

MEMO

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From:
Kris Hinskey

Date:
April 1, 2020

Arcadis Project No.:
30042006

Subject:
Response to EGLE - Monthly Updates on Offsite Mitigation Systems related to the Ford Livonia Transmission Plant, 36200 Plymouth Road, Wayne County, Michigan EGLE Site ID No.: 82002970

On behalf of Ford Motor Company (Ford), this memo has been prepared by Arcadis of Michigan, LLC for the Livonia Transmission Plant (LTP) site (the site). This memo is a response to the November 18, 2019 January 23, 2020, and February 14, 2020 letters from the Michigan Department of Environmental, Great Lakes, and Energy (EGLE), requesting additional information related to the interim preemptive mitigation systems installed east of LTP.

- *November 18, 2019 - The property owners at 12141 Boston Post are reported to have not provided Ford access for the necessary installation of performance metric points. A means to provide measurements of depressurization across the floor slab must be determined and results provided to EGLE for review. Provide information on the depressurization results at this property in the next monthly mitigation Memorandum.*
- *January 23, 2020 - The property owners at 12141 Boston Post are reported to have not provided Ford access for the necessary installation of performance metric points. A means to provide measurements of depressurization across the floor slab must be determined and results provided to EGLE for review. Several monthly reports have not accomplished this required metric and progress must be made on this residence.*

- *February 14, 2020 - The property owners at 12141 Boston Post are reported to have not provided Ford adequate access for the necessary installation of performance metric points within the residence. A means to provide mitigation for this structure must be determined and results provided to EGLE for review. Progress needs to be made on this residence.*

Response:

Thus far, the homeowner has prohibited the installation of sub-slab monitoring points within the finished spaces (e.g., through carpeted and/or finished floors) present within the slab on grade portion of the home. The property owner's denial of the monitoring point installation is documented in the October 24, 2018 and March 29, 2019 field notes. On November 25, 2019 Arcadis inquired again about the possibility of installing a sub slab monitoring point in the northwest corner of the living room and in the northeast corner of the dining room. The property owner replied on December 13, 2019 and stated, "absolutely not". On January 30, 2020 Arcadis inquired again about the possibility of installing a sub slab monitoring point in the northwest corner of the living room and in the northeast corner of the dining room. The property owner replied on January 30, 2020 and stated that he would think about it. Arcadis is continuing to pursue access for installation of the sub-slab monitoring points and will continue discuss with Ford what any options are for gaining access.

In the absence of vacuum data, post mitigation sampling has been used to demonstrate the absence of the seven constituents of concern (COCs) in indoor air and was completed on October 25, 2019 and on January 2, 2020. The post-mitigation indoor air samples collected on these dates were located in the slab on grade area of the home where monitoring of the differential pressure generated by the mitigation system is not being allowed by the homeowner. The analytical data packages were provided to all parties consistent with the access agreement on November 25, 2019 and February 26, 2020. The results of the sampling show that there have been no exceedances of the seven COCs for indoor air or sub-slab soil gas in the garage or home. Indoor air sampling will be continued at this location on a semi-annual basis until such time that sub-slab monitoring points are installed.

- *November 18, 2019 - The property owners at 12091 Brewster are reported to have not provided Ford access for the necessary installation of retro coat in the detached garage. A means to provide mitigation for this structure must be determined and results provided to EGLE for review.*
- *January 23, 2020 - The property owners at 12091 Brewster are reported to have not provided Ford access for the necessary installation of retro coat in the detached garage. A means to provide mitigation for this structure must be determined and results provided to EGLE for review. Progress needs to be made on this residence.*
- *February 14, 2020 - The property owners at 12091 Brewster are reported to have not provided Ford access for the necessary installation of Retro-Coat™ in the detached garage. The January 2020 Arcadis memo indicates the homeowner is considering providing access for mitigation to detached garage with expected application in spring of 2020. If this is unsuccessful another solution will be required such as the option of installing a sub-slab depressurization system for the garage. Please update EGLE on progress in the next update.*

Response:

Arcadis has contacted the homeowner on multiple occasions and the homeowner continues to deny access to mitigate the detached garage. The garage is not inhabited or occupied at this time and is primarily used to store a motorcycle and vehicle. In addition, three rounds of vapor intrusion sampling

have been completed to date, and there have been no exceedances of the seven COCs for indoor air or sub-slab soil gas in the garage or home. During the OMM/sampling event on January 23, 2020, Arcadis asked the homeowner again about access to the garage for the application of Retro-Coat™. The property owner is reconsidering allowing access to the detached garage to have Retro-Coat™ applied in the fall of 2020. Arcadis is continuing to work with the homeowner to accelerate access sooner than fall 2020 for the Retro-Coat™ application.

