

Load Lines 1, 2, 3, 4 and 12

Project Update

17 Nov 2010

Presented by



Project Background

At Load Lines 1, 2, 3, and 4, decontamination and demolition (D/D) of buildings & environmental remediation were done in four separate stages:

- A. D/D of buildings down to the floor slabs
- B. Environmental remediation completed in areas outside building footprints
- C. D/D of floor slabs and foundations
- D. Environmental remediation of areas below the floor slabs
(subsurface soil characterization below the areas was limited to 4 feet)

Project Background Continued

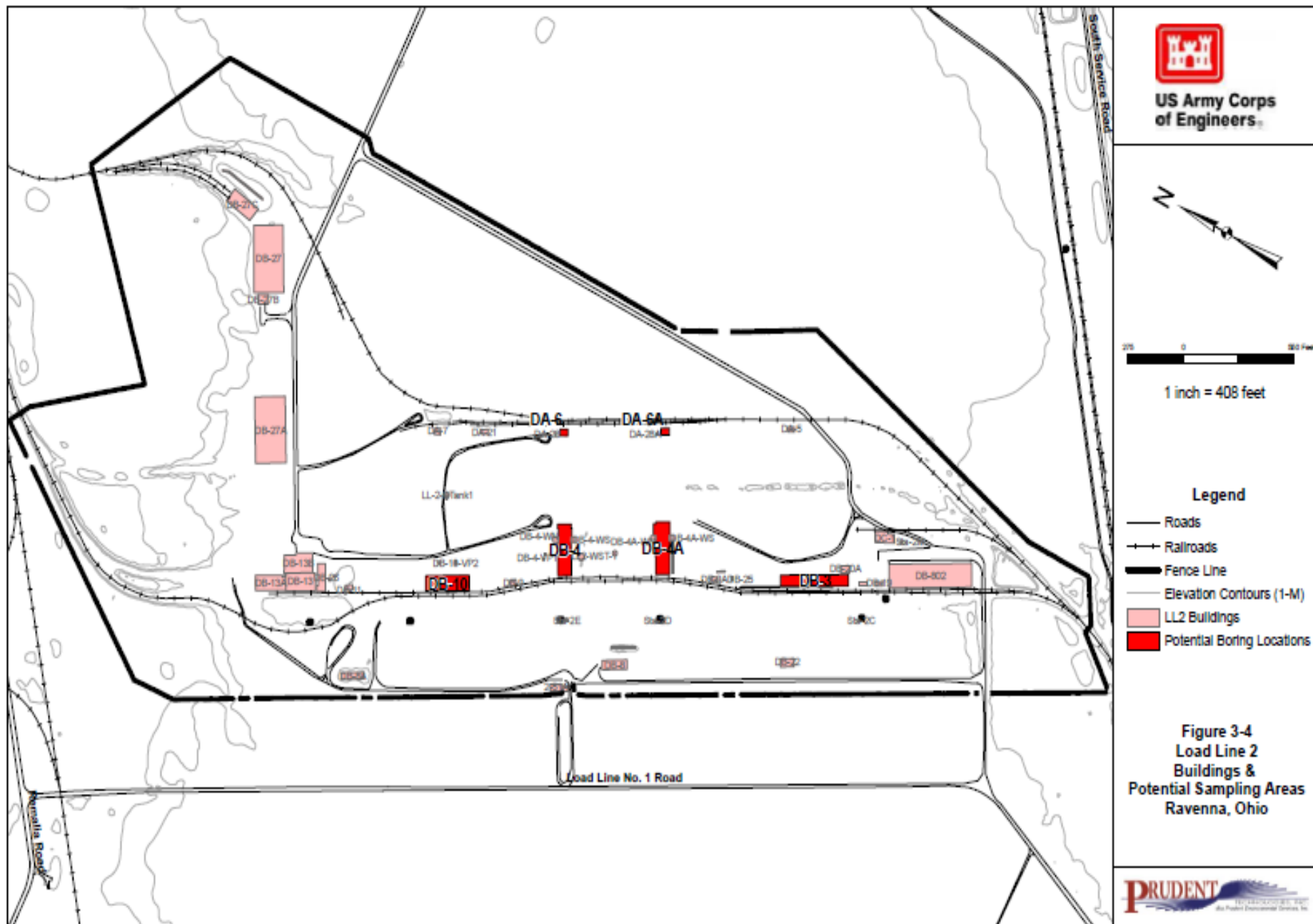
- A and C were conducted under one funding source.
- B and D were done per a future land use scenario of “National Guard Trainee”
- The National Guard mission and training requirements are continually changing.
- To accommodate continual changes in the National Guard mission, it would be beneficial to complete the most stringent practical environmental remediation.
- This stringent land use, called the **“Unrestricted National Guard”**, has a **somewhat different set of clean up goals.**

