



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTHEAST MICHIGAN DISTRICT OFFICE



C. HEIDI GREETHER
DIRECTOR

August 30, 2018

Ford Motor Company
c/o Mr. Todd M. Walton
Fairlane Plaza North, 8F
290 Town Center Drive
Dearborn, Michigan 48126

Dear Mr. Walton:

SUBJECT: Approval with Modifications
RE: Consent Decree No. 2:1712372-GAD-RSW
Response Activity Plan-Vapor Intrusion Evaluation
Ford - Livonia Transmission Plant
36200 Plymouth Road; Livonia, Wayne County, Michigan
MDEQ Site ID No. 82002970

The Michigan Department of Environmental Quality (MDEQ), Remediation and Redevelopment Division, has reviewed the Response Activity Plan-Vapor Intrusion Evaluation submitted by Ford Motor Company (Ford) in accordance with Section 6.6 of the Consent Decree entered into by the MDEQ and Ford on July 27, 2017. The response activity plan for conducting further investigations and evaluation of the volatilization to indoor air pathway was submitted by Arcadis of Michigan, LLC on the behalf of Ford on April 13, 2018. Section 13.2 of the Consent Decree requires MDEQ to review the submission and (a) approve the submission; (b) approve the submission with modifications; or (c) disapprove the submission and notify the Defendant of the deficiencies in the submission."

Based on MDEQ review, the Response Activity Plan-Vapor Intrusion Evaluation (RespAP-VI) is approved with the following modifications:

- **Section 1 – Schedule:** As it relates to obtaining access to off-site properties, the schedule shall be modified to address the requirement for Ford to pursue judicial action, if necessary.
- **Section 3 – Proposed Off-site Vapor Intrusion Response Activity Plan:** Add language to indicate:
 - Ford will continue to work with, and under the advisement of the Michigan Department of Health and Human Services (MDHHS) regarding the proposed collection of indoor air samples. Due to variability, the MDEQ does not recognize indoor air sampling as a reliable line of evidence, nor as reason not to mitigate a structure to address risk via the volatilization to indoor air pathway.

- The MDEQ considers 12 hours to represent the average work day for a non-residential structure.
- Ford shall understand that MDEQ staff will provide random and occasional oversight of sampling procedures and methodology; including split sampling for testing at the MDEQ laboratory.
- **Section 3 – Access Agreements:** The RespAP-VI states, *“Ford proposes to initiate sampling as soon as possible following receipt of a signed access agreement at each property via coordination with each property owner.”*

Within the response activity plan, this statement shall be changed to read, *“Ford proposes to initiate sampling within one week following receipt of a signed access agreement at each property via coordination with each property owner.”*

- **Section 3 – Collection of Building-Specific Samples:** Add language to the RespAP-VI to address the following:
 - MDEQ does not concur that adequate data is available to assess and define the groundwater plume. Ford shall add additional properties to those to be investigated and evaluated, as needed, based on the analytical data for samples of groundwater, sump water, soil-gas, and indoor air that are proposed to be collected from off-site properties. Detected concentrations that exceed the applicable generic or site-specific screening levels for each media will require modifications to the present groundwater plume model and the establishment of a new plume boundary to include/account for the 100' lateral inclusion zone. All properties within the new, defined limits of the groundwater plume (that incorporates properties within the lateral inclusion zone) will be included in the investigation.
 - Groundwater monitoring wells installed near structures shall be installed as permanent monitoring wells (not temporary) and shall be constructed so the screen intersects the top of the water table to properly assess the volatilization to indoor air pathway. Additional screens may be set in a nested well as situationally justified.
 - Groundwater samples from these wells shall be representative of the groundwater in contact with the adjacent/nearby structure.
 - At locations where sub-slab soil gas is unable to be sampled and concentrations exceeding vapor intrusion screening criteria or analytical method target detection limits are detected in groundwater samples collected from nearby monitoring wells or in groundwater collected from sumps present within the structures, whichever is applicable, for those structures, Ford will immediately initiate the remedial activities necessary to mitigate the risk from the volatilization to indoor air.
 - The off-site volatilization to indoor air pathway investigation and proposed sampling activities shall be considered/conducted at/within any permanent, fixed, and potentially inhabitable structures such as, but not limited to garages or insulated sheds.
 - Ford shall sample soil-gas and indoor air on days with a variety of weather and atmospheric conditions, including days when conditions are most

