



# Public Information Meeting

## Ford Livonia Transmission Plant

### August 20, 2018

# Who are we?

- ▶ Brandon Alger - Geologist, Michigan Department of Environmental Quality - Remediation and Redevelopment Division (DEQ-RRD)
- ▶ Beth Vens - Assistant District Supervisor, Michigan Department of Environmental Quality - Remediation and Redevelopment Division (DEQ-RRD)
- ▶ Paul Owens - District Supervisor, Michigan Department of Environmental Quality - Remediation and Redevelopment Division (DEQ-RRD)



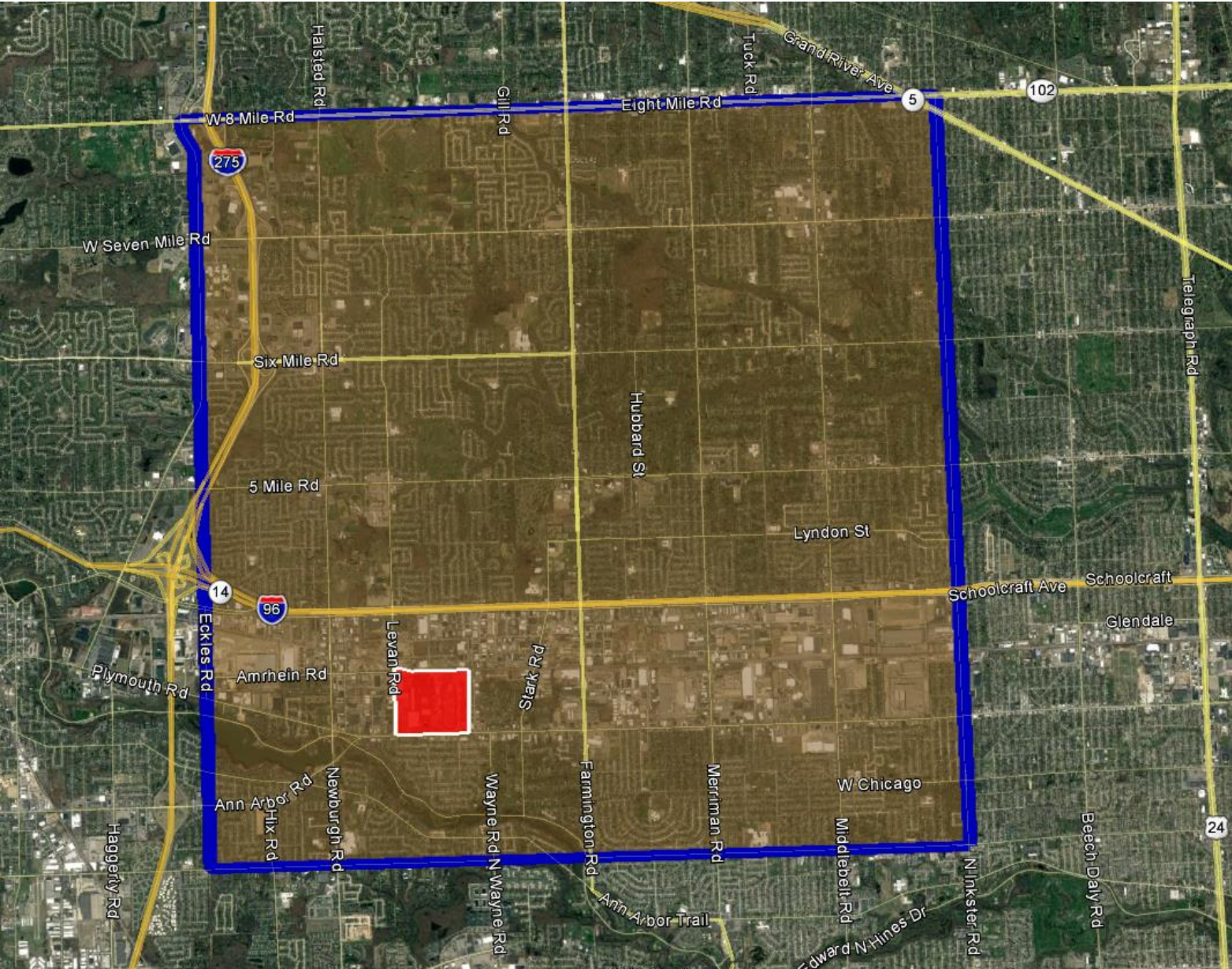
## Remediation and Redevelopment Division?

- ▶ Vision: Create a future where Michigan's contaminated properties are reliably managed, revitalized, and the environment is protected
- ▶ Mission: The Remediation and Redevelopment Division will work toward our goals through compliance assistance, partnerships, collaboration, and enforcement

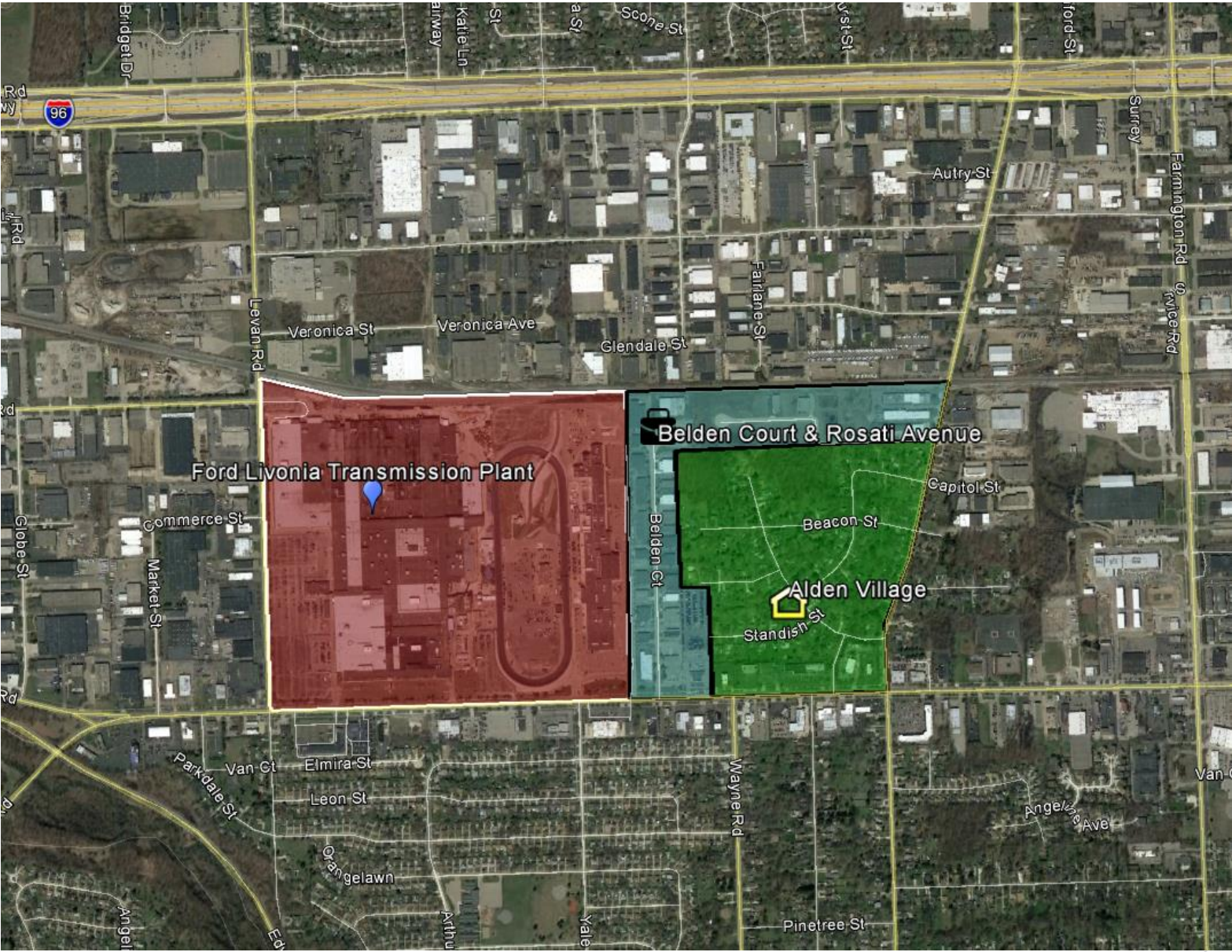
## Why are we involved?