- *January 23, 2020 - The property owners at 34990 Beacon are reported to have not provided Ford access for the necessary installation of retro coat in the detached garage. A means to provide mitigation for this structure must be determined and results provided to EGLE for review. Progress needs to be made on this residence.*
- *February 14, 2020 – The property owner is reported to have denied Ford’s proposal to install Retro-Coat™ in a detached garage wishing to instead opt for the use of a previously applied epoxy named PremierGarage®. Technical specifications for this product should be submitted to EGLE for review. In the meantime, a means to provide mitigation for this structure must be determined and results provided to EGLE for review.*

Response:

The property owner has initially denied the application of Retro-Coat™ in the detached garage, since the floor has an existing epoxy coating. Arcadis met with the property owners on January 30, 2020 to discuss the rebuild of the basement. During that conversation Arcadis explained again that EGLE is requiring the mitigation of the detached garage. The homeowner stated they would consider the application of Retro-Coat™ in the spring of 2020. On January 31, 2020 the property owners provided the name of the product which was applied to the detached garage. The product is called PremierGarage®. The homeowner requested that Arcadis and EGLE review this product and accept it in lieu of the Retro-Coat™. Arcadis has contacted the manufacturer and has received a response indicating that the product has not been tested as a barrier to vapor intrusion. Therefore, is not considered as an appropriate vapor barrier. Arcadis is reviewing alternatives to present to the homeowner. Four rounds of indoor air sampling have been completed within the garage, and there have been no exceedances of the seven COCs.. Indoor air sampling within the detached garage will be continued at this location on a semi-annual basis until such time that the structure has been mitigated.

- *February 14, 2020 – 34480 Capitol – The installed data-logger collected data that Arcadis has described as erratic, beginning with the January 7, 2020, Operation, Monitoring and Maintenance (OM&M) event. The erratic pressure appears to occasionally cause a loss of negative pressure, rendering the system temporarily ineffective. Ford needs to investigate and determine the causes and implement a solution before the next update memo and ensure that a minimum negative pressure is maintained. Maintaining a negative pressure at a minimum of -0.005 inches wc allows for minor system fluctuations and allows for an adequate response time is necessary to ensure the mitigation system remains reliable an effective. The vacuum should be increased to allow for this.*

Response:

Additional work was completed at this property during February as described in the February 28, 2020 monthly update and on March 2, 2020. The improved vacuum coverage is demonstrated in the graph below where all differential pressure levels recorded are -0.008 in wc or more negative since completion of the work on March 2, 2020.



- November 18, 2019 - The property owners at 12100 Boston Post are reported to have not provided Ford access for the necessary access into a shed to install retro coat. A means to provide mitigation for this structure must be determined and results provided to EGLE for review.
- January 23, 2020 - The property owners at 12100 Boston Post are reported to have not provided Ford access for the necessary access into a shed to install retro coat. It was stated that the shed is unsafe and cannot be occupied, however, this may be a temporary condition and a means to provide mitigation for this structure must be determined and results provided to EGLE for review. Progress needs to be made on this residence.
- February 14, 2020 – 12100 Boston Post - Additionally, property owners are reported to have not provided the necessary access into a shed to install Retro-Coat™. It has been previously stated that the shed is unsafe and cannot be occupied, however, this may be a temporary condition and a means to provide mitigation for this structure must be determined with results provided to EGLE for review. Progress needs to be made on this residence.

Response:

The homeowner has denied application of Retro-Coat in the shed located on the property due to the unsafe condition of the shed for occupancy. Arcadis will evaluate the condition of the shed during each routine semi-annual OM&M event. At such time if the shed is deemed safe for occupancy, the application of Retro-Coat will again be proposed to the homeowner. The first routine OM&M event was completed on February 10, 2020, and mitigation of the shed was offered to the homeowner. The homeowner indicated that the roof was falling in and denied access to the shed until such time that the roof is repaired. Arcadis will continue to monitor the condition of the roof and request access during semi-annual OM&M visits.

- February 14, 2020 – 12036 Brewster – The residence has a data log that shows that the vacuum is typically higher than -0.005 inches wc which does not allow for minor system fluctuations or allow for adequate response times to ensure the mitigation system is reliable and effective. The vacuum should be increased to allow for this. Additionally, there were times when a positive pressure was recorded, the mitigation system should be evaluated and adjusted to correct this from occurring.

Response:

An update was provided in the February 28, 2020 monthly update showing the results of the system adjustments that were made. The majority of the logged differential pressures are now -0.005 in wc or more higher.



