



U.S. Customs and Border Protection

presents the:

**PROPOSED PLAN FOR REMEDIAL ACTION
AT U.S. BORDER PATROL FIRING RANGE
NOGALES, ARIZONA**

MARK YOUR CALENDAR!

Public Comment Period: November 26th through December 29th, 2014

Public Meeting: December 10, 2014

A public meeting will be held to explain the Proposed Plan. Oral and written comments on the Proposed Plan and associated remedial actions will be accepted at the meeting.

Location: Holiday Inn Express 850 W. Shell Road, Nogales, AZ 85621

Time: 6:30 PM to 9:30 PM

For more information, see the Administrative Record file located at:

Nogales Santa Cruz Library

518 N. Grand Ave.

Nogales, AZ

U.S. CUSTOMS AND BORDER PROTECTION ANNOUNCES PROPOSED PLAN

The purpose of this Proposed Plan is to summarize the Remedial Investigation / Feasibility Study activities at the former U.S. Border Patrol (USBP) Firing Range located in Nogales, present a summary of the remedial alternatives for mitigating hazards at the site, present the Preferred Alternative, and solicit public review and comment on all of the alternatives presented.

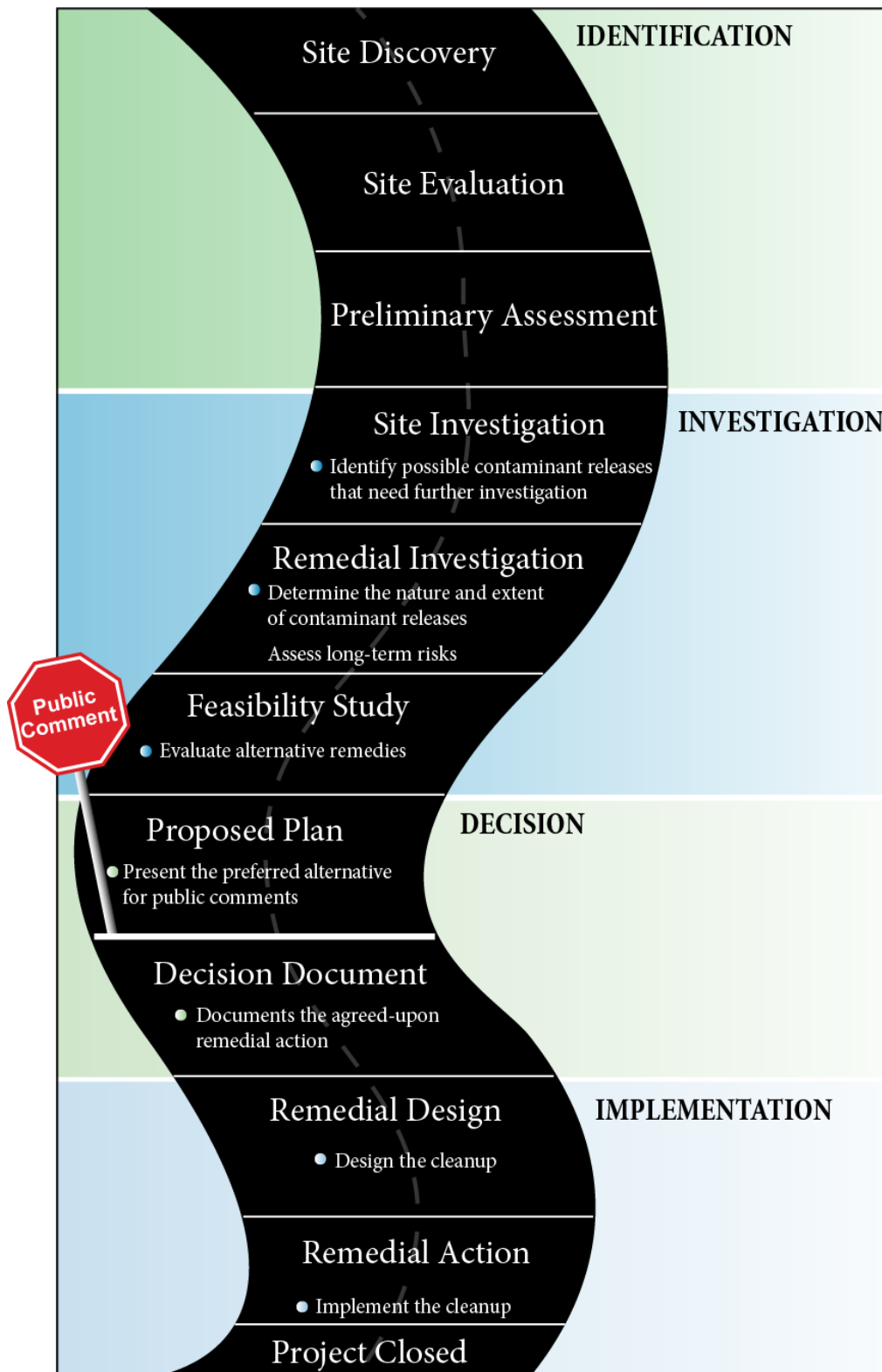
This document is issued by the U.S. Customs and Border Protection (CBP),¹ the lead agency for site activities. CBP, in consultation with the Arizona Department of Environmental Quality, will select a final remedy for the site after reviewing and considering all information submitted during the public comment period. CBP, in consultation with the Arizona Department of Environmental Quality may modify the Preferred Alternative or select another remedial alternative presented in this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives in this Proposed Plan. Figure 1 depicts the process followed by CBP, in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act, for the former USBP Firing Range. This figure also illustrates the importance of public participation in the selection of the remedial alternative for this site.

CBP 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 [42 USC § 9617(a)] and 40 Code of Federal Regulations (C.F.R.) § 300.430(f)(3) of the National Oil and Hazardous Substances Pollution Contingency Plan. This Proposed Plan summarizes information that can be found in greater detail in the Remedial Investigation/Feasibility Study reports and other documents contained in the Administrative Record file for this site. CBP Quality encourage the public to review these documents to gain a more comprehensive understanding of the former USBP Firing Range Area and remedial activities that have been proposed for the site.

¹ A distinction is made here between USBP and CBP because on March 1, 2003, the Department of Homeland Security (DHS) was established and USBP became a part of CBP, a component of DHS.

Figure 1 - Roadmap of the Comprehensive Environmental Response, Compensation, and Liability Act Process



SITE HISTORY AND BACKGROUND

The one-half acre USBP Firing Range Area (Figure 2) is located at 1651 W. Target Range Road, west of Nogales, Arizona within Santa Cruz County, Arizona, and consists of a Small Arms Firing Range. In 1992, the USBP leased the site from a private landowner to be used as a firing range, and USBP staff used the range until 2010. U.S. Customs and Border Protection continues to lease the property while investigation and remediation actions continue.

A Remedial Investigation has been conducted to define site boundaries, identify contaminated areas, and evaluate the need for environmental cleanup. The results of these investigations are summarized in the Remedial Investigation Report (TerranearPMC, 2012), available in the Administrative Record file. Additionally, various remedial alternatives were evaluated to address the cleanup of site contamination and mitigate the potential hazards resulting from past U.S. Border Patrol training activities. The results of this remedial alternative evaluation are summarized in the Feasibility Study Report (TerranearPMC, 2012), available in the Administrative Record. These prior studies have culminated in the recommendation presented in this Proposed Plan.

