

**DRAFT FINAL**

# **PROPOSED PLAN**

for the

## **FORMER NIKE CL-48 SITE**

**City of Independence and  
City of Garfield Heights  
Cuyahoga County, Ohio**

**July 2013**

**Prepared for:**

**United States Army Corps of Engineers  
Louisville District**



**Prepared by:**

**Professional Environmental Engineers, Inc.**

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## LIST OF ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
bgs	Below Ground Surface
BRA	Baseline Risk Assessment
BUSTR	Bureau of Underground Storage Tank Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
COC	Chemical of Concern
CFR	Code of Federal Regulations
COPC	Contaminant of Potential Concern
COPEC	Contaminant of Potential Ecological Concern
CDI	Chronic Daily Intake
DD	Decision Document
DAD	Dermal Absorbed Dose
DERR	Division of Emergency and Remedial Response
DoD	Department of Defense
EA	Environmental Assessment
EPC	Exposure Point Concentration
ESV	Ecological Screening Value
EU	Exposure Unit
FS	Feasibility Study
FSI	Focused Site Inspection
FUDS	Formerly Used Defense Sites
GSA	General Services Administration
HI	Hazard Index
HHRA	Human Health Risk Assessment
HIPAR	High Power Acquisition Radar
IFC	Integrated Fire Control
ILCR	Incremental Lifetime Cancer Risk
IRIS	Integrated Risk Information System
MDC	Method Detected Concentration

MCL	Maximum Contaminant Level
MTR	Missile Tracking Radar
MW	Monitoring Well
µg	Microgram
NCP	National Contingency Plan
NDMA	N-nitrosodimethylamine
NFA	No Further Action
ODNR	Ohio Department of Natural Resources
Ohio EPA	Ohio Environmental Protection Agency
PA	Preliminary Assessment
PAH	Polynuclear Aromatic Hydrocarbon
PRG	Preliminary Remediation Goal
PPRTV	Provisional Peer Reviewed Toxicity Value
RGO	Remedial Goal Option
RAO	Remedial Action Objective
RI	Remedial Investigation
RL	Reporting Limit
RfD	Reference Dose
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SL	Screening Level
SLERA	Screening Level Ecological Risk Assessment
SPLP	Synthetic Precipitation Leaching Procedure
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TTR	Target Tracking Radar
UCL	Upper Confidence Limit
UDMH	Red Fuming Nitric Acid
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VA	Veterans Administration
VOC	Volatile Organic Compound

## 1.0 INTRODUCTION

This document is the **Proposed Plan** and it describes the preferred alternative, **No Further Action**, for addressing the environmental impacts at the former Control Area and Launch Area of the former Nike CL-48 Site in Cuyahoga County, Ohio. The purpose of this document is to provide information about the site, 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 (NFA)** as the preferred alternative as this former Nike site does not present a current or future unacceptable human health or ecological risk.

The former Nike CL-48 Site 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 Department of Defense (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.

The USACE – Louisville District is responsible for the environmental investigation and cleanup program at the former Nike CL-48 site, and it is issuing this Proposed Plan, in consultation with the Ohio Environmental Protection Agency (Ohio EPA), to present the findings of environmental investigations and recommended action for the former Nike CL-48 Site. 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.

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

<http://bit.ly/NikeCL48>

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

**Cuyahoga County Public Library  
Independence Branch**

6361 Selig Drive

Independence, Ohio 44131

Phone: (216) 447-0169

Fax: (216) 447-1371

Monday–Thursday / 9:00 am – 9:00 pm

Friday – Saturday / 9:00 am – 5:30 pm

Sunday / 1:00 – 5:00 pm

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

## **2.0 NIKE PROGRAM SUMMARY**

The Nike missile program was proposed in May 1945 to develop a line-of-sight anti-aircraft missile system. The program delivered the United States' first operational anti-aircraft missile system, the Nike Ajax, in 1953. With an increasing perception of a direct Soviet bomber threat to the American mainland, the Army rushed the Nike Ajax system into production and deployed the missile system around key urban, military, and industrial locations including the Cleveland metropolitan area.

The Nike Ajax missile was 21 feet long and the missile with its booster was 34 feet 10 inches in length. The missile flew at a speed of Mach 2.3. The sustainer engine was liquid-fueled and the booster rocket was solid-fueled. The missile was made with three high-explosive fragmentation warheads mounted in the nose, center, and aft sections of the missile.

A military installation equipped with a gun or a launcher that can fire a projectile or a missile is termed a battery. Nike batteries were divided into two areas. Each battery had an Integrated Fire Control (IFC) or Control Area and a Launch Complex or Launch Area. The sections were separated by at least one thousand yards, with the Control Area occupying the higher ground where feasible for radar purposes. The sites were separated because the Missile Tracking Radar (MTR) needed to be distanced from the Launch Area in order to track fired missiles. The Control Area usually had barracks, a mess hall, and the radar and control systems needed to direct the missiles.