- November 18, 2019 - The homes at 34682 Beacon, 34990 Beacon, 12100 Boston Post, 34591 Beacon, and 12067 Boston Post had one point or more that did not meet the minimum depressurization standard in the August 30, 2019, and September 30, 2019, reports. Information regarding depressurization was not provided in the October 31, 2019 and should be included in future Memorandums. Please report on the actions taken to achieve adequate depressurization in this point
- January 23, 2020 -The residences at 34682 Beacon, 12100 Boston Post and 34591 Beacon had one point or more that did not meet the minimum depressurization standard for multiple months. This standard should be met to assure the systems are working adequately and actions should be taken to meet this standard on an expedited basis.
- February 14, 2020 – 34682 Beacon– This residence has a data log that shows that the vacuum is typically higher than -0.005 inches wc which does not allow for minor system fluctuations or allow for adequate response times to ensure the mitigation system is reliable and effective. The vacuum should be increased to allow for this.
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Response:

34682 Beacon - On September 7, 2019, a vacuum transmitter was installed at sub-membrane monitoring point MP-5, since the property owner would not allow the transmitter to be installed at SSMP-4, located within the finished slab on grade portion of the home. Access to the inside of the home was granted on September 18, 2019 to perform system adjustments resulting in the following monitoring point readings, SSMP-1: -0.107 in wc, SSMP-2: -0.053 in wc, SSMP-3: -0.073 in wc, SSMP-4: -0.007 in wc, SSMP-5: -0.022 in wc, MP-4: -0.013 in wc, and MP-5: -0.009 in wc. The data logged by the vacuum transmitter is provided below. Logging data demonstrates that a differential pressure of -0.009 in wc or more negative is continuously being maintained and that the system continues to operate effectively in the crawlspace portion of the home. Per the February 28, 2020 monthly update, additional work will be completed at this property to address a reduction in vacuum coverage in the slab area of the home.



Additionally, a post mitigation indoor air sample was collected on December 16, 2019 within the slab on grade portion of the home containing sub-slab monitoring point SSMP-4. The analytical data package was provided to all parties consistent with the access agreement on February 10, 2020. The results of the sampling show that there have been no exceedances of the seven COCs for indoor air or sub-slab soil gas in the garage or home. All monitoring points will continue to be monitored on a semi-annual basis. The first routine semi-annual OM&M monitoring event was completed on February 24, 2020 and included an indoor air sample collected within the slab on grade portion of the home.

12100 Boston Post – A vacuum transmitter was installed on the Sub-Slab Monitoring Point SSMP-4 located in the attached garage addition on May 4, 2019 to continuously monitor vacuum levels and to confirm that vacuum is being maintained, since the vacuum level was less than the performance metric established by EGLE of -0.02 in wc. Data logged by the vacuum transmitter is provided below. Differential pressure levels are being maintained that are more negative than -0.020 in wc at SSMP-4, demonstrating continued effective operation in the crawlspace and attached garage portions of the home.



On June 11, 2019, access to sub-slab monitoring point SSMP-2 (located in the raised slab addition) was provided by the homeowner and was measured at -0.002 in wc. However, both of the sub-membrane monitoring point (MP-1 and MP-2) and the sub-slab monitoring points in the attached garage (SSMP-1 and SSMP-3) meet the performance metric established by EGLE of -0.02 in wc. Arcadis was provided access to the property on September 23, 2019 and October 26, 2019 to perform

additional evaluations of the system performance within the raised slab portion of the home. Air leakage was observed to be occurring behind the finished building materials, limiting vacuum propagation. The carpeting was pulled back, and this area was sealed to the extent possible from inside the living room and a second sub-slab suction point was installed from inside the crawlspace. Valve adjustments were also made to force more air to be extracted from the raised slab area. This resulted in sub-slab soil being pulled into the system, so the valves were readjusted to prevent this. Arcadis has contacted the property owner monthly to gain access and has proposed additional sealing around the exterior of the raised slab foundation to reduce air leakage and enhance vacuum coverage in the raised slab area. Arcadis will continue to coordinate with the property owner to schedule the completion of these tasks during favorable weather conditions.

The results of the sampling show that there are no exceedances of the seven COCs for indoor air or sub-slab soil gas in the garage or home. One indoor air sample was collected on February 10, 2020 within the slab on grade portion of the home containing sub-slab monitoring point SSMP-2. Once the results have been reviewed and validated, the data package will be submitted to all parties as outlined in the access agreement. Indoor air sampling will be continued at this location on a semi-annual basis until such time that consistent vacuum influence is established within the slab on grade portion of the home.

