



Patriot Pipeline Safety, Corp. has been involved with the pipeline industry for over 17 years. It was a very natural fit for us to begin using K9's for pipeline leak detection in today's industry.

Application: Some pipeline K9s are trained in agents utilized in hydrostatic testing while others are trained to work on operating pipeline systems. At Patriot Pipeline Safety, Corp. we encourage the use of a K9 during your normal leak detection operations and as an additional tool for troubleshooting or isolating potential areas of concern. Due to their cost efficiency, wide band width of access, and proven accuracy, K9s can help companies comply with the following code of federal regulations:

- 192.705 Patrolling transmission lines
- 192.706 Transmission line leak surveys
- 192.709 Transmission line record keeping
- 192.616 Public Awareness
- 192.625 Odorization of gas
- 192.917 Pipeline integrity potential threats

PUBLIC GAS UTILITIES - It is worth your time to research if the Infrastructure Investment and Jobs Act (IIJA) of 2021 can assist in dialing in distribution replacement efforts for your company. These efforts of pipeline patrols and leak detection may be financially assisted through a grant depending on your eligibility and application status.

When do you consider such a resource like a K9?

1. Pair with routine leak detection survey
2. Geohazard assessment
3. Natural disaster integrity assessment
4. SCC inspection
5. Following routine R.O.W. clearing
6. Leak detection in environmentally sensitive areas
7. Pipe stress encroachments and assessments
8. 3rd party damage assessment
9. Post hydrotest and line pack
10. Farm tapping
11. Leak mitigation efforts in LDCs

Why K9s: Leak detection dogs have been used in the pipeline industry for over 30 years getting their start in Canada. The majority of our nation's pipeline infrastructure was built following WWII and between 1943 with the Little and Big Inch to the mid 1970's. These historic forms of infrastructure were built with different practices and materials compared to today's pipeline infrastructure. The documents

and record keeping during and post construction were also much different. As a result, many companies closely monitor the integrity of their systems to make sure they meet or exceed today's safety and integrity guidelines. Part of this continuous monitoring is leak detection. Leak detection and pipeline right-of-way surveys and surveillance are critical to the safe operation of all pipelines. Some common challenges we face in the industry nationwide are stress corrosion cracking, old cathodic or custody flanges, aging technology and materials used in valves, weld defects, incomplete records, external corrosion, internal corrosion, non-piggable systems, induced voltage risks, physical attacks and geological hazards that are growing in frequency. All of these factors exist on multiple systems in the United States. Utilizing K9s for leak detection helps mitigate the risks associated with these factors and helps energy companies get ahead of potential challenges. This approach increases public safety, increases environmental protection, strengthens our nation's energy independence and provides assurance our nations pipeline systems are operating safely and efficiently.

How: Rather used as a primary method of leak detection or if you pair us as an additional method with one of your pipeline operators, Patriot can offer [*a first of its kind field report*](#) to support your records or to keep and reference internally. All our observations can be traced back to compliance and we provide technical insight as to our observations. A K9 specially trained in pipeline leak detection can be applied to gathering, transmission, and distribution systems. Patriot utilizes a K9 as part of a layered approach to pipeline leak detection. A specially trained K9 trained in leak detection is paired with an industry experienced pipeline professional. K9s increase accuracy in leak detection because they can access areas vehicles, trailers and some personnel cannot. This includes crowded parking lots, wetlands, utility corridors, congested right-of-way conditions, and many other physical barriers that often limit complete leak detection surveys. They require less right-of-way preparation to access and have been proven to detect leaks. At Patriot Pipeline Safety, Corp. we access a client's right-of-way using field experience to visually identify technical challenges involving terrain and equipment and a specially trained K9 that can also be supported by unmanned aircraft (drones) for additional observations and assessment of questionable areas.

Cost: When you compare K9's to other forms of leak detection, they are much cheaper and equally as reliable. We know this because we've utilized and contracted out other forms of instrumental leak detection. Other forms require injection equipment, lack of accuracy due to obstruction challenges, wind and often need preparations done to right-of-ways for access. This can include very costly mowing, fence cutting, land owner problems, and unnecessary impacts to the environment. Especially in sensitive wetlands, electrical transmission corridors, and private or protected land tracks. Utilizing K9s also lessens personnel needed to operate heavy equipment with work trailers who might be exposed to hazards associated with the natural terrain and environment of a right-of-way that may include snow, rains, poisonous plants, insects, snakes, and disgruntled land owners. While we support other methods that have also been proven, K9s can serve as the primary source or provide additional leak detection in a multi-disciplined approach.

The difference: What sets us apart in the pipeline industry? To begin we only focus on pipelines, compressor stations, and storage fields. When you hire a Patriot representative, you are hiring a professional who has either turned valves, ran pigs, or worked on a pipeline system in their career. We have a successful history in the industry and have played key roles in some of the largest pipeline projects in the past decade in our country. We know your challenges because we have lived many of

them ourselves. We are NOT a general inspection company. We are NOT someone who just sends a body to the field. When you partner with Patriot, you are working with some of the best Pipeliners in the industry with a proven track record of experience and success. We are NOT K9 specialists or trainers. We are Pipeliners that know the importance and place of a pipeline leak detection K9 and know how to apply this natural gift and talent to help our clients protect their systems while protecting the integrity of our great industry. A specialized pipeline leak detection K9 paired with a very experienced Pipeliner who knows what they're looking at and what they're looking for. I take pride in my team and care about the level of experience, service and professionalism our clients expect and should receive. That's the difference!

Justin Maloney
President
Patriot Pipeline Safety, Corp.