- ▶ DEQ-RRD became involved with the chlorinated solvent issues when we received notices of migration, from Ford, indicating results showed these had migrated off-site
- ▶ DEQ-RRD now has a consent decree with Ford where we provide milestone oversight, feedback, and submission approval of the work by Ford and their consultants

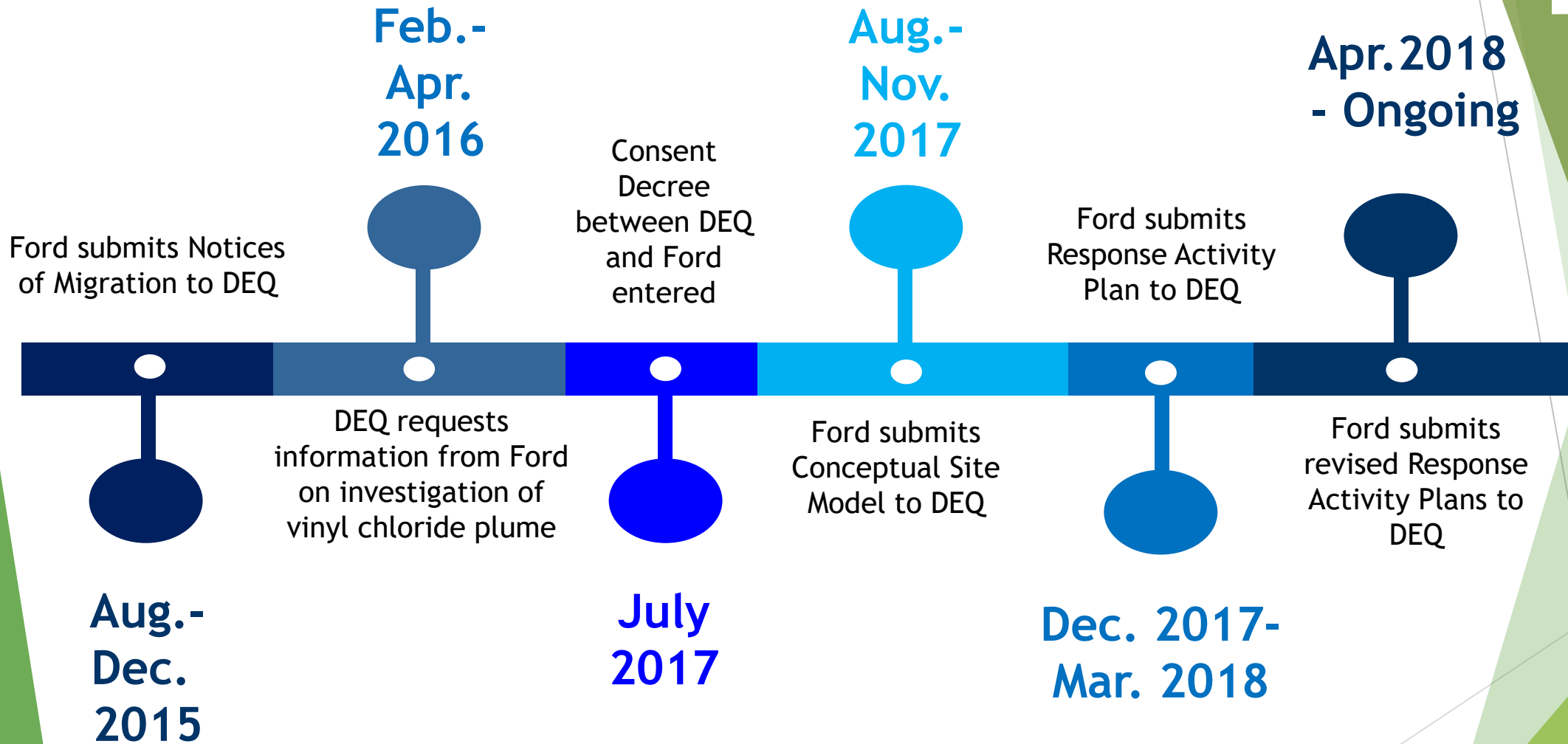
# Ford Livonia Transmission Plant



# Location of Neighborhood and Business District



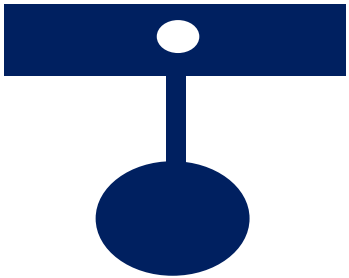
# Timeline of DEQ Involvement



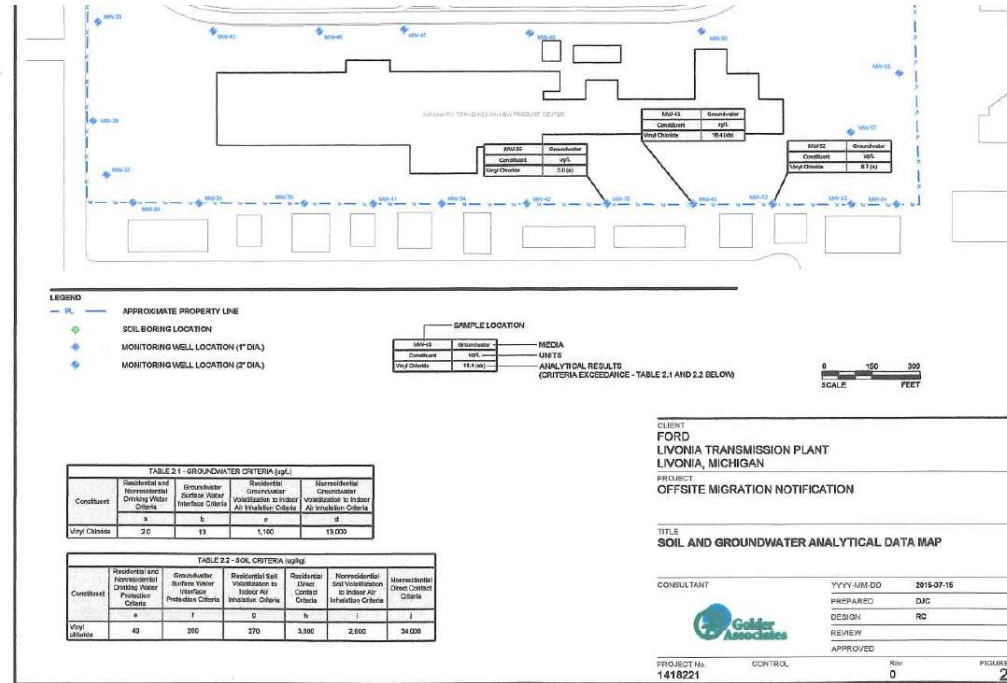
# Notices of Migration



Ford submits Notices of Migration to DEQ



Aug.-  
Dec.  
2015



A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Boundary Concentration	I Sample Location for "H"	J Environmental Medium for "H"
Vinyl Chloride	75014	12,300 ug/L 810 ug/kg	HPT- 18 SB-5	Groundwater Soil	1230 feet 1450 feet	South- Southeast	28 ug/L 17.1 ug/L 8.4 ug/L 7.3 ug/L 5.6 ug/L 4.9 ug/L 4.3 ug/L 3.9 ug/L 2.7 ug/L 2.62 ug/L 2.6 ug/L	HPT-56-8-11 HPT-07-15-18 HPT-61 - 13-14 HPT-57-15-18 HPT-30-10-13 HPT-63-7-10 HPT-74 - 13-16 HPT-29-17-20 HPT-59-16-19 HPT-09 -19-22 HPT-58-8-11	Groundwater

Total Number Samples Collected: 263 GW / 366-Soil Total Number of Samples Exceeding Criteria: 82 GW/1Soil