MARK YOUR CALENDARS

PUBLIC COMMENT PERIOD:

11/26/ 2014 to, 12/29/2014

The U.S. Customs and Border Protection will accept written comments on the Proposed Plan during the public comment period. Comment letters must be postmarked by 12/29/14 and should be submitted to:

Mr. Paul Enriquez
U.S. Customs and Border Protection
24000 Avila Road, Room 5020
Laguna Niguel, CA 92677

Email: nogales-firing-range@cbp.dhs.gov
To request an extension of the public comment period, send a written request to Mr. Paul Enriquez by 4:00PM, 12/14/2014

PUBLIC MEETING:

December 10, 2014, 6:30pm to 9:30pm

The U.S. Customs and Border Protection will host a public meeting to explain the Proposed Plan and all of the alternatives resulting from the Feasibility Study (the study completed prior to this Proposed Plan). Oral and written comments will be accepted at the meeting, held at:

Nogales Santa Cruz Library
518 N. Grand Ave.
Nogales, AZ

For more information, see the Administrative Record file, which includes a copy of the Remedial Investigation/Feasibility Study, at the following location:

Nogales Santa Cruz Library
518 N. Grand Ave.
Nogales, AZ

Figure1 –U. S. Border Patrol Firing Range Nogales, Arizona

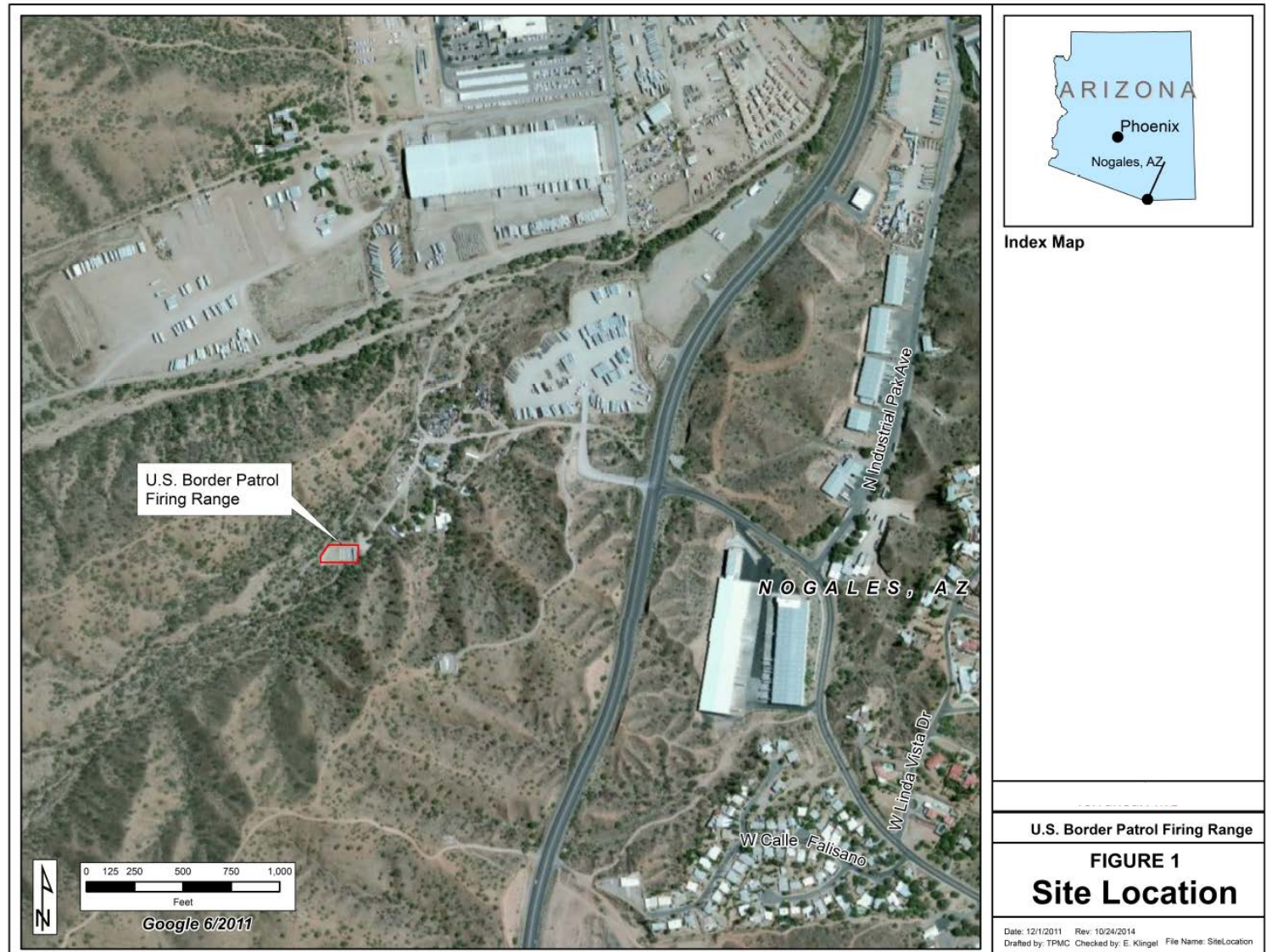


Figure 2 –U. S. Border Patrol Firing Range Nogales, Arizona

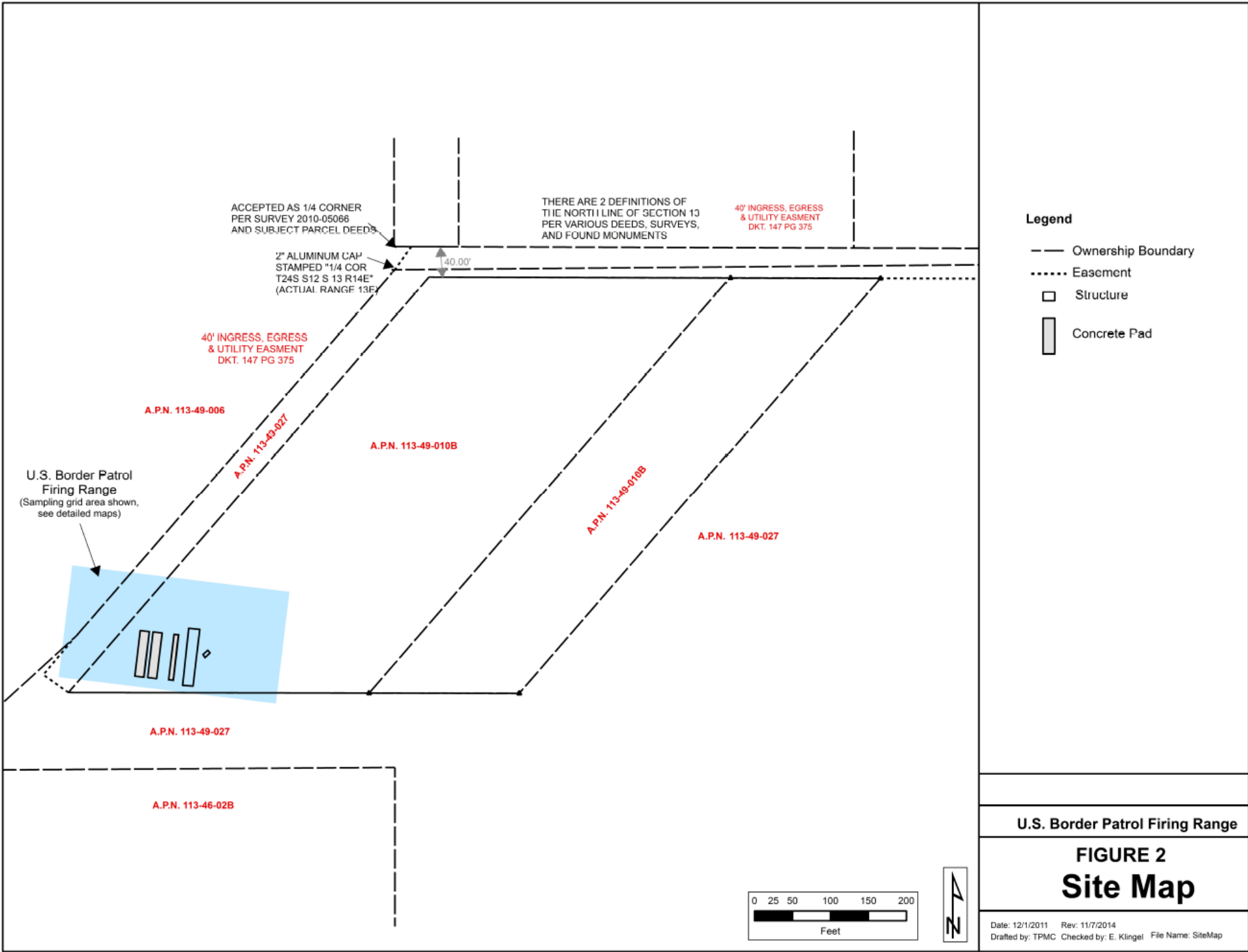
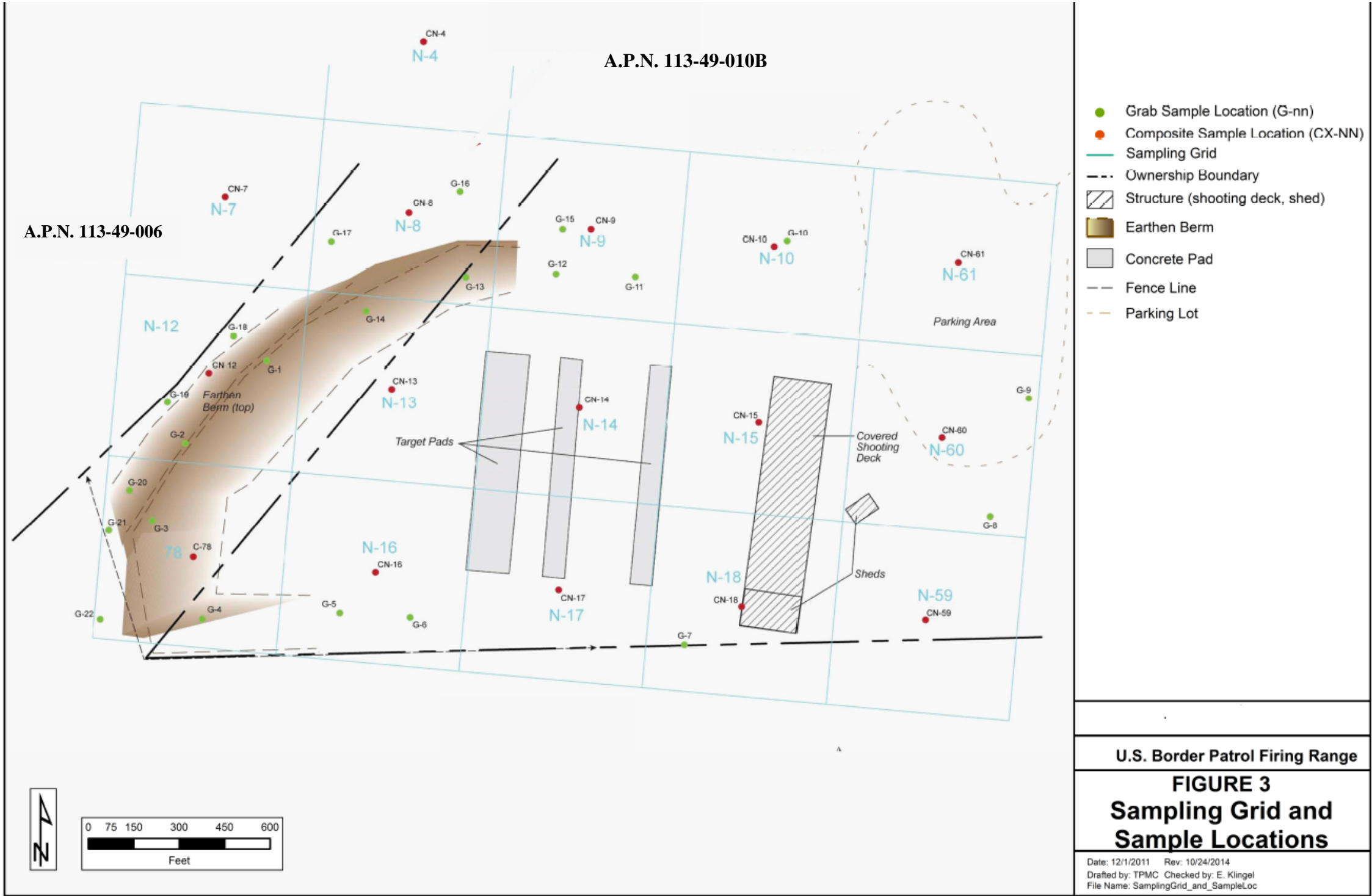


Figure 3 –U. S. Border Patrol Firing Range Nogales, Arizona



SITE CHARACTERISTICS

Current and Future Land Use

The area within the former USBP Firing Range currently consists of the firing range and firing range structures (Figure 3). The firing range and structures were constructed in 1992 and no previous development had occurred at the site. The areas immediately surrounding the study area have never been developed. In 2010, operations ceased at the property and it is no longer used as an active firing range.

Only CBP staff and the property owners have access to the former USBP firing range. Under current land use, the off-site area is undeveloped, so potential exposure to populations including industrial workers at adjacent properties, infrequent recreational use, or potential residential land use is limited. .

Topography

The majority of the former USBP Firing Range study area has been graded by heavy machinery and is essentially flat. The topography of the remainder of the study area and of the surrounding property is typical of dry desert lowlands present throughout the Basin and Range province of the western United States. The land surface is generally rugged and hilly. Several dry creek beds (arroyos) separate steep hills and ridges present throughout this area. The elevation ranges from approximately 3,960 to 4,130 feet above sea level.

Climate

Nogales' climate is typically sunny and dry, with low relative humidity. Average monthly high temperatures recorded at the Nogales 6 N climate station from 1952 to 2010 range from a low of 64.3 degrees Fahrenheit (°F) in January to a high of 95.3°F in June. Average monthly low temperatures range from 27.3°F in January to 63.9°F in June during the