34591 Beacon - A vacuum transmitter was installed on September 16, 2019 at sub-slab monitoring point SSMP-1 to continuously monitor vacuum levels and to confirm that vacuum is being maintained since the vacuum level was less than the performance metric established by EGLE of -0.02 in wc. System modifications were completed on February 28, 2020. The data logged by the vacuum transmitter presented below demonstrates the resulting improvement in performance. The differential pressure of -0.010 in wc or more negative is now continuously being maintained at SSMP-1 and the system is operating effectively.



- *November 18, 2019* - The home at 12067 Boston Post had one point or more that did not meet the minimum depressurization standard in the August 30, 2019, and September 30, 2019, reports. Information regarding depressurization was not provided in the October 31, 2019 and should be included in future Memorandums. Please report on the actions taken to achieve adequate depressurization in this point.

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- January 23, 2020 -The sub-slab depressurization system at 12067 Boston Post had one point, MP-1, that did not meet the minimum depressurization standard. Can adjustments to the system be made to meet the minimum depressurization standard?
- February 14, 2020 – 12067 Boston Post – This residence has a data log that shows that the vacuum is typically higher than -0.005 inches wc which does not allow for minor system fluctuations or allow for adequate response times to ensure the mitigation system is reliable and effective. The vacuum should be increased to allow for this.

Response:

A vacuum transmitter was installed at sub-membrane monitoring point MP-1 on August 28, 2019 to continuously monitor vacuum levels and to confirm that vacuum is being maintained since the vacuum level was less than the performance metric established by EGLE of -0.02 in wc. Note that system adjustments were performed prior to the installation of the transmitter at MP-1, however -0.020 in wc was not able to be continuously maintained. The other three sub-membrane monitoring points installed at this property all meet the performance metric established by EGLE of -0.02 in wc. Data logged by the vacuum transmitter is provided below. Logging data demonstrates that a differential pressure of -0.011 in wc or more negative is continuously being maintained at MP-1 and that the system continues to operate effectively.

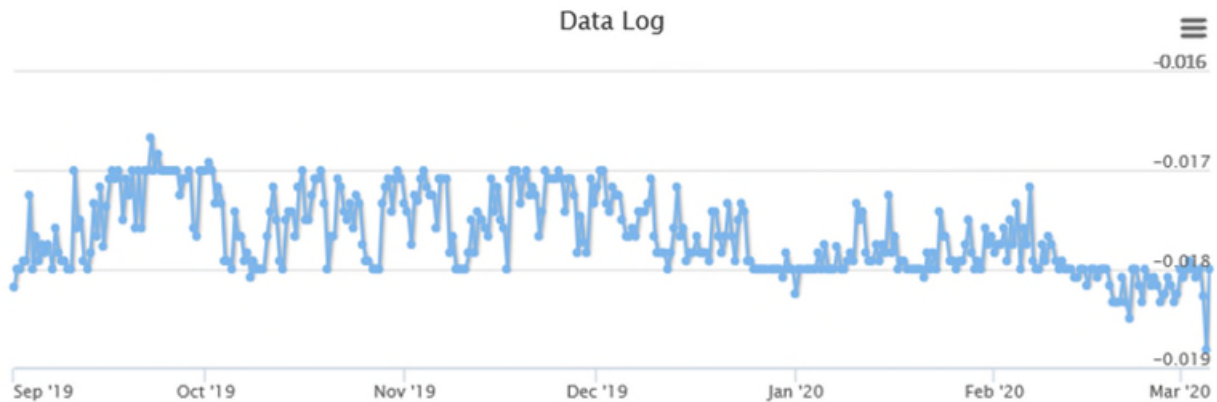


- November 18, 2019 - The home at 34990 Beacon had one point or more that did not meet the minimum depressurization standard in the August 30, 2019, and September 30, 2019, reports. Information regarding depressurization was not provided in the October 31, 2019 and should be included in future Memorandums. Please report on the actions taken to achieve adequate depressurization in this point.
- January 23, 2020 - The sub-slab depressurization system at 34990 Beacon had one point, MP-7, that did not meet the minimum depressurization standard. Can adjustments to the system be made to meet the minimum depressurization standard?

Response:

A vacuum transmitter was installed on August 28, 2018 at Monitoring Point MP-7 to continuously monitor vacuum levels and to confirm that vacuum is being maintained since the vacuum level was less than the

performance metric established by EGLE of -0.02 in wc. Note that system adjustments were incorporated on August 22, 2019, and the vacuum level at MP-7 has been optimized to the extent possible. The other six sub-membrane monitoring points installed at this property all meet the performance metric established by EGLE of -0.02 in wc. The data logged to date by the vacuum transmitter is provided below. All logging data demonstrates that differential pressure of -0.016 in wc or more negative is continuously being maintained at MP-7 and that the system continues to operate effectively.