# Request for Information



Feb.-  
Apr.  
2016

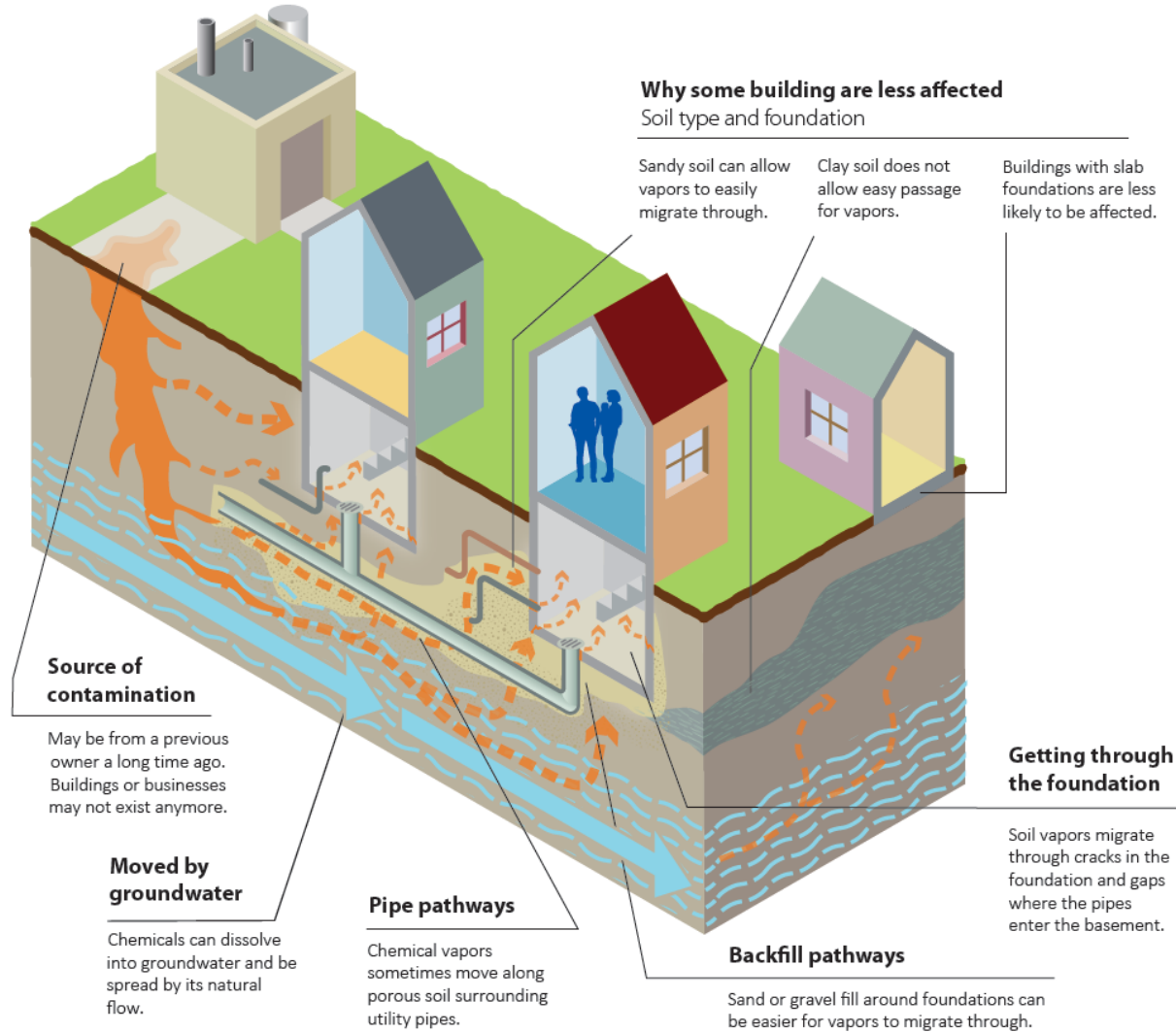


DEQ requests  
information from Ford  
on investigation of  
vinyl chloride plume

- ▶ Ford hosts an open house meeting for public in February 2016. After the meeting DEQ makes a formal request for additional information
- ▶ Ford provides a summary of technical information. DEQ reviews data and determines a risk may be present for the Volatilization to Indoor Air Pathway (Vapor Intrusion)
- ▶ DEQ determines area is supplied with municipal drinking water
- ▶ Ford continues investigation of contamination

# Vapor Intrusion

## A Complex Pathway

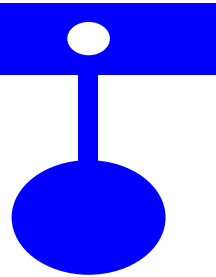




# Consent Decree



Consent  
Decree  
between DEQ  
and Ford  
entered

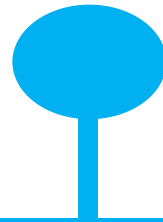


July  
2017

- ▶ The Consent Decree requires specific actions from Ford with DEQ oversight
- ▶ The Consent Decree requires actions from Ford under a specific timeline
- ▶ The Consent Decree requires an endpoint to be achieved by Ford
- ▶ The Consent Decree defines stipulated penalties should Ford fail to meet the requirements

# Conceptual Site Model

Aug.-  
Nov.  
2017



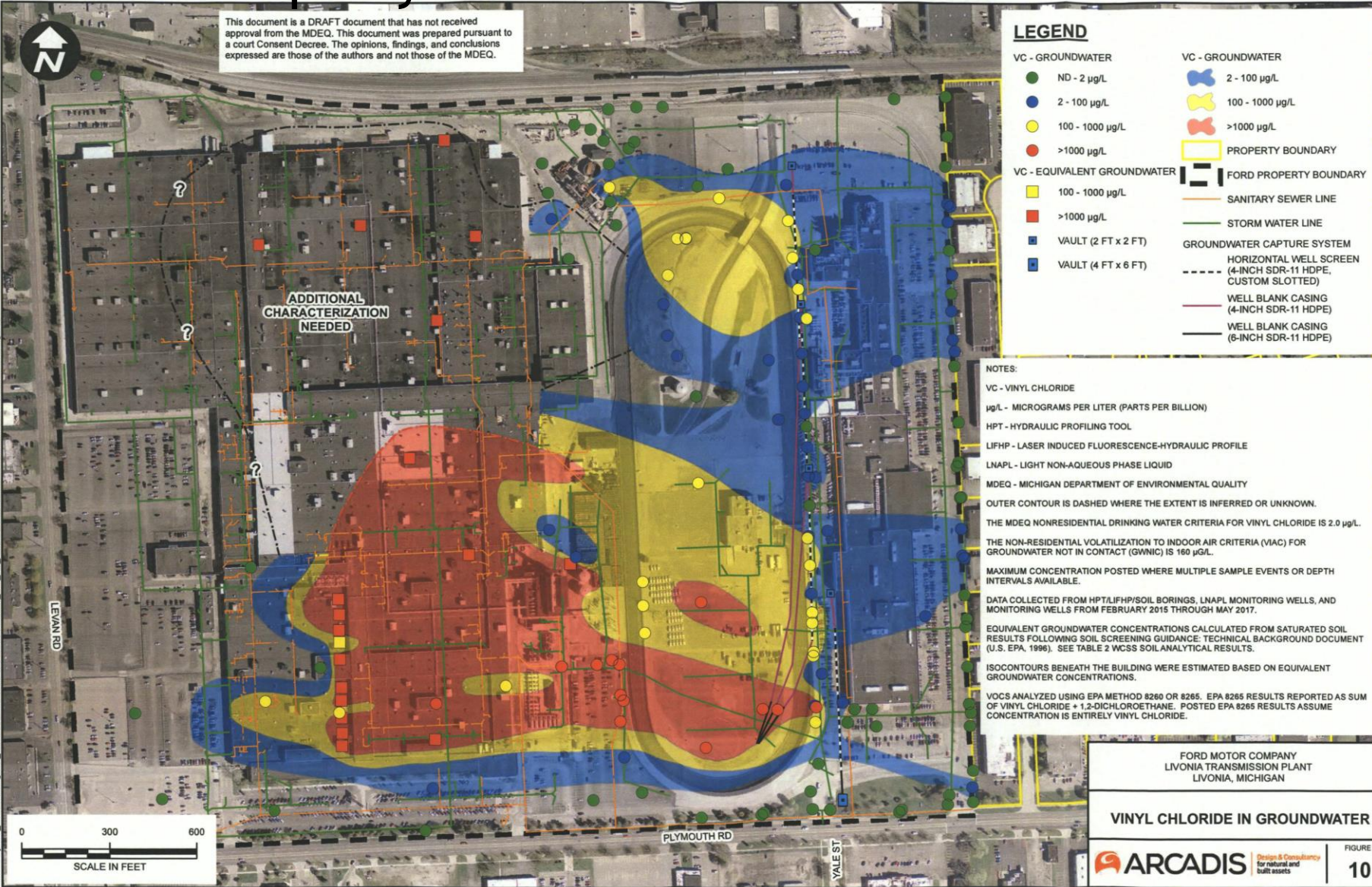
Ford submits  
Conceptual Site  
Model to DEQ