- conducive to vapor intrusion, taking factors that lead to hourly variation such as HVAC operation, inhabitant activity, etc. This will be reported in quarterly reports and referenced in any future proposals by Ford.
- Based upon the results of the property survey, Ford will prioritize homes with basements at the same depth of groundwater or lower than the depth of groundwater for immediate sample collection.
 - Numerous residents reported occasional standing water or flooding in their basements. The MDEQ has a non-exhaustive list of these homes. Ford shall obtain this information from the MDEQ, determine any additional residences with these conditions, and make these properties a priority in their investigation, along with other properties with basements. If results from sump water or other standing water indicates an exceedance of criteria the MDEQ should be contacted within 24 hours and immediate response activities may be required.
 - The collection of soil gas samples from shallow soil gas wells will require a strict quality control (QC) analysis including, but not limited to comparing CO₂ to O₂ ratios and documentation of the rate at which samples were collected. The data for samples not collected in exact accordance with the standard operating procedures (SOPs) included as part of the MDEQ 2013 VI Guidance Document may be incorporated with other lines of evidence but cannot be relied upon as a sole line of evidence to determine or negate the need for mitigation/remedial actions.
- **Section 5 – Reporting:** Ford shall notify the MDEQ if the proposed waste production is to exceed the estimated 100-115 barrels of waste as proposed in the Response Activity Plan Remedial Investigation.
 - **Additional Section, to satisfy Section 6.6(b)(i) – Proving the Groundwater Plume Model:**
 - To prove Ford's groundwater plume model as proposed, additional groundwater monitoring wells need to be installed between the point in the aquifer where the plume has been delineated to less than the analytical method target detection limit, and the edge of the 100' lateral inclusion zone. The monitoring wells should be added at intervals as necessary to demonstrate model confidence. This is required to further assess or demonstrate plume stability and to investigate the potential for variability in samples collected previously, at temporary Hydraulic Profiling Tool points.
 - To prove the groundwater plume model, Ford shall install nested or paired groundwater monitoring wells with a screen to intersect the water table, at the locations of any existing monitoring well which does not currently have a screen that intersects the top of the water table and are being used by Ford to extrapolate the extent of the vinyl chloride plume. The added wells shall be monitored and sampled in accordance with the MDEQ guidance document as part of the continuing site investigations to determine plume stability. Note: proving the model also includes proving the groundwater plume divide, as depicted by Ford on Figure 11 to assure it is appropriate to exclude these structures that are located between the

edges of the two plumes from further assessment for the volatilization to indoor air pathway.

- If, vinyl chloride is detected a concentration above the site-specific screening levels or analytical method target detection limit in any groundwater sample, collected from any of the new wells installed to comply with the direction provided in either of the above bullets, Ford must make the necessary modifications to the groundwater plume model and establish a new plume boundary (that includes a 100' lateral inclusion zone). All properties within the new area bounded by the lateral inclusion zone shall be included in the investigation.
- **General Comment – Modification to Response Activity Plan-Vapor Intrusion Evaluation:** As part of the response activities as proposed in the **Response Activity Plan-Vapor Intrusion Evaluation**, Ford shall also conduct a utility corridor analysis as outlined within Section 6.7 of the Consent Decree. Ford shall work with the MDEQ, as necessary, to determine what sampling is needed and where preferential pathways may or may not exist.

If the above modifications are not undertaken or accomplished, the MDEQ's approval with modifications of the Response Activity Plan-Vapor Intrusion Evaluation is withdrawn. The MDEQ's approval with modifications is also contingent upon **Ford's** timely implementation of the response activities as proposed in the plan in accordance with the schedule provided in the Response Activity Plan-Vapor Intrusion Evaluation.

Ford continues to suggest the presence of a clean water lens is protective of residents. Due to shallow groundwater and lack of data from the top of the shallow groundwater table, MDEQ does not agree with Ford's assertion that a clean water lens exists and is protective. Ford must verify that all remedial action decisions will be data-driven, and not based upon extrapolated data of an unproven water lens with unknown stability. The MDEQ wishes to also note that in many cases where chlorinated solvent groundwater contamination has an undetermined impact to the Volatilization to Indoor Air Pathway (VIAP), the responsible party chose to presumptively mitigate receptors within the known groundwater plume in consideration of lowering the risk to potentially impacted parties. This option is also available to Ford.

MDEQ's approval with modifications of the submission (Response Activity Plan-Vapor Intrusion Evaluation) is based upon the representations and information contained in the submittal, therefore the MDEQ expresses no opinion as to whether other conditions that may exist will be adequately addressed by the proposed response activities. Notwithstanding this approval with modifications, if environmental contamination is found to exist that is not addressed by the Response Activity Plan-Vapor Intrusion Evaluation and Ford is otherwise liable for the contamination, additional response activities may be necessary.

August 30, 2018

Pursuant to Paragraph 13.2, upon receipt of a notice of approval with modifications from the MDEQ, the Defendant shall proceed to take the actions and perform the response activities required by the Submission, as approved or as modified, and shall submit a new cover page and any modified pages of the Submission marked "Approved."

If Ford should have further questions or concerns, please contact Brandon Alger, Remediation Division, Southeast Michigan District Office, at 586-753-3826.

Sincerely,



Paul Owens, District Supervisor
Southeast Michigan District Office
Remediation and Redevelopment Division
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cc: Mr. Kris Hinskey, Arcadis of Michigan, LLC
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