ADDENDUM THREE
HCSO-CPD RANGE REMEDIATION AND MAINTENANCE
CONTRACT NUMBER P-15-001-202
CITY OF CHATTANOOGA, TENNESSEE

The following changes shall be made to the Contract Documents, Specifications, and Drawings:

I. Bid Form

A revised Bid Form (Section 301-02) is included with this Addendum.

II. Questions Regarding Section 13200 Part 2

Q: You state that the contractor must have 5 years' experience performing range remediation. Would you consider changing this to "5 years' lead remediation in Tennessee"?

A: Proof of 5 years' experience of lead remediation projects in Tennessee will be an acceptable qualification in lieu of 5 years' experience of firing range remediation. Key personnel must be able to show previous experience in firing range remediation.

III. Request for Geotechnical or Site Report on Lead Contamination

Q: Is there a report showing the hazardous levels for lead contamination? If so, can a copy be released?

A: A copy of the report prepared for the NPS regarding complete site remediation (beyond the scope of this project) is included with this Addendum.

August 2, 2016

/s/ Justin C. Holland, Administrator
City of Chattanooga
Department of Public Works

Bid Schedule
Contract W-15-015
City of Chattanooga

Note: Unless otherwise stated, all bid items shall be complete installation as specified and or shown on the drawings.

BASE BID

Item No.	Description	Unit	Est. No of Units	Unit Price	Item Total
717	Mobilization (Includes Plans and Project Permitting Costs)	LS	1	$	$
13200-6.2.1	Excavation and Lead Screening of Contaminated Soils (Includes all hauling, re-hauling, final placement or disposal for post-screened material)	CY	1200	$	$
13200-6.2.2	CREDIT: City's 50% Share of Value of Recycled Lead (less proportional share of recycling expenses)	TON	100000	$	$(CR)
13200-6.3.1	Guaranteed chemical treatment of screened soil, and confirmation sampling by Certified Laboratory	CY	1200	$	$
13200-6.3.2	Site restoration, including finish grading, placement of topsoil, seeding, mulching, post-construction cleanup	LS	1	$	$
13200-6.3.3	Rough grading , minor drainage improvments, contour restoration	CY	250	$	$
13200-6.4.1	Trenching for Infiltration Trench in Main Range Impact Area (Common)	CY	300	$	$
13200-6.4.2	Trenching for Infiltration Trench in Main Range Impact Area (Rock)	CY	10	$	$
13200-6.4.3	Geotextile Fabric Type I	SY	991	$	$
13200-6.4.4	#3 Washed Stone (Infiltration trench)	TON	525	$	$
13200-6.4.5	6" HDPE Perforated Drain Pipe	LF	380	$	$
13200-6.4.6	12" Sand Cap (Infiltration trench)	CY	80	$	$
13200-6.4.7	Surface Ditch Grading at Infiltration Trench in Main Range Impact Area	CY	200	$	$
			Total Base Bid		**$**

ADD ALTERNATE 1: RANGE DRAINAGE A

Item No.	Description	Unit	Est. No of Units	Unit Price	Item Total
15-1	Saw Cutting and Removing Existing Concrete Sidewalk	SF	410	$	$
23-1	Removal of Structures and Obstructions	LS	1	$	$
13200-6.4.1A	Trenching for Infiltration Trenches on Main Range Deck (Common)	CY	900	$	$
13200-6.4.2A	Trenching for Infiltration Trenches on Main Range Deck (Rock)	CY	10	$	$
13200-6.4.3A	Geotextile Fabric Type I	SY	10350	$	$
13200-6.4.4A	#3 Washed Stone (Infiltration trench)	TON	1560	$	$
13200-6.4.5A	6" HDPE Perforated Drain Pipe	LF	1380	$	$
13200-6.4.6A	Topsoil	CY	80	$	$
13200-6.4.7A	Surface Grading	CY	50	$	$
			Total Add Alternate 1		**$**

ADD ALTERNATE 2: RANGE DRAINAGE B

Item No.	Description	Unit	Est. No of Units	Unit Price	Item Total

Bid Schedule
Contract W-15-015
City of Chattanooga

Item No.	Description	Unit	Est. No of Units	Unit Price	Item Total
13200-6.5.1	Drainage Excavation (Unclassified)	CY	90	$	$
13200-6.5.2	Class B Concrete Pad (8'x6'x6")	CY	1	$	$
13200-6.5.3	3'x3'x18" Galvanized Gabion Basket, Geotextile Fabric Lined, filled with #57 Stone	EA	1	$	$
13200-6.5.4	4'x4' Precast V-Notch Weir Outlet Structure with Cast Iron Grate	EA	1	$	$
13200-6.5.5	Geotextile Fabric Type I	SY	400	$	$
13200-6.5.6	24" CMP Outlet Pipe with Anti-Seep Collar	LF	22	$	$
13200-6.5.7	Clay Embankment (Pond Berm)	CY	50	$	$
13200-6.5.8	Rip Rap Class A-3	TON	125	$	$
13200-6.5.9	Rip Rap Class A-1	TON	50	$	$
13200-6.5.10	High Slump Grout for Rip Rap	CY	10	$	$
13200-6.5.11	Pond Impact Berm Embankment in Place	CY	40	$	$
			Total Add Alternate 2		**$**

ADD ALTERNATE 3: CLEANING, FILLING & IMPROVING TARGET TRENCH

Item No.	Description	Unit	Est. No of Units	Unit Price	Item Total
13200-6.6.1	Removing all obstructions and cleaning target trench in preparation for backfilling	LS	1	$	$
13200-6.6.2	Embankment in Place	CY	100	$	$
13200-6.6.3	#57 Base Stone	TON	180	$	$
13200-6.6.4	Class A Concrete Slab (6" Thick Slab, Tooled Control Joints)	CY	45	$	$
13200-6.6.5	Steel Bar Reinforcement	LB	3500	$	$
			Total Add Alternate 3		**$**