Project Overview

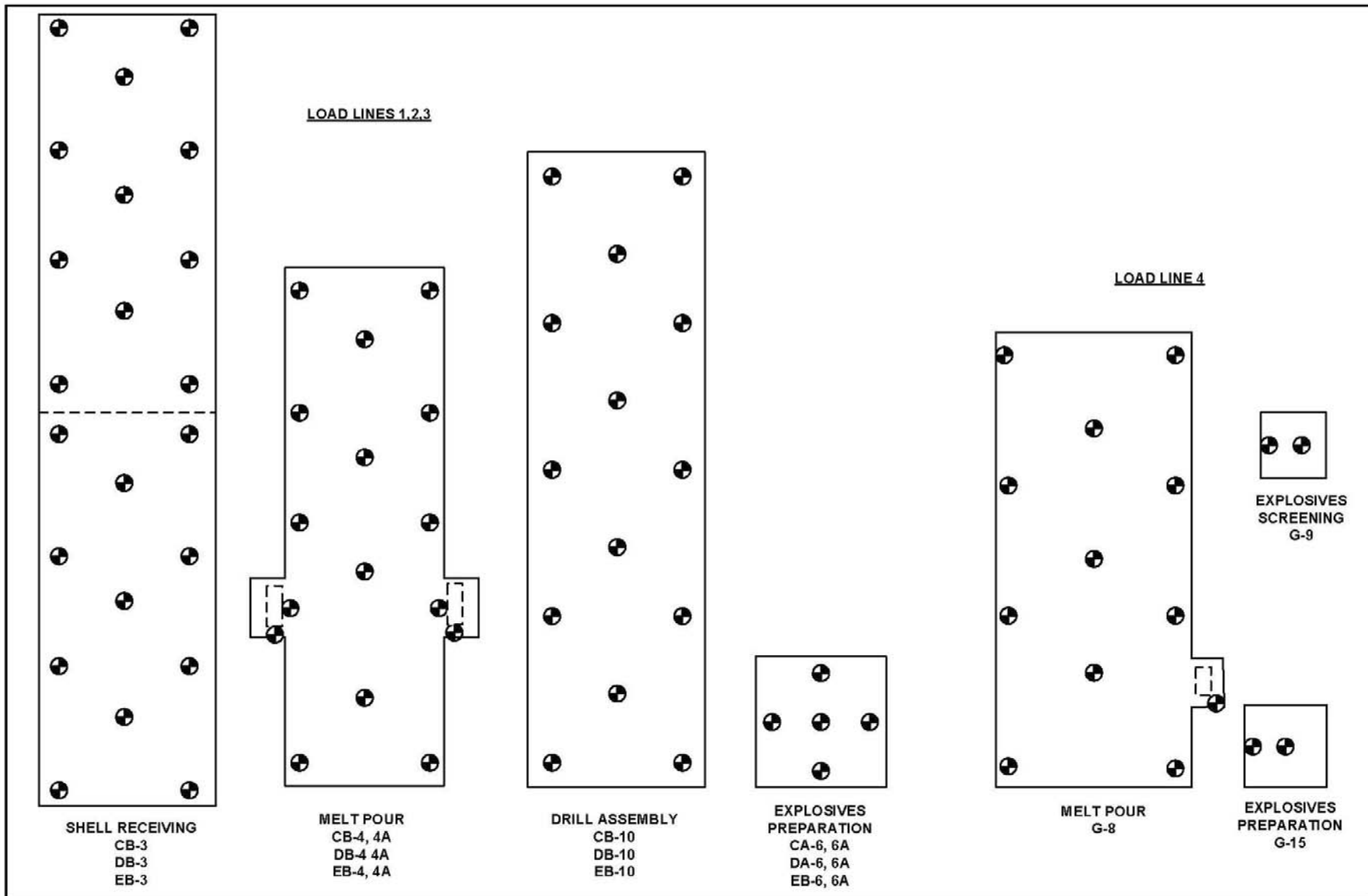
- A. Complete the subsurface soil environmental characterization of areas below the former building floor slabs to a depth of 7 feet – February 2011
- B. Conduct a Land Use Control Assessment and Cost Analysis - (Determine how much additional remediation needs to be conducted to attain an “Unrestricted National Guard” use and compare those associated costs to the long term costs of not doing additional remediation) - May 2011
- C. Complete additional characterization of all media, except groundwater, should it be required - July 2011
- D. Conduct additional remediation with confirmatory sampling, should it be required - August 2011
- E. Prepare a Closure Report – (hopefully to allow Unrestricted National Guard Training) - October 2011

