

APPENDIX C
FRAMEWORK BLASTING PLAN

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ACRONYMS

Applicant	TransWest Express LLC, also TransWest
ATF	Bureau of Alcohol, Tobacco, Firearms, and Explosives
BLM	Bureau of Land Management
BMP	Best Management Practice
CFR	Code of Federal Regulations
CIC	Compliance Inspection Contractor
COM Plan	Construction, Operation, and Maintenance Plan
DEIS	Draft Environmental Impact Statement
NESC	National Electrical Safety Code
NTP	Notice to Proceed
OSHA	Occupational Safety and Health Administration
Plan	Blasting Plan
POD	Plan of Development
PPE	Personal Protective Equipment
Project	TransWest Express Transmission Project, also TWE Project
TransWest	TransWest Express LLC, also Applicant
TWE Project	TransWest Express Transmission Project, also Project
USDOT	United States Department of Transportation
USFS	United States Forest Service

C1.0 INTRODUCTION

This framework Blasting Plan (Plan) outlines the contents, procedures, safety measures, and environmental protection measures that will go into a final Blasting Plan for the TransWest Express Transmission Project (TWE Project or Project) where blasting activities are required during construction. The final Blasting Plan will be prepared by the Construction Contractor(s) prior to construction of the Project. The TWE Project is being developed by TransWest Express LLC (TransWest or Applicant).

C2.0 PLAN PURPOSE

The purpose of the Blasting Plan is to provide safe procedural practices, environmental protection measures, and other specific stipulations and methods to minimize the environmental impact of blasting during Project construction. The final Blasting Plan will provide construction crews, environmental monitors, and the Compliance Inspection Contractor (CIC) with Project-specific information concerning blasting procedures. The primary objective of this Plan is to prevent adverse impacts to human health and safety, property, and the environment that could potentially occur as a result of construction of the TWE Project. This Plan incorporates Best Management Practices (BMPs) and Mitigation Measures identified in the Draft Environmental Impact Statement (DEIS) for the TWE Project.

C3.0 REGULATORY

The Construction Contractor(s) will be responsible for preparing and implementing the Blasting Plan in compliance with all local, state, and federal regulations pertaining to blasting. No blasting operations will be undertaken until approval and appropriate permits have been obtained from the applicable agencies. The Construction Contractor(s) will use qualified, experienced, and licensed professionals that will perform blasting using current and professionally accepted methods, products, and procedures to maximize safety during blasting operations.

C4.0 BLASTING PLAN GUIDANCE

Prior to blasting, the Construction Contractor(s) will prepare a final Blasting Plan for review by the Bureau of Land Management (BLM), CIC, and any other relevant jurisdictional organization as applicable. The final Blasting Plan will address blasting operations and safety and include full details of the drilling and blasting patterns, as well as the procedures the Construction Contractor(s) proposes to use for both production and controlled blasting. If at any time changes are proposed to the final Blasting Plan, the Construction Contractor(s) will submit them to BLM and CIC for review. The following items should be addressed in a Blasting Plan:

1. Identify proposed methods to achieve the desired excavations using individual shot plants (where the explosives are planted).
2. Address the proposed methods for controlling fly rock, blasting warnings, and use of non-electrical blasting systems.
3. Map explosive storage locations and areas where blasting will occur, including identification of blasting within 0.25 mile of a known sensitive resource; as well as blasting in the vicinity of pipelines, and wells and springs that may be impacted.

4. Identify blasting procedures including safety, use, storage, and transportation of explosives that will be employed where blasting is needed, and will specify the locations of needed blasting.
5. All blasting will be performed by current registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, and wildlife.
6. Appropriate flags, barricades, and warning signals will be used to ensure safety during blasting operations. Blast mats will be used when needed to prevent damage and injury from fly rock.
7. Blasting near buildings, structures, and other facilities susceptible to vibration or air blast damage will be carefully planned by the contractor and controlled to eliminate the possibility of damage to such facilities and structures. The Blasting Plan will include provisions for control to eliminate vibration, fly rock, and air blast damage.
8. Blasting in the vicinity of pipelines will be coordinated with the pipeline operator, and will follow operator-specific procedures, as necessary.
9. Damages that result from blasting will be repaired or the owner fairly compensated.