ADD ALTERNATE 4: WATER QUALITY DITCH IMPROVEMENT AND OUTLET REPAIR

Item No.	Description	Unit	Est. No of Units	Unit Price	Item Total
13200-6.7	Regrading ditch, placing fill and/or Class B concrete under outlet pipe, reconstructing/repairing 18" CMP outlet pipe at ditch station 7+65.40	LS	1	$	$
			Total Add Alternate 4		**$**

Total for Base Bid:	
Total for Add Alternates 1-4:	
TOTAL PROJECT BID (sum of Base Bid and all Add Alternates)	

BIDDER		DATE
BY (Signature)		TITLE
ADDRESS		
CITY	STATE	ZIP CODE
TELEPHONE NUMBER		

Chickamauga & Chattanooga National Military Park - Tracts 11-104E and 11-104H
Corrective Action Plan
August 22, 2014

INTRODUCTION

This document is the Corrective Action Plan (CAP) for the Tracts 11-104E and 11-104H located near the Chickamauga & Chattanooga National Military Park (CHCH). The tracts are used by Hamilton County and City of Chattanooga law enforcement agencies to conduct firearms and explosives training. The tracts have five firearms target ranges and two explosives detonation training areas on the property. This CAP is an addendum to the *Report on the Additional Level II Environmental Site Assessment (ESA) for Tracts 11-104E and 11-104H Located Near the Chickamauga & Chattanooga National Military Park (CHCH)*, dated July 14, 2014. This CAP is designed to be used in conjunction with the assessment report and not as a stand-alone document.

The State of Tennessee does not have state-specific remediation goals for contaminants, but has historically used EPA Region 9 Preliminary Remediation Goals (PRGs). Region 9 PRGs have been harmonized by EPA with similar risk-based screening levels used by Regions 3 and 6 into a single table: *EPA Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites* (last updated May 2014). The RSL for lead in residential soils is 400 milligrams per kilogram (mg/kg). The RSL for lead in industrial soils is 800 mg/kg. The NPS has in the past requested the use of the 400 mg/kg RSL as a cleanup goal for lead; therefore, this value was used for this site.

LEAD ASSESSMENT SUMMARY

The following is a summary of the assessment conducted at the subject tracts.

The results of the lead assessment of the five firing range areas indicate that the surface soils at all the ranges exceed the 400 mg/kg EPA residential soil RSL. No subsurface soil samples exceeded the 400 mg/kg RSL.

The sediment in the drainage ditches near Range 1 exceeds the 400 mg/kg residential RSL for lead. The surface water in the drainage ditches near Range 1 exceeds the EPA's 0.015 milligrams per liter (mg/L) drinking water maximum contaminant level (MCL) for lead. Lead in the sediment and surface water is likely to be migrating from the site into the Tennessee River.

The amount of soil and sediment at the ranges which exceeds the lead RSL is approximately 4,729 cubic yards, or approximately 6,147 tons. The following is a summary of the estimated quantities of soil recommended for removal and replacement with clean soil at each range.

- Range 1 – 4,059 cubic yards or 5,277 tons.
- Range 2 – 297 cubic yards or 386 tons.
- Range 3 – 231 cubic yards or 300 tons.
- Range 4 – 90 cubic yards or 117 tons.
- Range 5 – 52 cubic yards or 67 tons.

- Total – 4,729 cubic yards or 6,147 tons.

The shallow groundwater beneath the ranges does not appear to be adversely affected by high concentrations of lead in the surface soils.

The identified areas of surface soil and sediment on the ranges which exceed the EPA residential soil RSLs should be removed and replaced with clean soil.

The results of the soil toxicity characteristic leaching procedure (TCLP) analyses indicate that approximately one-third to one-half of the soil that exceeds the 400 mg/kg RSL would exceed the 5 mg/L regulatory limit for lead.

The results of the surface soil assessment of the explosives training areas indicates that there is no significant human health or environmental concern at these areas. No further action is recommended for the explosives training areas.

The results of the surface soil assessment at the Fire Pit site indicate that there are concerns for direct human contact with arsenic and lead; and leachability to groundwater concerns for naphthalene, selenium and mercury. Further assessment is recommended at the Fire Pit to determine the horizontal and vertical extents of the constituents in the soil at the site that exceed screening criteria. Synthetic precipitate leaching procedure (SPLP) testing of the soil should be conducted to better determine the potential for leaching of the detected constituents to the groundwater; or groundwater samples should be collected.

Additional details of the assessment are provided in the assessment report. This CAP only addresses the cleanup of lead-contaminated soil and sediment at the site.

REGULATORY FRAMEWORK

Current State of Tennessee regulations do not require that the results of soil or groundwater assessments be reported unless the site was being regulated under a specific program, such as underground storage tanks or hazardous waste. Furthermore, this CAP is also not required to be submitted to the State prior to conducting soil remediation at the range. The purpose of this CAP is to assist NPS in decision-making and planning for soil remediation at the range.

EVALUATION OF REMEDIAL OPTIONS

Description of Affected Area

Figures 3 through 7 in the July 2014 assessment report (see Attachment 1 of this CAP) show the approximate areas of soil and sediment on each range that exceed the 400 mg/kg EPA RSL for lead. This total area consists of approximately 127,683 square feet. The depth of affected soils is approximately 1 foot resulting in a volume of approximately 127,683 cubic feet or approximately 4,729 cubic yards. Based on the soil type (silt and clay loam), the total weight of impacted soil is estimated to be approximately 6,147 tons. Five monitoring wells installed during the assessment indicated that the depth to ground water is deeper than 15 feet BGS; therefore, the water table is not expected to be encountered during the excavation.

Based on the assessment results, soils having a total lead concentration less than approximately 1,000 mg/kg are not expected to exceed the 5 mg/L regulatory limit for TCLP lead. Assuming that just under half the soils would exceed the TCLP limit, the estimated area is approximately 62,308 square feet resulting in a volume of approximately 62,308 cubic feet or approximately 2,308 cubic yards (3,000 tons).

