DRAFT FINAL

PROPOSED PLAN

for the

BATTERY DISPOSAL AREA

of the

Former Victory Ordnance Plant

Decatur, Macon County, Illinois

August 2013

Prepared for:

United States Army Corps of Engineers
Louisville District

Prepared by:
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LIST OF ACRONYMS AND ABBREVIATIONS

bgs	Below Ground Surface
BDA	Battery Disposal Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Chemical of Concern
CFR	Code of Federal Regulations
COPC	Contaminant of Potential Concern
DD	Decision Document
DoD	Department of Defense
EEI	Envirodyne Engineering, Inc.
ELCR	Excess Lifetime Cancer Risk
ERA	Ecological Risk Assessment
ft	Feet
FUDS	Formerly Used Defense Sites
HI	Hazard Index
HHRA	Human Health Risk Assessment
IAC	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
LUC	Land Use Control
MCL	Maximum Contaminant Level
MI	Multi-Incremental® Sampling
NCP	National Contingency Plan
NFA	No Further Action
OSWER	U.S. Environmental Protection Agency Office of Solid Waste and Emergency Response
Plexus	Plexus Scientific Corporation
PA	Preliminary Assessment
PAH	Polynuclear Aromatic Hydrocarbon
PRG	Preliminary Remediation Goal
PE	Professional Environmental Engineers, Inc.
RDA	Recommended Dietary Allowance
RGO	Remedial Goal Option

RAO	Remedial Action Objective
RI	Remedial Investigation
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SPLP	Synthetic Precipitation Leaching Procedure
SVOC	Semivolatile Organic Compound
TACO	Illinois Environmental Protection Agency Tiered Approach to Corrective Action Objectives
TR	Target Range
URS	URS Corporation
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
VOP	Victory Ordnance Plant

1.0 INTRODUCTION

This document is the **Proposed Plan** and it describes the preferred alternative, **No Further Action (NFA)**, for addressing the potential environmental impacts caused by the Department of Defense (DoD) at the 3.7-acre Battery Disposal Area (BDA) (referred to as "site" herein) at the former Victory Ordnance Plant located in Decatur, Illinois. The purpose of this document is to provide information about the BDA, its history, potential risks, and current conditions, and inform and solicit input from the public regarding the preferred alternative. This **Proposed Plan** identifies **No Further Action** as the preferred alternative as this site does not present an unacceptable human health or ecological risk based on the current and likely future use of the property.

The former Victory Ordnance Plant (VOP) is a Formerly Used Defense Site (FUDS) that falls under and is funded by the Defense Environmental Restoration Program, which restores sites by addressing environmental contamination. The FUDS program is limited to properties that were under the jurisdiction of the Secretary of the Army and owned by, leased by, or otherwise possessed by the United States where the property was transferred from DoD control prior to October 17, 1986. The DoD is responsible for evaluating and cleaning up DoD–generated contamination on FUDS properties. The U.S. Army oversees the program for DoD, and the U.S. Army Corps of Engineers (USACE) manages the evaluation and cleanup of these properties. When a property is evaluated, work is planned to ensure that the property is cleaned up as necessary to protect human health, safety and the environment. For some properties, no clean-up activities may be necessary because site risks are present at acceptable levels.

** Terms in bold font are defined in Section 12.0 - Glossary*

DATES TO REMEMBER

(Mark your calendar)

PUBLIC COMMENT PERIOD:
November 20th – December 20th, 2013
The public will have an opportunity to review and provide comments on this Proposed Plan. USACE will accept written comments on this Proposed Plan during the public comment period.

Information used in selecting the preferred alternative in this Proposed Plan is available for public review online at:

http://bit.ly/VictoryOrdnancePlant

Copies of this document and supporting documents (which comprise the "**Administrative Record**") are available at the following information repository:

Decatur Public Library
130 North Franklin Street
Decatur, IL 62523

Monday–Thursday / 9:00 am – 9:00 pm
Friday – Saturday / 9:00 am – 5:30 pm
Sunday / 1:00 – 5:00 pm (September-May)

The USACE – Louisville District is responsible for the environmental investigation and cleanup program at the former VOP. As the lead agency, USACE is issuing this Proposed Plan, in consultation with the Illinois Environmental Protection Agency (EPA), to present the findings of environmental investigations and recommended action for the BDA. The final remedy for the site will be selected after reviewing and considering all information submitted during the 30-day public review period. Therefore, the public is encouraged to review and comment on this **Proposed Plan**.

2.0 SITE DESCRIPTION, HISTORY, AND PREVIOUS INVESTIGATIONS

2.1 SITE DESCRIPTION

The former Victory Ordnance Plant property is located at 2500 North 22nd Street in an urban setting in Decatur, Macon County, Illinois, as shown on **Figure 1**. The Battery Disposal Area comprises approximately 3.7 acres of Parcel 1 of the approximately 237-acre former VOP as shown on **Figure 2**.

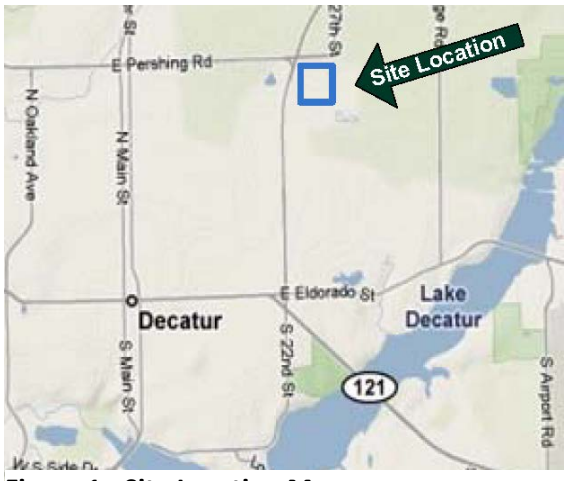

Figure 1 - Site Location Map.