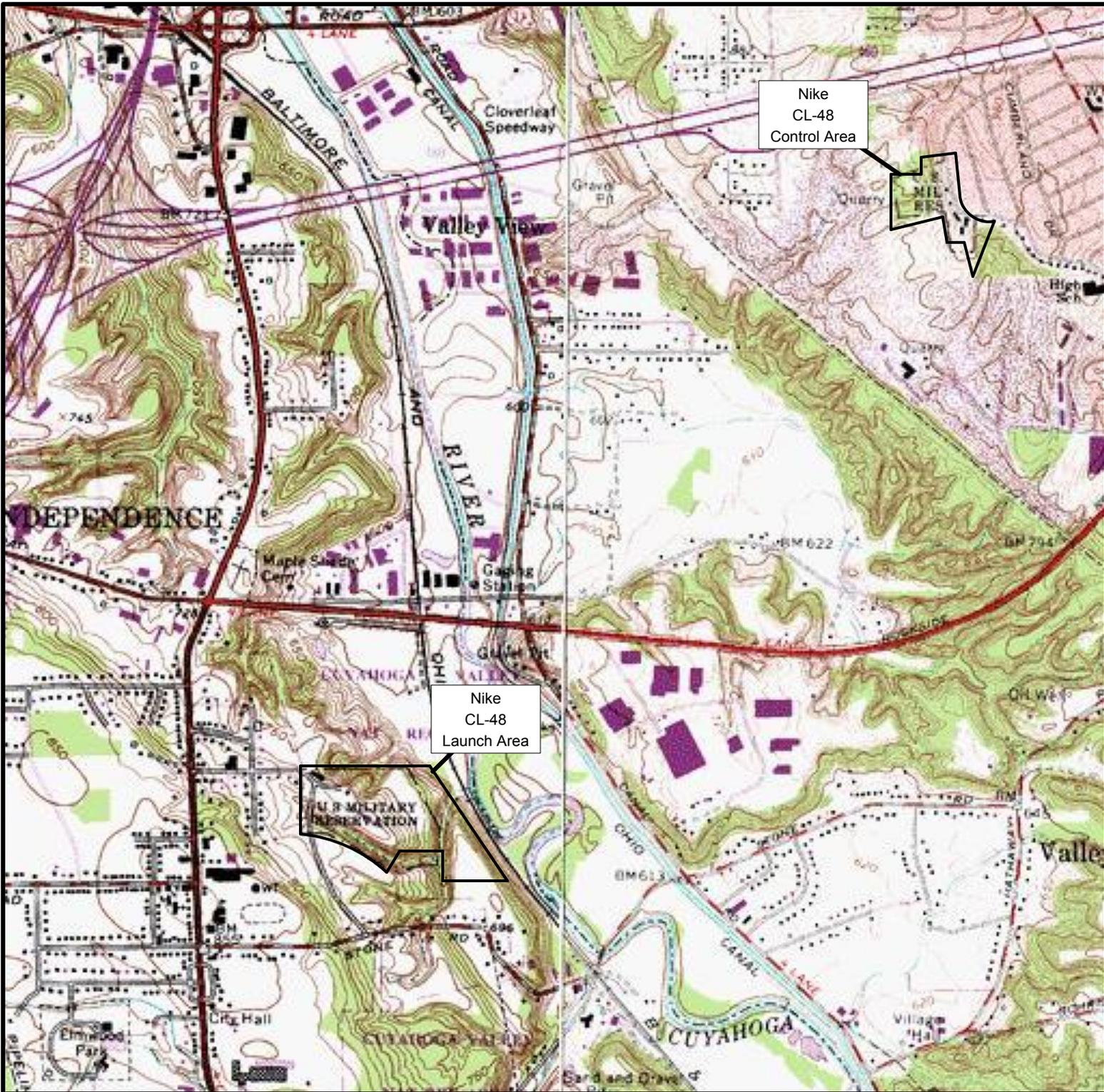
## **3.0 NIKE CL-48 SITE DESCRIPTION, HISTORY, AND PREVIOUS INVESTIGATIONS**

### **3.1 SITE DESCRIPTION**

The former Nike CL-48 Site comprised two areas – a Control Area and a Launch Area, as well as a 1.7 mile open space between the Control and Launch Areas, as shown on Figure 1. The property is encompassed within the cities of Garfield Heights and Independence, Ohio, about 10 miles south of downtown Cleveland, Ohio.