The relatively small amount of lead-contaminated surface water can be mixed with the soil and sediment during remedial activities. Remediation of the Fire Pit soils can most likely be accomplished within the estimated costs presented below for the lead-contaminated soil and sediment.

Remedial Options

The options for reducing lead to levels below the EPA residential RSL are as follows.

In-situ Treatment.

Although a relatively large area of lead-impacted soils is present on the site, only the surface soils (0 to 1 foot BGS) appear to be affected. In-situ treatment of the impacted soil could be done to stabilize the lead contamination in place, but does not meet the goal of removing lead contamination (particularly bullets and bullet-fragments) and restoring the firing range to a "clean" condition. Other approaches could include treatment in place or creating engineering controls (e.g., impermeable cap or soil cover) to reduce or minimize future human exposure to the lead in lieu of soil removal. However, these technologies likely would require additional studies, including further site assessments, groundwater monitoring, risk assessments and site management plans. Long-term management of any engineering controls would be also required, as well as some form of land use or deed restriction.

Ex-situ Treatment.

Ex-situ approaches all involve excavation followed by treatment using one or more technologies. Techniques such as screening the soil to remove bullets and lead fragments offer coarse treatment of the soil, but likely would need to be followed by additional treatment to remove or stabilize the residual particulate and adsorbed lead. Soil washing could be employed to achieve this goal, but would involve increased handling and potentially could result in large volumes of contaminated water to be treated or disposed of in addition to the soil. This "clean" soil could then be returned to the site. These approaches separately or together would require additional engineering to design and time to implement, resulting in higher costs.

The most expeditious approach to achieving a "clean" restored site is to excavate the soil for possible treatment and eventual off-site disposal and replace it with clean fill. Excavation of the shallow soils can be easily accomplished using small, relatively inexpensive equipment. The assessment results indicate that a portion of the soil can be disposed of untreated in a lined Subtitle D landfill, or equivalent, and will not require handling or management as hazardous. However, approximately 50% of the soil, if untreated, would require handling or management as hazardous. Nonetheless, excavation and landfill disposal of the lead-impacted soils is presumed to be the most cost-effective and timely method for reducing lead levels on the site.

The following are summaries of the two most viable options for removal and disposal of the lead-impacted soil from the range. The amount of time, field oversight, confirmatory sampling, backfilling and reporting associated with either option is likely to be similar.

Option 1: Excavation and removal of approximately 3,147 tons of non-hazardous soil and 3,000 tons of hazardous soil; disposal of the non-hazardous soil in a Subtitle D landfill; disposal of the hazardous soil in a RCRA hazardous waste facility; removal and disposal of contaminated sidewalks and target structures (estimated 500 tons); confirmatory sampling of the excavation; backfill with 6,147 tons of clean soil; and labor and equipment. This would require approximately 60 to 90 days to complete. **Estimated Cost - $1,916,400**

Option 2: Excavation and removal of approximately 3,147 tons of non-hazardous soil and 3000 tons of hazardous soil; on-site treatment of the hazardous soil with a commercial product that stabilizes heavy metals (e.g., EnviroBlend®) to non-hazardous; removal and disposal of contaminated sidewalks and target structures (estimated 500 tons); confirmatory sampling of the excavation and stabilized soils; disposal of all the soil in a Subtitle D landfill; backfill with 6,147 tons of clean soil; and labor and equipment. This option would require approximately 60 to 90 days to complete. **Estimated Cost - $1,233,000.**

Based on the above, the recommended remedial action for the site is **Option 2**. Treating and stabilizing the hazardous portion of the soil to non-hazardous provides additional long-term risk reduction to the NPS, in addition to the savings of approximately $683,400 in costs.

The initial cost estimates for soil/sediment/debris removal, treatment and disposal were provided by A & D Environmental of High Point, North Carolina (336-434-7750; www.adenviro.com). Additional details of the estimated costs can be provided upon request.

RECOMMENDED REMEDIAL ACTION

The following describes the proposed approach to be taken to implement the recommended remedial action for the site (Option 2). The objective of these activities is to remove and properly dispose of impacted soils and sediment, to the extent practicable, that exceed the 400 mg/kg residential RSL for lead.

Soil Removal Subcontractor

A soil removal subcontractor will be selected to remove, treat and properly dispose of the lead-impacted soil from the site. The selected subcontractor should be appropriately licensed in the State of Tennessee to perform the type of work required. The subcontractor should also have liability, pollution and workers compensation insurance at levels required by the State or local authorities, and at levels that may be required by NPS. Subcontractor workers should also be properly trained and certified for this type work and perform the work as required by the Occupational Safety and Health Administration (OSHA) and as described in 29 Code of Federal Regulations (CFR) 1926.

The selected subcontractor should also demonstrate recent experience performing similar types of remedial actions (i.e., soil removal and disposal) in similar environmental settings. The

subcontractor should also provide references for previous similar projects. Prior to bidding on the work, prospective subcontractors should visit the site.

The general scope of work that the subcontractor will be responsible for is as follows:

- Identifying an appropriate landfill for disposal of the soil and providing the soil profile necessary for acceptance into that facility.
- Removing vegetative cover from the sites and arranging for disposal.
- Excavating, stockpiling, treating and removing impacted soil.
- Maintaining dust and erosion control during excavation and soil handling.
- Arranging and performing soil transportation and disposal, including manifesting the waste to the approved landfill.
- Restoring the site, including backfill and soil compaction.
- Preparing and submitting a post-excavation summary report to the prime contractor.

Prime Contractor Responsibilities

State or Local Permits
The prime contractor will be responsible for obtaining permits (other than soil disposal) that may be required by State, local or other authorities to conduct the work.

