



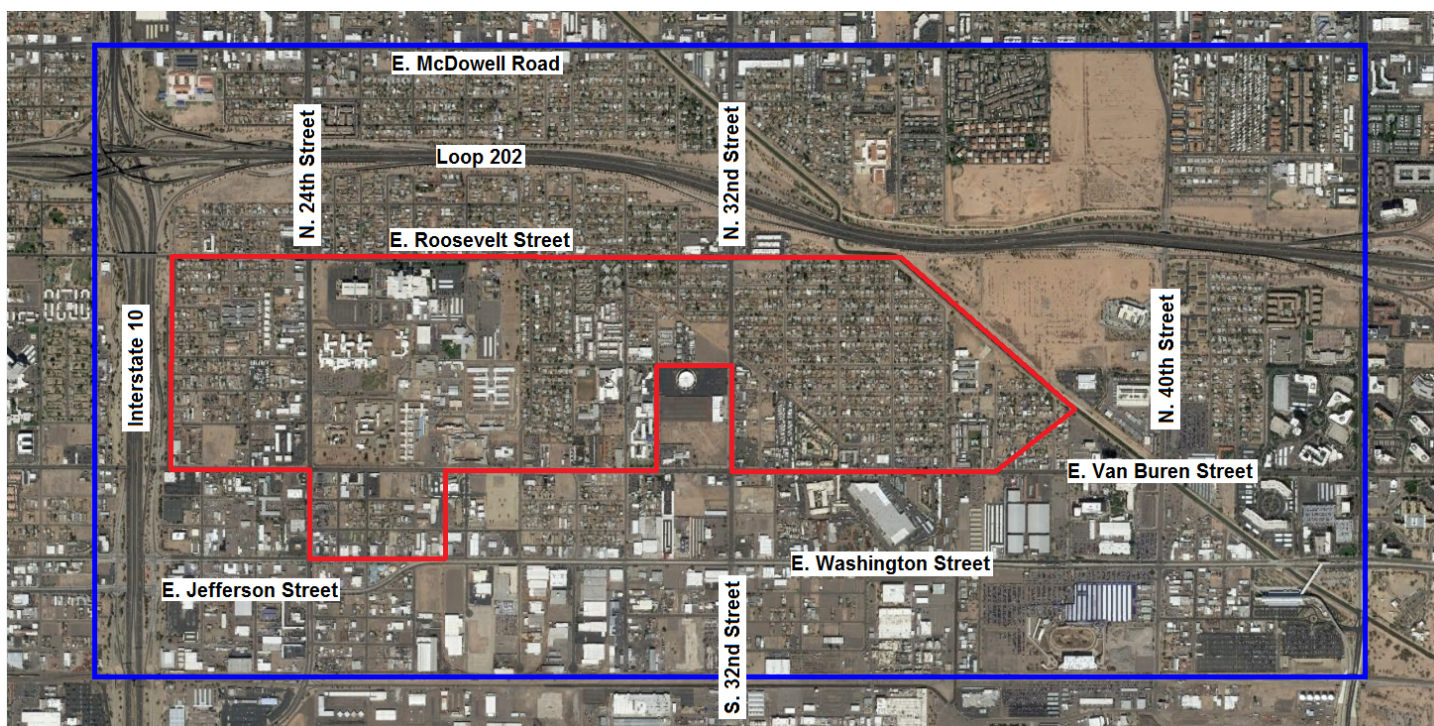
Motorola 52nd Street Superfund Site

U.S. Environmental Protection Agency | Region 9 | Phoenix, AZ | November 2018

EPA CONTINUES VAPOR INTRUSION SAMPLING IN PHOENIX, AZ

The United States Environmental Protection Agency (EPA), in consultation with the Arizona Department of Environmental Quality (ADEQ), is overseeing investigation activities as part of the Motorola 52nd Street (M52) Superfund Site (Site). This fact sheet describes the ongoing **soil vapor and indoor air investigation** being conducted in Operable Unit 2 (OU2) of the M52 Site. This investigation is to determine whether site contamination in groundwater may be migrating through soil and entering indoor air as chemical vapors into overlying buildings, a process called **vapor intrusion** (see below). EPA is looking at whether vapor intrusion is occurring in OU2, and, if so, whether the vapors detected indoors are over health-protective levels.