#### **3.1.1 Former Control Area**

The former Control Area occupies approximately 15.41 acres and is located at 5640 Briarcliff Drive in Garfield Heights, Ohio. The former Control Area is split into two parcels; approximately 5 acres are owned by the Garfield Heights Board of Education, and approximately 10 acres are owned by Garfield Office Development, LLC. The study area is within the property owned by the Garfield Heights Board of Education and is approximately 1 acre in size. Several of the former Nike buildings are used as office space and educational facilities. The southern portion of the property was once used as a community garden. Residential areas are north and east of



Scale: 1" = 24,000 ft



CONTROL/LAUNCH AREAS  
FORMER NIKE SITE CL-48  
CUYAHOGA COUNTY, OHIO



UNITED STATES ARMY  
CORPS OF ENGINEERS  
LOUISVILLE DISTRICT

**FIGURE 1**  
**GENERAL LOCATION MAP**

DATE  
6/10/11

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ENGINEERS, INC.

the property. The land use adjacent to the site is residential area to the north, both wooded and residential to the east, and wooded to the south. The Boyas Landfill is to the west. The site area slopes south from the entrance off Briarcliff Drive and slopes steeply to the east, south and west. The elevation of the site ranges from 990 feet at the entrance to the site to 955 feet (ft) near the eastern property boundary, above mean sea level (msl). The former Control Area can be reached by exiting Turney Road west onto Darlington Road, traveling north on Cumberland Road, and traveling west on Briarcliff Drive to the property.

### **3.1.2 Former Launch Area**

The former Launch Area is approximately 49.22-acres in size and is located at 7733 Stone Road in Independence, Ohio. It is owned by the Independence Board of Education and is currently used for administration offices and school bus operations. Several of the former Nike buildings are used as school district offices and bus maintenance facilities. The developed area is surrounded by wooded hill slopes. Wooded areas surrounding the Launch Area are used by the school district as an environmental studies land lab for students. The north and east portions of the property are used as an outdoor education center with trails, gardens, two man-made ponds, and a pavilion. The former Launch Area is bound to the north, east and southeast by the Cuyahoga Valley National Park (CVNP). The site is bound to the south by a wooded area. The site is bound to the southwest and west by residential areas. The former Launch Area can be reached by exiting Brecksville Road, proceeding east on Stone Road and directed due north on Tulip Trail Drive thru a residential area to the property.

## **3.2 SITE HISTORY**

The U.S. Government acquired the former Nike Site CL-48 from local landowners in 1956 and completed construction of the facility in early 1957. The former Nike CL-48 Site was operated as a Nike Ajax missile facility until 1961 and was declared excess in 1965. After being declared excess, the former Launch Area was acquired by the Independence Board of Education in 1967. The former Control Area was briefly transferred to the Ohio National Guard in 1967 and then acquired by the Garfield Heights Board of Education in 1970 (TEJV, 2009).

### **3.2.1 Former Control Area**

In 1956 and 1957, development of the former Control Area consisted of construction of six buildings and additional improvements, including radar towers, roads, storm sewers, a sewage pumping station and sanitary sewer line, natural gas lines, and electric utilities. The Control Area contained the various elements required to track incoming targets and to track and control the missile to the target. Developments that were present at the former Control Area included a guard house, battery control building, low-power acquisition radar, high-power acquisition radar, target-tracking and missile-tracking radars, generator building, radar collimation mast assembly, and other ancillary structures (TEJV, 2009). During 1985 and 1986,

as part of a BD/DR project, the USACE removed the following site structures: light standards, a Sentry House, a concrete block structure between the two radar towers, and two radar towers.

After being declared excess, the 15-acre former Control Area was briefly transferred to the Ohio National Guard in 1967 and then acquired by the Garfield Heights Board of Education in 1970 (TEJV, 2009). No major site improvements or land use changes have been made since that time.

### **3.2.2 Former Launch Area**

In 1956 and 1957, development of the former Launch Area included relocation of a farmhouse to an adjacent property; demolition of a barn and two storage sheds; construction of seven buildings; construction of three underground Missile Magazines; installation of a 4,000 gallon underground fuel oil storage tank for site generators; and construction of additional improvements including roads, storm sewers, a sewage septic system, natural gas lines, electric utilities, and an asphalt play court. The former Launch Area was used to assemble, maintain, store, and prepare missiles for firing. Developments present at the former Launch Area included underground Missile Magazines, a missile launch area, a missile fueling area, a Missile Assembly and Test Building, an Acid Storage shed, and other ancillary structures.