Subsurface Utilities
Prior to conducting excavation or ground-intrusive activities, the contractor will arrange for a utilities survey to identify any underground public utilities (e.g., water, sewer, gas, telephone, etc.) which may be present on the property near the excavation area. The owner of the property should provide a map of any private underground utilities (e.g., sewer lines, septic tank, water lines, electric lines, etc.) in the site area. The contractor will work with the soil removal subcontractor and owner representatives familiar with the area to avoid or work around any underground utilities that are identified near the excavation area.

Soil Excavation
The contractor will stake out the presumed limits of the impacted soils as a guide for the soil removal subcontractor who will be responsible for excavating the area and volume of soil shown in the figure provided in Attachment 1 and described above. The subcontractor's work will be overseen in the field by an environmental professional (EP) working on behalf of NPS. The exact area and depth excavated will be determined in the field by the EP on the basis of field screening and confirmatory laboratory analyses. As a result, the actual area and depth of excavation could be different than that shown and described above. The NPS will be advised of changes in soil removal, disposal or backfill quantities and such changes will be adjusted on the contractor's invoice on a prorated (i.e., per ton) basis. Similarly, such changes that require further time, materials or equipment will be identified on the contractor's invoice.

Prior to excavating, vegetative matter will be removed from the remediation areas on the ranges. The trees will be cut to ground level. Remaining tree stumps and plant roots in the top one foot of soil will be removed and handled along with the contaminated soil. All tree trunks, tree tops and other non-contaminated vegetative matter removed from the berm will be disposed of by the subcontractor as common yard or landscape waste at a local landfill approved for such material.

Vegetative matter will be segregated in a pile away from the ranges pending disposal to limit the potential that it could become contaminated by the subsequent soil removal activities.

Bullets, bullet fragment and shell casings will be left in the excavated soil. The excavated soil from the most heavily contaminated areas (est. 3,000 tons) will be placed in measured stockpiles on-site for subsequent treatment. Stockpiled soil will be placed on an impervious surface or material (e.g., heavy poly sheeting), and covered and secured with plastic sheeting to prevent wind or water erosion. Contaminated soil that is spilled onto the clean ground or other clean surfaces will be removed and returned to the stockpile.

The excavated soil from the less heavily (non-hazardous) contaminated areas (est. 3,100 tons) will also be placed on an impervious surface or material (e.g., heavy poly sheeting), and covered and secured with plastic sheeting to prevent wind or water erosion. This material will remain staged until the material is ready to be loaded and transported to the selected and approved Subtitle D landfill for disposal.

Soil Treatment

The excavated hazardous soil (est. 3,000 tons) will be treated so that the soil will pass subsequent TCLP analyses for metals. Various treatment methods are available which render soils non-leachable and/or non-hazardous for metals. The recommended method for this project is to add a reagent called EnviroBlend®. EnviroBlend® is a family of treatment chemicals, custom-blended to render metal-bearing wastes non-hazardous. The soil will be excavated and placed in measured stockpiles on an impervious surface on-site. The soil will be protected to prevent wind or water erosion. The dry EnviroBlend® reagent material will be thoroughly mixed with the hazardous soil with a backhoe and/or bobcat loader using an admixture ratio of approximately 5% (by weight). After mixing, the stockpile(s) will be secured pending receipt of analytical test results.

Dust and Erosion Control

During the soil excavation, handling and transportation activities, the soil removal subcontractor will make every effort to control or minimize the generation of dust and to prevent the spread of lead-impacted soil to unaffected areas or personnel. Dust control measures may include spraying or misting water on the soil, and conducting excavation and soil management activities in a manner that minimizes dust generation. Dust emissions will be minimized and controlled to the best practicable extent.

Part of the excavation area on Range 1 is on a steep slope. The soil removal subcontractor will make every effort to prevent soil erosion of the berm or excavated area during the project. Hay bales or other erosion control devices may be required to prevent erosion, or to prevent stormwater runoff and/or sediment from leaving the excavation area.

Soil Transportation and Disposal

The excavated soil will be transported to a disposal facility using trucks that are appropriately licensed and insured for the type of work being conducted. The soil in the trucks will be covered to control and reduce the potential release of material during transportation. The soil removal contractor is responsible for compliance with applicable regulations regarding soil transportation.

The soil will be disposed of at a Subtitle D landfill or other facility that is licensed to accept and dispose of lead-contaminated soil. The name of the intended disposal facility will be provided to the EP prior to the start of fieldwork. Copies of the disposal facility's license and/or facility identification (ID) number will be also provided to the EP. The soil removal subcontractor will also ensure that proper waste manifests are generated for transportation and disposal, and will provide copies of all manifests to the EP and/or NPS on a daily basis.

Site Restoration

Following excavation and receipt of acceptable confirmatory sample results, the contractor will restore the site as best as possible to pre-existing conditions. This will, at a minimum, include the following:

- Backfilling excavation with clean fill material. The fill material will be of a similar nature to that currently present on the site and will come from a source that is known or documented to be uncontaminated according to Tennessee or EPA standards (i.e., does not exceed RSLs). Such documentation may be in the form of certification from the source facility or from analytical testing.
- Compacting backfill material to acceptable standards to prevent settling.
- Reseeding excavated areas with grass similar to the existing ground cover. Newly seeded areas will be watered after application and covered with straw mulch.
- Repairing any utilities damaged by the subcontractor that were identified during the utilities survey.
- Repairing concrete walkways that may be damaged by truck, backhoe or other heavy equipment or stockpiling activities can be performed, if requested by the NPS, with additional authorization.

Post-excavation Report

Following completion of the above work, the subcontractor will provide the EP a summary report of soil removal, treatment and disposal activities. This report will include a brief description of the work conducted; the actual number of tons of soil excavated/treated; the number of truck loads and tons of soil taken to the disposal facility; the name, address and facility ID of the disposal facility; and copies of any certifications, test results, permits, manifests or other documentation obtained for the project.

