



***ROVER PIPELINE LLC***

***Rover Pipeline Project***

***Blasting Plan***

***March 2016***



## **1.0 INTRODUCTION**

The Rover Pipeline Project (Project) is a new natural gas pipeline system that will be constructed by Rover Pipeline LLC (Rover) and will consist of Supply Lateral and Mainline pipelines, compressor stations, and associated meter stations and other aboveground facilities that will be located in parts of West Virginia, Pennsylvania, Ohio, and Michigan. Rover does not propose to use blasting to remove rock from the trenchline. This blasting plan outlines the steps that would be followed should blasting be necessary.

## **2.0 BLASTING PLAN**

Should rock be encountered during grading or trench excavation, the contractor will assess the rock properties and attempt to remove rock using simple mechanical processes, such as a bull dozer mounted rock ripping attachment, or rock teeth on an excavator bucket. Alternative methods may also include an excavator mounted hydraulic breaker, line drilling and ripping. If the trench cannot be excavated using these methods and drilling and blasting is required, the contractor must prepare and submit a blasting plan for review and approval by Rover. The plan will address the following:

- safety,
- drilling procedures,
- use and deployment of explosives,
- blasting procedures (blast security, warning signs, blasting signals, firing, post blast inspection, and disposal of packing materials),
- protective measures for the public and private property (fire precautions, shot cover/flyrock control, seismograph monitoring, vibration and overpressure limits, seismograph equipment, seismograph operator qualifications, and resolution procedure for blasting complaints),
- explosive storage and transportation (inventory control, storage conditions, explosive transportation, transportation vehicles, signage, and driver qualifications),
- blasting logs (basic requirements, sample blasting log, sample hole diagram, sample map, and sample seismograph record),
- general blasting plan (blast hole patterns and depths, mainline, test blasts),
- standard contractor safe blasting practices,
- explosive training and licensing, and
- blasting permits.

As part of development of the blasting plan, the contractor will assess proximity to structures, sensitive resources, other utilities, and residences. Federal, state, and local regulations will be reviewed to determine acceptable rock removal methods within the area and to address those regulations in the blasting plan. If blasting is allowed, all necessary steps will be taken to protect existing conditions. This includes pre- and post- blast surveys at residences and structures, water well testing as applicable, and utilization of blasting mats.

The contractor will make a reasonable effort to first mechanically remove the rock in congested or densely residential areas. If the mechanical methods of removal fail to properly fragment the rock, then blasting would be used.

If blasting is required within a streambed, the pipeline contractor will develop a detailed blasting plan for in-water blasting for review and approval by Rover. All holes to be shot at the same time will be loaded immediately before blasting and loading will be by use of a non-sparking metal loading tube or similar device. Blast holes will be held open by some device, such as wooden plugs, sleeves, or casings that extend above the water surface. Explosives that are used underwater will have waterproof paper shells or otherwise be protected from the effects of water. The type of explosive, size of charges, and sequence of firing will be selected to minimize shock wave stresses on aquatic life in the vicinity of the blast area.

## **2.1 Pre-Blast Survey**

If it is determined that blasting is necessary, Rover shall conduct pre-blast surveys, with landowner permission, to assess the conditions of structures, wells, springs, and utilities within 150 feet of the proposed construction work areas. Should local or state ordinances require inspections in excess of 150 feet from the work area, the more stringent ordinances shall prevail. The survey will include:

- Informal discussions to familiarize the adjacent property owners with blasting effects and planned precautions to be taken;
- Determination of the existence and location of nearby structures, utilities, septic systems, wells and springs;
- Detailed examination, photographs, and/or video records of adjacent structures and utilities; and
- Detailed mapping and measurement of large cracks, crack patterns, and other evidence of structural distress.

Sampling of wells or springs will consist of yield, turbidity and bacteriological analysis (total coliform).

The results of the pre-blasting survey will be summarized in a condition report that will include photographs. This survey will be completed prior to the commencement of blasting.

## **2.2 Post-Blasting Inspections**

To maximize its responsiveness to the concerns of affected landowners, Rover will evaluate all complaints of well or structural damage associated with construction activities, including blasting. An independent contractor engaged by Rover will examine, with landowner permission, the condition of structures, wells, springs, and utilities within 150 feet, or as required by federal, state, or local ordinances, of the construction area after completion of blasting operations to identify any changes in the conditions of these properties or confirm any damages noted by the landowner, including yield of wells or springs.