Maryland Department of the Environment

Severn Groundwater Investigation

Anne Arundel County, MD

Meeting April 17, 2013

Agenda for Public Meeting

- Background Information – Summary of Site History and Environmental Investigations
- Action Plan –
  - Short-term Actions Taken To Date
  - Ongoing Investigations
  - Future Steps
- Conclusion and Information Resources for Residents

Kop-Flex, Inc.
7565 Harmans Road
Hanover, Maryland

Maryland Department of the Environment Voluntary Cleanup Program Site #31

Site History

- Washington Hydraulic Press Brick Company owned the property up to, at least, the early 1940's and may have used portions of the property for mining clay and/or gravel
- An aerial photograph from 1938 shows evidence of these practices
- No operations are known to have occurred on the property from the early 1940's to the late 1960's, which is confirmed by aerial photographs

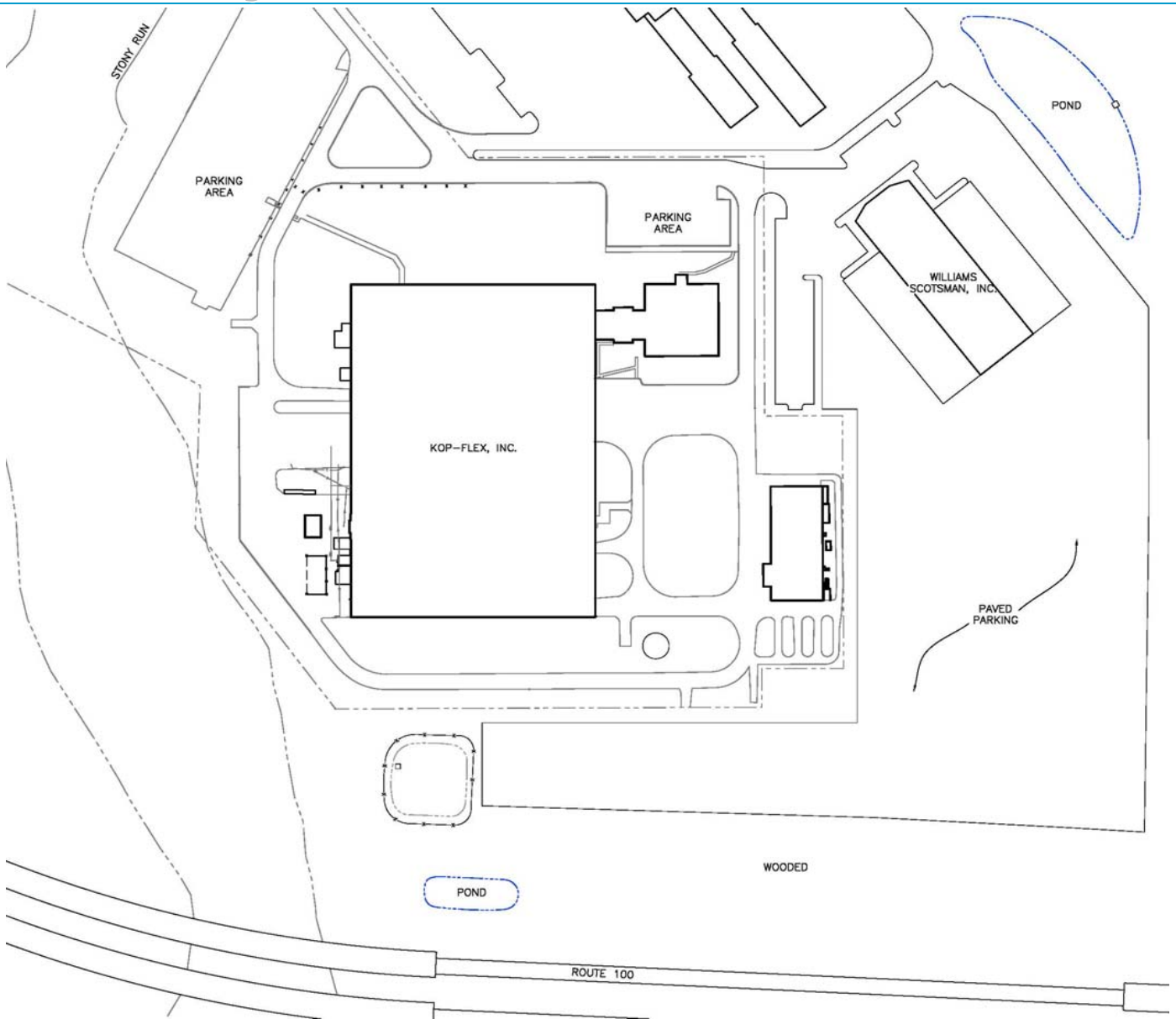
Site History

- The Power Transmission Division of Koppers Company (now part of Beazer East) purchased the property in 1966
- Construction of the Koppers Company facility began in 1967 and operations began in 1969
- In the late 1978, Koppers sold nearly 200 acres of the property to the Harmans Woods Joint Venture, leaving only 92 acres as part of the facility property.

Site History

- In June 1986, members of the Koppers Company management and Lee Capital Holdings purchased the assets of the Power Transmission Division of Koppers Company and formed Kop-Flex, Inc.
- In 1987, Kop-Flex sold 67 of the 92 acres leaving the current 25 acre property
- Emerson acquired Kop-Flex, Inc. in 1996

Site Layout


STONY RUN
PARKING AREA
PARKING AREA
POND
WILLIAMS SCOTSMAN, INC.
KOP–FLEX, INC.
PAVED PARKING
WOODED
POND
ROUTE 100

Site History

- Prior to the acquisition of Kop-flex, Emerson performed environmental due diligence at the property
- Results of the due diligence investigations identified both soil and groundwater contamination
- Contamination was attributed to the use of 1,1,1-trichloroethane (1,1,1-TCA) and cutting oils

Environmental History

- Available information indicates that 1,1,1-TCA was discontinued in 1993, 3 years prior to Emerson's acquisition of Kop-Flex

- Following the acquisition of Kop-Flex, Emerson conducted several phases of additional investigations to further assess the extent of soil and groundwater impacts (1997 through 1998)