2.2 SITE HISTORY

The use of the former VOP for DoD activities began in 1943 when the VOP was built. The plant manufactured tank engines, but no ammunition or explosives were produced. The plant was operated by the Caterpillar Company in this capacity until 1945. From 1945 to 1946 the facility was reported as surplus by the DoD and designated for disposal (transfer to another entity). In 1946, the property, except for 26.14 acres, was returned to DoD and the Decatur Signal Corps Depot was established. The Signal Corps Depot was operated until January 1961. During the early 1960's, the property was divided into four parcels. Parcel No. 1, consisting of 164.26 acres of land and some 40 various buildings, was sold to Firestone Tire and Rubber Company in August 1962. The 3.7-acre BDA is within Parcel No. 1. (Envirodyne Engineers, Inc. (EEI), 1988). Parcels No. 2-4 were sold in 1962 and 1963, but are not the focus of this Proposed Plan.

2.3 PREVIOUS INVESTIGATION ACTIVITIES

To evaluate the nature and extent of potential contamination associated with the previous operation of the former VOP, various environmental investigations have been performed, including a Contamination Evaluation in 1987, a Preliminary Assessment in 2006, a Site Inspection in 2008, and a Remedial Investigation in 2009 through 2012.

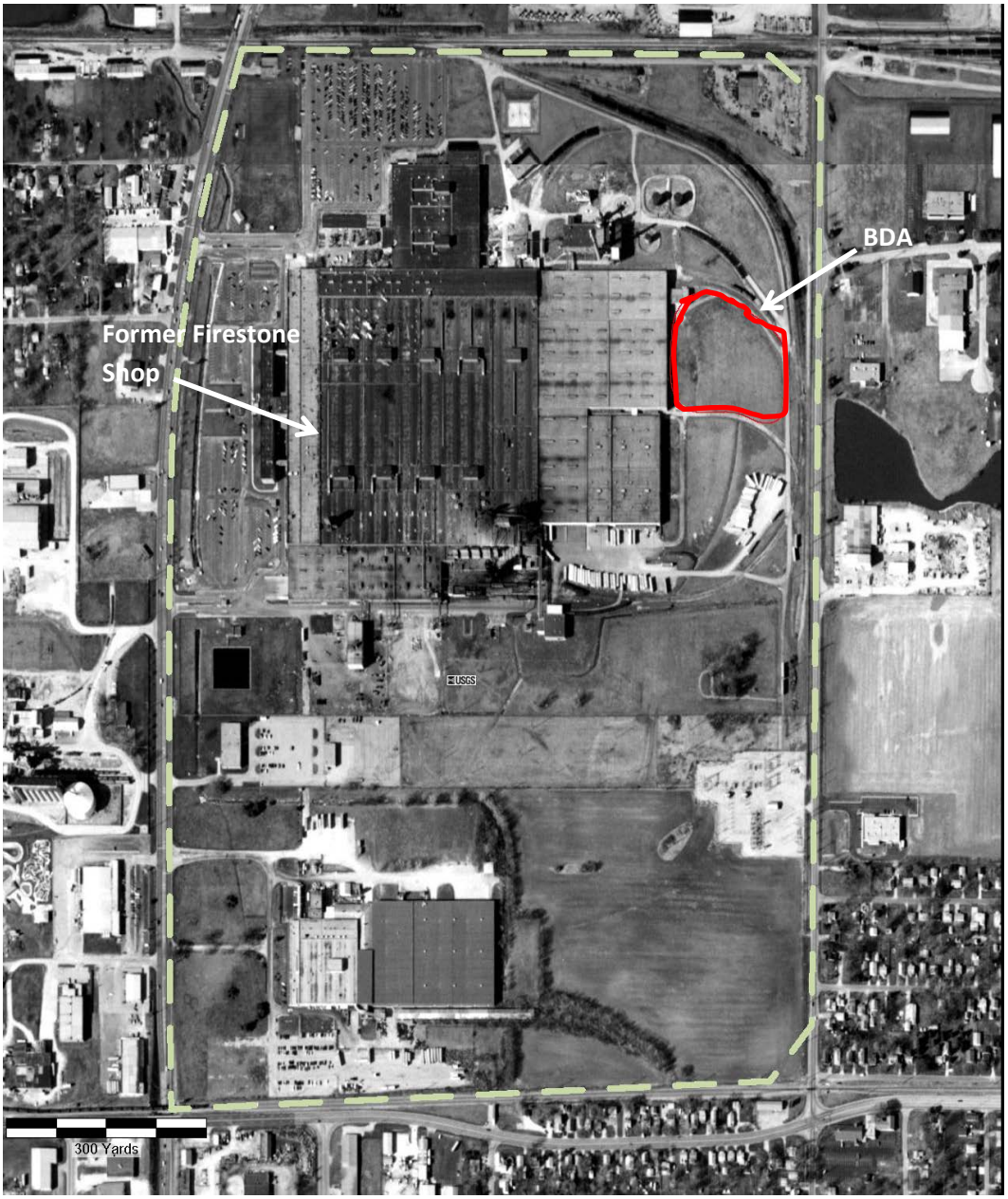

Figure 2 – Site Vicinity Map. The BDA (shown by the solid red line) is approximately 3.7 acres of the 237 acre VOP (shown by the dotted line). The BDA is located directly east of the former Bridgestone Firestone North American Tire's Machine Shop.

2.3.1 Contamination Evaluation (1987)

A Contamination Evaluation was performed by EEI in 1987. EEI interviewed former employees of Firestone Tire & Rubber Company, and one noted that six dump truck loads of batteries were disposed of in a disposal pit during the late 1950's and the BDA may have served as a dumping ground for defective communications equipment and supplies (though not substantiated by subsequent investigations). The "disposal pit" was reportedly located in an open area south of the railroad spur running from the east side of the Firestone finished products warehouse. The dimensions of the potential pit were estimated to be 15-feet (ft) deep by 30-ft long by 30-ft

wide five to ten ft below grade. The main types of batteries allegedly disposed were low voltage dry and wet cell batteries.

Four soil samples were collected around the suspected disposal pit during the Contamination Evaluation and analyzed for total metals, including arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc. Of these metals, arsenic, barium, cadmium, chromium, lead, silver, and zinc were detected at low levels in all the samples, including the background samples (EEI, 1988).