same time period (Western Regional Climate Center, 2011).

Nogales' climate is classified as arid, which is defined by average annual precipitation less than half of evaporation and mean temperature of the coldest month above freezing (32°F). The former USBP Firing Range receives little rain or snow, averaging about 17.21 inches of precipitation per year. Most precipitation occurs during the summer monsoon season, typically from July through mid-September. The monthly average precipitation recorded at the Nogales 6 N climate station from 1952 to 2010 ranges from a low average of 0.22 inches for May to a high average of 4.38 inches for August. The summer monsoon season for regional precipitation is characterized by incidences of sudden, dramatic downpours of heavy rain within a short period of time

Soils and Vegetation

The soils in the study area are primarily shallow and rocky with unweathered clasts of andesite and rhyolite tuffs, granites, and small areas of clay shales. The steeper slopes have numerous rock outcroppings and shallow loamy soils. Five soil associations dominate the area: Comoro-Pima, Continental-Sonoita, Caralampi-White House - Hathaway, Lampshire-Chiracahua-Graham, and Faraway-Rock Outcrop-Barkerville. The first three are typically deep soils and sandy loams with varying amounts of gravel and clay, generally appearing in or along floodplains and streambeds. The latter two are typically shallow cobbled clay or sandy loams occurring in the upper elevations on foothills and mountains (Allwyn Environmental, 2009). Soil pH ranges from slightly acidic (pH 6) to slightly alkaline (pH 8) (USDA, 1979).

Most of the ground surface is covered with vegetation; however, some portions are bare.

The vegetation that grows in these soils is representative of desert shrub land. Common vegetation includes several varieties of cacti, mesquite, creosote bush, ocotillo, acacia trees, desert willow, and yucca (National Park Service, 2011). Vegetation at the former USBP Firing Range did not significantly hinder the Remedial Investigation field activities.

Hydrogeology

The property lies within the boundaries of the Santa Cruz Active Management Area. The Santa Cruz Active Management Area was designed to address groundwater overdraft in the area, as a result, water management in this area is intensive. Within the Santa Cruz Active Management Area, groundwater can be withdrawn legally only through a groundwater right or permit, unless groundwater is withdrawn from an exempt well (maximum capacity of 35 gallons per minute or less). Based on the information provided in a well driller report from a well located within close proximity to the site (Arizona Department of Water Resources Well No.55-636229), the local groundwater is located approximately 135 feet below land surface in this well which is cased to 420 feet below land surface. No perched water appears to exist in the area as no intermittent clay layers were noted. Based on site topography, the groundwater flow in the vicinity of the subject property is likely to the north to northeast.