After being declared excess, the former Launch Area was acquired by the Independence Board of Education in February 1967. Since taking ownership, the Independence Board of Education has constructed or installed the following improvements: a bus storage garage; an 8,000-gallon diesel fuel underground storage tank (UST); converted the 4,000-gallon UST formerly installed by DoD from fuel oil to gasoline and added a fuel pump for use in fueling school busses in 1967; removed and replaced the 4,000 gallon UST with a 1,000-gallon UST in 1988; installed two oil and gas wells in 2007; placed two ponds in fill material during development of the property; constructed a gazebo for outdoor education classes; and installed a network of dirt trails throughout the undeveloped portions of the property (TEJV, 2009).

During 1985 and 1986, as part of a building demolition/debris removal (BD/DR) project, the USACE capped the three underground Missile Magazines with approximately 1 foot of reinforced concrete, removed and plugged vents and other access points, followed by paving of the area with 1 inch of asphalt pavement. In addition, two earthen mounds located east and west of the former Acid Fueling Station were removed by excavating the soil and transporting it off site for disposal. USACE also removed a Sentry House, an asphalt play court, a steel hoist by the former Acid Fueling Area, and a number of light posts that were not being used by the Independence Board of Education.

### **3.3 PREVIOUS INVESTIGATION ACTIVITIES**

To evaluate the nature and extent of potential contamination associated with the previous operation of the former Nike CL-48 Site, various environmental investigations have been performed, including a USACE Assessment in 1984, a Pre-CERCLIS Screening Assessment in 2001, a Preliminary Assessment in 2007, a Site Inspection in 2009, and a Remedial Investigation in 2012.

#### **3.3.1 USACE Assessment (1984)**

USACE issued a Findings and Determination of Department of Defense Responsibility for the Garfield Heights and Independence sites on 30 August 1984. The Findings of Fact section concluded that at the “Operations Area” (Independence) three Nike missile storage structures were to be abandoned by disconnecting electrical power and filling the structures with inert material. At the “Administration Area” (Garfield Heights) two buildings, two radar tracking towers, and associated concrete sidewalks and pads were to be razed and removed to below existing grade. The Findings of Fact concluded that neither the Independence Board of Education nor the Garfield Heights Board of Education had used these structures since DoD use was terminated, such that No Further Remediation (NFR) was warranted.

#### **3.3.2 Pre-CERCLIS Screening Assessment (2001)**

During 2001, the Ohio Environmental Protection Agency (Ohio EPA) prepared a Pre-Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Screening Assessment of the Garfield Heights and Independence, Ohio properties. Ohio EPA reviewed the list of FUDS in Ohio that had been deemed No Further Remediation (NFR) and chose five former Nike sites, including the former Nike Site CL-48, for additional review. The five sites were selected based on their proximity to public areas, including residential areas and parks. Reports were prepared for each site to review available information to determine whether there was potential for the site to affect surrounding areas and to determine whether the site merited further investigation. The former Nike CL-48 Site was not recommended for placement into CERCLIS; however, Ohio EPA did not concur with the USACE NFR determination from 1984 (Section 3.3.1). Ohio EPA recommended that both the Garfield Heights and Independence properties be further investigated, beginning with a Preliminary Assessment and Site Inspection, to evaluate the potential for contamination. Ohio EPA deemed that investigation was necessary to evaluate the potential for contamination in the Nike site features, such as USTs, radar towers, or transformers, as well as from activities such as on-site disposal, dumping, or landfilling.

### **3.3.3 Preliminary Assessment (PA) (2009)**

A Preliminary Assessment (PA) was completed in December 2009. In the process of finalizing the PA, the Ohio EPA requested surface soil, subsurface soil, and groundwater sampling and analyses within the former Control and Launch Areas of the former Nike Site CL-48 at 10 Areas of Concern (AOCs) to be addressed by the SI. Three of the 10 AOCs were identified at the former Control Area in Garfield Heights, including:

1. Former 1,000-gallon gasoline UST area
2. Suspected hillside solid waste disposal area
3. Former transformer pad location

The remaining seven AOCs were identified at the former Launch Area in Independence, including:

1. Former Missile Assembly and Test Building
2. Former Missile Magazine Area
3. Former Acid Fueling Area
4. Former septic system/leach field
5. Suspected hillside solid waste disposal area
6. Former transformer pad location
7. Former Acid Storage Shed Area

### **3.3.4 Site Inspection (SI) (2009)**

An SI was performed at the former Control Area in 2008 and 2009. Fieldwork for the SI was completed from November 2008 through January 2009, and the SI Report was finalized on 24 November 2009. Soil sampling activities were conducted at the 10 AOCs at both the Control and Launch Areas and groundwater sampling were conducted at the 11 monitoring wells installed in November 2008 at the former Launch Area.