Other Soil Removal Considerations

Any historic or pre-historic artifacts found by the contractor during the soil removal will be given to the EP or NPS.

ENVIRONMENTAL PROFESSIONAL OVERSIGHT

As described above, the soil removal and disposal subcontractor will be overseen by the contractor's EP on behalf of NPS. The EP will oversee and monitor the subcontractor's activities in the field. In addition, the EP will conduct confirmatory sampling for lead during and after excavation to ensure that, to the extent practical, the soil exceeding the residential RSL for lead is removed from the site. The soil removal fieldwork and sampling activities will be conducted in general accordance with the Field Branches Quality System and Technical Procedures, U.S. Environmental Protection Agency, Region 4 (http://www.epa.gov/region4/sesd/fbqstp/#GuidanceDocuments).

Treatment Confirmatory Sampling

Approximately 20 composite soil samples will be collected by the EP from the soil that was treated with EnviroBlend®. Each composite soil sample will be comprised of 10 aliquots collected from 10 locations and depths in the piles that are believed to represent the entire volume of treated soil. The samples will be analyzed for TCLP metals and used to demonstrate that the treated soil is non-hazardous for the purpose of disposal in a Subtitle D landfill. The TCLP samples will be analyzed on an expedited turnaround (e.g., 48 hours). The treated soil will remain stockpiled or stored on-site until the receipt of acceptable TCLP results.

Excavation Confirmatory Sampling

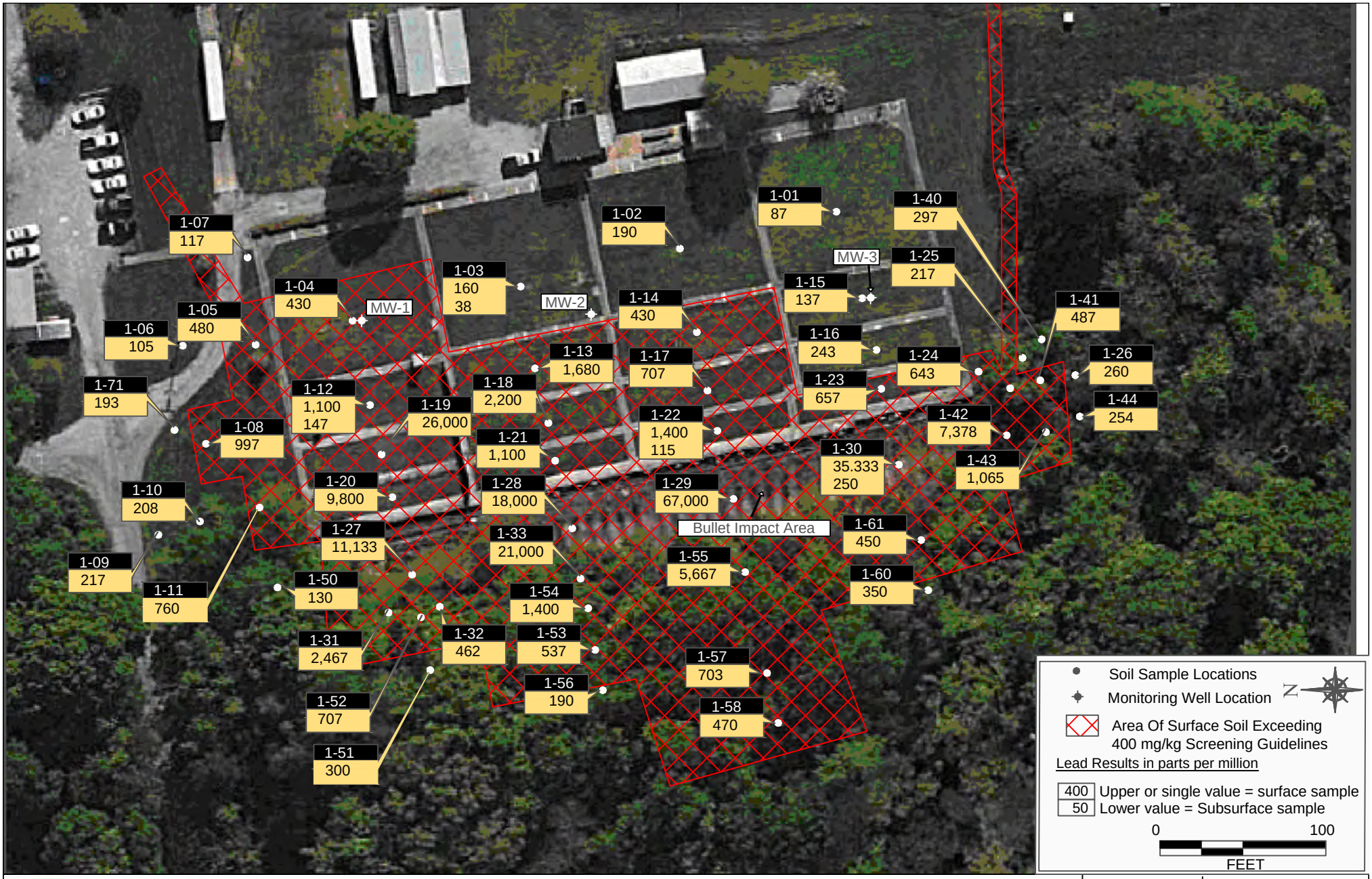
Excavation confirmatory sampling will consist of field screening soil for lead using either an XRF, or another field screening device, such as a Palintest SA-5000 Scanning Analyzer. During the course of the excavation activities, up to 200 soil samples will be field-screened using this method, which will provide same-day results in the field. Screening samples will be collected in sufficient locations in the bottom and sides of the excavation to evaluate whether the lead-impacted soil has been adequately removed. Based on the results of the field screening analyses, the EP will direct the subcontractor to cease or continue excavation of soils. The goal will be to remove the soils exceeding the 400 mg/kg residential RSL for lead, to the extent practical. The EP will also photograph and document field activities conducted during the soil excavation and removal.