C5.0 BLASTING PLAN CONTENTS

The Blasting Plan will include at a minimum the following information:

1. Blast officer
 - a. Other personnel who will be present
2. Site and location of planned blasting
 - a. Date of planned blasting
3. Environmental protection Measures
4. Safety Considerations
5. Explosives
 - a. Type
 - b. Quantity
 - c. Detonator device
6. Means of transporting explosives
 - a. Provisions for storing and securing explosives on site
7. Minimum acceptable weather conditions
 - a. If electrical initiation to be used – considerations for stray radio frequency energy and electrical currents
8. Procedures
 - a. Handling explosive charges
 - b. Setting explosive charges

- c. Wiring explosive charges
 - d. Firing explosive charges
9. Required Personal Protective Equipment (PPE)
10. Minimum standoff distances
 - a. Procedures for clearing and controlling access to blast danger
11. Procedures for handling misfires or other unusual occurrences
12. Emergency action plan
 - a. Phone numbers
 - i. Ambulance
 - ii. Fire department
 - iii. Police
 - b. Location and phone number of nearest medical services facility
 - c. Actions to be taken when a person is injured
13. Attach a copy of material safety data sheet for each explosive or other hazardous material expected to be used

C6.0 SAFETY MEASURES

C6.1 Transportation

Transportation of explosives will comply with all applicable federal, state, and local laws, including Title 49 of the Code of Federal Regulations (CFR), Chapter III. These regulations are administered by the U.S. Department of Transportation (USDOT) and govern the packaging, labeling, materials compatibility, driver qualifications, and safety of transported explosives. In general, these regulations require vehicles carrying explosive materials must be well-maintained, properly marked with placards, and have a non-sparking floor. Materials in contact with the explosives will be non-sparking, and the load will be covered with a fire- and water-resistant tarpaulin. Vehicles also must be equipped with fire extinguishers and a current copy of the USDOT and Transport Canada's 2012 *Emergency Response Guidebook*. Every effort will be made to minimize the transportation of explosives through congested or heavily populated areas.

Prior to loading an appropriate vehicle for carrying explosives, the vehicle shall be fully fueled and inspected to ensure its safe operation. Refueling of vehicles carrying explosives shall be avoided. Smoking shall be prohibited during the loading, transporting, or unloading of explosives. In addition, the following specific restrictions apply to transport of other items in vehicles carrying explosives:

- Tools may be carried in the vehicle, but not in the cargo compartment.
- Detonation devices can, in some cases, be carried in the same vehicle as the explosives, but they must be stored in a specially constructed compartment(s).
- Batteries and firearms shall never be carried in a vehicle with explosives.
- Vehicle drivers must comply with the specific laws related to the materials being transported.

- Vehicles carrying explosives shall not be parked or left unattended except in designated parking areas with approval of the State Fire Marshall. When traveling, vehicles carrying explosives will avoid congested areas to the maximum extent possible.

C6.2 Storage

Explosives must be stored in an approved structure (magazine) and kept cool, dry, and well-ventilated. The Construction Contractor will provide the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Cheyenne Wyoming, Denver Colorado, Salt Lake City Utah, and Las Vegas Nevada Field Offices with a list of dates and locations for the explosives and blasting agent storage facilities to be used on the Project at least 14 days before the establishment of such storage facilities.

At a minimum, the following storage requirements will be implemented:

- Explosives must be stored in an approved structure (magazine), and storage facilities will be bullet-resistant, weather-resistant, theft-resistant, and fire-resistant.
- Magazine sites will be located in remote (out-of-sight) areas with restricted access; kept cool, dry, and well ventilated; and will be properly labeled and signed.
- Detonators will be stored separately from other explosive materials.
- The most stringent spacing between individual magazines will be determined according to the guidelines contained in the ATF publication or state or local explosive storage regulations.
- Both the quantity and duration of temporary on-site explosives storage will be minimized.
- The Construction Contractor will handle and dispose of dynamite storage boxes in accordance with relevant federal, state, and local laws.

C6.3 Fire Safety

The presence of explosive materials on the Project site could potentially increase the risk of fire during construction. Special precautions will be taken to minimize this risk in conjunction with Appendix H - Fire Protection Plan, including but not limited to:

- Prohibiting ignition devices within 50 feet of explosives storage areas;
- Properly maintaining magazine sites so they are clear of fuels and combustible materials, well ventilated, and fire-resistant;
- Protecting magazines from wildfires that could occur in the immediate area;
- Posting fire suppression personnel at the blast site during high fire danger periods; and
- Prohibiting blasting during extreme fire danger periods.