Surface and subsurface soil samples were collected from seven soil borings (7) at the former Control Area and from 28 soil borings at the Launch Area. Soil samples were analyzed for **Target Analyte List** (TAL) metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, herbicides, total petroleum hydrocarbons-gasoline range organics (TPH-GRO), and nitrate. Groundwater samples were collected and analyzed for VOC, SVOCs, TAL metals, PCBs, pesticides, herbicides, and nitrate.

A human health risk screening evaluation was performed by comparing the soil analytical results to the EPA residential **Regional Screening Levels** (RSLs). The ecological risk screening

evaluation was performed by comparing the surface soils results to the EPA Region 5 **Ecological Screening Values (ESVs)** and the ECOTOX screening values. Chemicals of potential concern (COPCs) (i.e., chemicals detected above the RSLs) included aluminum, cobalt, iron, manganese, and thallium. Chemicals of potential ecological concern (COPECs) (i.e., chemicals detected above ecological screening values) included barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, zinc, and nitrate.

Groundwater analytical results were screened against the USEPA RSLs for Tap Water, adjusted by a factor of 0.1, and the USEPA Maximum Contaminant Levels (MCLs), as presented in the SI Report. Arsenic and lead, as well as bis(2-ethylhexyl)phthalate (BEHP), were the only constituents detected above their respective MCLs but were only detected in one well. BEHP is a common laboratory contaminant and the average concentrations of arsenic and lead were well below the MCLs.

Based on the results of the approved SI Report, no further action was recommended for the groundwater, surface water, and air pathways. Additional investigation was recommended to focus on the recreational scenario because the former Nike CL-48 Site is being used for educational purposes for children and is adjacent to the Cuyahoga Valley National Park. The SI also recommended that additional ecological assessment should be completed to determine the availability of habitat for sensitive species as well as the role any site habitat or habitat affected by the site would play in the ecological community.

### **3.3.5 Remedial Investigation (RI) (2012)**

In 2012, a RI was completed at the Nike CL-48 Site. The RI field investigation activities were performed from 31 January 2011 through 9 February 2011 and focused on delineating the extent of the constituents of interest (metals) in surface and subsurface soil. The activities consisted of the collection of surface soil samples, subsurface soil samples at multiple depths from soil borings installed at locations in selected AOCs at the Control and Launch Areas (see Figures 2 and 3), and abandonment of the 11 existing monitoring wells. Surface and subsurface soil samples were collected and analyzed for total metals, mercury, **Synthetic Precipitation Leaching Procedure (SPLP) Metals**, and **Toxicity Characteristic Leaching Procedure (TCLP)**. The TCLP and SPLP analyses were performed to evaluate the potential impact to groundwater from metals leaching from soils.

Of the analyses performed above, only 11 were detected in surface and subsurface soil samples collected at the Control and Launch Areas. The metals detected in excess of the screening goals (RSLs and background) are listed below:

- The chemicals detected in surface soil (0-0.5') at concentrations exceeding the screening levels in one or more surface samples were aluminum, cadmium, total chromium,