- ▶ High levels of on-site contamination documented
- ▶ Additional information provided for off-site plume
- ▶ Information on sub-surface geology provided
- ▶ Multiple data-gaps identified, additional information needed as investigation continues

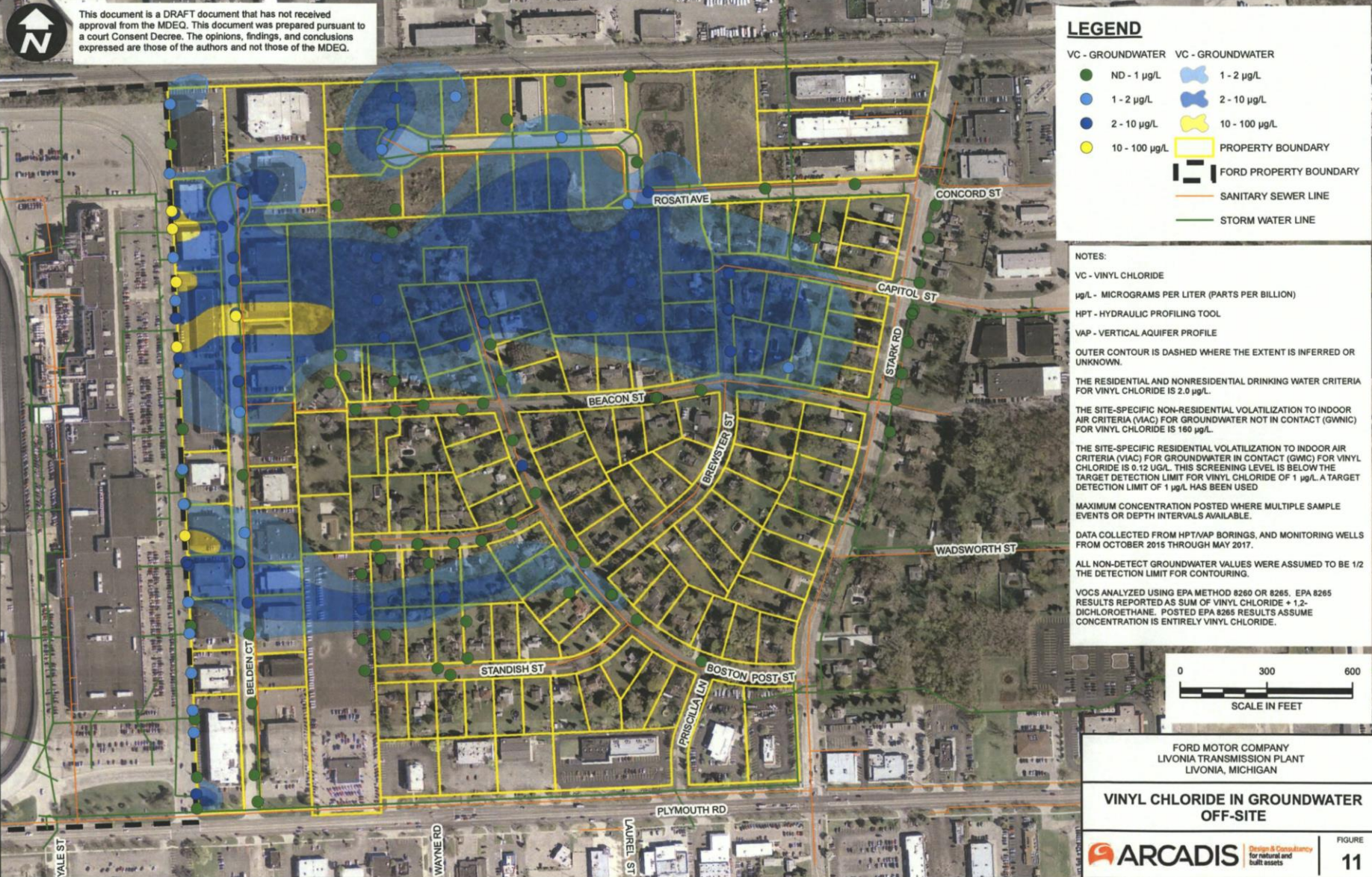
# Ford's Initial Conceptual Site Model: Vinyl Chloride on-site Property



CITY: New DIV: ENV DB: MG PIC: R. ELLIS PK: K. HINSKEY PROJECT NUMBER: MD01322.0001 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Int Z:GISProjects\_ENV\Nov\Brighton\_MI\FordLivonia\GIS\2016-04\Onsite\_GW\_VC\_20160405.mxd PLOTTED: 4/12/2018 8:41:23 AM BY: mgress