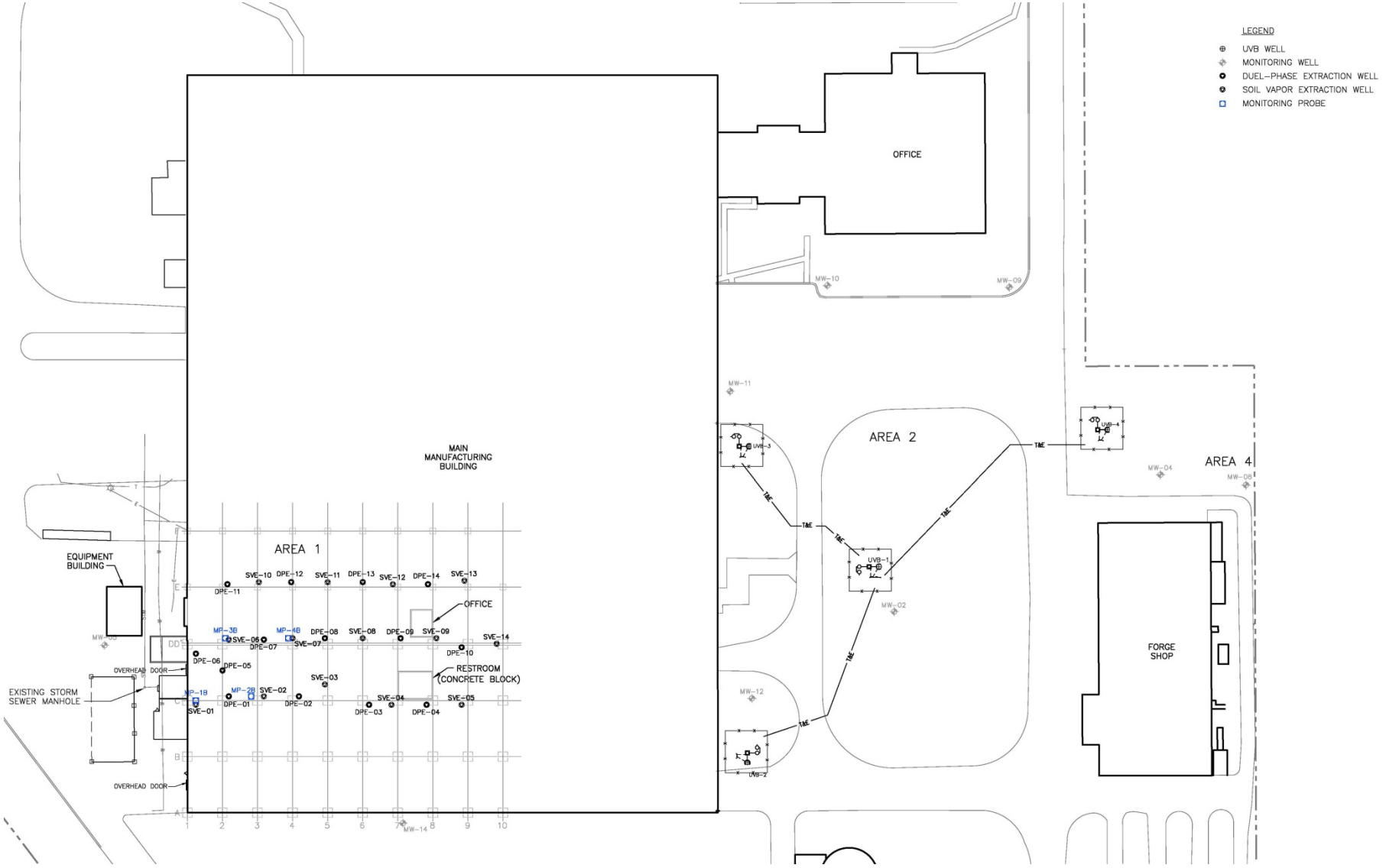
Onsite Environmental Investigation

- Results identified volatile organic compounds (VOCs) consisting of 1,1,1-TCA and its breakdown products in soil and groundwater below the main building and to the east of the building
- Impacts to groundwater were found to extend to about 45 feet below ground surface and groundwater flow was determined to be to the west-northwest

Onsite Environmental Remediation

- In 1998, the Kop-Flex site was accepted into the MDE voluntary cleanup program (VCP)
- In 2000, Kop-Flex submitted 2 remedial action plans (RAPs) to MDE for their review and approval:
  - One addressed impacts below the building
  - One addressed impacts to the east of the building

Remedial System Locations



Onsite Environmental Remediation

- Operation of the remediation system below the west portion of the building is ongoing and has been successful at removing VOCs in soil and groundwater
- The groundwater remediation system to the east of the building was operated for a period of 7 years

Onsite Environmental Remediation

- In later stages of operation, it was determined that groundwater remediation system to the east of the building was not as effective as anticipated
- Starting in 2007, supplemental investigations were conducted to the east of the building to evaluate why the remedy was not effective.
- As a result of these supplemental investigations, an additional source area was identified in shallow soils (less than 10 feet deep)

Onsite Environmental Investigation

- Between 2007 and 2012 several additional stages of investigation were conducted to better delineate impacts to soil and groundwater associated with the new source area. All of these investigations were conducted with MDE approval

- In February 2012 a deeper well (100 feet) was installed onsite to assess deeper groundwater quality. Chlorinated solvents were identified in this well

Deep Groundwater Investigation

- Between May and August 2012, two additional wells were installed onsite to determine the extent of deeper impacts and groundwater flow direction
- In October 2012, a deeper well was installed immediately south of the Kop-Flex site. Chlorinated solvents were identified in this well
- Groundwater flow in the deeper zone was determined to be to the south-southeast

