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Floodplain Assessment for the North Ancho Canyon Aggregate Area Cleanup in Technical Area 39 at Los Alamos National Laboratory

Los Alamos
NATIONAL LABORATORY
EST. 1943

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Prepared for: U.S. Department of Energy
Environmental Management
Los Alamos Field Office

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ACRONYMS AND TERMS

BMP	Best Management Practice
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
LANL	Los Alamos National Laboratory
SAL	Soil Action Level
SSL	Soil Screening Level
SVOC	Semi-volatile organic compound
SWMU	Solid Waste Management Unit
TA	Technical Area

INTRODUCTION

This floodplain assessment was prepared in accordance with 10 Code of Federal Regulations (CFR) 1022 *Compliance with Floodplain and Wetland Environmental Review Requirements*, which was promulgated to implement the U.S. Department of Energy (DOE) requirements under Executive Order 11988 *Floodplain Management* and Executive Order 11990 *Wetlands Protection*. According to 10 CFR 1022, a 100-year floodplain[1] is defined as "the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands." In this action, DOE is proposing to collect soil investigation samples and remove contaminated soil within and around selected solid waste management units (SWMUs) near and within the 100-year floodplain (hereafter "floodplain") in north Ancho Canyon at Los Alamos National Laboratory (LANL). The work is being performed to comply with corrective action requirements under the 2016 Compliance Order on Consent[2].

The project is located at Technical Area (TA)-39 in north Ancho Canyon. Three SWMUs are scheduled for cleanup under this project (Figure 1). Two sites are former waste stockpile areas, SWMUs 39-001(a) and 39-001(b), and one container storage area, SWMU 39-007(a).

The objective of the project is to remove contaminated soil until native soil is reached where concentrations are below the residential soil screening levels (SSL) and soil action levels (SAL). The goal of this proposed action is to appropriately characterize and remediate these sites to ensure there is no unacceptable human health or ecological risk associated with chemicals previously released during legacy operations.

The DOE prepared this floodplain assessment to evaluate the potential impacts of implementing the proposed action within a floodplain, as required by 10 CFR 1022.

PROJECT DESCRIPTION

The proposed action being assessed in this document occurs at TA-39 in the bottom of north Ancho Canyon. One site is a former container storage area, SWMU 39-007(a). This site is more than 500 feet (ft) from the floodplain boundary and does not need to be assessed any further. The other two SWMUs are former waste stockpile areas. At the SWMU 39-001(a) stockpile, the only chemicals present above residential SSLs/SALs are polychlorinated biphenyls (PCBs), lead, and uranium-238 (Figure 2). At the SWMU 39-001(b) stockpile, the only chemicals present above residential SSLs/SALs are PCBs and semi-volatile organic compounds (SVOCs; Figure 3).

The excavation in SWMU 39-001(a) will remove soil within the floodplain in several places and will include soil sampling within the floodplain, but will not trench fully across the channel (Photograph 1). The excavation in SWMU 39-001(b) will occur adjacent to and slightly within

1 A 100-year floodplain is a base floodplain with a 1.0 percent chance of flooding in any given year.

2 The 2016 Compliance Order on Consent (Consent Order) between the State of New Mexico Environment Department and DOE Environmental Management provides for specified compliance requirements for all of the solid waste management units, areas of concern, canyons, and watershed aggregates included in the Consent Order.

the floodplain (Photograph 2). Some equipment may traverse the floodplain in this area and soil samples will be taken within the floodplain.

The general sampling and remediation steps will begin with soil sampling. After sampling has defined the extent of the area with greater than 1 milligram (mg) per kilogram (kg) of PCBs, the top 1 ft of soil will be removed for off-site disposal. If the next round of sampling results show total PCB concentrations to be greater than 1 mg/kg, lead or SVOCs greater than residential SSLs, or uranium-238 greater than the residential SAL, an additional 1 ft of soil will be removed and the location will be resampled again. This process will be repeated until all confirmation sample results show PCB concentrations to be less than 1 mg/kg and concentrations of lead, isotopic uranium, and/or SVOCs to be less than the residential SSLs/SALs.

