Investigation of Potential Pollution in South Patrick Shores

In response to community concerns during 2018 regarding Per- and Polyfluoroalkyl Substances (PFAS) near Patrick Air Force Base and throughout the County, Brevard contracted with Applied Ecology, Inc. to sample and analyze fifty samples (including one blank) for a full suite of PFAS compounds. This investigation included thirteen groundwater monitoring wells, thirteen surface water grabs, eight sediment/muck samples, eleven irrigation wells, four push points (equivalent to shallow groundwater well sampling), and one trip/equipment blank. At the same time that community concerns surfaced regarding PFAS, concerns resurfaced regarding historical use of land in the South Patrick Shores area for disposal and potential correlation with local cancer rates. Therefore, in addition to the PFAS sampling, Applied Ecology was also contracted to sample three shallow irrigation wells in South Patrick Shores for the full suite of federally listed priority pollutants, carcinogens, volatile and semi-volatile organics, pesticides, heavy metals and radionuclides.

Results for the expanded sampling for the three shallow irrigation wells in South Patrick Shores were compared to all available standards, including Florida's Groundwater Cleanup Targets (GTLs) and Irrigation Water Screening Levels (IWSLs). This data was immediately shared with state and federal agencies responsible for public health and contamination screening and remediation, neighboring municipalities, the School Board, Patrick Air Force Base, Commissioners and the press. The majority of pollutants, including volatile and semi-volatile organics, pesticides, herbicides, heavy metals, dioxins and radionuclides were non-detectable or well below the appropriate screening values.

The following items were detected above the GCTLs which are based upon groundwater consumption, but below the IWSLs for residential use: the metal manganese and the pesticide dieldrin. Manganese is naturally ubiquitous in the environment, trace amounts are essential to animal health, and the concentrations measured were representative of typical background levels for the surficial aquifer. Dieldrin (detected at one well) is a broad-spectrum insecticide that was historically used to control termites and can have potential health impacts at certain concentrations in groundwater used for consumption.

Another metal, Strontium, was found above the Florida GCTL with no available IWSL for comparison. Strontium is a naturally occurring metal in groundwater, contained in certain foods, and typically seen in Florida's groundwater in the measured concentrations.

EPA is currently following up on the County's investigating with more extensive testing in the South Patrick Shores area: This includes:

1. Seven (7) soil samples were collected from Ms. Sullivan's yard at her request and tested for metals, pesticides, PCBs, volatile organic compounds and semi-volatile organic compounds. None of the detected chemical concentrations exceeded EPA's residential soil Removal Management Level. Only two analytes, arsenic and chromium, exceeded EPA's residential soil Regional Screening Levels. Arsenic is naturally occurring in Florida and the concentrations detected were consistent with those typically observed in urban Florida settings. Chromium is also naturally occurring and the concentrations detected were consistent with those typically observed in urban Florida settings. The EPA memorandum report dated March 19, 2019, on this testing is attached.
2. EPA is planning to collect soil gas samples at Ms. Sullivan's property to determine the possibility of any vapor intrusion taking place. This has been coordinated with Ms. Sullivan's schedule and is expected to occur the week of June 24th.
3. EPA is planning a limited sampling investigation of a portion of the South Patrick Shores subdivision in response to community concerns about debris burial in the area. A map of the investigation area is

attached. EPA will assess the presence or absence of environmental impacts in the mapped area. EPA has requested reports from the Air Force regarding ordnance discovered in South Patrick Shores.

4. The federal Agency for Toxic Substances and Disease Registry (ATSDR), a program of the U.S> Department of Health, is reviewing a petition to consider cancer data, especially in young people, for South Patrick Shores, Satellite Beach and the surrounding area and provide a Health Consult to minimize the potential for human health risks associated with exposure to hazardous substances.

The Army Corps of Engineers is currently preparing a draft Findings document to determine if the disposal site in South Patrick Shores would be eligible for cleanup funding through the Formerly Used Defense Site (FUDS) program, if any contamination is found that needs to be remediated. A previous evaluation in 1989-1991 did not determine the South Patrick Shores area to be a FUDS. The Army Corps is considering information that was not available or considered during their previous analysis. Their evaluation process started in October 2018 and typically takes a year. Jacksonville staff anticipate completing their assessment in June and submitting a report to the South Atlantic Division office in Atlanta. From there it goes to Washington DC for a final decision.

If the site is not eligible for FUDS funding but is found to contain hazardous contaminants, then EPA will determine if the site should be added to the Superfund National Priorities List (NPL). This is a ranking system based on the hazardous substances released and the risk associated with that release. The NPL assesses the volume released, the toxicity, the degree to which it was contained, and any human exposure pathways. This is used to prioritize Superfund cleanups nation-wide.

Regarding the County-wide PFAS sampling results, the U.S. Environmental Protection Agency (USEPA) established a lifetime drinking water health-advisory (LHA) of 0.07 µg/L for PFOS and/or PFOA. This non-regulatory LHA is based on daily ingestion of PFOA and PFOS over a lifetime and does not apply to less direct or frequent exposure such as swimming, bathing, or similar contact. None of the 50 samples had PFOA concentrations exceeding the LHA of 0.07 µg/L. Eight percent (8%) of the groundwater samples exceeded the drinking water LHA for PFOS. Combining measured concentrations of PFOA and PFOS, only 12% of the samples were at or above the LHA of 0.07 µg/L. However, none of the 50 samples exceeded the newly proposed IWSLs for either PFOA or PFOS and most of the other PFAS compounds sampled were below laboratory detection limits.