Next Steps – Offsite (MDE TO PRESENT)

- Connect the 8 homes with chemicals above federal and/or state drinking water standards to the Anne Arundel County public water supply:
  - Connect homes in front of existing water mains
  - Connect homes without existing water mains

Next Steps – Offsite (MDE TO PRESENT)

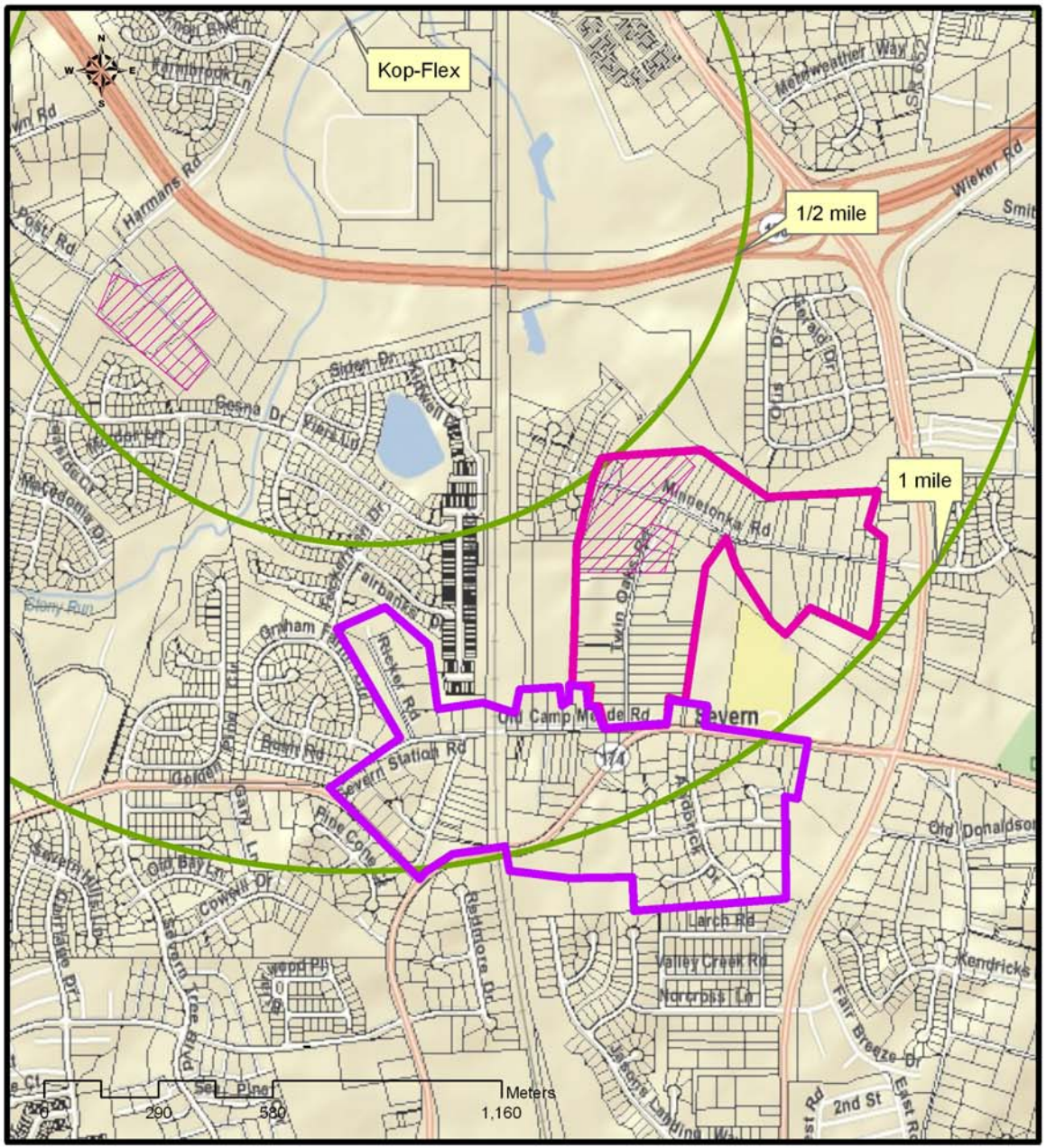
- Install a series of monitoring wells in the residential areas to evaluate groundwater quality and flow:
  - MDE approved the groundwater monitoring well location.
  - Monitoring wells will be screened at various depth intervals