# Ford's Initial Conceptual Site Model: Vinyl Chloride Off-site

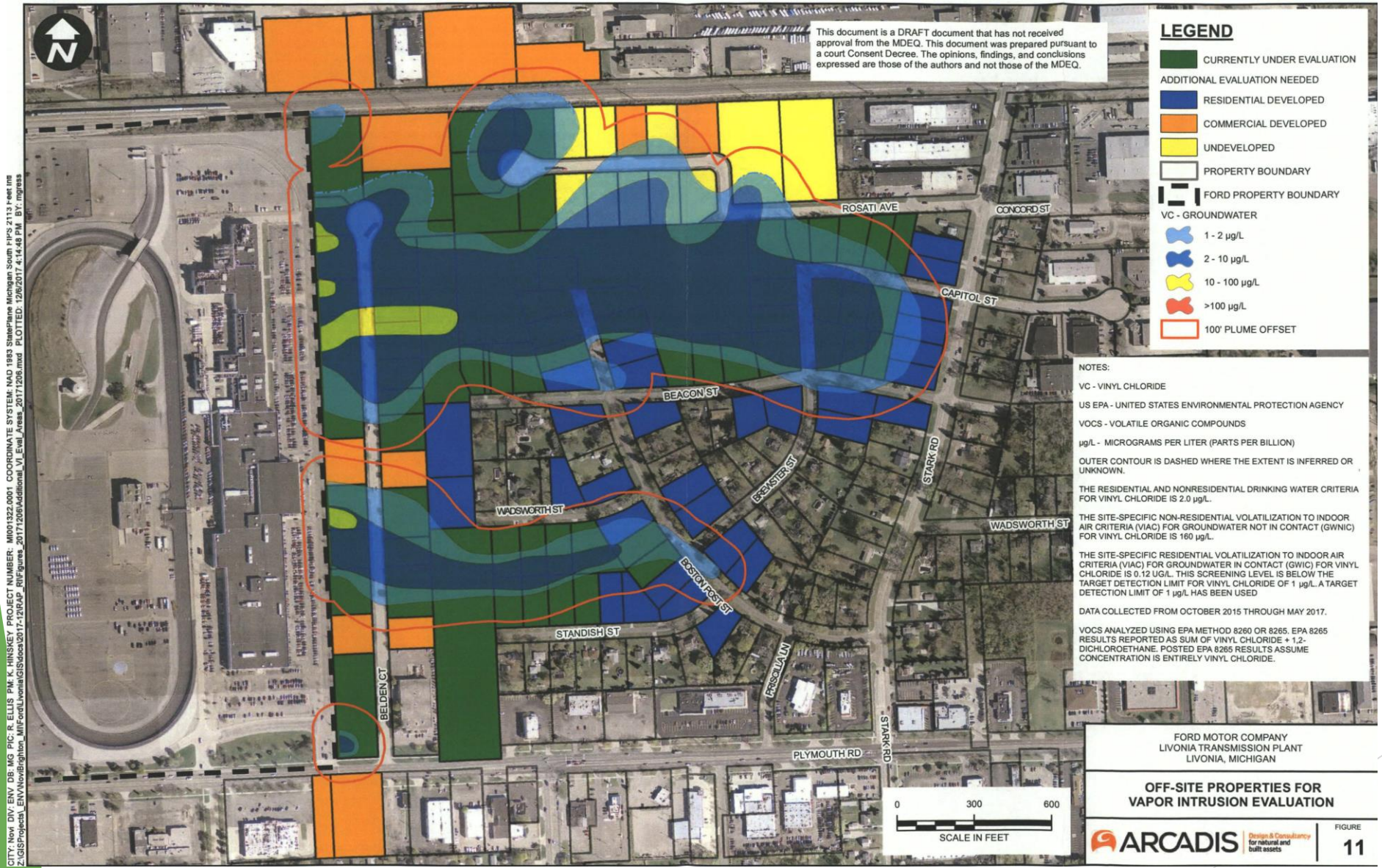


CITY: Now: DIV: ENV: DB: MD: PIC: R. ELLIS: PM: K. HINSKEY: PROJECT NUMBER: M001322.0001: COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Int Z: GISProject: ENV:\now\arlington\_mfp\env\livonia\GIS\030310\030310\_0402.mxd: G:\\_VC\_2018\0402.mxd: PLOTTED: 4/12/2018 8:42:35 AM: BT: ingress



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# Ford's Initial Conceptual Site Model: Potentially Impacted Properties off-site



# Disapproval of Proposed Investigation



Ford submits  
Response Activity  
Plan to DEQ

**Dec. 2017-  
Mar. 2018**

- ▶ Ford proposed additional investigation activities in a single Response Activity Plan, including investigating vapor intrusion and further off-site delineation to the north
- ▶ DEQ determined the proposed actions to be insufficient to adequately investigate risks
- ▶ Consent Decree required separate plans for vapor intrusion and remedial investigation

# Reasons for Disapproval



- ▶ Groundwater sampling methodology concerns
  - ▶ Soil-gas sampling methodology concerns
  - ▶ Unspecified schedule for completing work
  - ▶ Additional properties required investigation
  - ▶ Additional monitoring wells needed
  - ▶ Consent Decree requirement of separate plans for a vapor investigation and a remedial investigation
- 
- ▶ Response Activity Plan disapproved on March 16, 2018

# Proposed Approval of Investigations



Apr. 2018  
- Ongoing



Ford submits  
revised Response  
Activity Plans to  
DEQ

- ▶ Ford has submitted two Response Activity Plans
- ▶ The Vapor Intrusion Plan proposes to investigate if there is immediate risk of off-site vapor intrusion at homes and businesses
- ▶ The Remedial Investigation Plan proposes to further define and investigate data-gaps as identified in the 2017 Conceptual Site Model
- ▶ This DEQ started the 30 day public comment period on July 23 with a notice in the Free Press and Detroit News
- ▶ The Response Activity Plans are available for review, along with the proposed DEQ review comments and decision, at the DEQ open house table



# Ford Response Activity Plans Proposal Highlights



## On-Site:

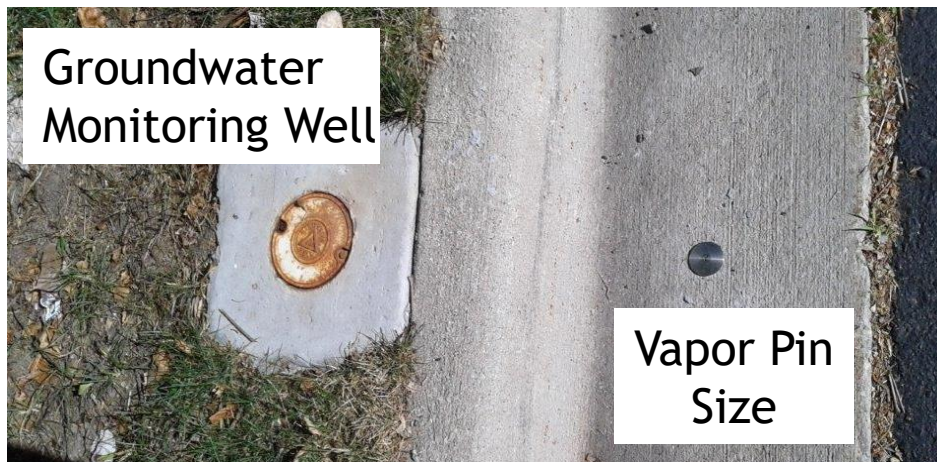
- ▶ Additional evaluation of sub-slab soil gas in portions of the Plant and Automatic Transmission New Product Center that have not previously been sampled
- ▶ On-site source characterization, including potential source area identification and further evaluation of the northwest portion of the Plant
- ▶ A utility corridor analysis to determine if underground utility corridors serve as preferential pathways for contamination to migrate.
- ▶ Continued monitoring on-site of existing sampling points

## Off-Site:

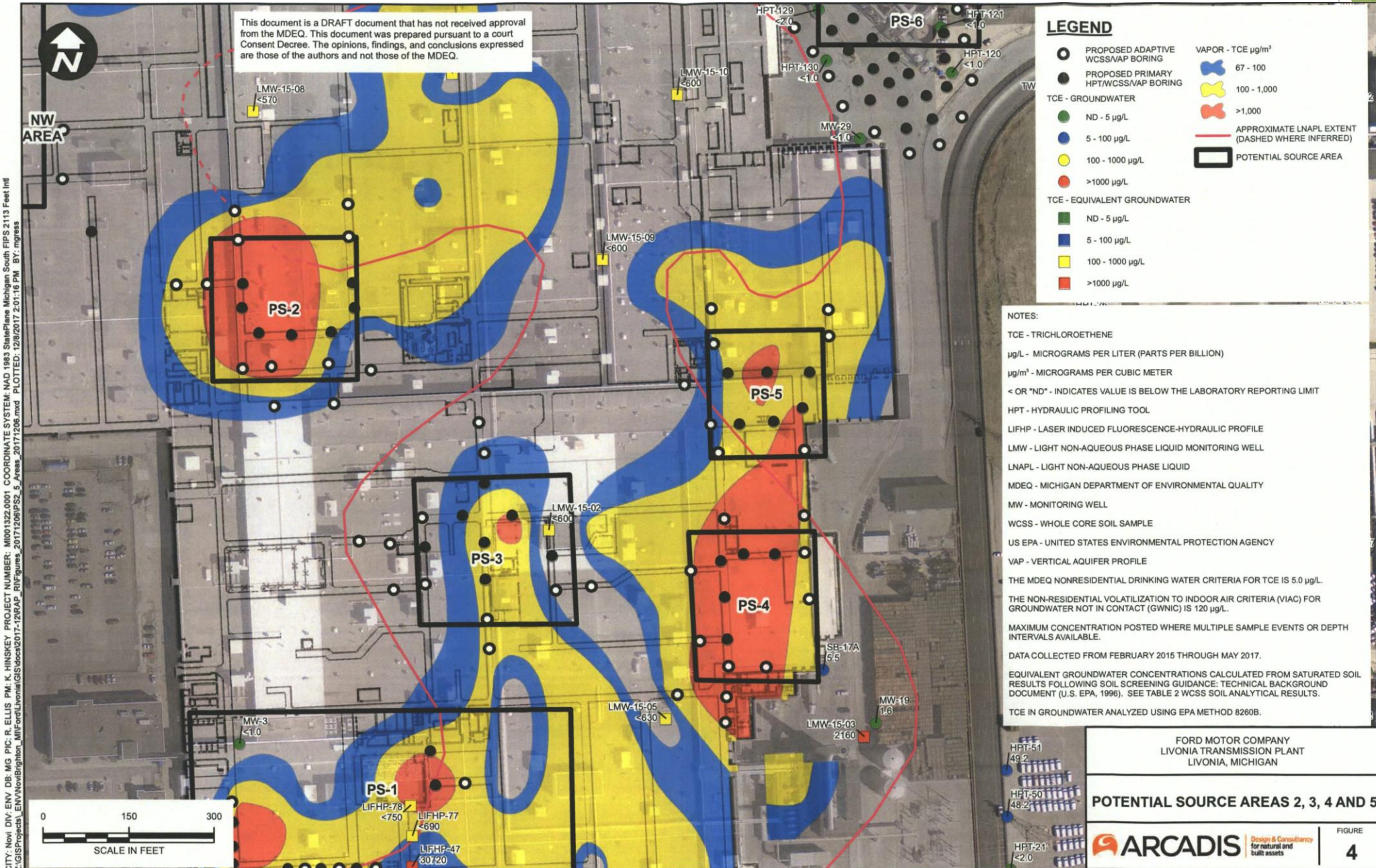
- ▶ Securing access to off-site properties with residents and business owners
- ▶ Collecting and evaluating building-specific property information, such as building construction details and presence of sump pumps
- ▶ Collection of sub-slab soil vapor in homes and businesses where building construction allows for this method of sampling and collection of indoor air samples
- ▶ Installation of additional monitor wells
- ▶ A utility corridor analysis to determine if underground utility corridors serve as preferential pathways for contamination.
- ▶ Continued monitoring off-site of existing sampling points.