**LEGEND**

● ISM SUB-SAMPLE



NOTE: ISM = Incremental Sampling Method

**CONTROL AREA  
FORMER NIKE SITE CL-48  
INDEPENDENCE, OHIO**

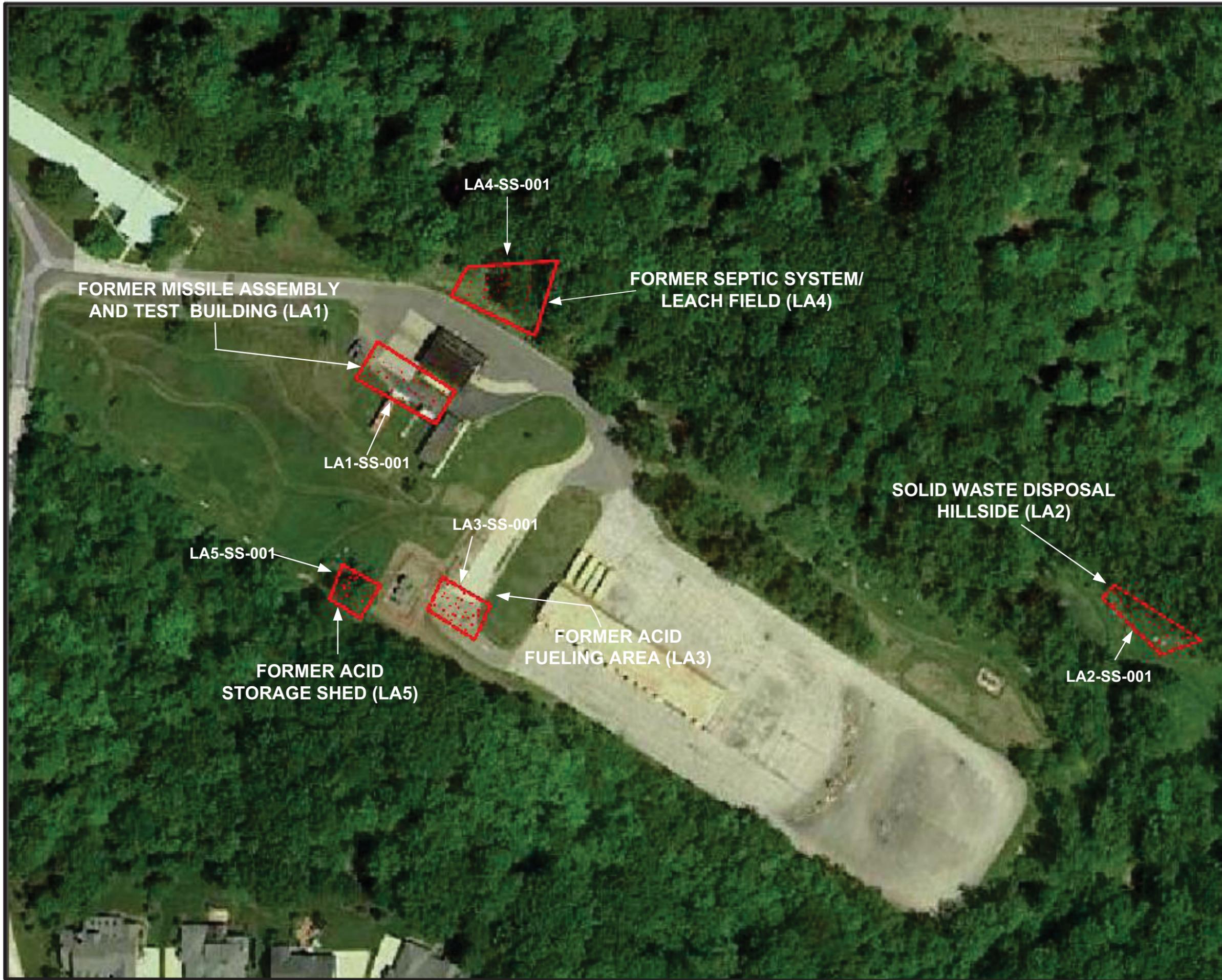


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ENGINEERS LOUISVILLE DISTRICT

**FIGURE 2  
SAMPLE LOCATIONS**

DATE  
06/17/2011

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**LEGEND**

● ISM SUB-SAMPLE



NOTE: ISM = Incremental Sampling Method

**LAUNCH AREA  
FORMER NIKE SITE CL-48  
INDEPENDENCE, OHIO**



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**FIGURE 3  
SAMPLE LOCATIONS**

DATE  
06/17/2011

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cobalt, copper, iron, lead, mercury, manganese, and zinc. Cadmium, total chromium, cobalt, copper, iron, manganese, mercury, and zinc were detected at concentrations exceeding background concentrations.

- The chemicals detected in subsurface soil (>0.5') at concentrations exceeding the screening levels in one or more surface samples were aluminum, total chromium, cobalt, copper, iron, mercury, manganese, and nickel. Cadmium, cobalt, copper, iron, manganese and nickel were detected at concentrations exceeding background concentrations.

Human health and ecological risks associated with these chemicals are summarized in Section 5.0.

#### **4.0 SCOPE AND ROLE**

The USACE 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).

#### **5.0 SUMMARY OF NIKE CL-48 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 Nike CL-48 Site. A screening-level ecological risk assessment (ERA) was performed to evaluate potential risks to ecological receptors. Chemicals detected in excess of the screening values were evaluated in the HHRA and ERA. The methodology that was followed to conduct both the HHRA and ERA was documented in a risk assessment work plan which was reviewed and approved by the lead regulatory agency, the Ohio EPA.

##### **5.1 HUMAN HEALTH RISKS**

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”.

Various exposure pathways are possible. A chemical of concern could enter the body through the:

- lungs by the inhalation pathway
- digestive tract by the ingestion pathway
- skin by dermal absorption.

The HHRA involves a series of steps to estimate human exposure and level of risk. One of the key steps is the definition of the human receptors. For the HHRA at the Control Area, the current Utility/Maintenance Worker, Future Child Resident, and Adult Resident were determined to be the receptors because the current land use is education support for the Garfield Heights School District. For the HHRA at the Launch Area, the Commercial/Industrial Worker, Utility/Maintenance Worker, Child Trespasser, and Future Adult and Child Residents were determined to be receptors because the current land use is education support for the Independence School District and includes a nature study area, and the surrounding land use is residential.

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 at each area was calculated and evaluated as described below:

- 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 incremental 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 ILCR 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 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.