Three groundwater monitoring wells (DG-1, DG-2, and DG-3) were installed and sampled on September 11, 1987. The groundwater samples were analyzed for total metals, including arsenic, barium, cadmium, chromium, iron, lead, manganese, mercury, selenium, silver, sodium, and zinc. Of these metals, only barium, chromium, iron, manganese, sodium, and zinc were detected in the groundwater samples. The **maximum contaminant level** (MCL) and Resource Conservation and Recovery Act (RCRA) groundwater protection criteria for those six metals were not exceeded. Despite these low levels, the report concluded that "additional groundwater sampling is advised to confirm the presence of the detected contaminants and determine potential contaminant variations over time" (EEI, 1988).

2.3.2 Preliminary Assessment (PA) (2006)

A comprehensive site-wide Preliminary Assessment (PA) was completed at the former VOP in 2006 and included the BDA (Plexus 2006). The PA included a review of available file information, collection and review of historic aerial photographs, interviews, and a site reconnaissance. During the PA, soil concentrations were compared to USEPA Region 9 **Preliminary Remediation Goals (PRGs)** and IEPA **Tiered Approach to Corrective Action Objectives (TACO)** values for soil, with the most conservative values used to determine if results exceeded acceptable levels. Groundwater concentrations were compared to Groundwater Quality Standards for Class I groundwater contained in 35 Illinois Administrative Code (IAC) 620 and TACO objectives for those compounds not listed in 35 IAC 620.

The PA, which only included an assessment of possible environmental concerns associated with the former DoD activities, concluded the following:

- The area of potential concern was identified as a 3.7-acre site that resembles a large mowed lawn (i.e., BDA).
- Interviews with at least one former employee indicated the possible disposal of defective communications equipment, supplies, and batteries. Other reportedly buried hazards include: cleaning chemicals, waste paint, and occasional firearms. The National Guard units (as presented in the Illinois EPA CERCLA Site Screening Report (1992)) would reportedly bring used batteries, small ammunitions, and weapons to Decatur Signal Depot for disposal.

- Soil sampling at the former VOP has not revealed metals contamination.
- Groundwater sampling at the former VOP has confirmed that there may have been a release of chromium, iron, and zinc from the BDA. Iron and manganese exceeded the State of Illinois Groundwater Quality Standards in all samples. (Plexus 2006)

The PA presented the following recommendation: "Further define the nature and extent of groundwater contamination (metals) present east of the former manufacturing Building A at the former battery disposal area using subsurface soil samples and groundwater samples."

2.3.3 Site Inspection (SI) (2008)

In October 2008, URS completed a Site Inspection (SI) to document the presence or absence of contamination associated with the BDA located on the former VOP. The SI included a review of available file information, a site reconnaissance, electromagnetic method and magnetic method field surveys, surface and subsurface soil testing and analysis, and sampling and analysis of groundwater from existing groundwater monitoring wells.

The BDA was divided into 16 grids, each 0.25-acre in size **(Figure 3)**. Both electromagnetic and magnetic geophysical field surveys were performed and the results indicated that the site may

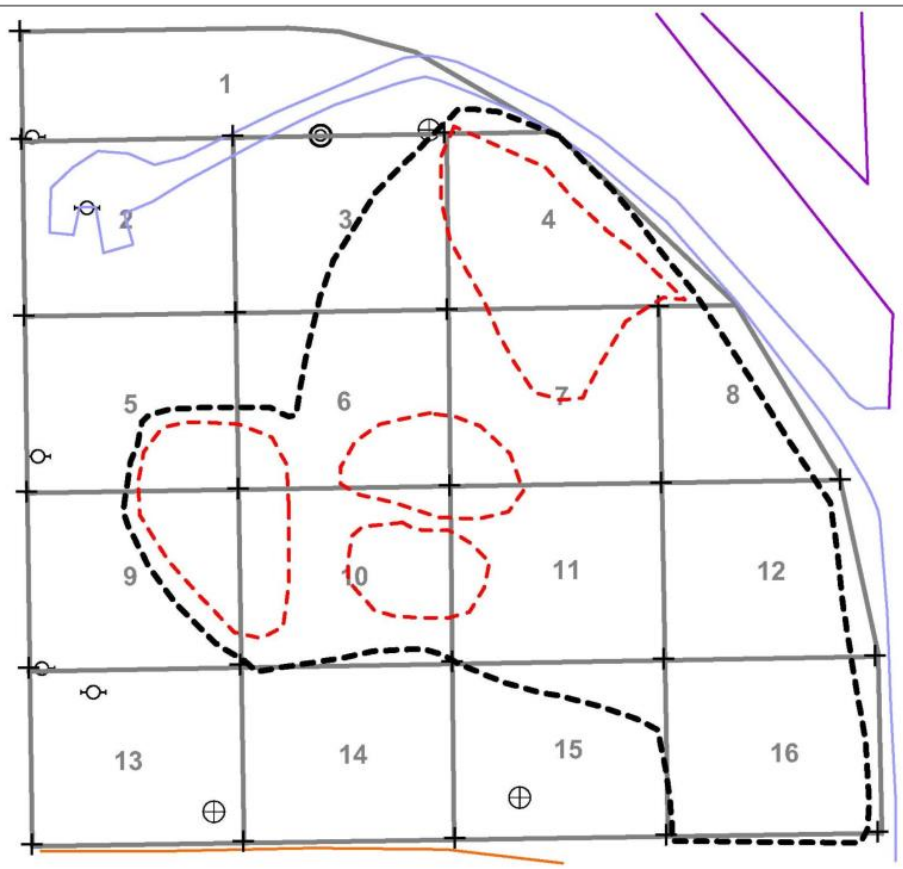

Figure 3 – Grid Layout. The BDA was divided into 16 grids. The dashed red lines represent interpreted locations of discrete disposal cells. The dashed black line shows the interpreted extent/boundary of the disposal area. Samples were collected during both the SI and RI from each of the 16 grids.

contain several discretely located disposal cells. Surface soil samples were collected from 0 to 0.5 below ground surface (bgs) from each grid and subsurface soil samples were collected at 1 to 4 bgs and 4 to 11 ft bgs from grids where geophysical anomalies (i.e., variations in subsurface soil conductivities used to measure depth to bedrock, presence of buried ferrous and nonferrous metals, and help verify the presence or absence of a burial pit) (see **Figure 4**) were indicated. All soil samples were analyzed for semi-volatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PAHs), pH, and total metals. A portion of the soil samples were also analyzed for volatile organic compounds (VOCs). Groundwater samples were collected from the three site wells and analyzed for VOCs, SVOCs, PAHs, and metals.