Approximately 10 percent of the field screening samples (up to 20 samples) will be split in the field and sent to a laboratory for analysis of total lead using EPA Method 6010. These laboratory splits will be analyzed on a 24-hour turnaround time in an effort to obtain the results prior to backfilling the excavation. If the laboratory analyses do not support the field screening results, additional excavation may be required. If the laboratory results confirm the field screening results, the subcontractor will begin the backfilling and berm restoration activities. No groundwater sampling is planned.

Following the fieldwork and receipt of the contractor's post-excavation report, the EP will prepare a Post Remediation Report. The report will document all field and sampling activities, including quantities of soil removed, treated and disposed of; disposal facility; soil screening and laboratory analytical results; and site restoration activities. The report will be prepared (or reviewed) and signed by a Tennessee-registered Professional Geologist (P.G.).

Attachment 1

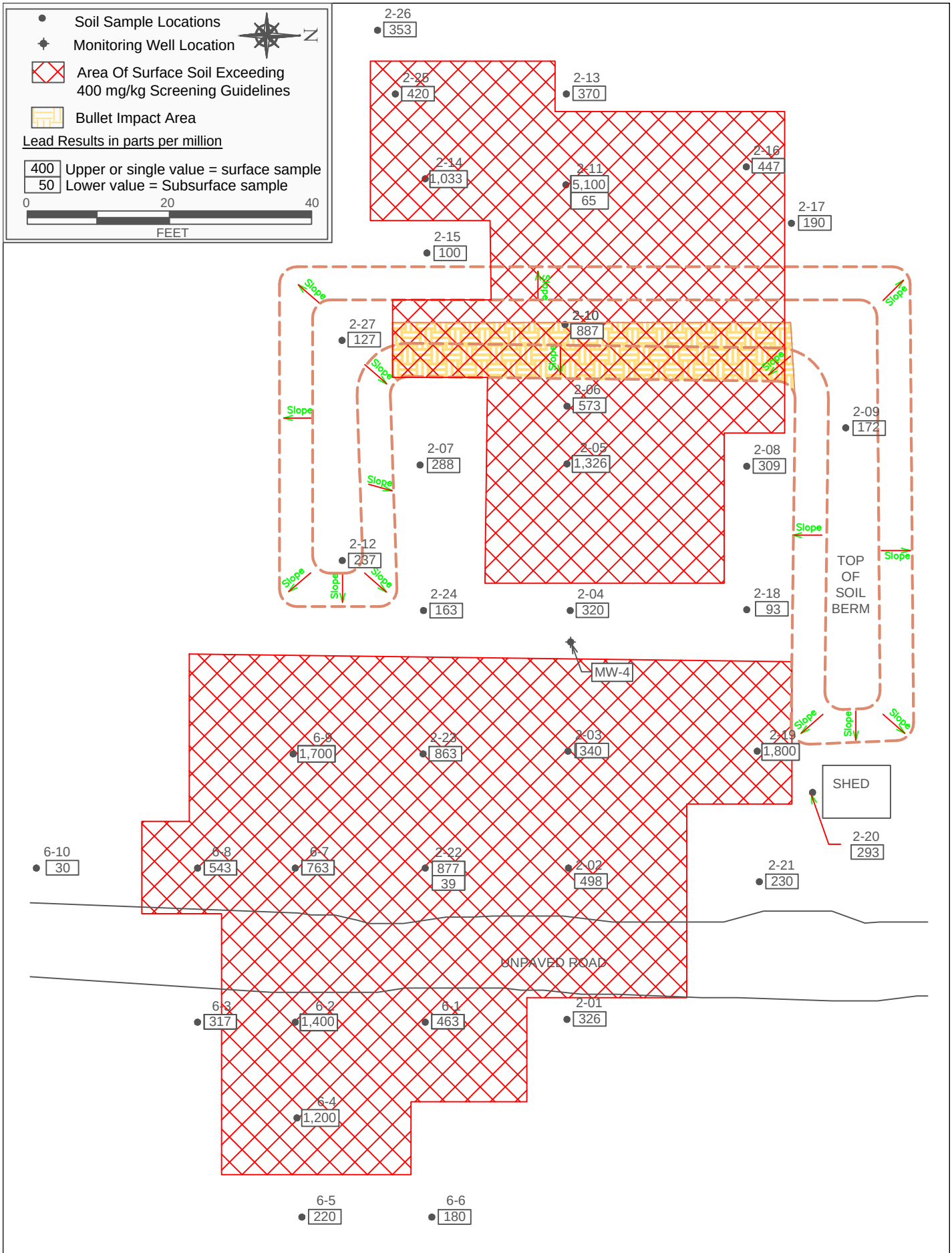
Figures 3 Through 7
(Source: CHCH Tracts 11-104E and 11-104H Assessment Report, July 2014)



Barksdale & Associates, Inc.

