





**NASJRB
WILLOW GROVE
RESTORATION
ADVISORY BOARD
(RAB)
December 13, 2017**



RAB Agenda

- Welcome Community and RAB Members
- Environmental Restoration Status
- Five Year Review
- Perfluorinated Compounds Status
- Questions
- Closing Remarks

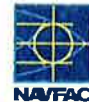
2



Environmental Restoration Status



NASJRB Willow Grove Environmental Restoration Sites



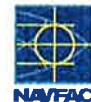
Site	Name	Operable Unit (OU)	Status
1	Privet Road Compound	Soil - OU 1 Groundwater - OU 3	Soil (OU 1) NFA ROD signed September 2006. Groundwater (OU 3) Interim ROD signed September 2008. Groundwater (OU-3) IRACR Signed December 2011.
2	Antenna Field Landfill	Soil - OU 5 Groundwater- OU 9	No Action ROD Signed June 17, 2010
3	Ninth Street Landfill	Soil - OU 6 Groundwater- OU 10	RI completed October 2011/FS Pending
4	North End Landfill	---	Consensus Agreement for No Action Jan. 2009
5	Fire Training Area	Soil - OU 4 Groundwater - OU 2	Soil (OU 4) NFA ROD signed Sept. 2007 Groundwater (OU 2) ROD signed Sept. 2012 Groundwater (OU2) RACR Signed September, 2014 Groundwater (OU 2) Final OPS report and OM&M Plan May 2015
6	Abandoned Rifle Range No. 1	---	Consensus Agreement for No Action December 2007
7	Abandoned Rifle Range No. 2	---	Consensus Agreement for No Action August 2008
8	Building 118 Abandoned Fuel Tank	---	NFA Agreement October 2006
9	Steam Plant Building 6 Tank Overfill	---	NFA Agreement October 2006
10	Navy Fuel Farm	---	NFA at this time Property transferred to Air Force
SSA 11	Aircraft Parking Apron	---	Eliminated From Consideration
12	South Landfill	OU 11	Final RI February 2014, FS to Follow
PFCs/PFAS	Perfluorinated Compounds/ Per- and polyfluoroalkyl substances	OU 12	TCRA Sept. 2015, Final PA/SI March 2016, RI in progress



Site 5 – Fire Training Area Groundwater



Site 5 Groundwater Remedial Action



- Anaerobic bioremediation system continues to operate
- Annual performance monitoring is being conducted in accordance with approved Operation, Maintenance, and Monitoring Plan
- Quarterly monitoring of anaerobic conditions conducted – last round completed late November 2017
- Additional injections of amendments will be conducted based on monitoring results
- Results continue to show good conditions for biodegradation of volatile organic compounds (VOCs) and decreasing trends of VOCs

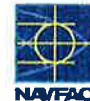


Perfluorinated Compounds Status

13



PFOA / PFOS Background

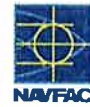


- In mid-2014, perfluorinated compounds known as Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) were found in drinking water wells near NASJRB Willow Grove.
- The health advisory levels at that time were 0.4 micrograms per liter ($\mu\text{g/L}$), or 400 parts-per trillion (ppt), for PFOA and 0.2 $\mu\text{g/L}$, or 200 ppt, for PFOS.
- PFOA/PFOS are man-made chemicals found in fire-fighting solutions known as aqueous film-forming foam (AFFF), which were used at NASJRB Willow Grove.
- In the summer of 2014, the Navy began sampling for PFOA/PFOS in private drinking water wells and worked with Horsham Water and Sewer Authority (HWSA) on the public municipal wells.

