

## **Sampling Results:**

Results from soil vapor sampling will be available one to two months after the sampling event and will be sent directly to the resident. The EPA's Petroleum Vapor Intrusion guidance will be used to determine if there is a vapor intrusion concern. All sampling will be done in coordination with South Carolina Department of Health and Environmental Control (SCDHEC). Soil vapor results above EPA's screening levels do not confirm the presence of vapor intrusion into a home, but do indicate a need for additional investigation. Additional investigations may consist of more soil vapor sampling, indoor air sampling, and/or long-term solutions, if needed.

For additional information on petroleum vapor intrusion, please visit:

[www.epa.gov/ust/petroleum-vapor-intrusion](http://www.epa.gov/ust/petroleum-vapor-intrusion)

MCAS Beaufort is committed to sharing information with you throughout this process. Please check the AMCC Web Site for informational updates. For further information, please contact:

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# Laurel Bay Military Housing



## Soil Vapor Sampling

MARINE CORPS AIR STATION  
BEAUFORT, SOUTH CAROLINA

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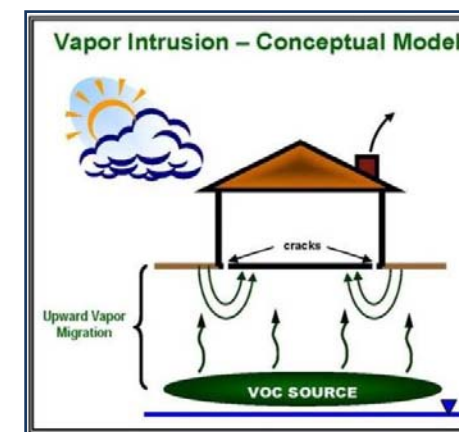
## **Background:**

Laurel Bay Military Housing Area was constructed in the late 1950's. The homes were originally heated with heating oil, which was stored in underground storage tanks located at each house. In the 1980s, the houses were converted to electric heating and the heating oil tanks were no longer used. As was the accepted practice at the time, out-of-service heating oil tanks were drained, filled with soil or sand, capped, and left in place. As a matter of good stewardship, a tank removal project began in 2007. Tank locations vary for each home within Laurel Bay. Most of the heating oil tanks were located in yards and open spaces and were easily removed. However, 34 houses have been identified as having heating oil tanks still in place due to above ground structures preventing their removal. Following the removal of the tanks, soil and groundwater sampling was conducted to determine if and to what extent the tanks may have leaked.

As a precautionary measure, soil vapor sampling is being conducted to ensure that vapors from residual heating oil are not entering the homes in Laurel Bay. This sampling event is not required by regulations, but is being conducted out of an abundance of caution for residents. MCAS Beaufort is committed to sharing information with residents throughout this process.



*A heating oil tank after removal at Laurel Bay.*



## **Petroleum Vapor Intrusion:**

Vapor intrusion is the term used to describe the migration of vapors from a contaminated source in soil or groundwater upward through the soil and into buildings through cracks or holes in building foundations or slabs. The term petroleum vapor intrusion is used when those vapors are the result of a release of petroleum product. Heating oil, previously used in Laurel Bay, has substances common to all petroleum products that can vaporize. These substances are known as volatile organic compounds (VOCs). In undeveloped areas, the vapors disperse into the outside air. In developed areas, the vapors can enter buildings and may affect indoor air quality.

## **Petroleum Vapor Sampling at Laurel Bay:**

The United States Environmental Protection Agency (EPA) published guidelines on vapor intrusion in 2012 and petroleum specific vapor intrusion in 2015. MCAS first began conducting vapor intrusion sampling in Laurel Bay in 2013. To date, 39 houses have undergone a soil vapor investigation. The results of the 39 houses have not indicated any vapor intrusion issues resulting from the leaking heating oil tanks.

## **Project:**

34 houses have been identified throughout Laurel Bay for this phase of the soil vapor investigation. Heating oil tanks at these residences were not removed due to location of the tank under a portion of the house slab or other exterior structure. Samples at each of these residences will need to be collected from the approximate heating oil tank location. This location will vary on a house-by-house basis, depending on the suspected location of the tank and the layout of the house. The soil vapor sampling is being conducted, as a precautionary measure, to ensure that vapors from heating oil are not entering these 34 houses.

## **Sampling Schedule:**

Sampling is anticipated to begin after Memorial Day and continue through July 2016. In most cases, sampling will take less than one day to complete. Sampling will be conducted between the hours of 0800 and 1600, Monday through Friday. Your presence is not required during the sampling event, but please take special consideration for pets and children.



*Typical house in Laurel Bay Military Housing Area.*



*Installation of a soil vapor sample point.*

Prior to any sampling in your home, all residents will be contacted for the following:

- Discuss and review the sampling plan and requirements,
- Schedule a date and time for a home walkthrough and utility locate,
- Schedule a date and time for the sampling to occur, and
- Collect information about your home, such as layout, attached garages, utility doors, ventilation system design, foundation conditions, presence of foundation sump, building material, location of laundry facilities, etc.

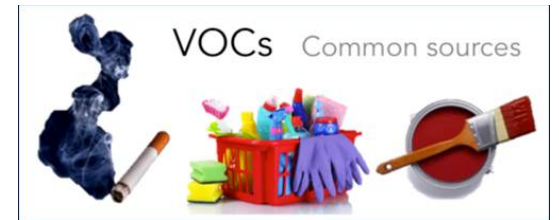
## **Sampling Procedure:**

A home walkthrough will be conducted to determine the approximate tank location and to identify any access concerns. The floor surface at the sample location will be assessed to determine if any flooring will need to be removed. A utility locator will be employed to identify any potential underground utilities that could be of concern while installing the sample point. The field team anticipated to access each home will consist of two contractors, one MCAS representative, and one Atlantic Marine Corps Community representative.

The sampling event will involve the installation of the soil vapor sampling point and then sample collection. The installation process will begin by exposing the concrete slab at the sample location above the heating oil tank. A 5/8-inch hole will be drilled through the concrete slab, approximately 6-inches deep. The soil vapor sampling point will then be installed into the drilled hole and capped. This will form a tight seal preventing any potential vapors from escaping into the home. Conditions at the soil vapor sampling point will need to stabilize for at least two hours before the sample can be collected. After stabilization, the field team will return to the home to set up sampling equipment and collect the sample. The sampling process will take less than an hour in most cases. Once the sample is collected, the soil vapor sampling point will then be removed, the hole will be sealed, and the surface will be restored to its original condition.



*Soil vapor sample point to be used at each house.*



## **Issues Related to Heating Oil:**

Only certain substances are a concern for vapor intrusion. Because heating oil is the source for potential vapor intrusion, compounds related to petroleum are the focus of sampling. VOCs are a group of compounds that can become vapors. The VOCs in heating oil are commonly found in cigarettes, cleaning products, paints, and vehicle exhausts.

39 houses have been sampled to date. At this time, no soil vapor results have indicated potential for vapor intrusion. Possible initial symptoms associated with vapor intrusion of heating oil components include:

- Headache
- Dizziness
- Drowsiness
- Respiratory and Eye Irritation
- Nausea
- Increased Heart Rate

Any specific health concerns should be communicated to your primary care manager for further evaluation. If soil vapor sampling demonstrates the potential for petroleum vapor intrusion, additional sampling will be performed. This may include collecting air samples from inside the home. Recommendations regarding medical evaluations will be provided, if needed, based on these results.