Prehistoric and Historic Cultural Resources

There are no identified prehistoric or historic cultural resources within the immediate vicinity of the former USBP Firing Range property.

SUMMARY OF PREVIOUS INVESTIGATION RESULTS

2009 Phase I Environmental Site Assessment Parcel 113-49-006

This report presents the findings of the Phase I Environmental Site Assessment performed in March 2009 on Assessors Parcel Number (APN) 113-49-006 located west and adjacent to the former firing range in the Mariposa Canyon area of Nogales, Arizona (referred to as the subject property in this Phase I Report). The entire property consists of one parcel (113-49-006) and covers approximately 66.84 acres. The subject property has its center located at latitude of approximately 31.347952 North and longitude of approximately 110.973038 West.

The Phase I Environmental Site Assessment was completed for Santa Cruz County to document known environmental risks and conditions associated with the property. The Phase I ESA was completed in accordance with the requirements of the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (American Society of Testing and Materials Designation: E1527-05). The objective of the Phase I ESA was to identify recognized environmental conditions at the property (Allwyn, 2009A).

This assessment revealed evidence of the following recognized environmental conditions in connection with the property (Allwyn, 2009A):

- Large quantities of bullet fragments were observed throughout the northeast portion of the subject property, which is located west of a practice shooting range used by the U.S. Border Patrol.
- Bullet fragments varied in size and were found in large concentrations in the wash and

hillside directly behind the shooting range.

- Bullet fragments were observed as far 600 feet west of the shooting range.
- The bullet fragments would likely result in elevated concentrations of lead in the soil.

2009 Phase I Environmental Site Assessment Parcel 113-49-027

This report presents the findings of the March 2009 Phase I Environmental Site Assessment performed on APN 113-49-027 located west and south of the former firing range in the Mariposa Canyon area of Nogales, Arizona

The Phase I Environmental Site Assessment was completed for Santa Cruz County to document known environmental risks and conditions associated with the property. The Phase I Environmental Site Assessment was completed in accordance with the requirements of the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM Designation: E1527-05). The objective of the Phase I Environmental Site Assessment was to identify recognized environmental conditions at the property. Allwyn Environmental performed historical research review, environmental records and databases evaluation, site reconnaissance, and interviews with persons knowledgeable with the site.

The subject property consists of the northern portion of one parcel (113-49-027) figure 2 and covers approximately 41 acres. The subject property consists of rugged and hilly undeveloped native desert land, with evidence of vehicular traffic occurring on the subject property. There are no structures

located on the subject property. However, there is one parcel that is entirely enclosed by the subject property. The enclosed parcel (113-49-010B) is located in the northwest portion of the subject property and contains an automobile salvage yard and the former USBP firing range study area. The automobile salvage yard appeared to encroach onto the subject property on the small narrow strip next to the northern boundary in the northwest portion of the subject property.

2009 Phase II Environmental Site Assessment Parcel Nos. 113-49-006 and 113-49-027

A Phase II ESA was completed in December 2009 for two parcels (Parcel Nos. 113-49-006 and 113-49-027) located immediately west of the former USBP firing range. Small arms target practice activities were suspected of impacting the two parcels, potentially resulting in elevated concentrations of lead, arsenic, antimony, and polynuclear aromatic hydrocarbons. The on-site assessment activities were conducted from October 19, 2009 through November 12, 2009. The assessment was conducted in accordance with a U.S. Environmental Protection Agency approved a Quality Assurance Project Plan dated July 2, 2009, and a site-specific Sampling and Analysis Plan, dated October 6, 2009 and approved by U.S. Environmental Protection Agency on November 5, 2009 (Allwyn, 2009C).

Soil samples from 51 of 135 sampling cells contained lead in a concentration above the Arizona Department of Environmental Quality residential soil remediation level of 400 milligrams per kilogram and, of these, 33 contained lead in a concentration above the non-residential soil remediation level of 800 milligrams per kilogram. Subsurface soil samples from 28 sampling cells

contained lead in a concentration above the residential soil remediation level and, of these 28 sampling cells, 14 contained lead in a concentration above the non-residential soil remediation level.

Soil samples from one of the 135 sampling cells contained antimony in a concentration above the residential soil remediation levels. Soil samples from two of the 135 sampling cells contained one polynuclear aromatic hydrocarbons, benzo (a) pyrene, in a concentration above the residential soil remediation levels for the 10^{-6} excess lifetime cancer risk level.

The horizontal extent of lead impacts in the assessment area has been generally defined to the west of the shooting range, but was not been defined to the north and south of the shooting range. The vertical extent of lead impacts has not been defined.

Antimony and polynuclear aromatic hydrocarbons, while present in soil samples above the residential soil remediation levels in two and one sampling cells, respectively, are present only in cells in which lead is also present in soil samples in a concentration above the residential soil remediation levels. Therefore; lead was considered the target constituent of concern for further assessment and/or remediation at the site.

The extent of lead impacts in the wash immediately behind the small arms shooting range was delineated. Lead is present at concentrations above the non-residential SRL in the wash soil extending between 250 and 300 feet and above residential surface remediation levels between 450 and 500 feet northeast (downstream) of the small arms shooting range. Antimony, arsenic, and polynuclear aromatic hydrocarbons are not present in concentrations above the residential soil remediation levels in samples collected from the wash. Therefore, lead was considered to be the target constituent

of concern for further assessment and/or remediation in the wash.

Toxicity, Characteristic Leaching Potential analysis to evaluate the hazardous waste classification of on-site soil was performed on two samples containing lead above the non-residential soil remediation level (2,200 milligrams per kilogram and 3,400 milligrams per kilogram, respectively) with one also containing lead above the residential soil remediation levels. The samples collected for the hazardous waste classification demonstrated that the unscreened material and material passing through a #8 sieve would be classified as a hazardous waste based on lead toxicity (0008 waste code).

This assessment has revealed evidence of the two following recognized environmental conditions in connection with Parcel Nos. 113-49-006 and 113-49-027: Bullet fragments were observed on the subject property, in the vicinity of the former USBP Firing Range in the northwest portion of the subject property. Bullet fragments varied in size and were found in large concentrations in the wash and hillside directly behind the shooting range. The bullet fragments likely result in elevated concentrations of lead in the soil. Further assessment of the soil through soil sample collection and analysis, and/or alternate means (e.g. X-ray fluorescence) was recommended to evaluate the extent and magnitude of potential lead impact of the soil.

WHAT ARE THE “CONTAMINANTS OF CONCERN”?

The U.S. Customs and Border Protection, has identified small arms debris as the constituents of concern that pose the greatest potential risk to human health at the former **U.S. Border Patrol Firing Range**.

These small arms debris constituents of concern include:

Lead, Arsenic, antimony and polynuclear aromatic hydrocarbons derived from bullet fragments and shotgun pellets, plastic shotgun wadding, and clay pigeon targets

SUMMARY OF REMEDIAL INVESTIGATION RESULTS

Remedial Investigation / Feasibility Study, 2011 - The Remedial Investigation was performed to characterize the site for Small Arms Debris Constituents of Concern, fill data gaps, and assess safety hazards at the former USBP Firing Range. The Feasibility Study evaluated remedial alternatives to reduce the potential explosives safety hazards to property owners and the general public.

Small Arms Debris was observed within the Firing Range during the Remedial Investigation. Constituents of concern consistent with small arms firing ranges were observed during the Remedial Investigation at the former USBP Firing Range

A total of sixty soil samples were collected at the former firing range in Nogales, Arizona. Thirty eight soil samples (sixteen composite samples and twenty two discrete ‘grab’ samples) were collected from 0 to 12 inches below land surface and twenty two soil samples (sixteen composite samples and

six ‘grab’ discrete samples) were collected at a depth between 12 and 42 inches below land surface. All sixty soil samples were analyzed for the presence of antimony, arsenic, and lead. Ten surface soil samples were analyzed for the presence of polynuclear aromatic hydrocarbons and five samples containing high concentrations of constituents of concern metals were analyzed for toxicity characteristic leaching potential. All of the constituents of concern metals were found throughout the firing range. The highest concentration of metals for both shallow (0-12 inches) and deep (12-42 inches) are found in the southwest corner of the firing range. This area consists of the major portion of the back-stop berm and firing range area between the back-stop berm and last concrete target area. The highest concentration of polynuclear aromatic hydrocarbons is also found in the southwest corner of the firing range.