The project will use a variety of techniques for soil sampling and remediation efforts including hand tools, standard hand auger sampling, and excavation using machinery such as a backhoe and front end loader. Heavy equipment will traverse the western edge of the floodplain. The project will utilize and maintain appropriate best management practices (BMPs) to contain excavated materials, and all pollutants, including oil from machinery or vehicles. The project will stabilize disturbed areas as appropriate at the end of the project.

Photograph 1. Looking north into the area of excavation. The floodplain boundary starts on the other side of the ponderosa pines (*Pinus ponderosa*).

Photograph 2. Looking north-northeast into the area of excavation. The floodplain boundary begins on the other side of the berm where the standing dead tree and fallen tree are located.

FLOODPLAIN IMPACTS

The proposed excavation is approximately 1.5 acres in size and less than 5% of that falls within the floodplain. The total amount of disturbance to the floodplain is estimated to be approximately 0.10 acres.

There will be negative, short-term effects to the floodplain from vehicle and heavy equipment access which will compact the soil and causing vegetation loss. Erosion, sediment transport, and flood hazard will return to pre-construction conditions once the project is completed and vegetation restored. This project will not affect the natural floodplain processes.

No long-term negative impacts to the floodplain are expected under the proposed project. No effects to lives or property associated with floodplain disturbance are anticipated.

Negative, short-term effects from the project will be mitigated and minimized by the implementation of the following best management practices for work in floodplains during construction.

- Support structures such as personnel trailers will not be installed within the floodplain.

- Any disturbed areas will be revegetated with an appropriate native seed mix or plants within 30 days or at the beginning of the growing season after construction is completed.
- All trash and debris (e.g., construction material) will be removed from the floodplain after construction is complete.
- Hazardous materials, chemicals, fuels, and oils will not be stored within the floodplain.
- Do not work in a floodplain when soil is too wet to adequately support equipment.
- Refuel equipment at least 100 ft from any drainage, including dry arroyos.

Compliance with the Migratory Bird Treaty Act restricts vegetation removal during the peak bird breeding season, May 15 through July 31, unless biological resources staff at LANL have conducted a nest check to ensure that there are no nesting birds present. If active nests are found, the nest tree or shrub will be left in place until the nesting is complete.

ALTERNATIVES

The only viable alternative to the proposed action is a no action alternative. This alternative was not selected because it would not allow DOE to fulfill its requirements under the Compliance Order on Consent. The reduction of potential migration of chemicals is an important goal of LANL's operational practices.

CONCLUSIONS

This project will not result in long-term adverse impacts to the floodplain. Temporary disturbance within the floodplain will cease following completion of construction activities. Best management practices will be implemented. This proposed project will not significantly modify existing elevations and flow paths within the floodplain from pre-project conditions to post-project conditions or result in other long-term negative impacts to the floodplain and its functionality. No effects to lives and property associated with floodplain modifications are anticipated.

In accordance with 10 CFR Part 1022, a Statement of Findings based on the information in this document will be published and available for public comment. This statement will include a brief description of the proposed project, an explanation of why it is located in a floodplain, the alternatives considered, a statement indicating if the action conforms to state and local floodplain requirements, and a brief description of the steps to be taken to minimize potential harm within the floodplain.