Off-site Investigation

- In June 2012, installed 1 deep well off-site to the south of Kop-Flex facility (north of Route 100)
  - 1300 ppb of 1,1-DCE
  - 342 ppb 1,4-dioxane
  - Also identified deep groundwater flow to the south-southeast
  - Confirmed data with re-sampling in August

Residential Well Sampling

- November 2012 - Initial Sampling – Contact 15 closest homes – 4 responses. 3 impacted on Twin Oaks. Immediately provided bottled water.
- Phase 1 Sampling - January 2012 - 76 homes on Twin Oaks & Minnetonka.
- Phase 2 Sampling - February/March 2012 - 137 homes including Andorick Acres, Old Camp Meade Road, Ricker Road, Severn Station Road and Reece Road



Residential Well Sampling Areas

Initial Contacts - Pink Hatch - 4 responses
Phase 1 - Pink Outline
Phase 2 - Purple Outline

1,1-Dichloroethene Concentrations (ug/L)

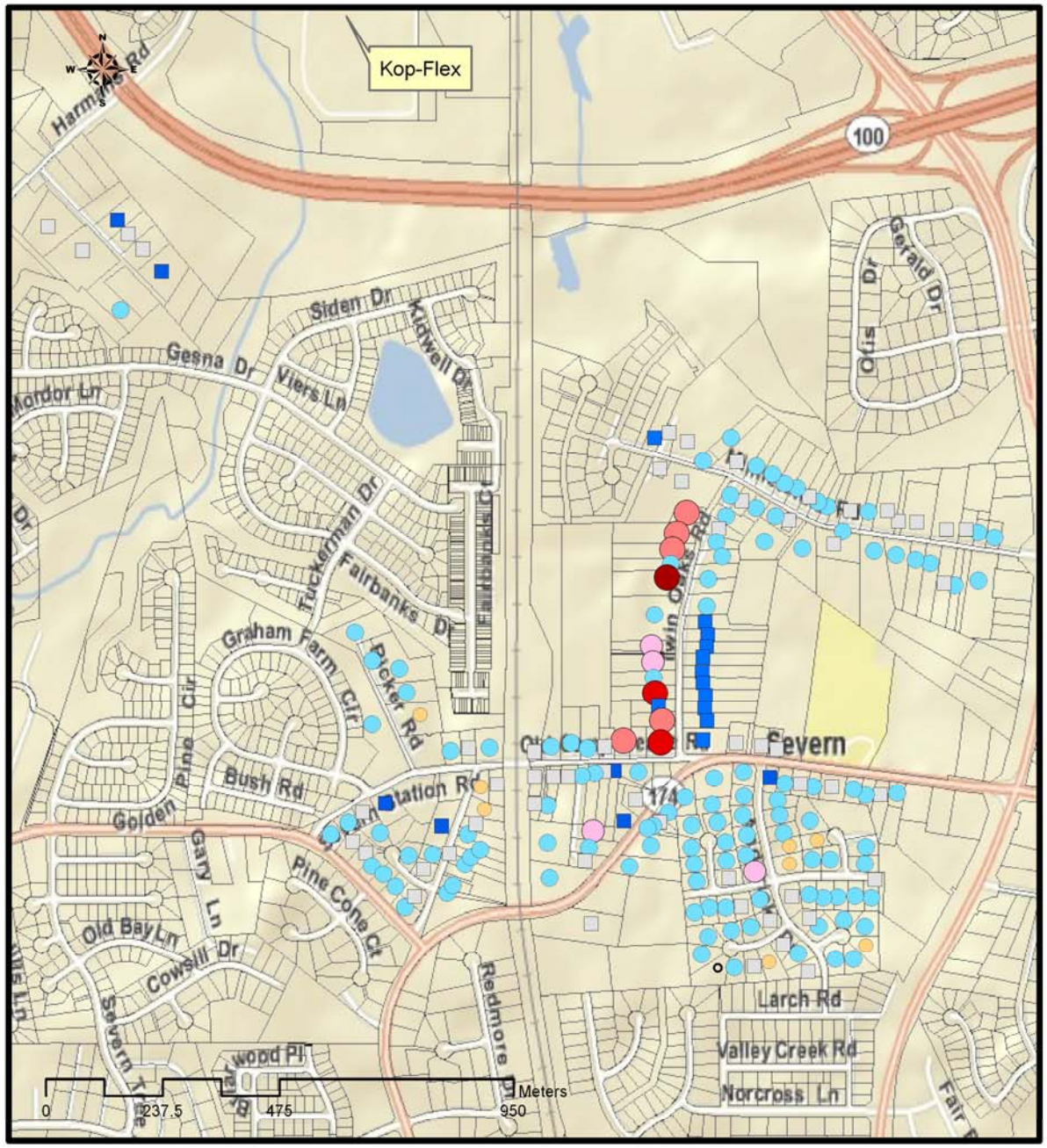
- Well Not In Use/ Public Water
- Not Sampled/ Declined
- Results Pending
- <0.5
- Detected Less than MCL (<7 ug/L)
- 7-100 ug/L
- 100-200 ug/L
- >200 ug/L

