

Project Overview

The Orphan Well Association (OWA) has been working since 2013 to address methane emissions from the historical abandoned well, Tenwell No. 1. The well is located in the playground of the Brennan sub-division in Vermilion, AB. Over the past seven years the OWA has been monitoring the well and is managing the gas coming up through the soil. While the methane levels around the well do not pose a public safety risk, a more permanent solution is needed.

In conjunction with the Alberta Energy Regulator (AER) and Alberta Health Services (AHS), the OWA has developed a long-term management strategy consisting of two phases. Phase 1 is the Methane Interception Operation that will reduce or eliminate the methane traveling through the soil near the well. This phase is scheduled for September 21 – 25, 2020. Phase 2 is the installation of a permanent Active Methane Management System (AMMS) that allows for better management of the methane emissions at the surface. This system will replace the temporary one currently on site and will be installed in the spring of 2021.

Phase 1 – Methane Interception Operation

The proposed first phase of the Long-term Management Program is a Methane Interception Operation. The intent of this operation is to change the flow path of the methane coming up through the soil outside of the wellbore. While this operation will not repair the well, it will help direct more of the methane gas into the wellbore where it can be more easily managed at ground level with the Active Methane Management System.

The Methane Interception Operation involves entering the well and making holes through the casing at specific depths several hundred metres below the surface. These holes, called perforations, allow the gas to flow into the well. Perforations are made with an explosive device that is lowered into the well on an electrical wireline. The wireline is run off of a vehicle called a “logging unit”. The explosive device, called a perforating gun, is a collection of explosive charges in a special carrier. An electrical signal fires the charges to perforate the casing and surrounding rock.

The OWA may need to perforate the well up to three times, but it is hoped that perforations at one or two depths will be sufficient. If more than one perforation is needed, the perforation activities will be spaced a day apart.

The logging unit will also be used to collect data from the well. This is done by lowering a package of instruments, called wireline logging tools, into the wellbore. The instruments record and transmit information about the condition of the wellbore.

Safety

The safety of residents is a priority for the OWA. On the days that perforation activities are taking place, residents in the Emergency Planning Zone (within 50 metres of the well) will be required to leave their homes for about a two-hour period from 12 noon to 2:00 pm.

The possibility of a safety issue during perforation explosions is extremely remote. However, out of an abundance of caution, the OWA wants to ensure nearby homes are vacant during the perforation operations. Residents will be provided with gift cards so they can enjoy lunch on the OWA while they are briefly out of their homes.

Security fencing will be installed around the site. There will be a security person on site during the day. When larger equipment is on site, there will also be a security person overnight. All personnel on site will have gas monitors. During perforation activities, the playground will be closed.

Equipment

In addition to the logging unit, service trucks, a trailer with a test unit and an incinerator flare stack will be moved onto the playground. The test unit and incinerator are there to handle potential excess gas volumes that may occur after perforating the well. It is not anticipated that this equipment will be required - it is only there as an additional safety measure.

Matting will be placed over the grass to protect it from the equipment being used. Movement of equipment on and off the site will be scheduled so as not to conflict with school bus times.

Dust & Noise

The matting that will be placed over the grass in the playground should prevent any dust, mud or damage to the grass occurring from vehicles, equipment or operations.

The Methane Interception Operation will occur in the daytime. Noise from these activities will be similar to any urban type of construction project.

Traffic & Parking

The OWA will work with the Town of Vermilion to block off sections of 63rd and 64th Streets to pedestrian and vehicle traffic during the two-hour periods when perforation activities are taking place. Other than during these times, traffic through the community will not be restricted. Road information signs will be placed around the community.

There will be no parking restrictions on 63rd or 64th Streets. In addition, OWA will make every effort to park all its equipment and vehicles on the matted area of the playground and not on the roadways.

Operations Schedule

Date	Activities
Monday, Sept. 21	<ul style="list-style-type: none">• Prepare site for operations• Bring in matting to protect the grass and park• Install fencing for public safety• Remove some surface piping associated with the temporary Active Methane Management System (AMMS)• Move in equipment
Tuesday, Sept. 22	<ul style="list-style-type: none">• Collect well data (logging)• Planned Perforation #1<ul style="list-style-type: none">• Residents within 50 metres of the well will be required to leave their homes from 12 noon to 2 pm• Monitor results
Wednesday, Sept. 23	<ul style="list-style-type: none">• Planned Perforation #2 – <u>if required</u><ul style="list-style-type: none">• Residents will once again be required to leave their homes from 12 noon to 2 pm• Monitor results
Thursday, Sept. 24	<ul style="list-style-type: none">• Planned Perforation #3 – <u>if required</u><ul style="list-style-type: none">• Residents will once again be required to leave their homes from 12 noon to 2 pm.• Monitor results
Friday, Sept. 25	<ul style="list-style-type: none">• Clean out well• Take downhole measurements• Move out equipment• Start removal of fencing and matting
Saturday, Sept 26	<ul style="list-style-type: none">• Finish site clean-up• Re-assemble AMMS unit

Contact Us

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