Research Study on Community Experiences Related to Water, Home, and Environmental Impacts after the East Palestine Chemical Spill and Fires

Introduction: We are a team of researchers conducting a study to understand community members' experiences and concerns about their water, air, and soil after the East Palestine chemical spill and fires. Any products that result from this work will never identify you or your organization, and will only share aggregated, anonymized insights. This study is designed to develop practical and policy recommendations that build community resilience. You may stop this survey at any time.

The research plan has been reviewed by the Human Subjects in Research Ethics board at the University of Illinois Chicago, Purdue University, and Cleveland State University. More information about this study can be found here and on our website. This project is supported by the National Science Foundation Award #2329409.

Q1.1 Are you 18 years or older and do you agree to participate in this study?

- ☐ Yes
- ☐ No

***Skip To: End of Survey if No.*

Background: We will begin by asking for background information about your household and proximity to the East Palestine chemical spill and fires.

Q2.1 Did you live in Carroll, Columbiana, Jefferson, Mahoning, Stark, or Trumbull County (Ohio); Beaver, Lawrence, or Mercer County (Pennsylvania); or Hancock County (West Virginia) **before** the East Palestine chemical spill and fires occurred? Select yes if you lived there before but have moved since.

- ☐ Yes, I live in the following county: _____
- ☐ No

**Skip To: Q2.2 if No to Q2.1.*

Q2.1b What zip code did you reside in on February 3, 2023? _____

Q2.2 Do you work or own a business in Carroll, Columbiana, Jefferson, Mahoning, Stark, or Trumbull County (Ohio); Beaver, Lawrence, or Mercer County (Pennsylvania); or Hancock County (West Virginia) **before** the East Palestine chemical spill and fires occurred?

- ☐ Yes, I work in the following county: _____
- ☐ Yes, I own a business in the following county: _____
- ☐ No

**Skip To: End of Survey, if No to Q2.1 and Q2.2. Skip to: Q2.2b if Q2.2 is Yes, I work. Skip to Q2.2c if Q2.2 is Yes, I own a business.*

Q2.2b What zip code did you work in on February 3, 2023? _____

Q2.2c What zip code was your business located in on February 3, 2023? _____

Information about your Household: In this section, we will ask for more background information about your household.

**Skip To: Q4.1 If No to Q2.1, that you do not live in one of the counties specified.*

Q3.1 How many people lived in your household on February 3, 2023? _____

Q3.2 How many children under 18 lived in your household on February 3, 2023? _____

Q3.3 Before February 3, 2023, how long had you resided in the area?

- ☐ Less than 1 Year
- ☐ 1 to 5 Years
- ☐ 5 to 10 Years
- ☐ More than 10 Years

Q3.4 Did you rent or own a home within one of the specified counties on February 3, 2023?

- ☐ Rent
- ☐ Own
- ☐ Other (please specify) _____

Q3.5 Are you **currently** residing at the property you were living at on February 3, 2023? If no, what county are you **currently** located in?

- ☐ Yes
- ☐ No _____

Q3.6 Are you **currently** living with different people now than before February 3, 2023? If yes, please explain.

- ☐ Yes _____
- ☐ No

Evacuation and Emergency Alerts: We would like to know more about your experiences in the early stages of the East Palestine chemical spill and fires.

Q4.1 Were you at home on February 3, 2023, during the East Palestine chemical spill and fires? If no, please specify where you were (ex., at your workplace, at your business).

- ☐ Yes
- ☐ No _____

Q4.2 From what source(s) did you initially hear about the train derailment? You may select more than one.

- ☐ TV
- ☐ Radio
- ☐ Social media
- ☐ Newspaper
- ☐ Websites or other online sources (ex., Google News, Reddit, media compilation sites)
- ☐ Word of mouth
- ☐ Community organizations
- ☐ Other (please specify) _____

Q4.3 Were you told by responding agencies that staying in your home or workplace was unsafe? If so, how were you notified (ex., by an individual, TV, radio, online sources)?

- ☐ Yes _____
- ☐ No
- ☐ I do not know

Q4.4 Did you or any member of your household evacuate from your residence or workplace once the train derailment occurred? If yes, but not all members of the household evacuated, please explain.

- ☐ Yes _____
- ☐ No

***Skip To: Q5.1 If No.*

Q4.5 If you were told to evacuate, approximately how much time passed between being told you need to evacuate and you leaving your residence or workplace?

- ☐ 0 to 12 hours
- ☐ More than 12 hours, but less than a day
- ☐ 1 to 3 days
- ☐ More than 3 days
- ☐ I was not told to evacuate

Q4.6 If you evacuated, can you describe where you went and/or provide the zip code?