Multi-Increment (MI) Subsurface Soil Characterization

- In August 2010, Prudent Technologies conducted MI subsurface soil characterization at the “High” priority buildings and the Shell Receiving Buildings
- Prudent utilized the approximate number and locations of borings performed for the previous subsurface characterization that used discrete (individual) borings down to a depth of 4 feet.



Note: Final boring locations will not be in areas where remediation has occurred

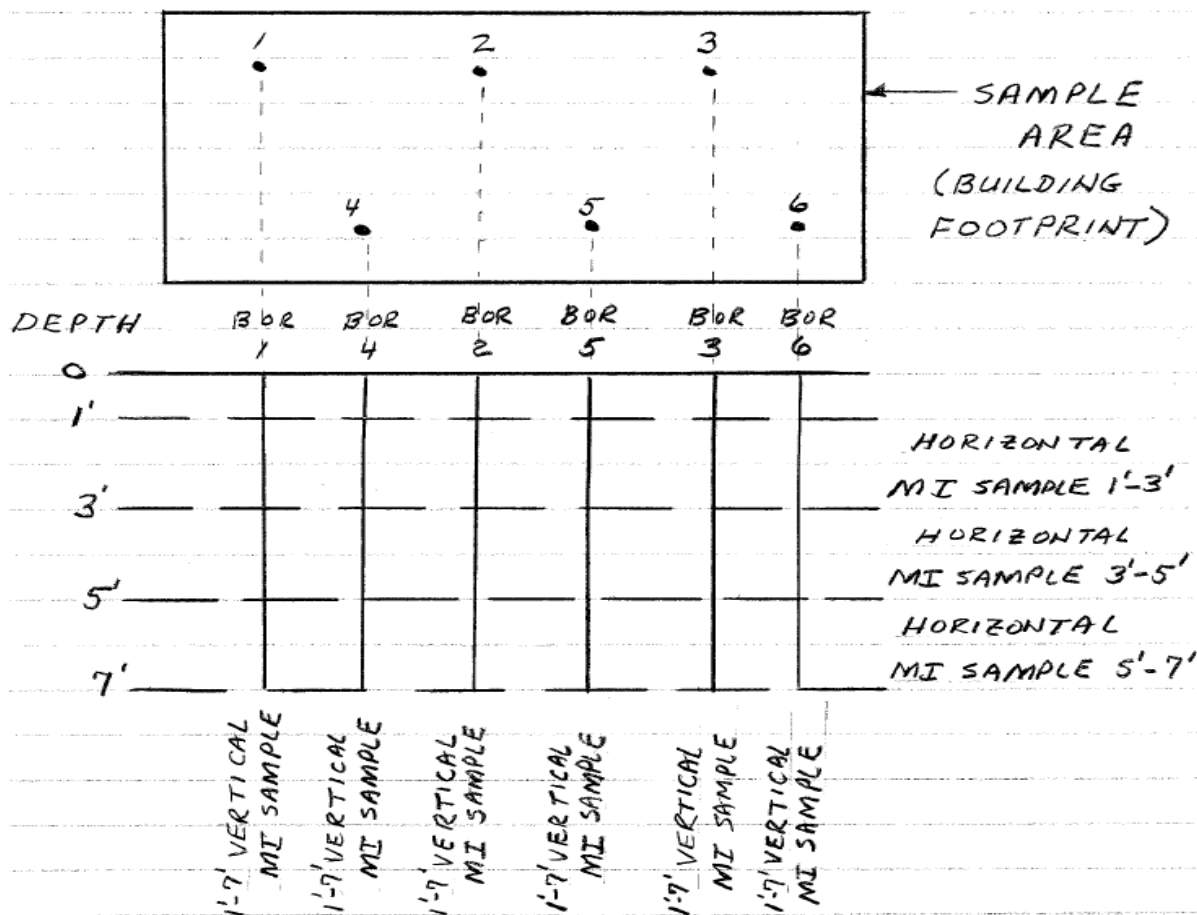


**FIGURE 3-2
SCHEMATIC OF PROPOSED SUBSURFACE MI SAMPLING LOCATIONS**

LEGEND

- ⊕ Approximate Sampling Location
Geoprobe Boring

SUBSURFACE MI SAMPLING



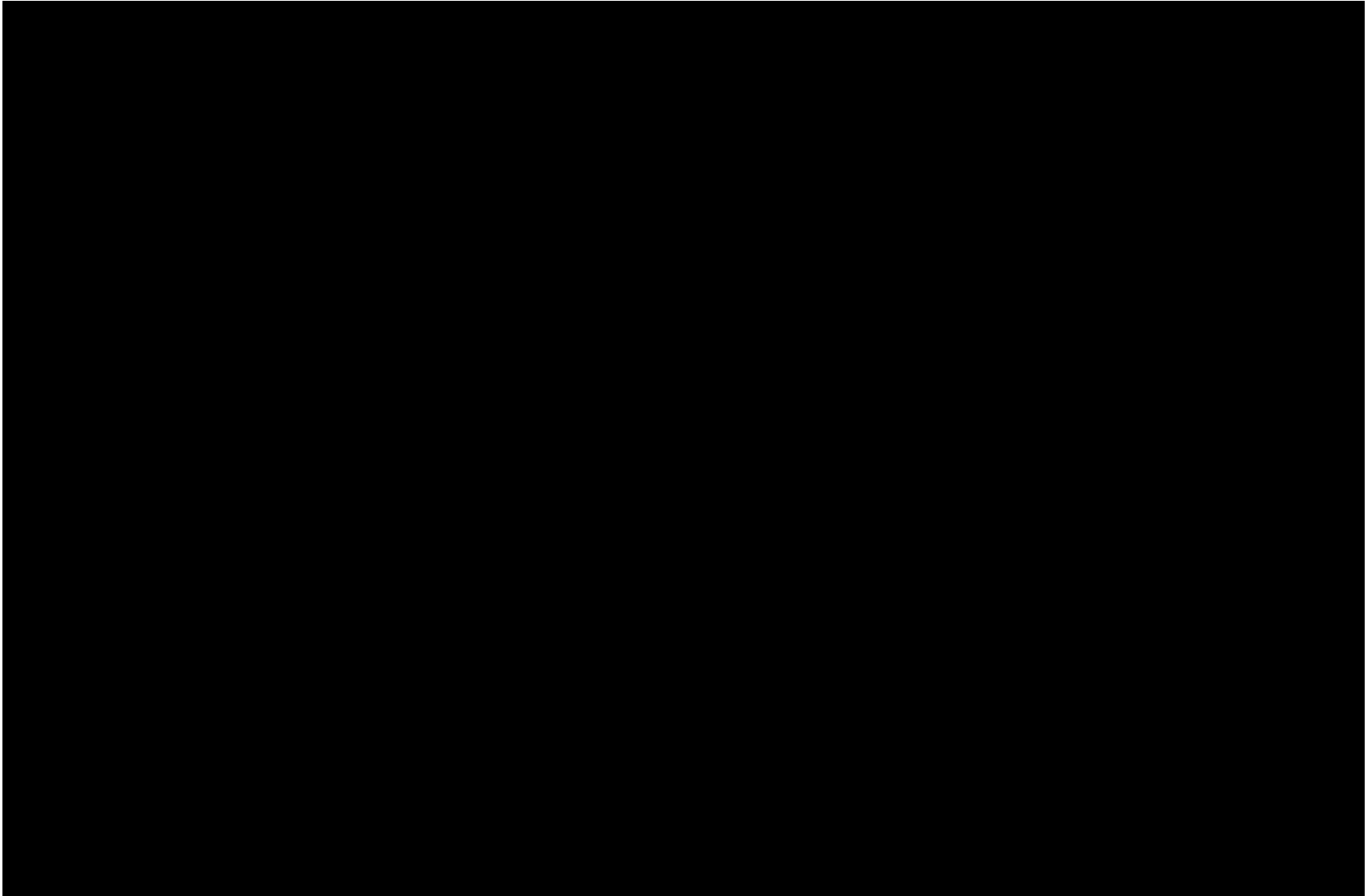
COLLECT 3 HORIZONTAL MI SAMPLES

COLLECT 6 VERTICAL MI SAMPLES

CAN DO TRIPLICATE SETS OF SAMPLES
TO MEASURE REPEATABILITY

$$(\text{RELATIVE STANDARD DEVIATION} = \frac{SD}{AVG} \times 100\%)$$