Four of the five toxicity characteristic leaching potential samples exceeded U.S. Environmental Protection Agency standards for lead and none of the arsenic samples exceeded the U.S. Environmental Protection Agency toxicity characteristic leaching potential standards. There are no U.S. Environmental Protection Agency toxicity characteristic leaching potential standards for polynuclear aromatic hydrocarbons and antimony.

The locations of these constituents of concern are shown in Figures 4 and 5.

FIGURE 4 - U.S. Patrol Firing Range

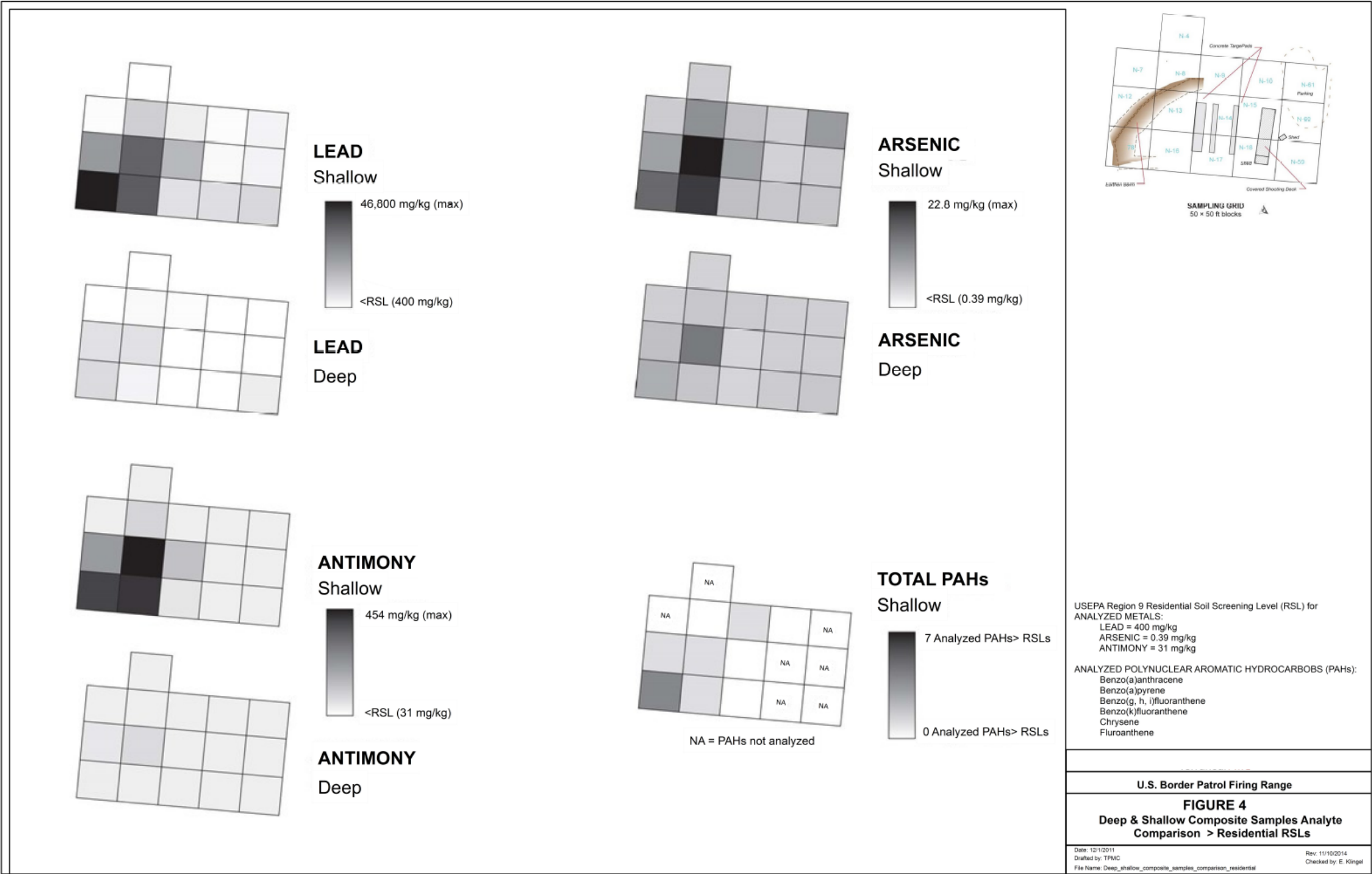
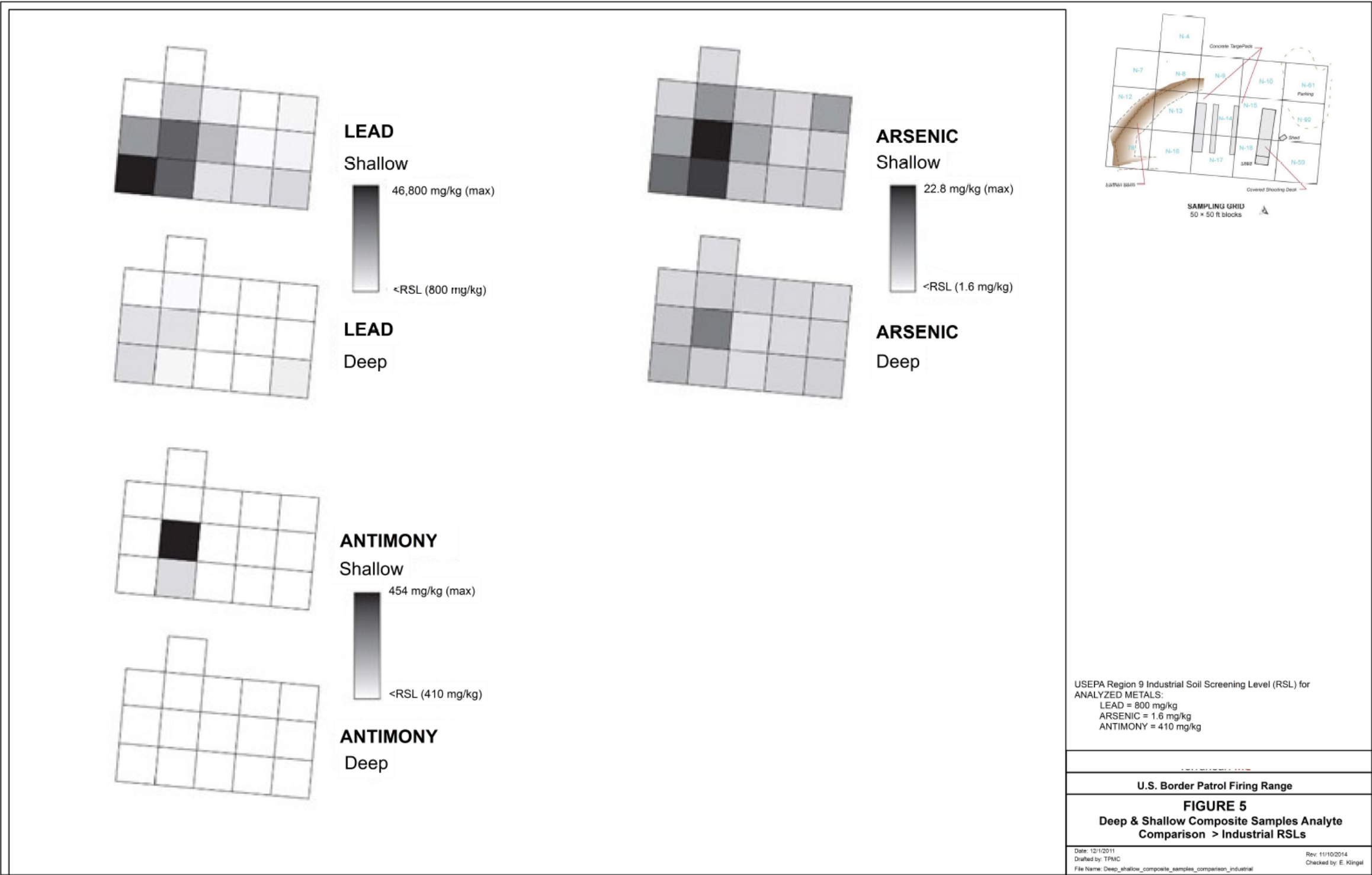


FIGURE 5 - U.S. Border Patrol Firing Range



SCOPE AND ROLE OF THE RESPONSE ACTION

The CBP is developing a response plan and/or action to address contaminants at the former USBP Firing Range. The scope of the response action is to address the potential hazard posed by the presence of small arms debris at the former Firing Range, ultimately removing such hazard and allowing the land to be returned to the owner.