Five PAHs were detected in the surface soil samples at concentrations above PRGs. One PAH and lead were the only chemicals detected in the subsurface soil samples above the screening value. All other surface and subsurface samples were below PRGs for other chemical constituents, and pH values were within the neutral range (7.74-7.99). Only magnesium, sodium, and zinc were detected in groundwater samples, but below the screening values.

Based on the SI findings, additional field investigation activities were recommended, including reinstallation of groundwater monitoring wells to better capture impacted groundwater, the collection of additional surface and subsurface soil testing to accurately delineate the vertical and horizontal extent of the metals contamination zone, and the collection of groundwater samples from the newly installed wells (URS, 2008).

2.3.4 Remedial Investigation (RI) (2009-2012)

Professional Environmental Engineers, Inc. (PE) performed a Remedial Investigation (RI) at the BDA of the former VOP in August 2009. Field activities completed for the RI included the following:

- Site reconnaissance prior to the commencement of the field sampling effort.
- Collection of surface soil samples from a grid of 30 sub-grid areas.
- Collection of subsurface soil samples at multiple depths from trenches installed at eight of the SI-grid areas.
- Collection of subsurface soil samples from soil borings drilled in three of the SI-grid areas.
- Abandonment of three existing monitoring wells
- Installation of three new (replacement) monitoring wells
- Collection of groundwater samples from the newly-installed wells
- Site survey of soil sampling locations and new wells
- Management and disposal of investigation-derived waste (IDW)

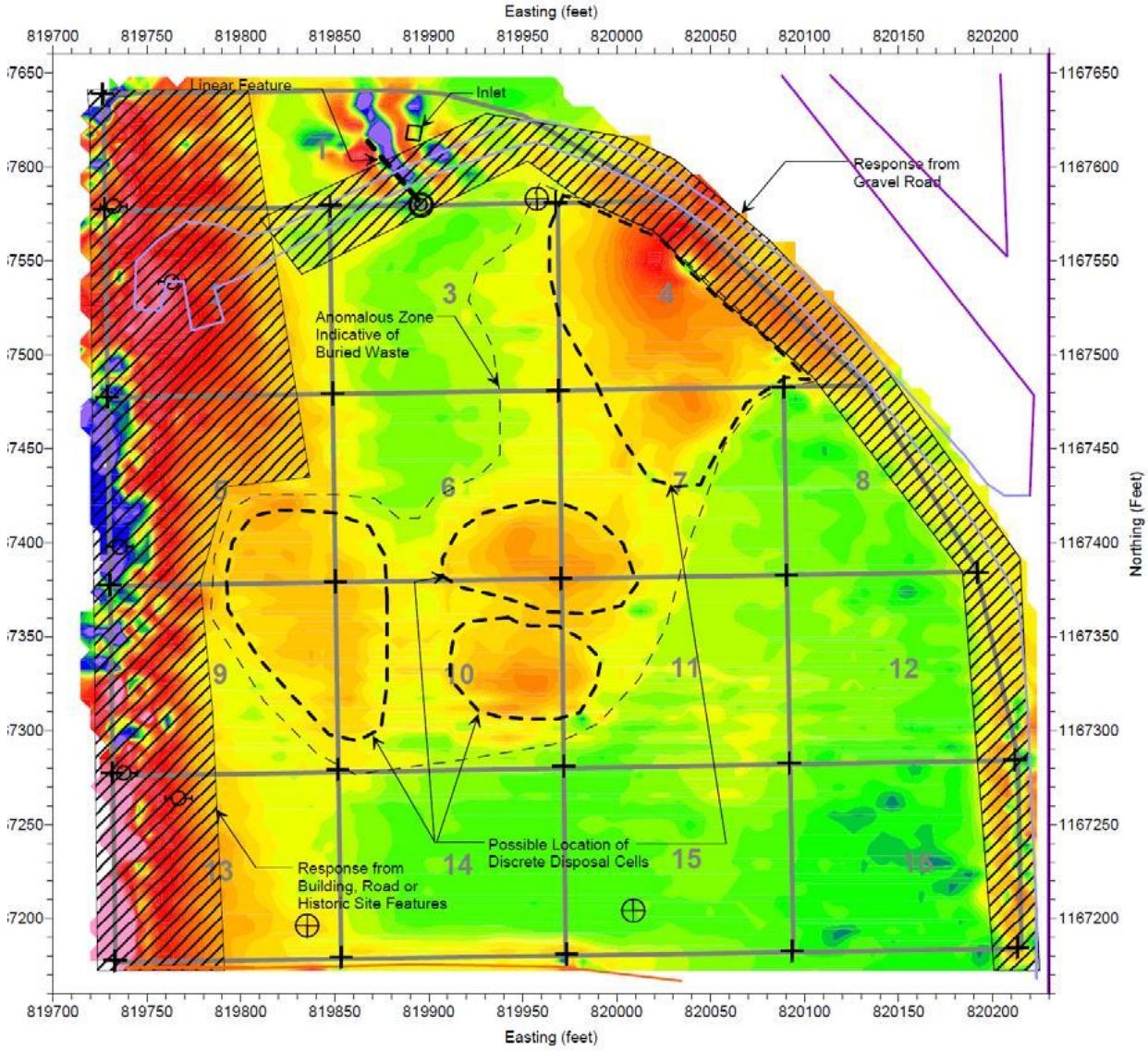

Figure 4 – SI Geophysical Survey Results. The results of the geophysical survey conducted during the SI were used as the basis of the sampling performed during the RI, specifically the additional characterization of Grid #4. The orange and red contours in the figure are indicative of potential buried waste, surface debris, or known surface features. The blue contours are generally indicative of metal objects.