# Investigation Activities

- ▶ **Groundwater Monitoring Wells:**
  - ▶ Present in neighborhood and on-site, additional wells proposed on and off-site
- ▶ **Soil Gas Wells:**
  - ▶ Present in neighborhood and on-site, additional soil gas wells proposed both on and off-site
- ▶ **Sub Slab Vapor Pins:**
  - ▶ Present on-site; additional vapor pins proposed both on and off site
- ▶ **Indoor Air:**
  - ▶ Sampled on-site; additional samples proposed both on and off site



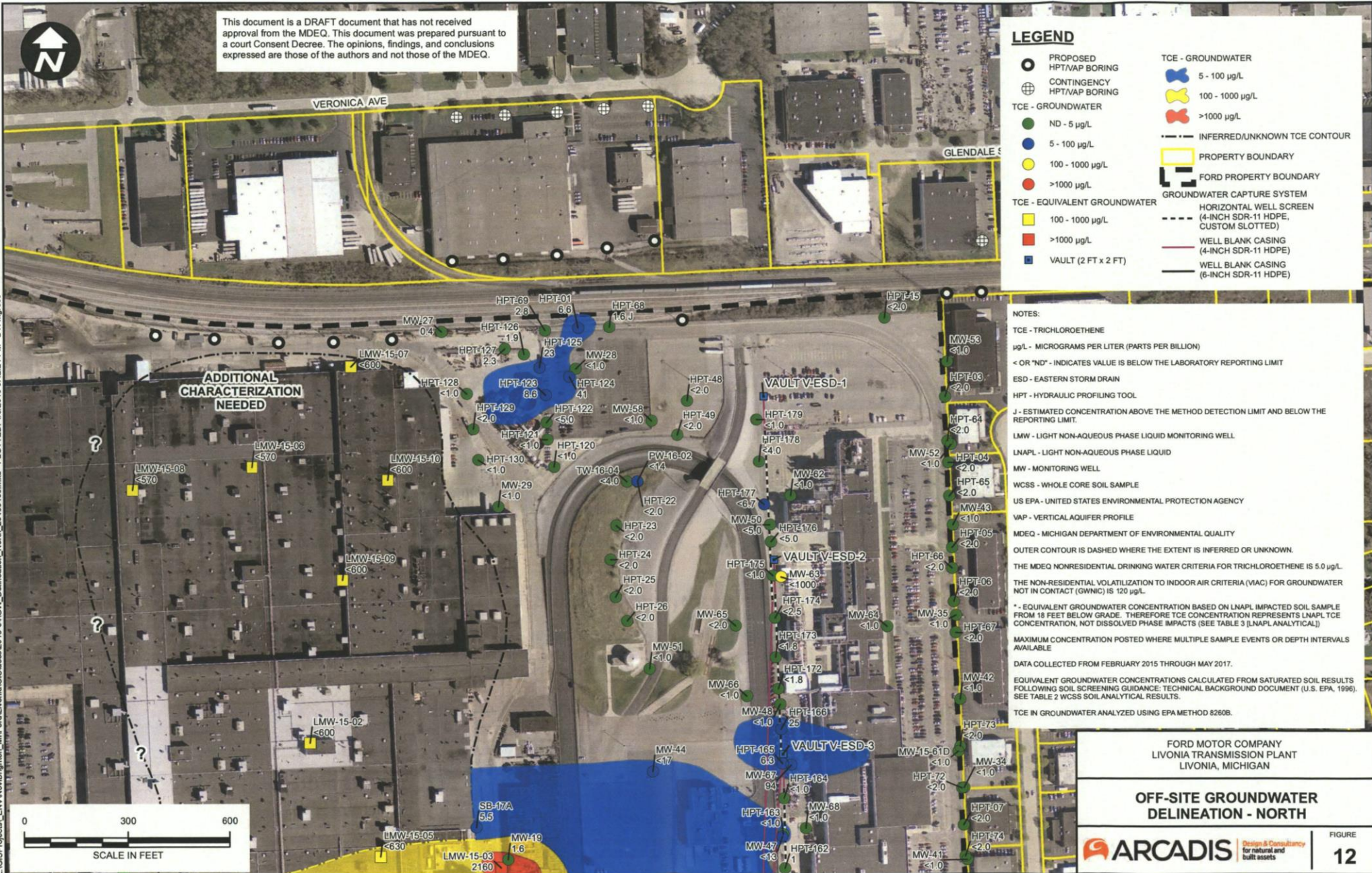
# Ford's proposed additional on-site borings



# Ford's proposed additional off-site borings - north



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### LEGEND

- PROPOSED HPT/VAP BORING
- ⊕ CONTINGENCY HPT/VAP BORING
- TCE - GROUNDWATER
  - ND - 5 µg/L
  - 5 - 100 µg/L
  - 100 - 1000 µg/L
  - >1000 µg/L
- TCE - EQUIVALENT GROUNDWATER
  - 100 - 1000 µg/L
  - >1000 µg/L
- VAULT (2 FT x 2 FT)
- TCE - GROUNDWATER
  - 5 - 100 µg/L
  - 100 - 1000 µg/L
  - >1000 µg/L
- INFERRED/UNKNOWN TCE CONTOUR
- ▭ PROPERTY BOUNDARY
- ▭ FORD PROPERTY BOUNDARY
- ▭ GROUNDWATER CAPTURE SYSTEM
  - HORIZONTAL WELL SCREEN (4-INCH SDR-11 HDPE, CUSTOM SLOTTED)
  - WELL BLANK CASING (4-INCH SDR-11 HDPE)
  - WELL BLANK CASING (6-INCH SDR-11 HDPE)

**NOTES:**

TCE - TRICHLOROETHENE

µg/L - MICROGRAMS PER LITER (PARTS PER BILLION)

< OR "ND" - INDICATES VALUE IS BELOW THE LABORATORY REPORTING LIMIT

ESD - EASTERN STORM DRAIN

HPT - HYDRAULIC PROFILING TOOL

J - ESTIMATED CONCENTRATION ABOVE THE METHOD DETECTION LIMIT AND BELOW THE REPORTING LIMIT.

LMW - LIGHT NON-AQUEOUS PHASE LIQUID MONITORING WELL

LNAPL - LIGHT NON-AQUEOUS PHASE LIQUID

MW - MONITORING WELL

WCSS - WHOLE CORE SOIL SAMPLE

US EPA - UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

VAP - VERTICAL AQUIFER PROFILE

MDEQ - MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

OUTER CONTOUR IS DASHED WHERE THE EXTENT IS INFERRED OR UNKNOWN.

THE MDEQ NONRESIDENTIAL DRINKING WATER CRITERIA FOR TRICHLOROETHENE IS 5.0 µg/L

THE NON-RESIDENTIAL VOLATILIZATION TO INDOOR AIR CRITERIA (VIAC) FOR GROUNDWATER NOT IN CONTACT (GWNIC) IS 120 µg/L.