The alternatives being considered in this Proposed Plan complement the CBP's overall strategy, following U.S. Environmental Protection Agency guidance, for clearing the property and allowing future use by the property owner.

SUMMARY OF SITE RISKS / HAZARDS

Results of the Remedial Investigation indicate small arms debris constituents of concern (Hazardous chemicals) related to the historical use of the range by Customs and Border Protection operations were detected above the Arizona Department of Environmental Quality residential soil screening levels or the U.S. Environmental Protection Agency residential regional screening levels for soil, indicating chemical risk to human health exists at the former USBP Firing Range. Therefore a risk assessment was performed to evaluate the risk associated with small arms debris constituents of concern to human or ecological receptors at the former USBP Firing Range.

A small arms debris constituents of concern base line risk assessment was conducted for the former USBP Firing Range using the latest U.S. Environmental Protection Agency hazard assessment methodology (USEPA, 2008).

Lead concentrations in soil exceed both the human health and ecological screening levels, in all of the soil samples collected on site and immediately adjacent to the site in 2011. Concentrations of antimony and arsenic and polynuclear aromatic hydrocarbons exceed both human and ecological screening levels in vadose zone soils, although exceedances are not as widespread as lead. Based on the widespread exceedances of the lead U.S. Environmental Protection Agency residential regional screening levels for soil and Arizona Department of Environmental Quality residential soil remediation levels in the fine soil fraction, remedial decisions to address current soil conditions would be warranted. Concentrations of antimony, arsenic, and polynuclear aromatic hydrocarbons are co-located with elevated lead concentrations, thus Remedial Actions that would address fine grained particulate lead in soil would also address these constituents. Based on this comparison to regulatory and risk-based screening criteria, further estimation of risk under a baseline exposure scenario, which is captured in the screening criteria, is unlikely to provide additional information that would impact the remedy selection in the Feasibility Study. Thus, no additional risk assessment is recommended until a strategy to address lead in soils has been developed

The assessment rated the potential hazard at the former USBP Firing Range as having a high potential for contact with small arms debris constituents of concern. This rating was based on the potential for the area to have a high number of small arms debris items because it was used as a small arms firing range.

The likelihood of encountering small debris constituents of concern at the former USBP Firing Range is considered moderate, based on the low number of hours that humans are present at the site. The limited exposure

time is a result of current barriers, and only remedial construction workers, CBP staff have authorized access to the former USBP Firing Range.

It is CBP's current judgment that Alternative 3 is the Preferred Alternative identified in this Proposed Plan is necessary to protect public health or welfare from Small Arms Debris Constituents of Concern hazards at the former USBP Firing Range

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives drive the formulation and development of response actions. The primary Remedial Action Objective for the former USBP Firing Range is based on the Small Arms Debris Constituents of Concern presented in the Remedial Investigation Report. The aim is to achieve the U.S. Environmental Protection Agency's threshold criteria of "Overall Protection of Human Health and the Environment" and "Compliance with Applicable or Relevant and Appropriate Requirements."

The following Remedial Action Objectives were developed for the protection of human health and the environment:

"Prevent or reduce the potential for receptors to come in direct contact with soil constituents of concern remaining after remediation on U.S. Border Patrol Firing Range."

"Prevent the potential for receptors both human and ecological to ingest the soil constituents of concern on the U.S. Border Patrol Firing Range."

"Prevent the potential for receptors to inhale the soil constituents of concern at the U.S. Border Patrol Firing Range."

"Interrupt U. S. Border Patrol Firing Range constituents of concern migratory pathways to human or ecological targets."

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Section 121(d) of the Comprehensive Environmental Response, Compensation and Liability Act [42 USC § 9621(d)] states that remedial actions on Comprehensive Environmental Response, Compensation, and Liability Act sites must comply with, or have a waiver for, any Applicable or Relevant and Appropriate Requirements, which include regulations, standards, criteria, or limitations promulgated under federal environmental, or more stringent state environmental or state facility siting laws. An Applicable or Relevant and Appropriate Requirement may be either applicable or relevant and appropriate, but not both. Substantive requirements of laws and regulations may be designated as Applicable or Relevant and Appropriate Requirements for on-site and off-site response actions, but administrative requirements (such for permits or record keeping) are not Applicable or Relevant and Appropriate Requirements for on-site response actions.

Applicable or Relevant and Appropriate Requirement identification considers a number of site-specific factors, including the potential remedial action, chemicals at the site, site physical characteristics, and site location. Applicable or Relevant and Appropriate Requirements are generally divided into three categories: chemical-specific, location-specific, and action-specific. Each is described as follows:

For the former USBP Firing Range project these Applicable or Relevant and Appropriate Requirements are applicable only for the soil medium. The chemical

constituents of concern in the soil are lead, antimony, arsenic and polynuclear aromatic hydrocarbons. The chemical specific requirements are the U.S. Environmental Protection Agency residential and industrial soil regional screening levels and the Arizona Department of Environmental Quality residential and industrial soil remediation levels.

Chemical-Specific Applicable or Relevant and Appropriate Requirements are shown in the following tables:

Constituent	Arizona SRLs* mg/l	
	Residential	Industrial
Inorganics		
Antimony	31	410
Arsenic	10	10
Lead	400	800
Poly-Aromatic Hydrocarbons		
Benzo(a)anthracene	0.69	21
Benzo(a)pyrene	0.069	2.1
Benzo(b)fluoranthene	0.69	21
Benzo(g,h,i)perylene	none	none
Benzo(k)fluoranthene	6.9	210
Chrysene	68	2,000
Fluoranthene	2,300	22,000

*SRL Soil Remediation Level

Constituent	USEPA* RSLs* mg/l	
	Residential	Industrial
Inorganics		
Antimony	31	410
Arsenic	0.39	1.6
Lead	400	800
Poly-Aromatic Hydrocarbons		
Benzo(a)anthracene	0.15	2.1
Benzo(a)pyrene	0.015	0.21
Benzo(b)fluoranthene	0.15	0.21
Benzo(g,h,i)perylene	none	none
Benzo(k)fluoranthene	1.5	21
Chrysene	15	210
Fluoranthene	2,300	22,000

*USEPA U.S. Environmental Protection Agency

* RSLs Regional Screening Levels

Location-Specific Applicable or Relevant and Appropriate Requirements

These Applicable or Relevant and Appropriate Requirements are triggered by the particular location and the proposed remedial activity at the site. No requirements were identified as location-specific Applicable or Relevant and Appropriate Requirements for any off-site actions associated with the former USBP Firing Range.

Action-Specific Applicable or Relevant and Appropriate Requirements

These Applicable or Relevant and Appropriate Requirements define acceptable treatment and disposal procedures for hazardous substances, or specify how other activities must be conducted. The following Code of Federal Regulations requirements for management and disposal of hazardous waste have been identified as Action-Specific Applicable or Relevant and Appropriate Requirements for the former USBP Firing Range:

- 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste
- 40 CFR Part 266, Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities.

These regulations specify requirements for generators of contaminated soils, or other wastes.

The generation of hazardous waste due to remedial actions at the former **USBP Firing Range** is anticipated to be encountered at the site during enactment of the remedial alternatives and will comply with the requirements of 40 CFR Part 262. Wastes generated as a result of response actions at the site will be characterized to determine whether they are regulated as hazardous. If any hazardous wastes are generated at the site and must be transported off site, such activities will comply with the pre-transport, manifesting, recordkeeping, and reporting requirements of 40 CFR Part 262.