2.3.4.1 Surface Soil Sampling

Thirty (30) surface soil samples were collected from the 16 grids and analyzed for VOCs, SVOCs, total metals, and pH. The data from the RI and SI, 46 samples in total, were combined to evaluate surface soil at the BDA. Six (6) PAHs were detected above screening levels in a majority of the surface soil samples. Eight (8) metals were detected at concentrations above the screening levels or TACO background values. These 14 chemicals of potential concern for surface soil were evaluated in the human health risk assessment (see Section 5.0).

2.3.4.2 Trenching and Subsurface Soil Sampling

Fifteen (15) subsurface soil samples were collected from five trenches excavated through anomalous areas located in Grid 4, Grid 6, Grid 9, Grid 11, and Grid 16 with the intent to characterize the nature and depth of the alleged buried waste (see **Figure 4**). Two of the five trenches were excavated in areas (Grid 9 and Grid 16) not previously sampled during the SI to delineate the vertical and horizontal extent of soil contamination. Soil borings were advanced in three grids (Grid 5, Grid 7, and Grid 10), chosen based upon the geophysical results, to verify the depth of the BDA. Six (6) additional subsurface soil samples were collected from these three soil borings at depths ranging from 10 ft bgs to 23 ft bgs. The subsurface soil samples were analyzed for VOCs, SVOCs/PAHs, metals, and pH.

The data from the RI and SI, 31 samples in total, were combined to evaluate subsurface soil at the BDA. Six (6) PAHs were detected at concentrations above the screening levels in subsurface soil samples. The most elevated concentrations of PAHs were observed in samples collected from Grid 16, with the maximum concentrations of most PAHs contained in the 6-8 ft sample interval. Eleven (11) metals were detected at concentrations above the screening levels or the TACO background values in subsurface samples. The most elevated concentrations of metals were observed in the samples collected from Grid 4, with the maximum concentrations of all but one of the metals contained in the 3-5 foot sample interval. Further, small amount of batteries were observed in the trench excavated in Grid 4 during the RI field activities. These 17 chemicals of potential concern for subsurface soil were evaluated in the human health risk assessment (see Section 5.0)

2.3.4.3 Monitoring Well Replacement and Groundwater Sampling

PE decommissioned the three monitoring wells installed in 1987 and installed three new monitoring wells (MW1R through MW3R) screened at intervals Illinois EPA considered better (5 to 15 ft) to capture potential groundwater contamination. Groundwater samples were collected from the three newly installed monitoring wells and analyzed for VOCs, SVOCs, (including PAHs), and metals. Six metals were detected in groundwater samples at concentrations above screening levels. Aluminum and manganese exceeded screening levels in MW1R and MW3R. Aluminum, arsenic, cobalt, iron, manganese, and vanadium exceeded screening levels in MW2R. From batteries, one would expect cadmium, lead, mercury, nickel, and zinc but none of these elements were detected at elevated concentrations, making it highly probable that the elements found in groundwater – aluminum, arsenic, cobalt, iron, manganese, and vanadium – are naturally occurring and not related to previous site activities.

2.4 ADDITIONAL RI ACTIVITIES AND TIME CRITICAL REMOVAL ACTION

Additional characterization of the BDA was performed on 21 August 2012 to further evaluate the presence or absence of batteries. The trenching of six test pits in Grids 4, 5, 6, 7, 9 and 10 (see **Photo 1**) revealed evidence of the burial of a significant amount of batteries in Grid 4.

Batteries were not observed in the remaining five grids.

Photo 1 – Excavation activities at Grid 4 in August 2012.

In November 2012, Plexus was contracted by the USACE to complete a Time Critical Removal Action to consist of excavation and disposal of the batteries/debris that had been discovered in Grid 4 in August 2012. Plexus excavated and subsequently disposed of 537.27 tons of soil at Veolia ES Valley View Landfill. Soil samples were collected from the floor and sidewalls of the excavations to confirm that concentrations of manganese in the remaining soils were below the Illinois EPA cleanup objectives for industrial/commercial properties.

Following the completion of the Time Critical Removal Action, the 3.7 acre BDA was covered with pavement by the property owner in December 2012.

3.0 SCOPE AND ROLE

The U. S. Army is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and Section 300.430(f)(2) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)** (40 Code of Federal Regulations (CFR), Part 300).

4.0 SUMMARY OF SITE RISKS

A baseline human health risk assessment (HHRA) was performed to evaluate potential risks and hazards from current and predicted future exposures to chemicals in media at the BDA. A screening-level ecological risk assessment (ERA) was performed to evaluate potential risks to ecological receptors. Chemicals detected in excess of the screening values, as noted in Section 2.3, were evaluated in the HHRA and ERA. Risks were determined for both current and hypothetical future property users.

4.1 HUMAN HEALTH RISKS

The HHRA involves a series of steps to estimate human exposure and level of risk. The first step in this process is to determine exposure and identify receptors. The concepts of "**exposure pathway**" and "**receptor**" are used in evaluating risk coming from exposure to chemicals in the environment. An "exposure pathway" is the course a chemical takes from a source to an exposed organism. A "receptor" is the organism exposed to the chemical by means of the "exposure pathway". For example, if a homeowner uses a well to supply water for potable use, the well and water piping comprise the pathway that allows a chemical in the groundwater to reach the homeowner, and the homeowner is the receptor. The concept of an exposure pathway being defined as either "complete" or "incomplete" is additionally required to evaluate risk. An "exposure pathway" is considered to be "complete" if there is (1) a source or chemical release from a source, (2) an exposure point where contact can occur, and (3) an exposure route by which contact can occur. In the absence of the three aforementioned requisites, the "exposure pathway" is considered to be "incomplete". For example, if a chemical source is present, and is releasing chemicals to the air, but there are no people nearby, the "exposure pathway" is deemed to be "incomplete".

The potential human receptors identified for the BDA included the following:

- Current outdoor commercial/industrial workers
- Future Outdoor commercial/industrial workers
- Future Indoor commercial/industrial workers (limited to indoor dust)
- Future Construction workers (to support construction/development)
- Future Child and Adult Residents

Human health risk occurs from exposure to chemicals that are considered to be carcinogens (can cause cancer) and/or non-carcinogens, and the risk for each receptor noted above was calculated and evaluated as described below:

WHAT IS "RISK"?