Planned MI Subsurface Soil Sampling at Load Lines 1, 2, 3, & 4





- Photo 1: Geoprobe Rig and layout of Primary, QC, and QA Boring Locations. Primary locations have yellow pin flags, QC locations have orange pin flags, and QA locations have red pin flags.



- Photo 2: Bringing Geoprobe Tubes from the Geoprobe Rig to the Sampling Area



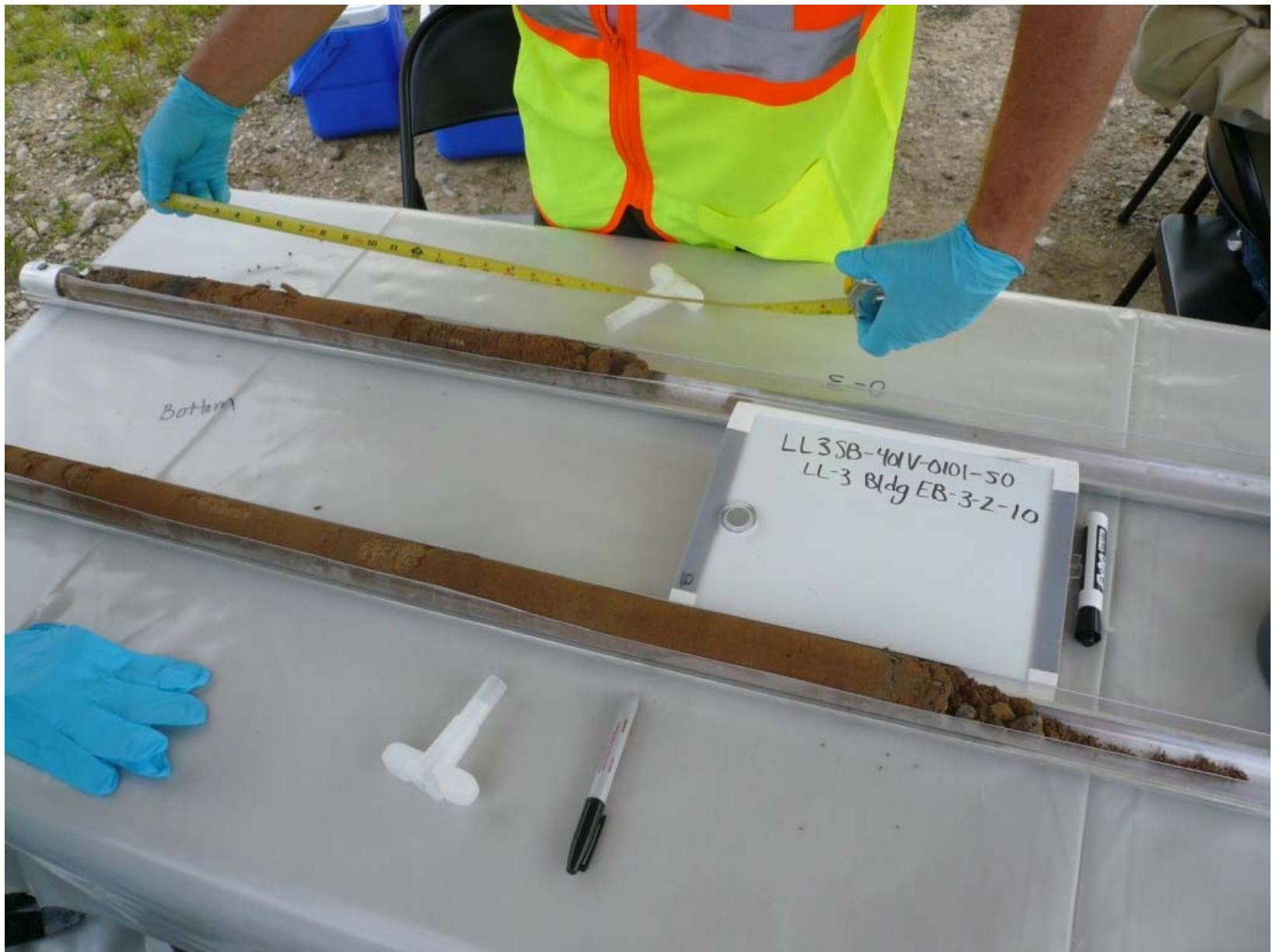
- Photo 3: Portable Canopy Used to Shelter the Field Sampling Area