Figure 3
Soil Boring & Sample Locations
Range 1

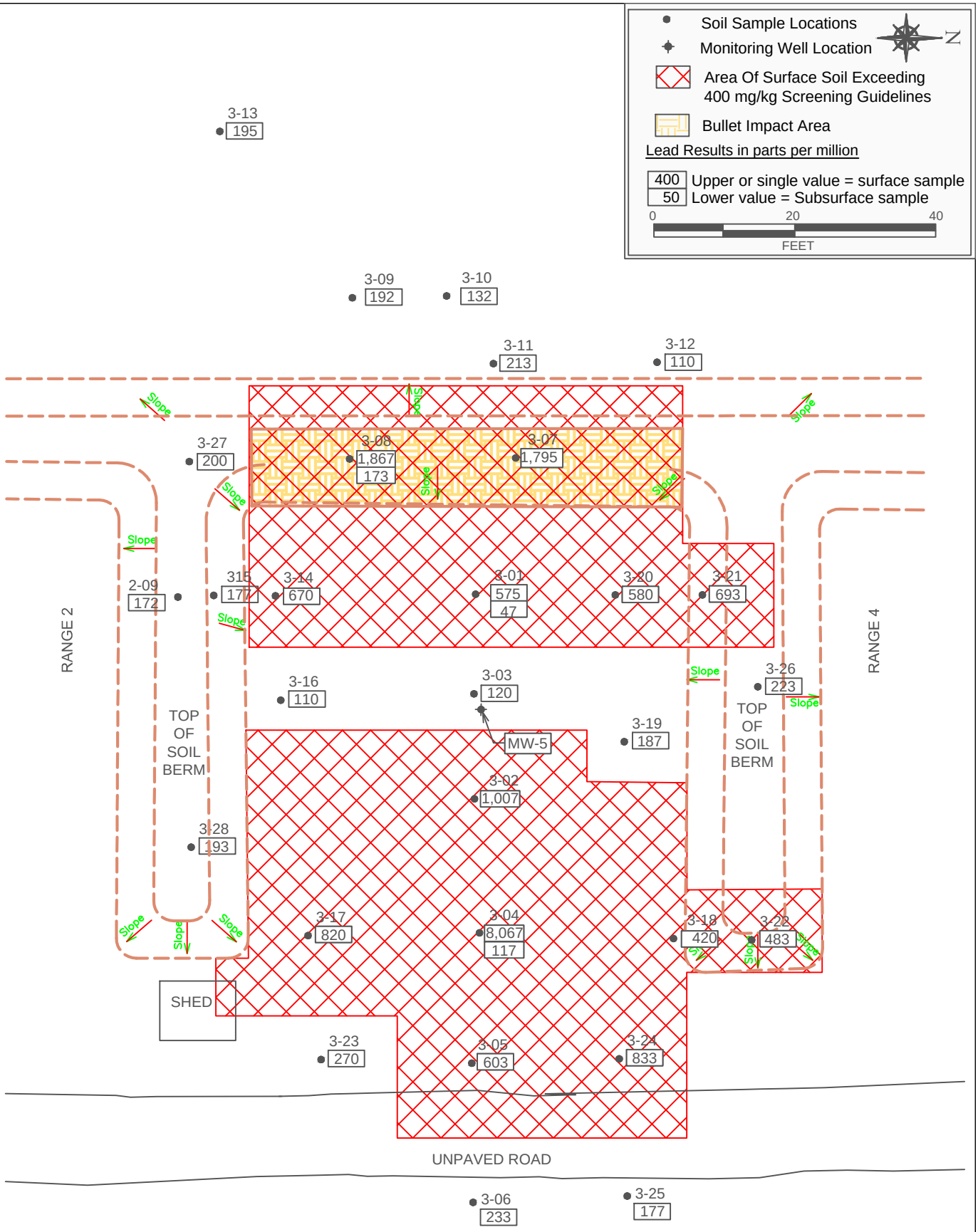
Creation Date:	June 28, 2014
Revised Date:	
Prepared By:	Diane Pitts
Data Souce:	



Barksdale & Associates, Inc.

Figure 4
Soil Boring & Sample Locations
Range 2

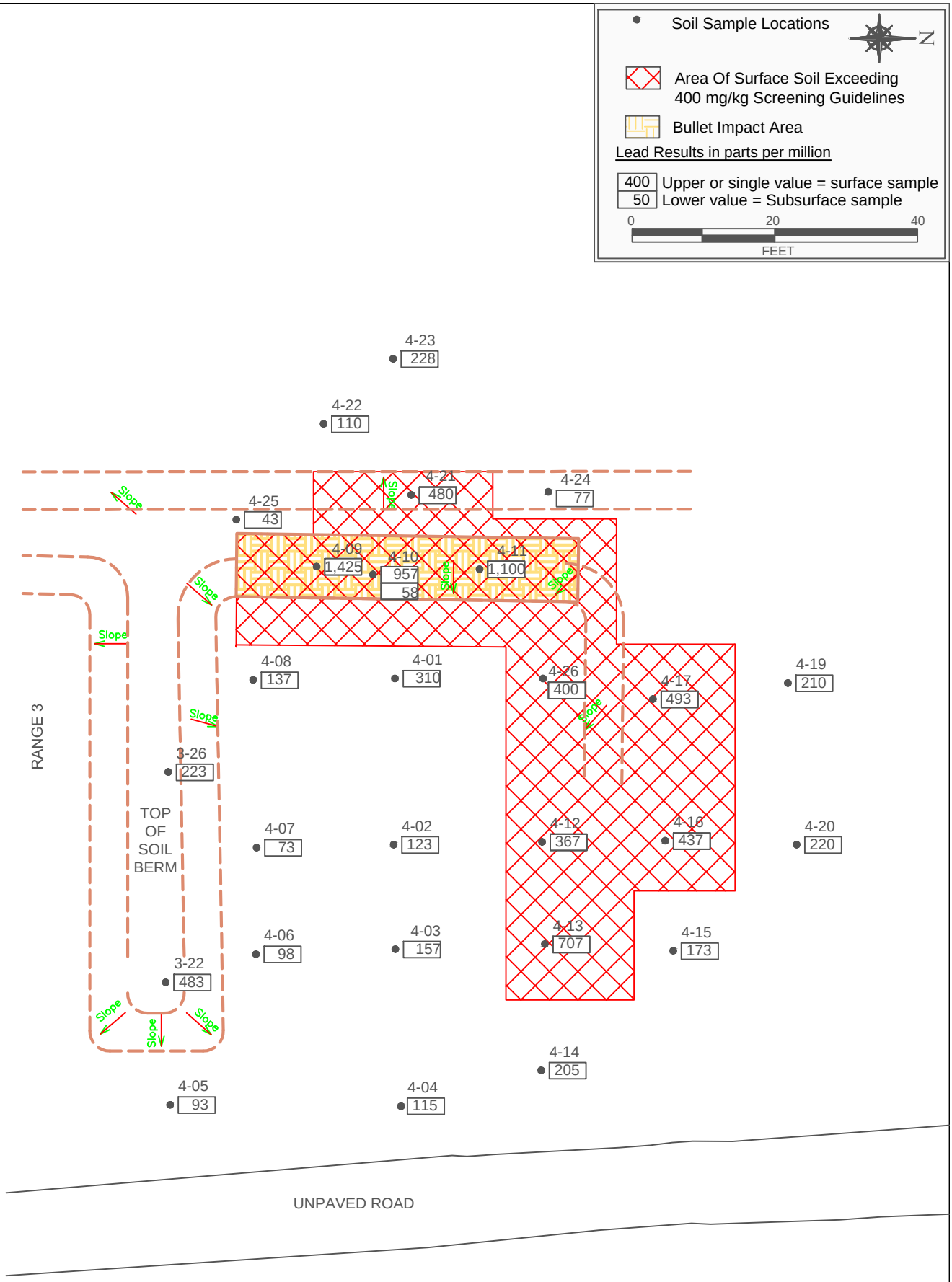
Creation Date:	June 28, 2014
Revised Date:	
Prepared By:	Diane Pitts
Data Souce:	