A human health risk assessment estimates "risk," which is an estimate of the likelihood of health problems occurring if no cleanup action were taken at a site. To estimate the risk at a site, the USACE follows the US EPA's four-step process:

- Step 1: Analyze Contamination
- Step 2: Estimate Exposure
- Step 3: Assess Potential Health Dangers
- Step 4: Characterize Site Risk

In Step 1, the risk assessor looks at the concentrations of chemicals found at a site and compares them to health-based concentrations[explain this term] to help determine which chemicals, if any, are most likely to pose the greatest threat to human health.

In Step 2, the risk assessor looks at the different ways that people might be exposed to the contaminants identified in Step 1, and calculates a "reasonable maximum exposure" (RME), which portrays the highest level of human exposure that could reasonably be expected to occur.

In Step 3, the risk assessor uses the information from Step 2 combined with information on the toxicity of each chemical to assess potential health risks. There are two types of risk: cancer risk and non-cancer risk.

In Step 4, the risk assessor combines, evaluates, and summarizes the results of the first three steps and determines whether the potential health risks are acceptable for people at or near the site according to relevant benchmarks.

- With respect to carcinogens, risk to human health is expressed as a probability that an individual will develop cancer over a lifetime as a result of exposure to a carcinogen. Cancer risk from exposure to carcinogen(s) is expressed as the excessive lifetime cancer risk (ILCR), or the increased chance of cancer above the normal background rate of cancer. In the United States, the background chance of contracting cancer will be a little more than three (3) in 10 (American Chemical Society, 2006). In order to assess potential risk to human health, the ELCR is compared against an established risk goal. As allowed by the CERCLA, acceptable risk goals may lie within the range of increased cancer risk of one occurrence per million people (10^{-6}), up to one occurrence per ten thousand people (10^{-4}) (40 CFR 300.430).

- With respect to non-carcinogens, the risk to human health is evaluated by comparing an estimated exposure (i.e. intake dose) from site soils to an acceptable toxicity value expressed as a reference dose, or RfD. The RfD is the threshold below which no toxic effects are expected to occur in a population. The ratio of intake over the RfD is the Hazard Quotient (HQ) (EPA, 1989). The HQs for each constituent are be summed to obtain a Hazard Index (HI). A hazard index value of less than or equal to 1.0 indicates that no adverse noncancer human health effects are expected to occur.

Risks were calculated for each receptor at the BDA and evaluated in terms of acceptable risks (as defined in the NCP under 40 CFR 300.430(e)(2)(i)(A)(2-5) of 1×10^{-6} to 1×10^{-4} for carcinogens and the Hazard Index (HI) value of 1 for noncarcinogens for the following COPCs:

- For surface soils, the COPCs included benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, aluminum, arsenic, cadmium, cobalt, hexavalent chromium, lead, manganese, mercury, thallium, vanadium and zinc.

- For subsurface soils, the COPCs included benzo(a)anthracene, benzo(a)pyrene, benzo(b) fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, aluminum, arsenic, cadmium, cobalt, hexavalent chromium, lead, manganese, mercury, thallium, vanadium and zinc.

- For groundwater, the COPCs included aluminum, arsenic, cobalt, manganese, and vanadium.

For those chemicals above that exhibited cancer risk or noncancer hazards greater than levels described in the NCP, an evaluation of the contributions of risk from background concentrations was performed. Risks from background chemical concentrations were subtracted from the overall site risks, to determine just the risk relative to on-site chemical concentrations. The following chemicals/receptors exhibited excess lifetime cancer risks within

the NCP risk range of 1×10^{-6} and 1×10^{-4} but greater than 1×10^{-6}, or noncarcinogenic HIs greater than 1 (after the elimination of risks contributed by background sources):

- Future Construction Worker – Subsurface Soil, Grid 4 – HI greater than 1:
  - Manganese
- Future Indoor Commercial/Industrial Worker – Surface Soil, ELCR = 1×10^{-5}:
  - Benzo(a)pyrene
- Future Child Resident – Surface Soil –ELCR = 1×10^{-4}:
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene
  - Dibenzo(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
- Future Older Child/Adult Resident – Surface Soil – ELCR = 1×10^{-5}:
  - Benzo(a)pyrene
  - Benzo(b)fluoranthene

4.2 ECOLOGICAL RISKS

A screening level ERA was performed to evaluate ecological risks at the site. Since exposure pathways were shown not to be complete, and there are no ecological habitats affected by the site, risk to ecological receptors is negligible and no further evaluation is warranted.

5.0 INVESTIGATION SUMMARY AND CONCLUSIONS

Based on the results of the RI and the other previous investigations, the baseline HHRA, the additional RI activities, and the Time Critical Removal Action, a No Further Action designation has been recommended for the BDA. The rationale for this recommendation is below:

1) The Time Critical Removal Action, which resulted in the removal of batteries, debris, and associated contaminated soil, has eliminated the contaminant source to soil and groundwater.

2) The only constituent that exhibited risks in excess of the NCP risk threshold was manganese, which resulted in an HI of greater than 1.0 for the construction worker scenario based on concentrations observed in Grid 4. This risk was calculated prior to the Time Critical Removal Action. The removal action has addressed the manganese-impacted soil (as confirmed by the post-removal sampling and analysis) and no longer presents a theat.

3) No other exposure scenario exhibited risks at unacceptable levels. Risks for the current and future site receptors (outdoor worker, construction worker, child resident, and adult resident) were below or within the NCP risk range of 10^{-6} to 10^{-4}. However, since the calculated risks to the residential receptors are above 10^{-6}, Illinois EPA, per state statue, prevents an unlimited use/unrestricted exposure (UU/UE) designation for the BDA. Thus, this property is presently zoned for industrial use and will remain as such as the reasonably anticipated future land use by Katmandu, Inc. is industrial.

4) There is a concrete pad covering the entire 3.7-acre BDA site, thereby removing any complete exposure pathways relative to soil exposure.