- Photo 4: Geoprobe Liner Cutting



- Photo 5: Aluminum Half-Pipes Securing Geoprobe Tube Liner



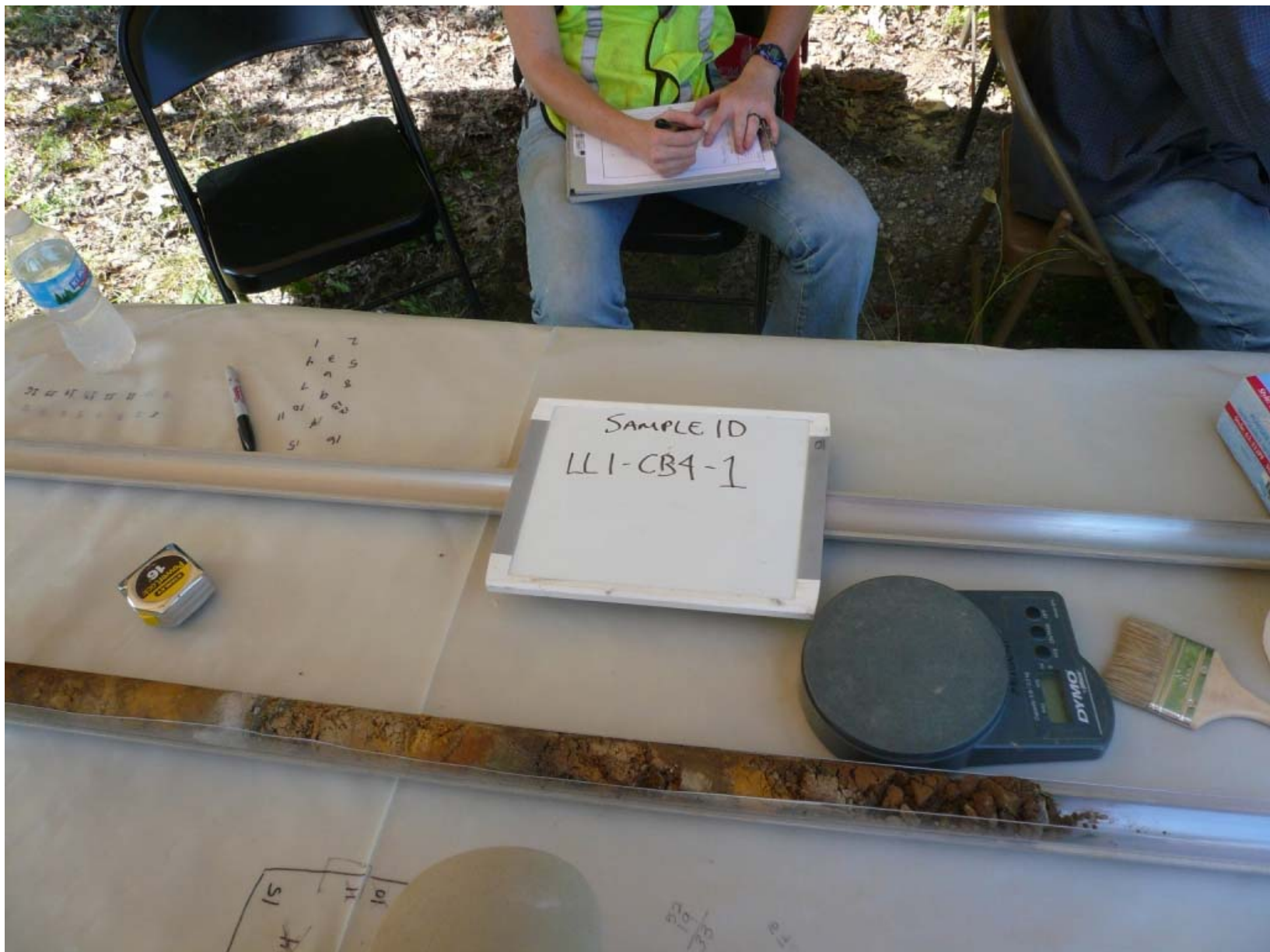
- Photo 6: Sides of Geoprobe liner tube above Sides of aluminum half-pipe