\* - EQUIVALENT GROUNDWATER CONCENTRATION BASED ON LNAPL IMPACTED SOIL SAMPLE FROM 18 FEET BELOW GRADE. THEREFORE TCE CONCENTRATION REPRESENTS LNAPL TCE CONCENTRATION, NOT DISSOLVED PHASE IMPACTS (SEE TABLE 3 [LNAPL ANALYTICAL])

MAXIMUM CONCENTRATION POSTED WHERE MULTIPLE SAMPLE EVENTS OR DEPTH INTERVALS AVAILABLE

DATA COLLECTED FROM FEBRUARY 2015 THROUGH MAY 2017.

EQUIVALENT GROUNDWATER CONCENTRATIONS CALCULATED FROM SATURATED SOIL RESULTS FOLLOWING SOIL SCREENING GUIDANCE: TECHNICAL BACKGROUND DOCUMENT (U.S. EPA, 1996). SEE TABLE 2 WCSS SOIL ANALYTICAL RESULTS.

TCE IN GROUNDWATER ANALYZED USING EPA METHOD 8260B.

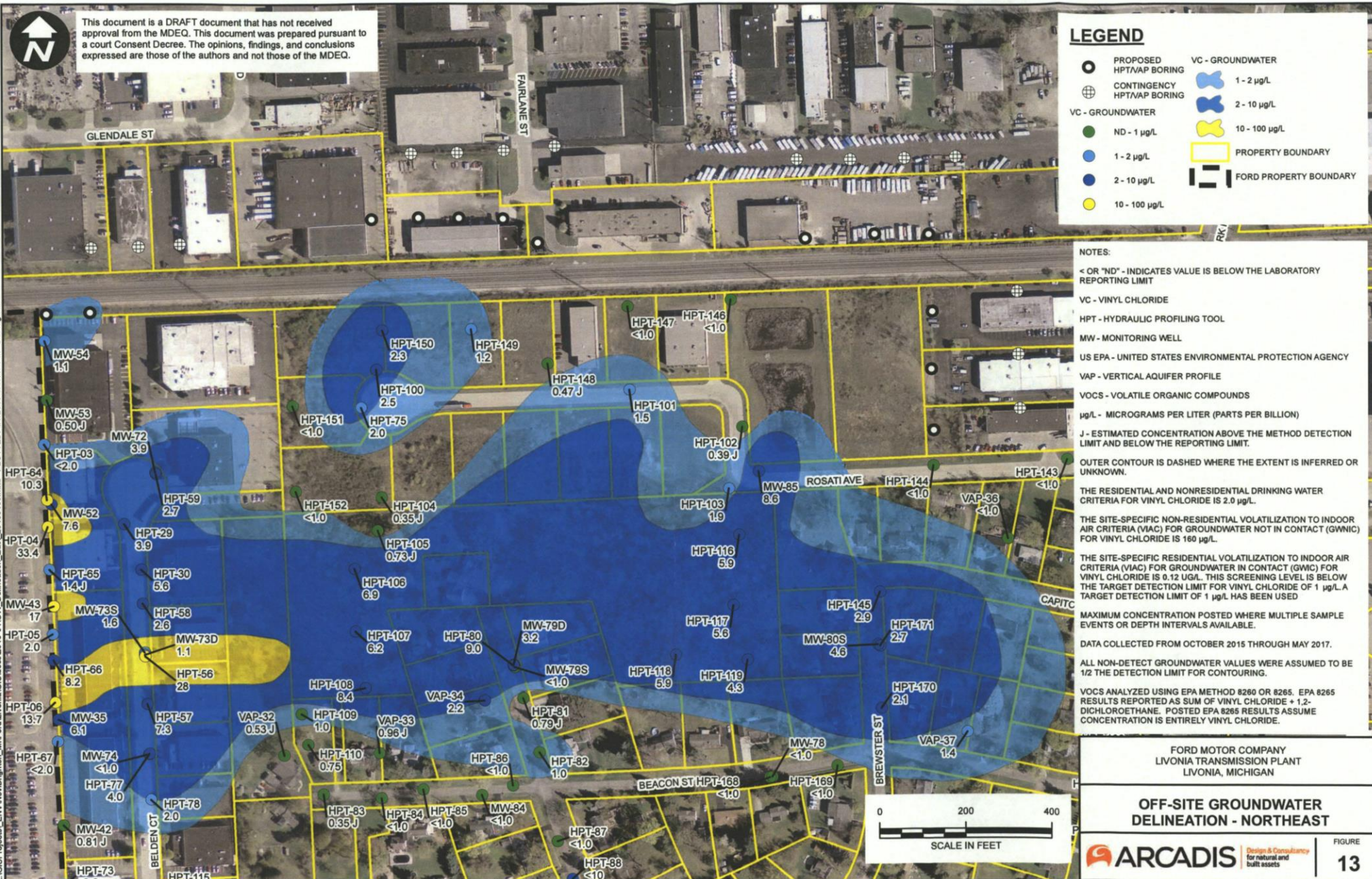
FORD MOTOR COMPANY  
LIVONIA TRANSMISSION PLANT  
LIVONIA, MICHIGAN

**OFF-SITE GROUNDWATER  
DELINEATION - NORTH**

**ARCADIS** Design & Consultancy  
for natural and built assets

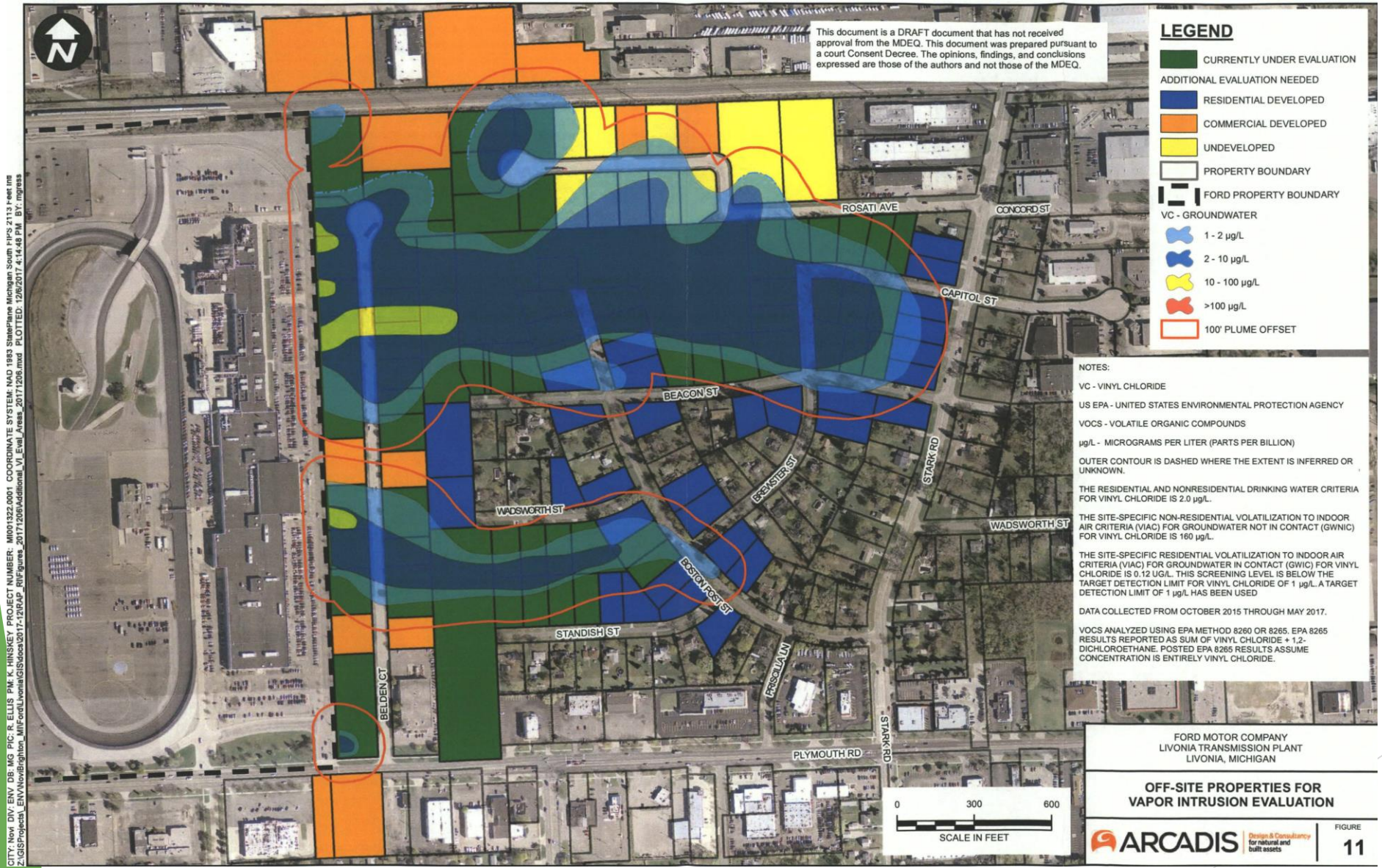
FIGURE  
**12**

# Ford's proposed additional off-site borings - northeast



CITY: Novi DIV: ENV DB: MG PIC: R. ELLIS PM: K. HINSKEY PROJECT NUMBER: M001322.0001 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Int Z:GISProjects\_Env\Novi\Borough\_Miford\Novia\GIS\docs\2018-04\GW\_Delineation\_East\_20180405.mxd PLOTTED: 4/6/2018 3:43:47 PM BY: mgress