Barksdale & Associates, Inc.

Figure 5
Soil Boring & Sample Locations
Range 3

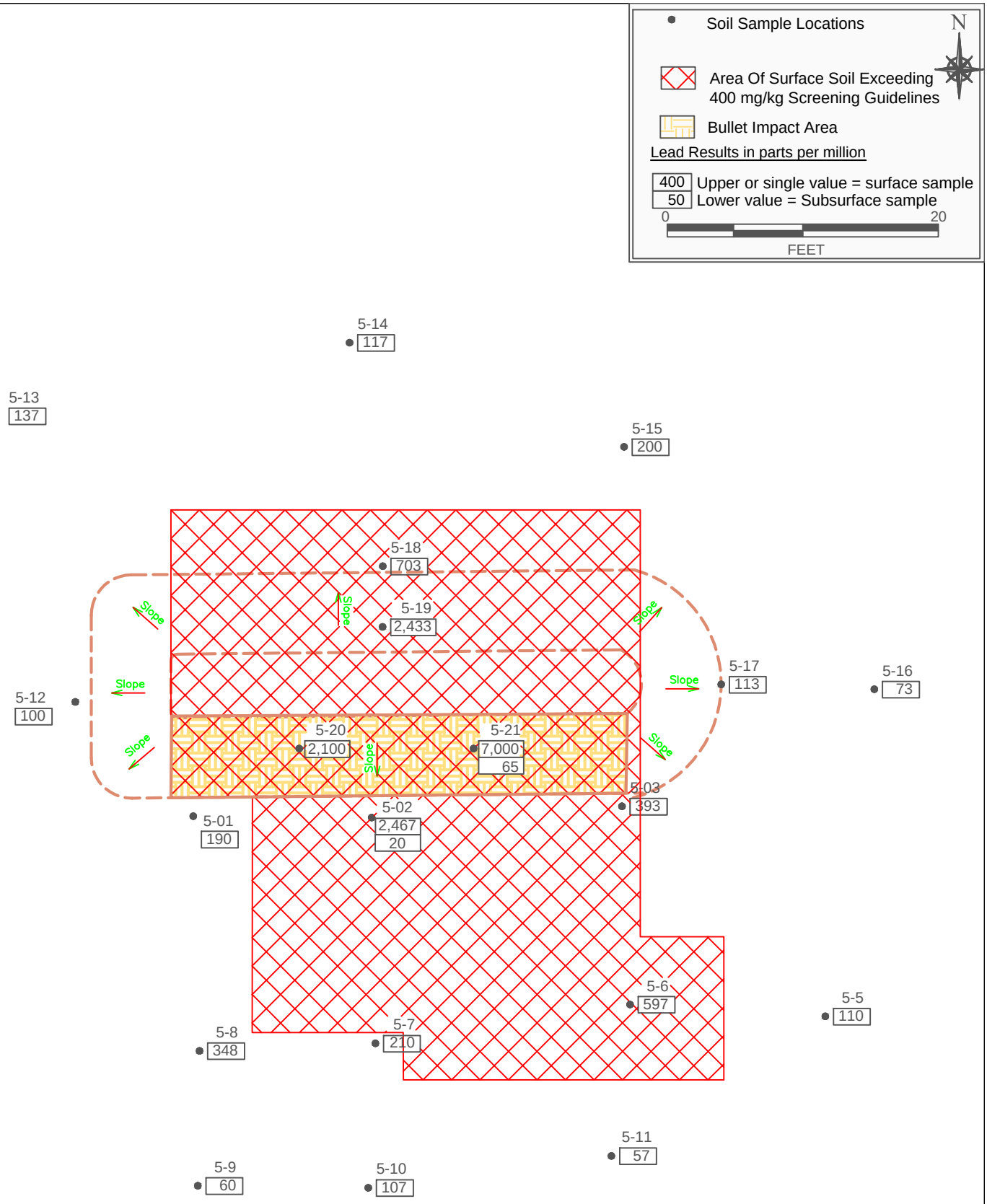
Creation Date:	June 28, 2014
Revised Date:	
Prepared By:	Diane Pitts
Data Souce:	



Barksdale & Associates, Inc.

Figure 6
Soil Boring & Sample Locations
Range 4

Creation Date:	June 28, 2014
Revised Date:	
Prepared By:	Diane Pitts
Data Souce:	



Barksdale & Associates, Inc.

Figure 7
Soil Boring & Sample Locations
Range 5

Creation Date:	June 28, 2014
Revised Date:	
Prepared By:	Diane Pitts
Data Souce:	