- Photo 7: Original clays recovered at a few locations



- Photo 8: Clay fill over weathered rock was very typical



- Photo 9: Recent fill over old fill over weathered rock very typical



- Photo 10: Weathered rock just below surface (typical at Load Line 1). Top of the Geoprobe tube on right and bottom on left



- Photo 11: Collecting nominal 5-gram soil plugs from the Geoprobe samples. For horizontal subsurface VOC MI samples, the Terra Core sampler and large, opened jars are used.



- Photo 12: Putting nominal 5-gram soil plugs in bottles with Methanol (horizontal subsurface MI samples)



- Photo 13: Collecting nominal 5-gram soil plugs for a vertical subsurface VOC MI sample. For vertical subsurface VOC MI samples, small jars are used.



- Photo 14: Use of aluminum wedge sampler with hard clays



- Photo 15: Use of aluminum wedge sampler with weathered rock



- Photo 16: Lined 5-gallon buckets used to collect horizontal subsurface MI samples. The three buckets with white garbage disposal bags are used for the three depth intervals, 1– 3 feet, 3– 5 feet, and 5– 7 feet.



- Photo 17: Use of Lined Coffee Can to Collect Vertical Subsurface MI Samples

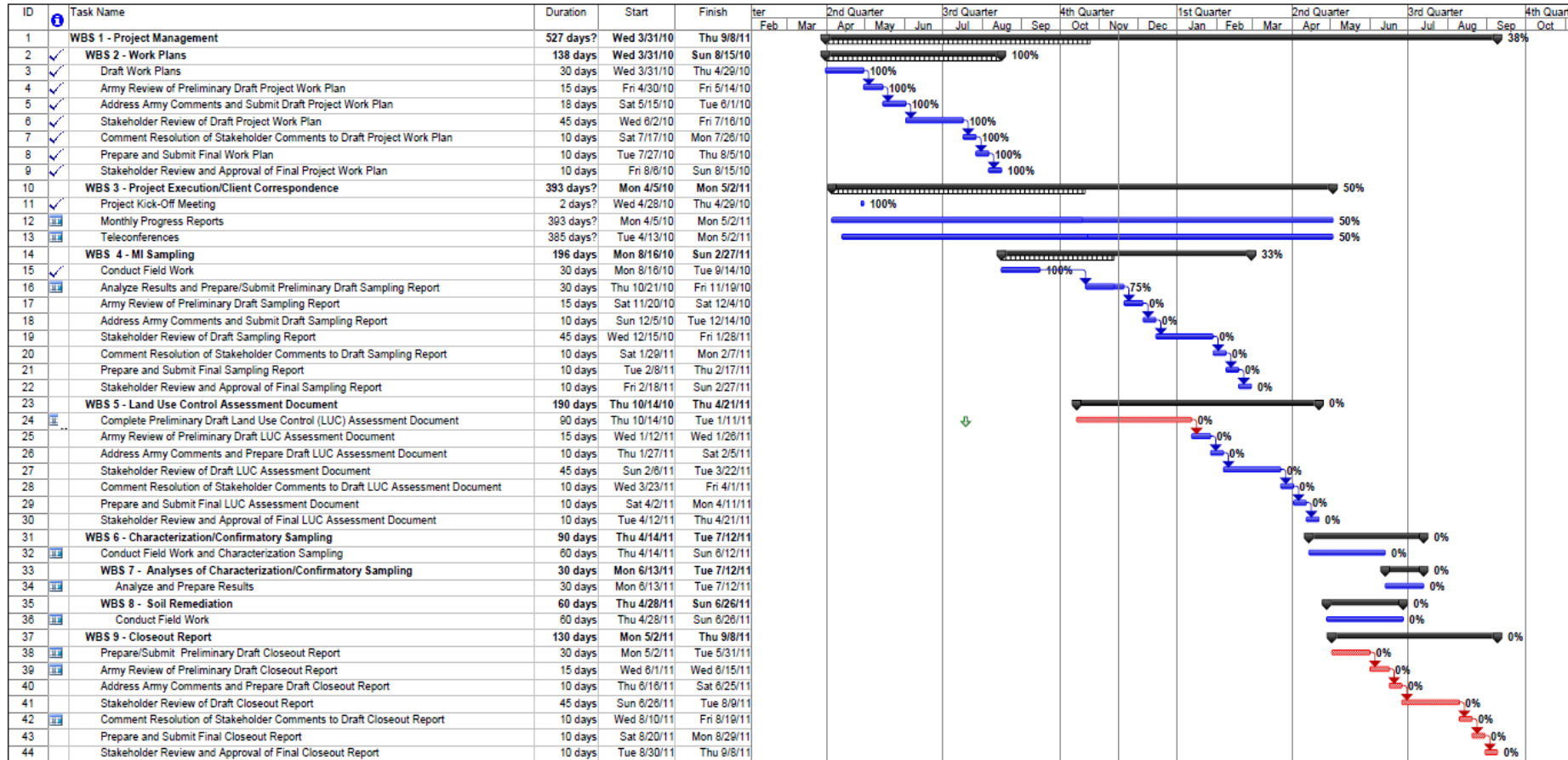


- Photo 18: Use of Pre-Populated Sample Labels

Summary & Conclusions

- A. Of the total of 411 (81 horizontal and 330 vertical) planned MI subsurface samples, a total of 81 horizontal MI subsurface soil samples and 324 vertical MI subsurface soil samples were collected over a period of 13 work days.
- B. The Geoprobe rig successfully collected subsurface materials down to a depth of 7 feet through original clays and fill over weathered rock in most cases, and generally to depths at least several feet into weathered rock.
- C. The tools and procedures utilized to prepare MI subsurface soil samples from the Geoprobe liners for both VOC and non-VOC analyses worked well.
- D. Triplicate sample results are still being analyzed to evaluate repeatability of the MI subsurface soil samples.

Project Schedule



Project: Sampling and Closure of Load Lines 1,2,3,4,12 and Other Areas of Concern
Date: Tue 11/16/10

Critical	Baseline Split	External Milestone	Manual Summary
Critical Split	Baseline Milestone	Inactive Task	Start-only
Critical Progress	Milestone	Inactive Milestone	Finish-only
Task	Summary Progress	Inactive Summary	Deadline
Split	Summary	Manual Task	
Task Progress	Project Summary	Duration-only	
Baseline	External Tasks	Manual Summary Rollup	