C7.0 DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

In addition to applicable design and operational standards, regulations, laws and permit requirements, the following design features and BMPs have been developed to avoid or minimize potential blasting

related impacts. Note that the Construction, Operation and Maintenance (COM) Plan will be a part of the Notice to Proceed (NTP) Plan of Development (POD).

TWE-51: The TWE Project will be designed, constructed, and operated to meet or exceed the requirements of the National Electrical Safety Code (NESC), U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) standards, and the Applicant's requirements for safety and protection of landowners and their property.

TWE-53: The Construction, Operation and Maintenance (COM) Plan will include a Blasting Plan, which will identify methods and mitigation measures to minimize the effects of blasting, where applicable. The Blasting Plan will document the proposed methods to achieve the desired excavations, proposed methods for blasting warning, use of non-electrical blasting systems, and provisions for controlling fly rock, vibrations, and air blast damage.

TWE-56: As part of the COM Plan, the Applicant will provide a Health and Safety Plan, which will outline measures to protect workers and the general public during construction, operation, and decommissioning of the TWE Project. The Plan will identify applicable federal and state occupational safety standards, establish safe work practices, and define safety performance standards.

TWE-64: The COM Plan will include a Fire Protection Plan. The Applicant or its Contractor(s) will notify the BLM of any fires and comply with all rules and regulations administered by the BLM and U.S. Forest Service (USFS) concerning the use, prevention, and suppression of fires on federal lands, including any fire prevention orders that may be in effect at the time of the permitted activity. The Applicant or its Contractor(s) may be held liable for the cost of fire suppression, stabilization, and rehabilitation. In the event of a fire, personal safety will be the first priority of the Applicant or its Contractor(s). The Applicant or its Contractor(s) will:

- Operate all internal and external combustion engines on federally-managed lands per 36 CFR Part 261.52(j), which requires all such engines to be equipped with a qualified spark arrester that is maintained and not modified;
- Carry shovels, water, and fire extinguishers that are rated at a minimum as ABC-10 pound on all equipment and vehicles. If a fire spreads beyond the suppression capability of workers with these tools, all workers will cease fire suppression action and leave the area immediately via pre-identified escape routes;
- Initiate fire suppression actions in the work area to prevent fire spread to or on federally-administered lands. If fire ignitions cannot be prevented or contained immediately, or it may be foreseeable that a fire would exceed the immediate capability of workers, the operation must be modified or discontinued. No risk of ignition or re-ignition will exist upon leaving the operation area;
- Notify the appropriate fire center immediately of the location and status of any escaped fire;
- Review weather forecasts and the potential fire danger prior to any operation involving potential sources of fire ignition from vehicles, equipment, or other means. Prevention measures to be taken each work day will be included in the specific job briefing. Consideration will be given to additional mitigation measures or temporary discontinuance of the operation during periods of extreme winds or dryness;

- Operate all vehicles on designated roads vehicle parking to be restricted to areas free of vegetation on roads or within the permitted ROW and designated work areas.;
- Operate welding, grinding, or cutting activities in areas cleared of vegetation within range of the sparks for that particular action. A spotter will be required to watch for ignitions; and
- Use only diesel-powered vehicles in areas where excessive heat from vehicle exhaust systems could start brush or grass fires.

Additional BMPs and Mitigation Measures identified in the Draft EIS are listed below. The identified BMPs and Mitigation Measures have not been finalized at this time and may be updated, changed, or eliminated in future revisions of this Plan.

PHS-1: The applicant shall prepare an explosives use plan that specifies the times and meteorological conditions when explosives will be used and specifies minimum distances from sensitive vegetation and wildlife or streams and lakes.

PHS-2: If blasting or other noisy activities are required during the construction period, the applicant must notify nearby residents in advance.

PHS-4: A health and safety program shall be developed by the applicant to protect both workers and the general public during construction, operation, and decommissioning of an energy transport project. The program should identify all applicable federal and state occupational safety standards, establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses, OSHA standard practices for safe use of explosives and blasting agents, measures for reducing occupational electromagnetic field exposures), and define safety performance standards (e.g., electrical system standards). The program should include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies should be established.

AIR-2: To minimize fugitive dust generation, the applicant shall water land before and during surface clearing or excavation activities. Areas where blasting will occur should be covered with mats.

WAT-1: Blasting activities will be avoided or minimized in the vicinity of sole source aquifer areas to reduce the risk of releasing sediments or particles into the groundwater and inadvertently plugging water supply wells.

NOISE-1: The applicant shall limit noisy construction activities (including blasting) to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 10 p.m.) and weekdays.