_____

_____

_____

Q4.7 If you initially evacuated from your residence or workplace, did you permanently return after evacuating? If yes, please include the approximate day you returned. If no, why not? Select all that apply.

- ☐ Yes. I returned to my residence on: _____
- ☐ Yes. I returned to work on: _____
- ☐ No, but I have returned to my residence intermittently.
- ☐ No. I have not returned to my residence at all, because: _____

  _____
- ☐ No. I have not returned to work at all, because: _____

  _____

Q4.8 If you own a business or work in the area, but do not reside in the counties specified in Q2.2, can you provide the name of the county you are **currently** located in?

_____

Home and Environmental Impacts: Here, we ask about how the East Palestine chemical spill and fires impacted your property and environment.

***Skip To: Q5.9 If No to Q2.1, that you do not live in one of the counties specified.*

Q5.1 How is water supplied to your property? (Choose one or more).

- ☐ Water utility/municipal water
- ☐ Private well
- ☐ Cistern
- ☐ Other (please specify) _____
- ☐ Not applicable
- ☐ I do not know

Q5.2 Prior to the chemical spill and fires, what water source did you use for drinking? Select all that apply.

- ☐ Unmodified tap water (ex., served by your utility or private well/cistern)
- ☐ Filtered tap water
- ☐ Boiled tap water
- ☐ Bottled water and/or delivery service
- ☐ Other (please specify) _____

Q5.3 What water source do you **currently** use for drinking? Select all that apply.

- ☐ Unmodified tap water (ex., served by your utility or private well/cistern)
- ☐ Filtered tap water
- ☐ Boiled tap water
- ☐ Bottled water and/or delivery service
- ☐ Other (please specify) _____

Q5.4 If you currently use bottled water for drinking, who provides it? Select all that apply.

- ☐ Government and/or relief organizations.
- ☐ Purchased by our household.
- ☐ Bottled water and/or a delivery service is not used
- ☐ Other (please specify) _____

***Skip To: Q5.6 If bottled water and/or a delivery service is not used.*

Q5.5 About how much water do you usually keep stored at home (ex., in cases, about 24 liters of water per case, or in 5-gallon cooler tanks)?

_____

Q5.6 How likely do you think it is that you could get sick from unmodified tap water if you:

	Likelihood (check one)				
	Not at all	Very little	Neutral	Somewhat	To a great extent
Drink a glass of water	☐	☐	☐	☐	☐
Rinse fresh vegetables	☐	☐	☐	☐	☐
Cook noodles (ex., spaghetti, ramen)	☐	☐	☐	☐	☐
Brew a pot of coffee	☐	☐	☐	☐	☐
Make ice for cold drinks	☐	☐	☐	☐	☐
Rinse your mouth after brushing your teeth	☐	☐	☐	☐	☐
Wash your hands after using the toilet	☐	☐	☐	☐	☐
Take a shower	☐	☐	☐	☐	☐
Wash your dishes	☐	☐	☐	☐	☐
Wash kitchen/bathroom counters	☐	☐	☐	☐	☐
Wash clothes	☐	☐	☐	☐	☐

Q5.7 How has the water use in your household changed beginning on or after February 3, 2023 until the present? Consider that never (0 times), rarely (1-2 times), sometimes (3-10 times), often (11-20 times), always (more than 20 times) would cover the most challenging one-month period since February 3, 2023.

	Check how often				
	Never (0 times)	Rarely (1-2 times)	Sometimes (3-10 times)	Often (11-20 times)	Always (+ 20 times)
How frequently did you or anyone in your household worry you would not have enough water for all of your household needs?	☐	☐	☐	☐	☐
How frequently has your main water source been interrupted or limited?	☐	☐	☐	☐	☐
How frequently have problems with water meant that clothes could not be washed?	☐	☐	☐	☐	☐
How frequently have you or anyone in your household had to change schedules or plans due to problems with your water?	☐	☐	☐	☐	☐
How frequently have you or anyone in your household had to change what was being eaten because there were problems with water?	☐	☐	☐	☐	☐
How frequently have you or anyone in your household had to go without washing their hands because of problems with water?	☐	☐	☐	☐	☐

Q5.8 How has water availability changed in your household beginning on or after February 3, 2023 until the present? Consider that never (0 times), rarely (1-2 times), sometimes (3-10 times), often (11-20 times), always (more than 20 times) would cover the most challenging one-month period since February 3, 2023.