The risks calculated for each receptor at the Control and Launch Areas were evaluated in terms of acceptable risks as defined in the NCP under 40CFR300.430(e)(2)(i)(A)(2-5) and Ohio EPA DERR-00-RR-038, June 28, 2005). No cancer risk results or noncancer hazards for any receptor were found to exceed the acceptable risk levels in either the surface or subsurface soils at both the Control and Launch Areas, as presented in the Final RI Report (PE, 2012) that had concurrence from Ohio EPA (March 2013).

## **5.2 ECOLOGICAL RISKS**

Ecological risk assessments are conducted to evaluate the likelihood that adverse ecological effects could result from the exposure to one or more chemical contaminants in the environment. The ecological risk assessment may consider plants and animals known to live on or near the site and evaluate the nearby habitat capability to support plant and animal life. A Screening Level Ecological Risk Assessment (SLERA) is performed to determine if ecological threats are almost, or entirely, absent and therefore no further work is needed. The screening ecological risk assessment may show that assessment should continue to determine whether risk exists; or if there is the possibility of adverse ecological effects, and a more detailed ecological risk assessment, with more information about the site, is needed.

Since exposure pathways were shown not to be complete at the Launch Area (for lack of habitat), a quantitative evaluation was not warranted. However, for the Control Area, good habitat was deemed to be present and a quantitative evaluation was performed. The chemical found to exceed conservative ecological screening levels, and selected as Constituents of Potential Ecological Concern (COPECs) included cadmium and mercury. A SLERA was performed to evaluate ecological risks from current and potential future exposure to constituents at the Former Nike CL-48 Control Area if no remedial action were to be taken. Terrestrial mammals evaluated included the meadow vole, the shrew, and the red fox. The terrestrial avian species evaluated was the kestrel. No resulting HQs for any ecological receptor species evaluated were found to exceed 1.0. The SLERA concluded that there are no COPECs for the Former Nike CL-48 Control Area. This suggests that there are minimal ecological risks from any potential soil contamination from the Former Nike CL-48 Launch Area.

## **6.0 REMEDIAL ACTION OBJECTIVES**

Remedial Action Objectives (RAOs) may be developed for protection of human health and/or for protection of ecological receptors and are based on Remedial Goal Objectives (RGOs). The RGOs represents a concentration at which human health risk or ecological risk is acceptable. RGOs were calculated by setting a Target Risk (TR) equal to the project risk goal of one occurrence in one hundred thousand ( $10^{-5}$ ), and using the intake and cancer risk equations to solve for  $C_s$  (the soil concentration that would result in the target risk level). The maximum detected concentrations of the individual chemicals analyzed at the Nike CL-48 Site (see Section 5.0) were compared to the respective RGOs and found to be below the RGOs. Since the RGO levels were not exceeded, RAOs were not needed for protection of human health and/or for protection of ecological receptors. Therefore, RAOs were not developed as part of this Proposed Plan.

## **7.0 SUMMARY OF ALTERNATIVES**

Since the Nike CL-48 Site 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 Nike CL-48 property. This determination is supported by the findings of the Site Inspection (USACE, November 2002), the Focused Site Inspection (TEJV, February 2007), and the Remedial Investigation (PE, September 2012). As a result, evaluation of alternatives was not performed and the No Further Action alternative is recommended for the site.

## **9.0 PREFERRED ALTERNATIVE**

The USACE, in consultation with Ohio EPA, is recommending no further action with respect to Nike CL-48 Site including the Control Area and the Launch Area. 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 Nike CL-48 will be considered complete.

## 10.0 COMMUNITY PARTICIPATION

Public participation is an important component of remedy selection. The USACE and Ohio EPA are soliciting input from the community on the preferred alternative. The comment period extends from August 16, 2013 through September 16, 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 Ohio 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 Nike CL-48 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 September 16, 2013) to either of the address provided below:

**Mr. Andrew C. Kocher**

**Ohio Environmental Protection Agency**

**Northeast District Office**

**Division of Environmental Response  
and Revitalization**

**2110 East Aurora Rd.**

**Twinsburg, OH 44087**

**Andrew.Kocher@epa.state.oh.us**

**Dr. David Brancato**

**USACE – Louisville District**

**Engineering Division, Environmental  
Engineering Branch**

**P.O. Box 59, Rm. 351, Louisville, KY  
40201**

**David.J.Brancato@usace.army.mil**

Pending availability of funding, the USACE may hold a public meeting, noting that the public has interest in such. If the meeting were to occur, it will be held at Independence Branch of the Cuyahoga County Library, which is also the location of the document repository/Administrative Record for the Nike CL-48 Site, on a date yet to be determined. This meeting, if held, will provide another opportunity for the public to comment on the proposed plan. The USACE 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 MEETING**