14

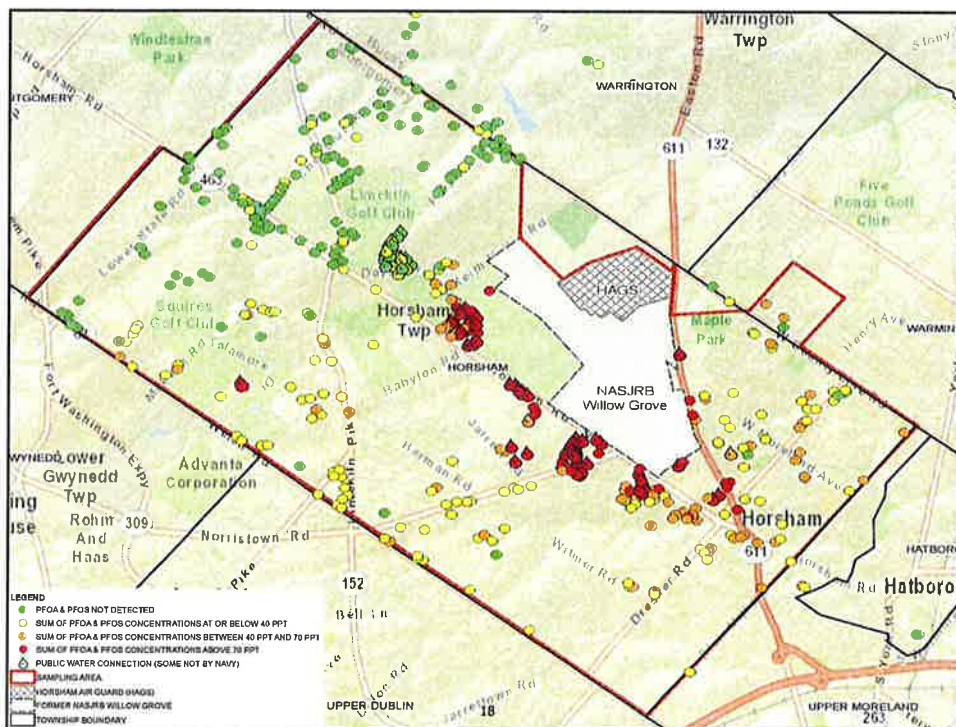


Summary of PFOA/PFOS Actions



- Private drinking water wells sampled for PFOA/PFOS near NASJRB Willow Grove:
 - Private wells sampled: ~ 500
 - Private wells above lifetime HA (>70 ppt): 95
 - Private wells remaining to be connected: 14
 - Private wells below HA/monitored (>40 ppt): 70
- The Navy has funded carbon filtration systems at five Horsham Water and Sewer Authority (HWSA) public wells (#10, 17, 21, 26, and 40) which are above the lifetime HA. All are filtering water below the lifetime HA and back to drinking water service.
- The Navy has provided funds to HWSA for filtration system costs and drinking water connections above the lifetime HA. The total funding is over \$16 million.

17





PFAS Investigation (cont.)



Remaining Tasks for Phase II Remedial Investigation

- Draft SAP Addendum for soil-to-groundwater evaluation by the end of 2017. Field work expected in early 2018.
- Draft RI Report in mid 2018
- Feasibility Study in late 2018

21



PFAS Stormwater Evaluation



Outfalls/Storm Sewers

- Outfall sampling conducted in August 2017 showed PFOA/PFOS concentrations in northern outfalls to Park Creek and Pennypack Creek were significantly lower after rain event.
- Outfalls along the northern end of the base that discharge to Park Creek have been closed. The retention basin has been modified to hold additional storm water.

22



PFAS Information and Resources (continued)



Environmental Protection Agency
<https://www.epa.gov/pfas>

Agency for Toxic Substances and Disease Registry
<https://www.atsdr.cdc.gov/pfc/index.html>

Pennsylvania Department of Environmental Protection
http://www.dep.pa.gov/Citizens/My-Water/drinking_water/Pages/default.aspx

Horsham Township
<http://www.Horsham.org/default.aspx>

Warminster Township
<http://warminstertownship.org/information-on-perfluorinated-chemicals-pfoa-and-pfos/>

25



NAS JRB Willow Grove RAB Meeting



- Questions or comments from the RAB?
- Community questions or comments?
- Next Meeting
 - March 14, 2018 @ 2:00 pm
- Closing Navy Remarks

26