The vapor intrusion investigation is being conducted in areas depicted on the map below, within the area bordered by McDowell Road to the north, 44th Street to the east, Buckeye Road to the south, and 20th Street to the west. Two of the responsible parties for the M52 Site, NXP USA, Inc. (successor to Motorola Inc.) and Honeywell International Inc. are conducting this investigation under EPA oversight.



Approximate Vapor Intrusion sampling areas in red.
OU2 Boundary in blue.



What is Vapor Intrusion?

Vapor intrusion refers to a process by which chemicals make their way through the ground into indoor air via cracks and other openings in the foundation slabs of buildings. These chemicals are referred to as “volatile organic compounds (VOCs)” which can produce vapors or gases that may travel through the soil.

Vapor intrusion into a residence.

Vapor Intrusion Sampling Process

Step 1: Sampling Soil Gas

First, samples of soil gas – vapors within the soil - are collected from 5 to 15 feet below the ground surface, preferably in areas covered by asphalt or concrete and close to underground utility lines. Utility lines are of special interest, because they can provide a pathway for vapors to enter into buildings. Usually there are two rounds of soil gas samples taken at each location.

Soil gas results are compared against EPA’s health-based screening levels to determine if the concentrations pose a possible risk to indoor air. The screening levels are conservatively calculated to make sure the vapors that may enter overlying buildings are at concentrations below EPA’s health-based standards. Where soil gas samples show soil gas concentrations above EPA health-based screening levels, sampling moves to the second step: indoor air sampling.

There is no cost to property owners or tenants for any sampling activities.

Step 2 (if necessary): Sampling Indoor Air and Directly under Buildings

Air samples are collected in and around residential and commercial buildings overlying elevated soil gas levels to determine whether contamination is present indoors above EPA’s health protective levels. Several types of air samples are collected to help confirm the vapor source. These can include indoor air, crawl space or sub-slab air, and outdoor samples. First, a walk-through is conducted to learn details about the structure and select the best sampling locations and remove potential products that may be vapor sources in the building.

The indoor and outdoor air samples are collected using Radiello® passive diffusion samplers. Indoor air samplers are placed in the main part of a residence for 5-7 days (see photo). At the same time outdoor air samples are collected in the area. Sub-slab samples are taken from below the slab of the building using a small Vapor Pin® (see photo) that is installed in a 5/8-inch hole drilled through the concrete slab of the residence in an inconspicuous location and is connected to a Summa® canister. The vapor pin is removed and the hole is repaired after sampling. Because seasonal temperatures can impact vapor concentrations, a total of two rounds of sampling are required, once during hot weather and once during cool weather periods.

The air samples are analyzed at a laboratory to measure VOCs and determine whether they exceed EPA health-based screening levels. All results will be provided to both the property owner and occupants.

Step 3: Analysis of Results

Indoor air, sub-slab or crawl space air, outdoor air samples, and nearby soil gas results help determine whether there is a risk for vapor intrusion into the building. If elevated indoor contaminant concentrations are detected and appear to be from vapor intrusion, EPA will work with the owner and occupant to identify a solution to bring the levels down or prevent vapors from entering the building in the first place. Temporary solutions can include simple increases to ventilation including use of air purifiers and increasing HVAC levels. Longer-term solutions may include installation of sub-slab mitigation systems beneath the buildings which prevents vapors from entering the building.



Radiello® passive sampler



Vapor Pin®



Sampling vapor under the slab.



Note: All drinking water in the downtown Phoenix area meets all state and federal drinking water standards.

Vapor Intrusion work is expected to begin in December.

Contact Information:

For more information, please contact ADEQ or EPA staff :

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<http://www.epa.gov/superfund/motorola52ndst>

EPA Toll-Free Line: 1-800-231-3075

For information in Spanish, please call toll-free
Para información en español, por favor llama al número a continuación: 1-800-231-3075

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