Phase 1 Sampling

- 76 homes contacted:
  - 40 sampled;
  - 14 with no well;
  - 4 declined;
  - 18 did not respond (as of 4/11/2013)
- 7 residents impacted with 1,1-dichloroethene above MCL (7 ug/L) and 1,4-dioxane.
- Immediately provided bottled water.
- Impacted Well screen depths between 163 feet and 247 feet.
- Two wells detected but below MCL (wells greater than 247 feet)

Phase 2 Sampling

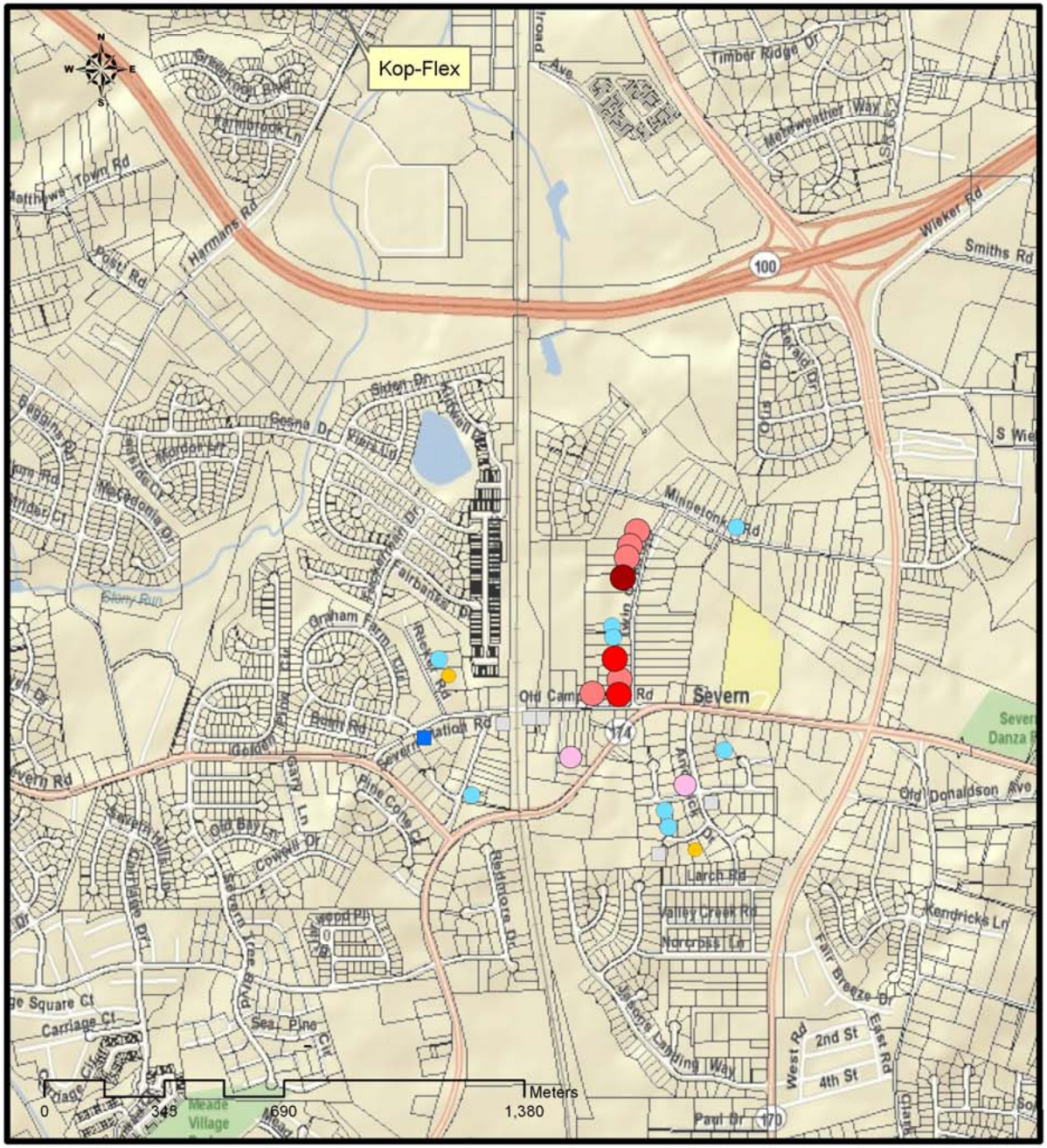
- 137 homes contacted:
  - 91 sampled (7 waiting for results);
  - 6 with no well in use;
  - 1 declined;
  - 39 did not respond (as of 4/11/2013)
- One resident impacted with 1,1-dichloroethene above MCL (7 ug/L).
- Immediately provided bottled water.
- Consistent with Phase 1 – impacted well has screen depth between 163 feet and 247 feet.
- Two wells detected but below MCL (wells greater than 247 feet)



Residential Well Sampling Results for All Wells
(Sampling through 4/11/2013)

1,1-Dichloroethene Concentrations (ug/L)

- Well Not In Use/ Public Water
- Not Sampled/ Declined
- Results Pending
- <0.5
- Detected Less than MCL (<7 ug/L)
- 7-100 ug/L
- 100-200 ug/L
- >200 ug/L



Residential Well Sampling Results for Wells Greater Than 163 feet (Sampling through 4/11/2013)

1,1-Dichloroethene Concentrations (ug/L)

- Well Not In Use/ Public Water
- Not Sampled/ Declined
- Results Pending
- <0.5
- Detected Less than MCL (<7 ug/L)
- 7-100 ug/L
- 100-200 ug/L
- >200 ug/L

Ongoing Actions

- Continued supply of bottled drinking water to impacted residents (7 homes)
- Continued residential well sampling
  - Second contact letters were sent March 22
  - Seven homes awaiting results
  - Installation of off-site monitoring wells (status?)

Future Actions

- Quarterly Sampling for homes below MCL (4 homes) starting May 2013
- Immediate public water connection where available (3 houses)
- Expedited expansion of water main and public water connection where possible (4 houses)

Maryland Department of the Environment

Land Restoration Program

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