6.0 REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) may be developed for protection of human health and/or for protection of ecological receptors as defined by human health and ecological risk-based criteria. Pre- and post-removal action sampling has demonstrated compliance with the acceptable risk range defined by NCP (i.e., 1 x1 0^{-4} to $1.0x10^{-6}$ (carcinogenic) and 1.0 (noncarcinogenic)) for receptors based on the current and reasonably anticipated future land use (industrial) at the former VOP facility. Therefore, RAOs were not developed as part of this Proposed Plan.

7.0 SUMMARY OF ALTERNATIVES

Since the BDA does not pose an unacceptable risk to human health and the environment, a set of remedial action alternatives was not developed and evaluated. Therefore, only the No Further Action alternative is presented in this Proposed Plan.

8.0 EVALUATION OF ALTERNATIVES

In accordance with the **CERCLA** process, the USACE has determined that no additional remedial action is warranted for the VOP property. This determination is supported by the findings of the RI, the Time Critical Removal Action, and the HHRA. As a result, evaluation of alternatives was not performed and the No Further Action alternative is recommended for the site.

9.0 PREFERRED ALTERNATIVE

It is the position of the USACE of the Louisville District of the USACE that no additional actions are necessary at the BDA located within the former Victory Ordnance Plant to protect public health and welfare and the environment. The preferred response action described in this

Proposed Plan for BDA is No Further Action (NFA), which means no further environmental investigation or remediation is required.

The No Further Action alternative has been evaluated against the nine criteria developed by the EPA and specified in 40 CFR §300.430(e)(9)(iii) that encompass evaluation of statutory requirements and technical, cost, and institutional considerations. The criteria are:

- Overall protection of human health and the environment
- Compliance with ARARs
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume (TMV) through treatment
- Short-term effectiveness
- Implementability
- Cost
- State acceptance
- Community acceptance

These criteria are further defined by the NCP as:

- **Threshold Criteria:** Overall protectiveness of human health and the environment, and compliance with ARARs.
- **Primary Balancing:** Long-term effectiveness and permanence; reduction of TMV through treatment; short-term effectiveness; implementability; and cost.
- **Modifying Criteria:** State and community acceptance

It should be noted that the final two criteria (State and Community Acceptance) are used to modify the selection of an alternative. These criteria will be assessed after the public comment period that follows issuance of the Proposed Plan (the precursor to the Record of Decision).

The detailed evaluation was performed to provide the relevant information required to select No Further Action as a remedy for the site. USACE believes proposing a No Further Action alternative is appropriate due to the Time Critical Removal Action that was conducted to remove batteries and surrounding soils contaminated with elevated levels of metals. Sampling and laboratory analytical results demonstrate that the BDA now is protective of human health and the environment, as residual levels of metals in soil at the former BDA are below the industrial/commercial respective criteria established by the IEPA under Illinois' Tiered Approach to Cleanup Objectives (TACO). A summary of this evaluation is presented below:

Overall Protectiveness to Human Health and the Environment

The No Further Action alternative provides for protection of human health and the environment because targeted soil/battery-mass waste materials exceeding TACO criteria for metals (located in Grid 4) have been removed from the BDA, thus mitigating unacceptable risks formerly posed by site contaminant source materials and soils contaminated with metals (particularly manganese). This action also removed PAHs from Grid 4. Remaining risks in excess of 1E-06 but less than or equal to 1E-04 are associated with residential exposure to PAHs in soil outside of Grid 4. This property is presently zoned for industrial use, and there is no likely change expected for future use of the property by Katmandu, Inc.; therefore, per OSWER Directive 9355-0.30, current PAH contaminant levels under the most reasonable future land use do not present risks at unacceptable levels. There is also a concrete pad covering the entire 3.7 acre BDA site, which also removes any complete exposure pathways relative to soil exposure.

Compliance with ARARs

The No Further Action alternative offers no additional measures for compliance with applicable or relevant and appropriate requirements (ARARs) because the BDA no longer presents an unacceptable risk from DoD contamination.

Long-Term Effectiveness and Permanence

Respective to long-term effectiveness and permanence, the No Further Action alternative presents acceptable risk to the environment because soil analytical data from the BDA demonstrate that the residuum does not pose a risk to human health and the environment. Further, groundwater was not determined to be adversely affected at former BDA. The Level 1 eco-assessment demonstrated no impacts

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES

Overall Protectiveness of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

Compliance with ARARs evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.

Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

Cost includes estimated capital and annual maintenance O&M costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value.

State/Support Agency Acceptance considers whether the state agrees with the EPA's analyses and recommendations, as described in the RI, FS, and Proposed Plan.

to ecologically significant resources.

Reduction of Toxicity, Mobility, or Volume Through Treatment

The No Further Action alternative does not directly affect contaminant toxicity, mobility or volume through treatment; however, past removal actions (i.e., the removal of the batteries and surrounding soil) resulted in significant reduction in the volume of contaminants present.

Short-Term Effectiveness

The No Further Action alternative does not result in adverse risks to the community, remediation workers, or result in adverse impacts to the environment as no action is completed.

Implementability

The No Further Action alternative is readily implementable in that nothing is required to be constructed, maintained, or monitored.

Cost

The No Further Action alternative does not have a cost associated with it as there are no activities associated with it.

The proposed remedy of No Further Action is consistent with CERCLA regulations and the objectives of the selected remedy: to maintain current and future land use as industrial. If this recommendation is ultimately selected by USACE after consideration of all public comments received, no additional environmental investigation or remediation will be performed and the USACE's environmental actions for VOP will be considered complete.

10.0 COMMUNITY PARTICIPATION

Public participation is an important component of remedy selection. The USACE and Illinois EPA are soliciting input from the community on the preferred alternative. The comment period extends from 20 November 2013 through 20 December 2013.