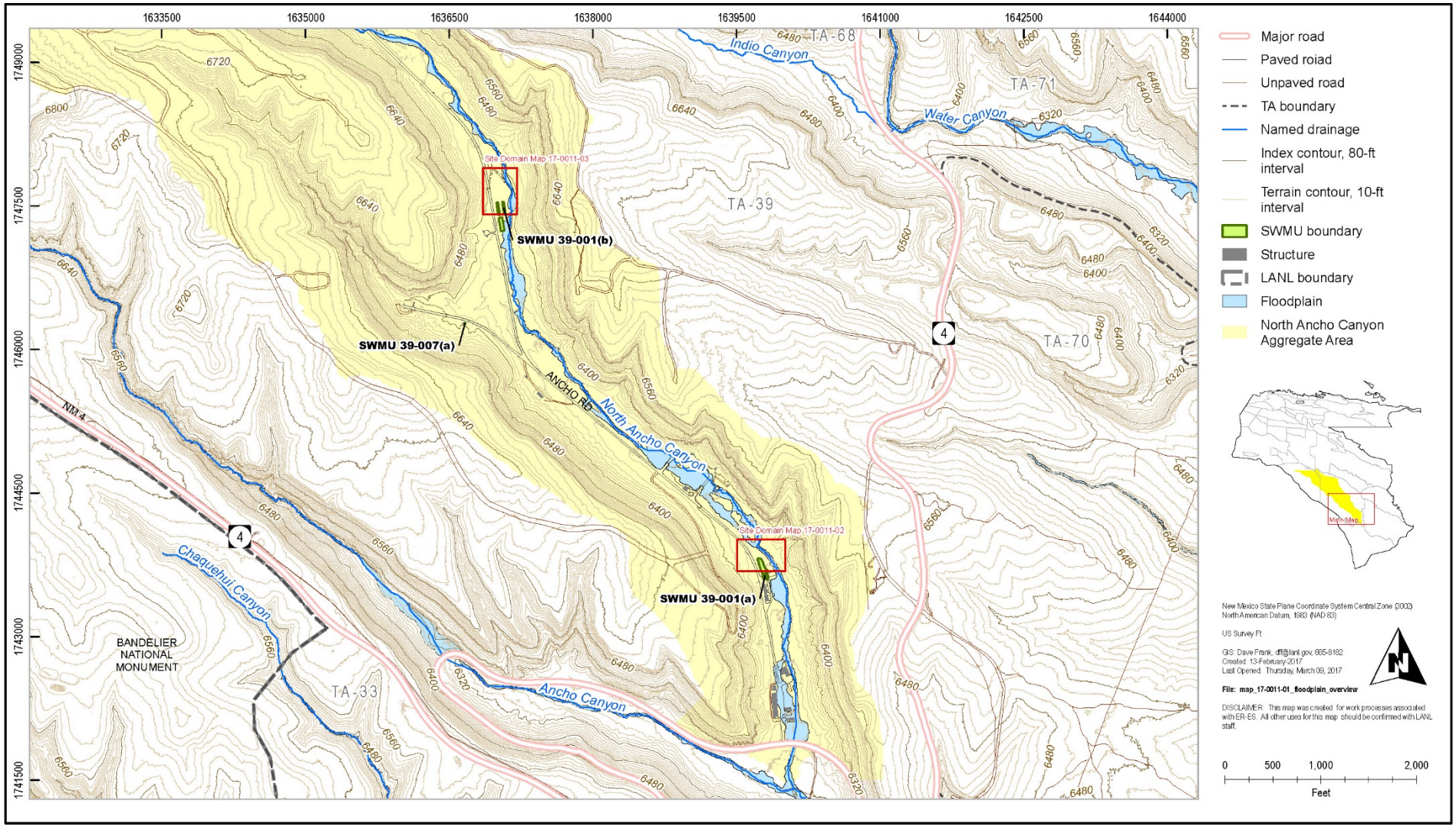

Figure 1. General overview of the project locations in north Ancho Canyon.