The regulations in 40 CFR Part 266 specify management standards that apply to hazardous waste. If any regulated hazardous waste is generated as a result of remedial actions, such wastes will be stored, handled, transported, and disposed in accordance with the applicable requirements of 40 CFR Parts 260 through 270, including Part 266.

SUMMARY OF REMEDIAL ALTERNATIVES

The former USBP **Firing Range** site consists of a bullet backstop berm, firing area and parking lot. The highest numbers of small arms debris and small arms constituents of concern were found in the bullet backstop area. The firing area exhibited a moderate number of small arms debris and small arms constituents of concern. The parking lot exhibited the lowest number of small arms debris and small arms constituents of concern.

To satisfy the Remedial Action Objective, CBP has developed and conducted a detailed analysis of the following three remedial alternatives and selected Alternative 3 as the Preferred Alternative.

Alternative 1: Limited Off-Site Landfilling, Soil Stabilization and Cap and Grade

Estimated Present Worth Cost: \$1,418,000

The first step of Alternative 1 is to remove the metal and polynuclear aromatic hydrocarbon contaminated soils that are above U.S. Environmental Protection Agency residential regional screening levels for soil and Arizona residential soil remediation levels. Stockpiling of soils will use an X-Ray Fluorescence gun as a screening tool to separate the soils into two piles of concentrations of lead above 400 milligrams per liter and concentrations of lead less than 400 milligrams per liter. The removal of areas of excavation will then be confirmed with laboratory analysis and then

transported to an appropriate landfill. The removal areas comprise select areas of the backstop berm, firing range and parking lot.

The second step will be to treat the remaining stockpiled soils and in-place soils (depth of 12 inches) with a soil stabilization amendment. This method stabilizes lead and arsenic using a natural and benign additive, Apatite II, derived from processed fish bones, which chemically binds lead and arsenic into stable, insoluble minerals. Apatite II is suitable for most types of soil and groundwater and for contamination concentrations from parts per billion to weight percent levels.

The third step involves installation of an impervious cap and soil layer over the site and subsequent grading of the cap and soil to direct infiltration and runoff away from the capped area.

Alternative 2: Sieving, Soil Stabilization, and Cap and Grade

Estimated Present Worth Cost: \$584,360

The first step of this alternative is to remove the metals fraction and clay pigeon/shot gun wadding that is greater than ¼ inch in diameter using sieving in the backstop berm. The metals will be recycled and the clay pigeon/shot gun wadding fraction will be removed to an appropriate landfill.

The second step will be to treat the excavated soils from the backstop berm and the remaining constituents of concern in the soils in the firing range proper and parking lot with a soil stabilization amendment, Apatite II. This method stabilizes metals using a natural and benign additive to prevent migration of the metals further into the soils or into groundwater. The excavated soils from the backstop berm will be treated on the surface and the firing range proper and parking lot soils will be treated in place by mixing in the Apatite II down to a

depth where constituents of concern are at the state and federal allowable limits.

The third step involves installation of an impervious cap over the site and subsequent grading of the cap to direct surface waters and runoff away from the capped area.

Alternative 3: Off-Site Landfilling

Estimated Present Worth Cost: \$3,800,000.

This alternative removes all the small arms debris and constituents of concern that are above U.S. Environmental Protection Agency residential regional screening levels for soil and Arizona soil remediation levels with confirmatory soil sampling from the former firing range to an appropriate landfill. The removal areas comprise the backstop berm, firing range proper and parking lot. Removal of small arms debris and constituents of concern will be confirmed by sampling and analysis of the remaining soils.

The waste expected from the implementation of Alternative 3 is small arms debris and soil containing hazardous small arms constituents of concern. All soils containing hazardous metallic and non metallic small arms debris and constituents of concern will be shipped to the appropriate hazardous waste landfill.

EVALUATION OF ALTERNATIVES

Nine criteria were used to evaluate the three remedial alternatives individually and against each other in order to select a preferred remedy. This section of the Proposed Plan presents the relative performance of each alternative against the nine criteria, noting how each alternative compares to the other options under consideration.

The nine criteria fall into three groups: threshold criteria, primary balancing criteria,

and modifying criteria (U.S. EPA, 1999). The purposes of these three groups are provided below.

- Threshold criteria (criteria 1 and 2 below) are requirements that each alternative must meet in order to be eligible for selection.
- Primary balancing criteria (criteria 3 through 7 below) are used to weigh major trade-offs among alternatives.
- Modifying criteria (criteria 8 and 9 below) may be considered to the extent that information is available during the Feasibility Study, but can be fully considered only after public comment is received on the Proposed Plan.

The nine evaluation criteria from the *Guidance for Conducting Remedial Investigations and Feasibility Studies under Comprehensive Environmental Response, Compensation, and Liability Act* (USEPA, 1988) are discussed below. The “Detailed Analysis of Alternatives” can be found in the Feasibility Study.

1. Overall Protection of Human Health and the Environment - Considers ability to eliminate, reduce, or control threats to public health and the environment.

2. Compliance with Applicable or Relevant and Appropriate Requirements - For an alternative to become eligible for selection, it must meet cleanup levels or other remedial requirements identified as Applicable or Relevant and Appropriate Requirements, or a waiver should be identified and the justification for invoking it must be provided. An alternative that cannot comply with these Applicable or Relevant and Appropriate Requirements, or for which a waiver cannot be justified, would be eliminated from consideration for further discussions as a potential alternative in the Proposed Plan.

3. Long-Term Effectiveness and

Permanence - The ability to maintain protection of human health and the environment over time.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants through

Treatment – Effectiveness of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

5. Short-term Effectiveness - The length of time needed to implement an alternative and the hazards posed to workers, residents, and the environment during implementation.

6. Implementability - The technical and administrative feasibility to implement the alternative, including factors such as the relative availability of goods and services.

7. Cost - Estimated present worth cost for implementing the alternative.

8. State/Support Agency Acceptance - Considers whether the State agrees with the U.S. Army Corps of Engineers' analyses and recommendation based on the Remedial Investigation / Feasibility Study and Proposed Plan.

9. Community Acceptance - Considers whether the local community agrees with the U.S. Army Corps of Engineers' analyses and preferred alternative. Public comments on the Proposed Plan are an important indicator of community acceptance.

The three remedial alternatives developed for the U.S. Border Patrol Firing Range were evaluated and compared to the nine criteria specified above based on the publication entitled *Guidance for Conducting Remedial Investigations and Feasibility Studies under Comprehensive Environmental Response, Compensation, and Liability Act* (USEPA, 1988).

The detailed analysis of alternatives may be thought of as proceeding in two steps: 1) a detailed evaluation of each alternative relative to the nine U.S. Environmental Protection Agency criteria; and 2) evaluation of the remedial alternatives relative to each other, based on their ability to achieve the evaluation criteria. A detailed comparison of each alternative to the nine criteria may be found in the Feasibility Study Report (TerranearPMC, 2014).

During the detailed analysis, the alternatives are refined, as appropriate, and analyzed in detail with respect to the evaluation criteria.

The detailed analysis of alternatives consists of the analysis and presentation of the relevant information needed to allow decision makers to select a site remedy. However, it is not the decision making process. The results of this detailed analysis of alternatives are used to compare the alternatives and identify the key tradeoffs among them. This approach to analyzing alternatives is designed to provide decision makers with sufficient information to adequately compare the alternatives, select an appropriate remedy for a site, and demonstrate satisfaction of the Comprehensive Environmental Response, Compensation, and Liability Act requirements.

The Feasibility Study Report (TerranearPMC, 2012) provides a comprehensive analysis of the remedial alternatives, based on their ability to achieve the nine evaluation criteria as previously specified in the *Guidance for Conducting Remedial Investigations and Feasibility Studies under Comprehensive Environmental Response, Compensation, and Liability Act* (USEPA, 1988). A summary of the comparison of alternatives relative to each other is provided in Table 1.