The 30-day comment period provides an opportunity for public involvement in the decision-making process for the proposed action. All public comments will be considered by the U.S. Army and Illinois EPA before selecting the remedy. The public is encouraged to review and comment on this **Proposed Plan**. During the comment period, the public is encouraged to review documents pertinent to the VOP installation. If the public would like to comment in writing on the **Proposed Plan** or other relevant issues, please mail written comments (postmarked no later than 20 December 2013) to either of the physical or email addresses provided below:

Mr. Michael Haggitt
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Federal Facilities Unit
Remedial Project Management Section
Bureau of Land
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Springfield, Illinois 62794-9276
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P.O. Box 59
Rm. 351
Louisville, KY 40201
David.J.Brancato@usace.army.mil

The Decatur Public Library is the location of the document repository/**Administrative Record** for the former VOP.. The U.S. Army will review the public's comments as part of the process in reaching a final decision on the most appropriate action to be taken.

PUBLIC DOCUMENT REPOSITORY

Decatur Public Library
130 North Franklin Street
Decatur, IL 62523
Phone: (217) 424-2900

A **Responsiveness Summary**, a document that summarizes the U.S. Army's responses to comments received during the public comment period, will be included in the **Decision Document (DD).** The U.S. Army's final choice of action will be documented in the **Decision Document**. It is anticipated that the **Decision Document** will be finalized in March 2013.

WHAT CAN YOU DO NEXT?

To ensure that you have the information that you need to understand the Proposed Plan for the former Victory Ordnance Plant and to submit your comments on it, you are invited to do the following:

- **Review** the Final Remedial Investigation Report (July 2013) and other relevant documents in the Administrative Record at repository locations listed at the Decatur Public Library per the address below.
- **Use** the internet to access the fact sheet on the former Victory Ordnance Plant and other information about environmental restoration activities at **http://bit.ly/VictoryOrdnancePlant**
- **Call** the Public Affairs Office at the USACE – Louisville District at (502) 315-6773 to ask questions, request more information, or make arrangements for an informal briefing.

11.0 REFERENCES

Envirodyne Engineers, Inc. (EEI). 1988, Contamination Evaluation for Former Decatur Signal Dept, Prepared for USACE Buffalo District, April.

Plexus Scientific Corporation (Plexus), 2006. Former VOP, Preliminary Assessment. Prepared for USACE, Louisville District. August.

Professional Environmental Engineers, Inc. (PE), 2012. Remedial Investigation Report for the Battery Disposal Area at the Former VOP, Decatur, Illinois. June.

Professional Environmental Engineers, Inc. (PE), 2013. Remedial Investigation Report for the Battery Disposal Area at the Former VOP, Decatur, Illinois. June.

URS Group (URS), 2008. Site inspection, Former VOP, Decatur, Illinois – Final. October.

12.0 GLOSSARY

This glossary defines the technical terms used in this Proposed Plan. The definitions in this glossary apply specifically to this Proposed Plan and may have other meanings when used in different circumstances.

Administrative Record: a collection of documents generated during the investigation of the site, which form the basis for selection of a Remedial Action, and are placed in a central location for public review.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): the federal law that establishes a program to identify, evaluate, and remediate properties where hazardous substances may have been released, leaked, poured, spilled, or dumped into the environment.

Decision Document (DD): a document used to provide the reasoning or background for the choice of a particular remedial strategy or cleanup plan for a site. It includes a bibliography of documents that were used to reach the remedial decision. When the DD is finalized, remedial design and construction begin.

Exposure Pathway: the course a chemical takes from a source to an exposed organism.

Hazard Index: The Hazard Index is sum of more than one hazard quotient for multiple contaminants that have the same human health affect or multiple exposure pathways or both. When the Hazard Index for multiple contaminants exceeds unity, then a similar conclusion to the hazard quotient is reached and one or more of the contaminants may have to be reduced to yield a Hazard Index value less than unity.

Human Health Risk Assessment (HHRA): An evaluation of current and future potential for adverse human health effects from exposure to site contaminants.

Groundwater: The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs.

Maximum Contaminant Level (MCL): the maximum concentration of a contaminant allowed in drinking water systems by the National Primary Drinking Water regulations (40 CFR 141.11 and 141.12).

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): the federal regulation that sets forth the procedures for implementing cleanup under CERCLA (commonly known as Superfund). See 40 CFR Part 300.

No Further Action (NFA): a determination based upon an evaluation of the historical use of the site, or of area(s) of concern at that site, as applicable, that there are no discharged

contaminants present at the site, or at any other site to which a discharge originating at the site has migrated, or that any discharged contaminants present at the site or that have migrated from the site have been remediated in accordance with applicable remediation regulations.

Preliminary Remediation Goal (PRG): initial clean-up goals that (1) are protective of human health and the environment and (2) comply with Applicable or Relevant and Appropriate Requirements.

Proposed Plan: a document that summarizes for the public the preferred cleanup alternative for a site and presents the rationale for the preference.

Receptor: human or ecological entity exposed to a stressor.

Recommended Dietary Allowances (RDA): average daily level of intake sufficient to meet the nutrient requirements of nearly all (97%-98%) healthy people

Regional Screening Level (RSL): chemical-specific concentrations for individual contaminants in air, drinking water and soil that may warrant further investigation or site cleanup.

Remedial Action Objective (RAO): specific goal for protecting human health and the environment

Remedial Investigation (RI): An in-depth study designed to gather data needed to determine the nature and extent of contamination at a site

Responsiveness Summary: a document that presents written responses to the formal comments received during the public comment period and is appended to the Decision Document.

Public Comment Period: November 20, 2013 through December 20, 2013

You Are Invited to Submit Your Comments

on the Proposed Plan for the former Victory Ordnance Plant
Decatur, Illinois

INSTRUCTIONS: To select the final remedy for the Battery Disposal Area of the former Victory Ordnance Plant, the U.S. Army Corps of Engineers would appreciate your comments on the Preferred Alternative presented in this Proposed Plan. Therefore, please take a moment to note your comments on this form and return them by mail or email to the addresses listed in Section 10.0. Before you submit your comments, please don't forget to sign and date the form, and to print your name and address at the bottom. And please make sure that your comments are received before the end of the formal public comment period on Dec. 20, 2013. Thanks for your participation in this process!

Please sign your name: _____

Please print your name: _____

Street address: _____

City, State, and Zip Code: _____

Date: _____