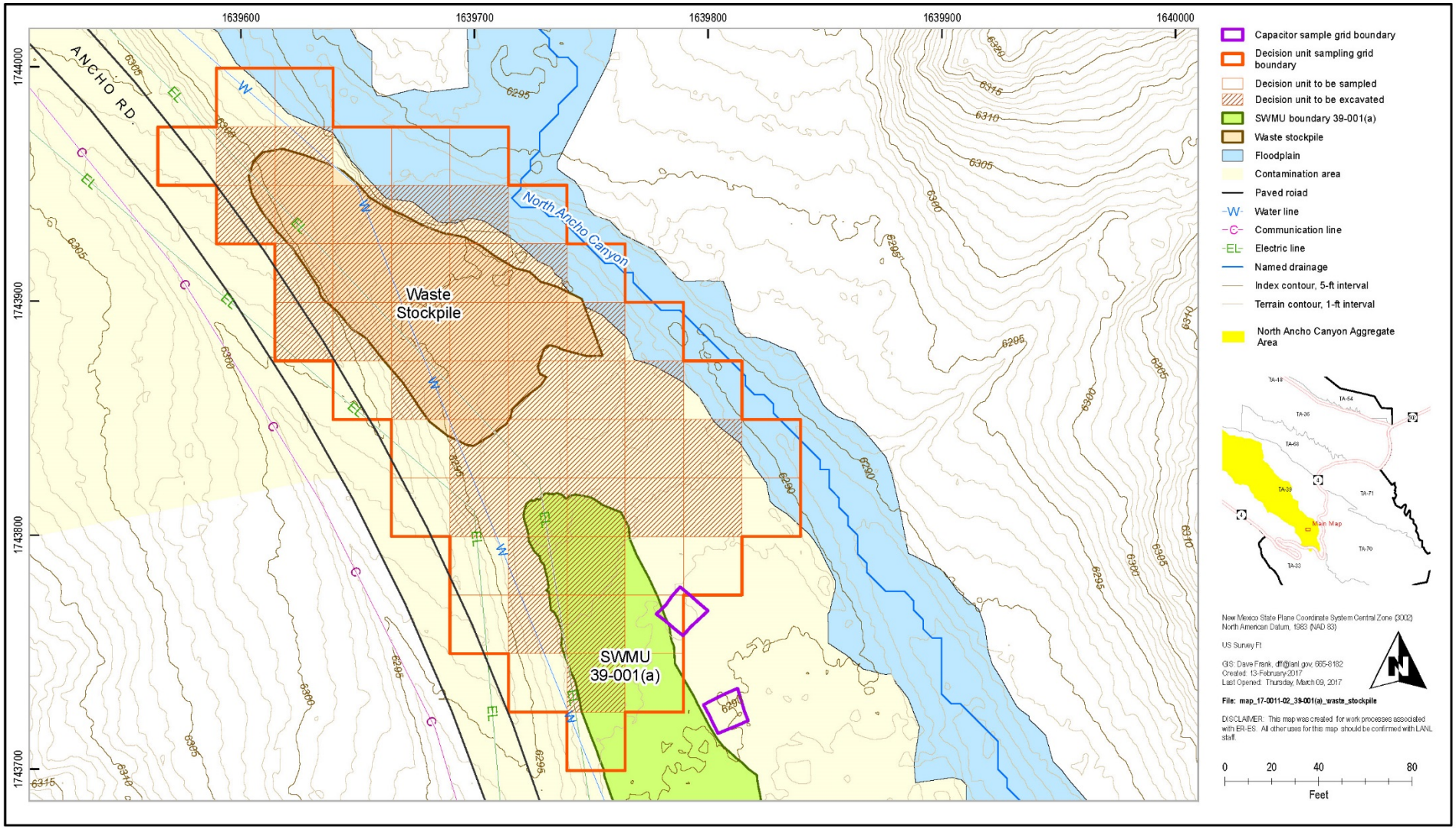

Figure 2. Proposed sampling and excavation areas at the waste stockpile storage area near 39-001(a) in relation to the floodplain.