Table 1. Summary of Comparison of Alternatives Relative to Each Other

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3
	Limited Off-Site Landfilling, Soil Stabilization and Cap and Grade	Sieving, Soil Stabilization, and Cap and Grade	Off-Site Landfilling
Overall Protection of Human Health and the Environment	■	■	■
Compliance with Applicable or Relevant and Appropriate Requirements	■	■	■
Long-term Effectiveness and Permanence	■	■	■
Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment	■	■	■
Short-term Effectiveness	■	■	■
Implementability	□	□	■
Cost (Present Worth)	\$1,418,000	\$584,360	\$3,500,000.
State / Support Agency Acceptance	yes	yes	yes
Community Acceptance	TBD	TBD	TBD

Ranking:

- High ability to meet criteria
- Moderate ability to meet the criteria
- Does not meet criteria
- TBD: To be determined.

SUMMARY OF PREFERRED ALTERNATIVE

Based on a detailed analysis of each alternative using all nine criteria previously discussed and the evaluation comparing the alternatives to each other using the five primary balancing evaluation criteria (criteria 3 through 7), it is CBP's current judgment that Alternative 3, the Preferred Alternative identified in this Proposed Plan, or one of the other alternatives considered in the Proposed Plan, is necessary to protect public health or welfare and the environment from actual or threatened releases of hazardous substances into the environment. In this case, the hazards at the former USBP Firing Range are due to the presence of small arms debris and constituents of concern.

Alternative 3 is recommended because it would achieve substantial hazard reduction. Alternative 3 meets the following five balancing criteria: (1) is protective of human health and the environment for intrusive receptors (humans, animals); (2) is effective in both the short- and long-term at mitigating potentially remaining small arms debris and constituents of concern risks to receptors conducting activities during development and reuse of the site; (3) is administratively and technically feasible to implement; (4) because it removes the contaminants of concern from the site and (5) is compliant with the applicable or relevant and appropriate requirements.

Based on information currently available, CBP believes the Preferred Alternative 3 meets the threshold, balancing and modifying criteria. CBP expects the Preferred Alternative to satisfy the following statutory requirements of Section 121(b) of the Comprehensive Environmental Response, Compensation, and Liability Act: (1) be protective of human health and the environment, (2) comply with Applicable or

Relevant and Appropriate Requirements, (3) be cost-effective, and (4) utilize permanent solutions to the maximum extent practicable. The supporting agency, the Arizona Department of Environmental Quality, has concurred that the selection of Alternative 3 as the Preferred Alternative is appropriate and provides the best balance of tradeoffs.

COMMUNITY PARTICIPATION

CBP is providing this information regarding the remedial alternatives for the former USBP Firing Range to the public through public meetings, the Administrative Record file for the site, and announcements published in the Nogales International Newspaper. The CBP, along with the Arizona Department of Environmental Quality, encourage the public to gain a more comprehensive understanding of the site and the remedial activities that have been conducted at the site.

Public input is a key element in the Comprehensive Environmental Response, Compensation, and Liability Act process. The local community is encouraged to comment on this Proposed Plan and the Preferred Alternatives summarized herein. Comments from the public will be used to help determine what action to take. Members of the public may communicate verbally or in writing at the public meeting on November 13, 2014. Representatives from the U.S. Army Corps of Engineers and the CBP will be present at the meeting to explain the Proposed Plan, hear concerns, and answer questions.

Members of the public may also comment in writing. Written comments will be accepted at the public meeting and throughout the public comment period that ends on December 29, 2014.

Correspondence should be sent to:

Paul Enriquez
U.S. Customs and Border Protection,
24000 Avila Road, Room5020,
Laguna Niguel, CA 92677

E-mail: nogales-firing-range@cbp.dhs.gov

If special correspondence or public meeting accommodations are needed, please contact Paul Enriquez at: nogales-firing-range@cbp.dhs.gov

After considering public comments, the U.S. Army Corps of Engineers and CBP will select the final remedy. The Preferred Alternative may be modified based on public comment or new information. The final chosen remedy will be described in the Decision Document (the next step after this Proposed Plan). CBP will respond to comments from the public in a responsiveness summary, which will be part of the Decision Document and will be available for review in the Administrative Record file.

REFERENCES

- TerranearPMC, 2014. *Remedial Investigation/Feasibility Study for the U.S. Customs and Border Protection Firing Range Nogales, Arizona*. Final. April.
- USEPA, 1999. *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and other Remedy Selection Documents*. EPA 540-R-98-031. July.
- USEPA, 1998. *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA*. Interim Final. EPA/540/G-89/001. October.
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GLOSSARY OF TERMS

Administrative Record File

The official collection of documents related to investigation and cleanup activities at the former **U.S. Border Patrol Firing Range** considered, or relied on, in selecting the response action supporting the Decision Document for remedial action at the former **U.S. Border Patrol Firing Range**.

Anomaly

An anomaly is any item that is identified as a subsurface irregularity during geophysical investigation. This irregularity deviates from the expected subsurface ferrous and nonferrous material at a site (pipes, power lines, etc.).

Archives Search Report

An Archives Search Report is a detailed investigation report of past munitions activities conducted on an installation. The principal purpose of the archives search is to assemble historical records and available field data, assess potential ordnance presence, and recommend follow-up actions at a Defense Environmental Restoration Program Formerly Used Defense Site.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980

This Act authorizes federal action to respond to the release or potential release of hazardous substances into the environment or a release or threat of release of a pollutant or contaminant into the environment that may present an imminent or substantial danger to public health or welfare.

Decision Document

Decision Documents serve to provide the reasoning for the selection of or changes to a site cleanup plan. Decision Documents are required by Section 117 of Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, for remedial actions taken pursuant to Sections 104, 106, 120, and 122 (42 USC Sections 9604, 9606, 9620, and 9622). 40 CFR 300.430(f)(2) of the National Oil and Hazardous Substances Contingency Plan establishes the regulatory requirements for these Decision Documents.

Land Use Control

Land Use Controls are legal, physical, or administrative mechanisms that restrict the use of, or limit access to, real property to manage risks to human health and the environment. Mechanisms encompass a variety of engineered remedies to contain or reduce contamination and/or physical barriers to limit access to real property, such as fences or signs.

National Oil and Hazardous Substances Contingency Plan

The National Oil and Hazardous Substances Contingency Plan provides the regulatory framework (see 40 CFR Part 300) for responses under Comprehensive Environmental Response, Compensation, and Liability Act. The National Oil and Hazardous Substances Contingency Plan provides that the Department of Defense has the responsibility to take

actions to respond to releases from or on Department of Defense facilities or vessels [40 CFR 300.175(a)(4)].

Proposed Plan

The Preferred Alternative for a site is presented to the public in a Proposed Plan. The Proposed Plan briefly summarizes the alternatives studied in the detailed analysis phase of the Remedial Investigation / Feasibility Study, highlighting the key factors that led to identifying the Preferred Alternative. The Proposed Plan, as well as the Remedial Investigation / Feasibility Study and the other information that forms the basis for the lead agency's response selection, is made available for public comment in the Administrative Record file.

Remedial Investigation / Feasibility Study

A Remedial Investigation is performed to collect data to characterize site conditions, delineate the nature and extent of contamination (including Munitions and Explosives of Concern) and assess risk/hazard to human health and the environment. The Feasibility Study is the evaluation process for the development, screening, and detailing alternatives for remedial actions.

Removal Action

A removal action is the cleanup or removal of released hazardous substances from the environment or the taking of such other actions, as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from any exposure to hazardous substances. The term includes, without being limited to, security fencing or other measures to limit access and provide post-removal site control, where appropriate.

You may use the space below to write your comments, then fold and mail. Comments must be postmarked by December 29, 2014. If you have any questions about the comment period, please contact Mr. Paul Enriquez by email at: nogales-firing-range@CBP.dhs.gov

[illegible]

State: _____ **Zip:** _____

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PLACE STAMP
HERE
The Post Office
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Mr. Paul Enriquez,
U.S. Customs and Border Protection,
24000 Avila Road, Room 5020,
Laguna Niguel, CA 92677