- *November 18, 2019 - The mitigation system at 12089 Boston Post was previously reported to have water within the mitigation system and it was proposed that when it rains more than 1 inch in 24 hours the system will be evaluated. This is acceptable however, multiple days with rain events of less than 1 inch should also trigger evaluation of the system. If water is encountered, measures should be taken to prevent water from entering the system on a permanent basis.*

Response:

Arcadis will complete an evaluation of the system when a rain event exceeds one inch within a 24-hour period (AcuuWeather, 2020). The frequency of inspection during heavy rain events or flooding, was provided to EGLE in a memo on June 28, 2019. This frequency may be adjusted if one inch of rain is not found to be impacting system performance. If water is found to be inhibiting system performance resulting in a loss of vacuum in the sub-slab monitoring points, modifications to the system will be completed. This may include adjustment to the flow control valves in the riser pipes and/or resizing of the mitigation system fan. From January 10, 2020 to January 12, 2020 there was approximately 2.56 inches of precipitation. No water was reported within the mitigation system during the follow up inspection and system performance was not impacted during an O&M inspection conducted on January 15, 2020.

- *November 18, 2019 - Water has been encountered on a few liners at various homes. The source of the water has not been determined to date. If the water re-occurs at properties, determine the source of the water and ensure it will not affect the performance of the mitigation system.*

Response:

Water present on the barriers has been attributed to plumbing leaks and/or rain events. Arcadis has made numerous plumbing repairs during installation of the interim preemptive mitigation systems at no cost to the homeowners. Arcadis has prepared a water response plan that was submitted to EGLE on June 28, 2019 that describes the long-term management plan. In addition, Arcadis staff is on call to

respond and address rain events in a timely manner in cooperation with homeowner availability. The response measures include removal of water, assessment of the source of water, and repair of barriers, if needed.

- *November 18, 2019 - Property owners at 12121 Boston Post, 12124 Boston Post, and 34644 Beacon are indicated as not providing Ford access according to the Memorandums. No dates for next steps at these properties were provided in the August 30, 2019, mitigation Memorandum. Please provide estimated dates and details of the next steps Ford will take for interim preemptive mitigation at these properties to EGLE by November 30, 2019.*
- *February 14, 2020 – 12121 Boston Post - Ford is still pursuing access to this property through legal actions. Please update as progress is made. Remaining installations – Ford is still required to complete installation of systems at 34380 Capitol, 34450 Capitol, and 34644 Beacon. Progress at these properties is shown in the report and it is EGLEs expectation this work is to be completed expediently.*

Response:

34380 Capitol – Arcadis and Arcadis’s subcontractor met with the homeowner on February 25, 2020 to collect information required for the City of Livonia permits. Arcadis will continue to coordinate the installation of the mitigation system with the homeowner and to ensure that all permits are place prior to implementation.

34450 Capitol – The system installation in the crawlspace portion of the home began on March 3, 2020. Additional details will be provided in the March monthly mitigation update memo.

12124 Boston Post - The claim for access to 12124 Boston Post has been dismissed because the property owner is now allowing access. Arcadis has been working with the homeowner as described in the monthly mitigation Memorandums and the installation began on January 29, 2020. As of February 10^t, the following tasks have been completed: the installation of two exterior crawl space access points, installation of an interior crawl space door, asbestos removal, and plumbing repairs. During the inspection following the asbestos removal, several hazards within the crawl space were identified. Arcadis is working to address these hazards which include electrical wiring issues with the homeowner’s cooperation so that installation can continue. Photos of the crawl space documenting these conditions are below:



Heating duct without support beam is lying on dirt floor.



Numerous heating ducts lying on the floor or hanging with less than 10” of clearance below.



Water meter with multiple leaks



Numerous loose Romex 120V wrapped around a brick pillar.

34644 Beacon – Arcadis began construction of the IPM system on February 13, 2020, and installation was completed on March 6, 2020 with all monitoring points meeting the performance metric established by EGLE of -0.02 in water column (wc).

12121 Boston Post - The suit seeking access to the properties at 12121 Boston Post has been removed by this property owner to federal court. Ford has moved to remand that lawsuit to state court. That motion to remand is now fully briefed and awaiting a ruling from the court. The property owners at 12121 Boston Post are the only remaining property owner currently refusing to allow the mitigation systems to be installed at their property.

References

AccuWeather, 2020. <https://www.accuweather.com/en/us/livonia-mi/48150/may-weather/338728?monyr=5/1/2019&view=table>