# Ford's depiction of potentially impacted properties off-site



# DEQ Proposed Modifications

## Response Activity Plan: Vapor Intrusion



- ▶ Comprehensive sub-slab soil gas samples will be collected within all habitable structures within the plume
- ▶ Shallow groundwater monitoring wells installed near structures to evaluate Vapor Intrusion potential
- ▶ Additional monitoring wells shall be installed within the plume and the 100' buffer zone. Any wells showing detections will be included in the area addressed by Ford
- ▶ The Michigan Department of Health and Human Services will direct the collection of indoor air samples
- ▶ Ford will add additional properties to those to be investigated and evaluated based on the analytical data from groundwater, sump water, soil-gas, and indoor air samples that are collected from off-site properties

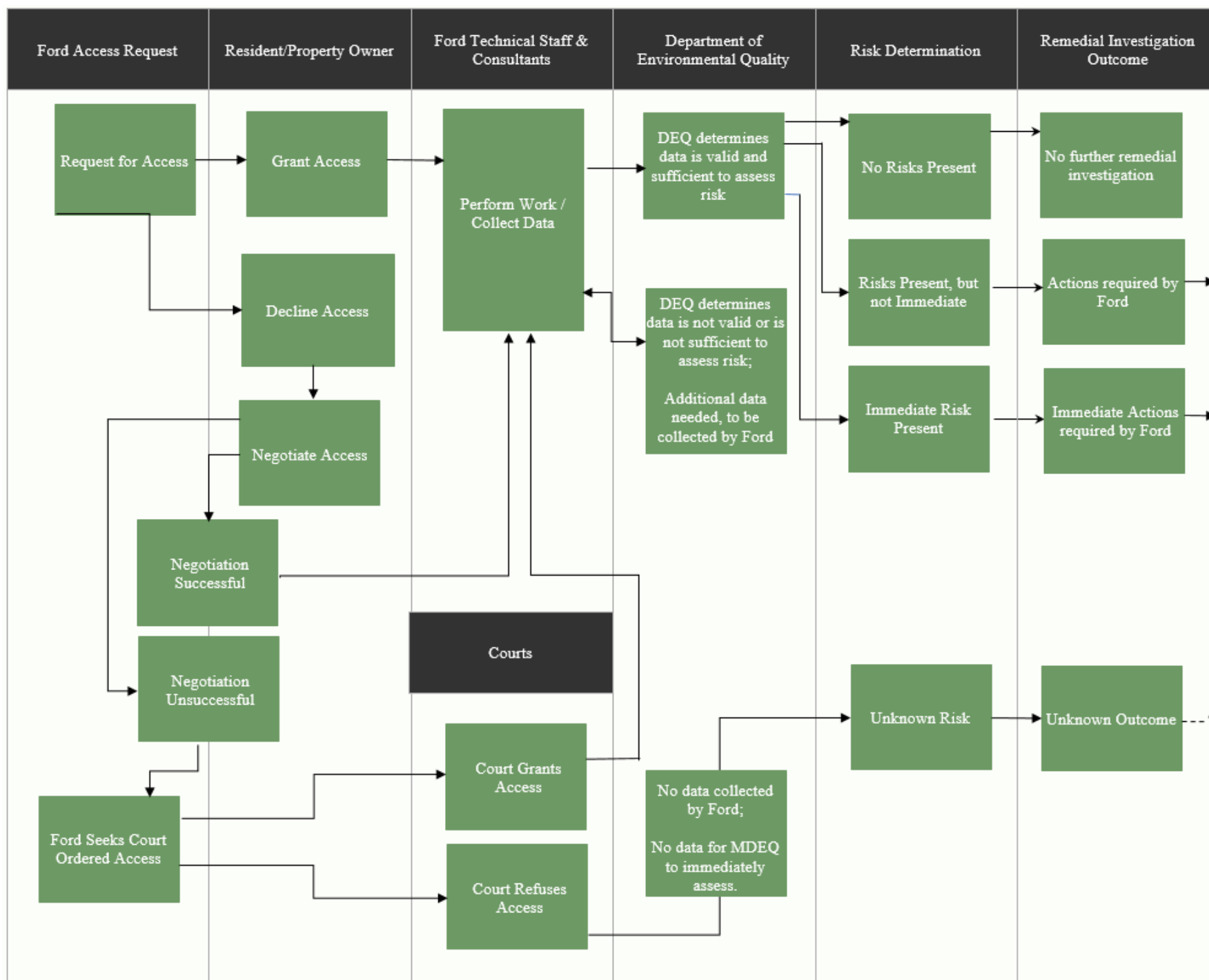
# DEQ Proposed Modifications

## Response Activity Plan: Remedial Investigation



- ▶ Utility corridor investigation should have a set schedule and investigation completed within 6 months
- ▶ Greater evaluation of on-site potential source areas, specifically the areas designated by Ford as “PS-2” and the “Northwest Corner”
- ▶ Additional monitoring wells shall be installed within the plume and the 100’ buffer zone to obtain additional data points to verify Ford’s model of the impacted areas, any wells showing detections will be included in the area to be addressed by Ford
- ▶ Ford shall notify the DEQ and the City of Livonia if residential or irrigation wells are found and Ford shall properly abandon the wells





# Access Flow Chart

# Going Forward



- ▶ The 30 day public comment period began July 22 and ends on August 21
- ▶ DEQ will collect public comments on the Response Activity Plans to be incorporated by Ford into the final Response Activity Plans
- ▶ DEQ proposes approval with modifications of both Response Activity Plans
- ▶ Response Activity Plans state Ford is required to begin securing access within one week of approval with modifications
- ▶ Mobilization will begin immediately after access agreements are in place; samples will take place at least quarterly, over at least a year
- ▶ If any collected data indicates an *immediate* risk to human health, Ford will notify DEQ and take immediate interim response activities to mitigate risk
- ▶ Under the consent decree Ford's obligations are ongoing beyond the collection of samples

# Questions for Panel?

## ▶ Panel members:

- ▶ Paul Owens, DEQ Remediation and Development Division, District Supervisor
- ▶ Beth Vens, DEQ Remediation and Development Division, Assistant District Supervisor
- ▶ Brandon Alger, DEQ Remediation and Development Division, Project Manager, Geologist
- ▶ Cyndi Mollenhour, DEQ Compliance and Enforcement Unit, Environmental Case Coordinator
- ▶ Christina Bush, DHHS Toxicology and Response Section, ATSDR Site Assessment Unit Manager
- ▶ Wayne County Department of Health, Veterans & Community Wellness

Additional information and resources available for review at:

Ford website: [www.fordlivoniabostonbeaconproject.com](http://www.fordlivoniabostonbeaconproject.com)

Ford email contact: [info@fordlivoniabostonbeaconproject.com](mailto:info@fordlivoniabostonbeaconproject.com)

*(content by Ford Motor Company)*

DEQ website: [www.michigan.gov/livoniavi](http://www.michigan.gov/livoniavi)

DEQ email contact: [DEQ-RRD-FORD-LIVONIA@Michigan.gov](mailto:DEQ-RRD-FORD-LIVONIA@Michigan.gov)

*(content by Department of Environmental Quality)*