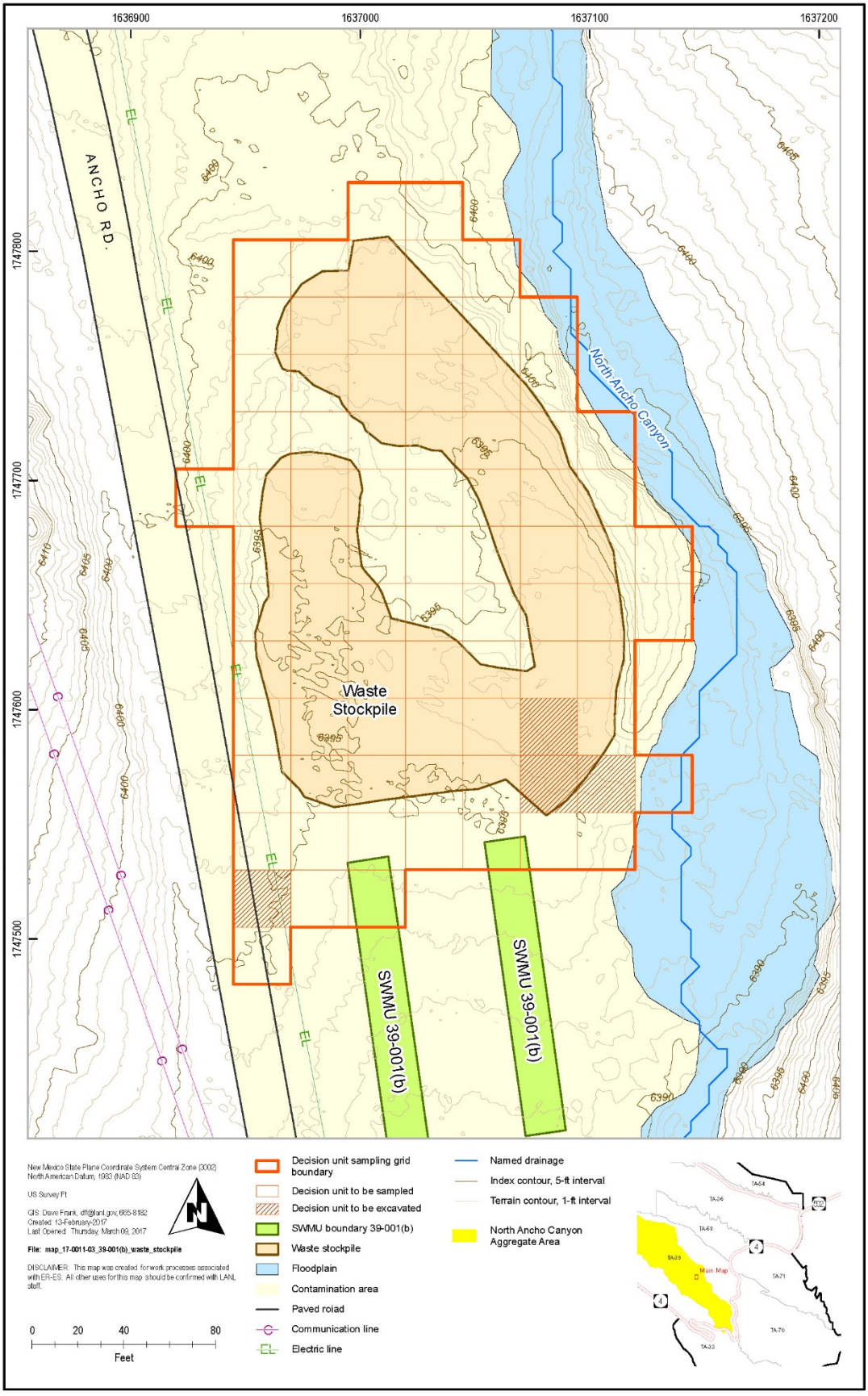

Figure 3. Proposed sampling and excavation areas at the waste stockpile storage area near 39-001(b) in relation to the floodplain.