To Be Determined

**Cuyahoga County Public Library**

**Independence Branch**

6361 Selig Drive

Independence, Ohio 44131

Phone: (216) 447-0169

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

## 11.0 REFERENCES

- American Cancer Society 2006. Cancer Facts & Figures 2006; available at [www.cancer.org](http://www.cancer.org)
- Code of Federal Regulations. Protection of the Environment. Remedial Investigation/Feasibility Study and Selection of Remedy. Hazardous Substance Response. [40 CFR 300.430(e)(2)]. December 2005.
- Cox, C. and G. Colvin. Evaluation of Background Metal Concentrations in Ohio Soils. Submitted to Ohio Environmental Protection Agency, Columbus, OH. June 21, 1996.
- Logan, T. and Miller, R. Background Levels of Heavy Metals in Ohio Farm Soils. Ohio State University Research Circular 275-83, 1983.
- Ohio Administrative Code, Chapter 3745-81 Primary Drinking Water Rules, Part 3745-81-11 Maximum contaminant levels and best available technologies for inorganic contaminants.
- Ohio EPA-DERR (Ohio Environmental Protection Agency-Division of Emergency and Remedial Response) 2004d. Human Health Cumulative Carcinogenic Risk and Non-Carcinogenic Hazard Goals for DERR Remedial Response and Office of Federal Facility Oversight. Technical Decision Compendium, 28 Apr 2004. On line: <http://www.epa.state.oh.us/derr/rules/riskgoal.pdf>
- Ohio EPA (Ohio Environmental Protection Agency) Use of Risk-Based Numbers in the Remedial Response Process Overview, DERR-00-RR-038, 2005.
- Ohio EPA (Ohio Environmental Protection Agency) Arsenic in Ohio's Ground Water: Ambient Ground Water Monitoring Wells, 2009. Accessed on-line: [http://www.epa.state.oh.us/ddagw/pdu/gw\\_as\\_ambient.html](http://www.epa.state.oh.us/ddagw/pdu/gw_as_ambient.html).
- Ohio EPA (Ohio Environmental Protection Agency) Ohio EPA 2009. Letter of Concurrence regarding Nike CL-48 Launch Area Parma Ohio Final Baseline Risk Assessment Letter, September 2009.
- Professional Environmental Engineers, Inc. (PE), 2012. Final Remedial Investigation Report, Former Nike CL-48 Site, Cuyahoga County, Ohio, September.
- Schacklette, H. and Boerngen, J. Element Concentrations in Soils and Other Surficial materials of the Coterminous United States. U.S. Geological Survey Professional Paper 1270, 1984
- Terraine-EnSafe 8(a) Joint Venture (TEJV), 2009. Final Site Inspection Report, Former Nike CL-48 Site Cuyahoga County, Ohio. November.

Terraine-EnSafe 8(a) Joint Venture (TEJV), 2007. Draft Final Preliminary Assessment Report, Former Nike CL-48 Site Cuyahoga County, Ohio. March.

USGS (U.S. Geological Survey) The National Geochemical Survey – Database and Documentation v. 5. 2008. Accessed on-line: <http://tin.er.usgs.gov/geochem/doc/home.htm>

## 12.0 GLOSSARY

**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 of the decision by the regulators on a selected remedial action, which includes the responsiveness summary and a bibliography of documents that were used to reach the remedial decision. When the DD is finalized, remedial design and construction begin.

**Ecological Screening Value (ESV):** Ecological screening values are based on contaminant levels associated with a low probability of unacceptable risks to ecological receptors. The Office of Technical Services (OTS) has developed ESVs for use at hazardous waste sites. Since these numbers are based on conservative endpoints and sensitive ecological effects data, they represent a preliminary screening of site contaminant levels to determine if there is a need to conduct further investigations at the site. Ecological screening values should not be used as remediation levels.

**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:** the federal regulation that sets forth the procedures for implementing cleanup under CERCLA (commonly known as Superfund).

**No Further Action:** 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.

**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.

**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 Goal Objective (RGO):** a chemical-specific initial cleanup goal that is protective of human health and the environment and used during the analysis of remedial alternatives in the RI/FS.

**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

**Target Analyte List (TAL) Metals:** a list of 22 inorganic compounds/elements designated for analysis as contained in the version of the EPA Contract Laboratory Program Statement of Work for Inorganics

**Toxicity Characteristic Leachate Procedure (TCLP):** this procedure is used to characterize the mobility or leachability contaminants present in liquid and solid wastes. The TCLP is a sample preparation (extraction) that simulates the leaching action that could occur in an area such as a landfill. If the analysis of the extract results in a value for an analyte in excess of the regulatory requirement, then the tested material is considered a RCRA waste.