

APPENDIX J
FRAMEWORK GEOTECHNICAL PLAN

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ACRONYMS

4WD	four-wheel drive
Applicant	TransWest Express LLC, also TransWest
BLM	Bureau of Land Management
DEIS	Draft Environmental Impact Statement
gvm	gross vehicle mass
Plan	Geotechnical Plan
POD	Plan of Development
Project	TransWest Express Transmission Project, also TWE Project
psi	pounds per square inch
ROD	Record of Decision
ROW	right-of-way
TransWest	TransWest Express LLC, also Applicant
TWE Project	TransWest Express Transmission Project, also Project
USCS	Unified Soil Classification System

J1.0 INTRODUCTION

This framework Geotechnical Plan (Plan) generally describes the procedures required by TransWest Express LLC (TransWest or Applicant) and its Construction and Geotechnical Contractors to gather geotechnical information to allow for design and construction of the TransWest Express Transmission Project (TWE Project or Project).

J2.0 PLAN PURPOSE

This Plan provides a sequence of events to be utilized by TransWest and its Construction and Geotechnical Contractors to accomplish the necessary geotechnical exploration and sampling to facilitate design of the Project. This Plan is to be implemented after the receipt of the Record of Decision (ROD) and during the final engineering phase of the Project. These measures are intended to provide the required engineering parameters for design while staying within the disturbance limits as defined by the ROD Plan of Development (POD).

The mitigation measure which relates to this Plan is identified in the Draft Environmental Impact Statement (DEIS) as mitigation measure GE-1 which states: in areas with geologic hazards and active mining; placement of Project structures and other Project related disturbance would be avoided to the extent practical. Where avoidance is not possible a site specific geotechnical investigation and engineering design would be implemented during construction and operation of the Project. Depending on the type of potential geologic hazard, the designs may vary and should address specific needs for enhanced structural supports. Site specific assessment of geologic hazards shall include review of available information concerning areas of hazards, and consultation with appropriate government agency personnel who are knowledgeable about the hazards. Assessment also shall include, if necessary, field surveys and gathering of geotechnical information to determine what engineering design methods would mitigate or lessen potential risks. If active mines cannot be avoided, Applicant will conduct similar due diligence in regard to hazards from underground and historic mining to ensure that Project facilities will not hinder access to mineral resources or create dangers to mining activities. The Geotechnical Plan will address this measure as it is further developed.

J3.0 PLAN UPDATES

This Plan will be updated for the ROD POD based on preliminary engineering and design for the selected Agency Preferred Alternative and will include results from the geotechnical desktop study to be completed during the summer of 2014. All geotechnical field activities will be performed following the ROD and all ground disturbing activities associated with geotechnical studies will be contained within the disturbance limits as described in the ROD POD. The final Geotechnical Plan will be prepared by TransWest and its Geotechnical Contractor(s) and approved by the Bureau of Land Management (BLM) or the land management agency as appropriate prior to initiation of any surface disturbing activities. Field surveys for sensitive plant species, Class III cultural resource inventories, and other required resource surveys will be conducted as necessary for the final Geotechnical Plan.

J4.0 TYPICAL PROCEDURES

A geotechnical exploration program may be prepared for the Project. This program will describe specific boring locations, access, landowner/agency notifications, schedule, in-field testing and boring depth requirements. The program may consider borings at every point of interest and at 3 mile maximum spacing along tangents. Points of interest are defined as structures with a line angle greater than 5 degrees, exceptionally long spans, line crossings, potential landslide areas or other areas of

geologic instability, or a change in geologic setting. All boring locations will be located within the Project right-of-way (ROW) and will avoid sensitive resources to the maximum extent practicable. The Applicant will consider other investigative techniques for determining the engineering properties of the soil needed for foundation design as is appropriate and practical for the soil conditions and types. Access to each of the drill sites will be considered in selecting geotechnical exploration locations. Locations that can be accessed with existing roads will be chosen when available to avoid even elementary road construction. Some locations will require overland travel (i.e. “drive and crush”) from existing access roads.

The drilling equipment needed to perform the drilling and sampling activities will include truck mounted, track mounted or all-terrain drill rigs, water truck, four-wheel drive (4WD) support vehicle including an air compressor, and a 4WD vehicle for the field engineer. The type of rig used will depend on accessibility of boring locations, and practicality of using continuous flight hollow-stem auger, mud rotary, or ODEX drilling techniques to advance the borings. Possible types of drilling equipment are listed below:

- Conventional two-ton or larger truck with a drill rig mounted on the chassis.
- A 30,000 gross vehicle mass (gvm) 6-wheeled truck, about 30 feet long, with or without 4WD capabilities.
- All-terrain vehicle consisting of a similar drilling rig mounted on a lighter framed, shorter vehicle equipped with oversized low-pressure tires. Track mounted drilling rigs use a wide variety of drilling machinery on tracked vehicles with low (about 10 pounds per square inch [psi]) ground pressure.

Soil samples will be collected by driving a sampling device into the undisturbed soils just below the augers. Where necessary, rock core samples will also be taken using a rock coring barrel. Laboratory testing will be conducted on soil/rock samples to define the Unified Soil Classification System (USCS) soil type, strength parameters and corrosion characteristics. Upon completion and before leaving each site, soil borings will be backfilled, securely covered and all cuttings will be removed from the site. No open holes will be left unattended, and all holes will be backfilled to near the ground surface before moving to the next boring.

Boring depth requirements will vary based on structure type and foundation loading. However, an average soil boring depth is anticipated to be 40 feet unless bedrock is encountered, in which case, up to 15 feet of rock core will be accomplished.