	Check how often				
	Never (0 times)	Rarely (1-2 times)	Sometimes (3-10 times)	Often (11-20 times)	Always (+ 20 times)
How frequently has there not been as much water to drink as you would like for you or anyone in your household?	☐	☐	☐	☐	☐
How frequently did you or anyone in your household feel angry about your water situation?	☐	☐	☐	☐	☐
How frequently has there been no useable and/or drinkable water whatsoever in your household?	☐	☐	☐	☐	☐
How frequently have you or anyone in your household had to go without bathing because of problems with water?	☐	☐	☐	☐	☐
How frequently have you or anyone in your household gone to sleep thirsty because there wasn't any water to drink?	☐	☐	☐	☐	☐
How frequently have problems with water caused you or anyone in your household to feel ashamed/excluded/stigmatized?	☐	☐	☐	☐	☐

Q5.9 Have you been told by the authorities that your water is unsafe to drink? If so, by who? When?

- ☐ Yes _____
- ☐ No
- ☐ I do not know

***Skip To: Q5.13 if Q4.7 is No. I have not returned to my residence at all.*

Q5.10 Was there ever soot inside your house? If yes, where did you see the soot?

- ☐ Yes, the soot was located: _____
- ☐ No
- ☐ I do not know
- ☐ Not applicable

Q5.11 Did it smell differently inside your home after the chemical spill and fires?

- ☐ Yes
- ☐ No
- ☐ I do not know
- ☐ Not applicable

***Skip To: Q5.13 if other than yes.*

Q5.12 Have you noticed that the new smell inside your home is stronger when you do any of the following or the following things occur? You may select more than one.

- ☐ Turn on the heat
- ☐ Open the windows
- ☐ Turn on the air conditioner
- ☐ Use an air cleaner/purifier
- ☐ Clean
- ☐ Use a vacuum
- ☐ Stormwater flooding on property after heavy rain (ex., when the creek water fills under the basement)
- ☐ Weather or outside temperature changes
- ☐ Other (please specify) _____
- ☐ Not applicable

Q5.13 Have you been told by responding agencies that you may have contamination in your home or business? If so, please specify who told you and when.

- ☐ Yes _____
- ☐ No
- ☐ I do not know
- ☐ Not applicable

Q5.14 Is there a creek located on your property? If yes, which creek.

- ☐ Yes _____
- ☐ No

Q5.15 Have you had flooding on your property (ex., into the basement) since February 3, 2023?

- ☐ Yes (please specify where) _____
- ☐ No
- ☐ I don't know

Home and Environmental Sampling and Remediation: This section focuses on air, water, and soil sampling and other actions done in response to the East Palestine chemical spill and fires.

Q6.1 What sources do you feel provide trusted and expert information about the water, air, and soil impacts in your community? Please explain why.

_____

_____

_____

Q6.2 Have you requested air, water, or soil sampling from any organizations? If yes, please specify which testing and organization.

- ☐ Yes (please specify) _____
- ☐ No
- ☐ I don't know

*** Skip To: Q6.6 If No.*

Q6.3 Have you received the results of the sampling? If yes, please specify what was found.

- ☐ Yes (please specify) _____
- ☐ No
- ☐ I don’t know

Q6.4 Did you find the results of the sampling to be clearly presented and easy to understand? If no, please specify why.

- ☐ Yes
- ☐ No (please specify) _____
- ☐ I don't know

Q6.5 Do you trust that the sampling is accurate? If no, please specify why.

- ☐ Yes
- ☐ No (please specify) _____
- ☐ I don't know

Q6.6 Do you have anything else to share about air, water, or soil sampling?

_____

_____

_____

Q6.7 Which of the following have you done to clean your house and/or water, air, or land in response to the East Palestine chemical spill and fires? Select all that apply.

Cleaned the house yourself using… (specify which)

- ☐ A vacuum
- ☐ Solvents or other cleaning products
- ☐ A HEPA vacuum
- ☐ Other_____

Cleaning provided by… (specify which):

- ☐ Hired cleaners
- ☐ Norfolk Southern
- ☐ Government agencies
- ☐ Other_____

- ☐ Cleaned the exterior of the house (ex., pressure washing)
- ☐ Performed environmental remediation for landscaping or gardens
- ☐ Installed a home water treatment system, purifiers, or filters
- ☐ Used air purifiers
- ☐ None

Q6.8 To what extent has paying for water, air, or soil testing, or environmental remediation on your property impacted you financially?

- ☐ To a great extent
- ☐ Somewhat
- ☐ Neutral
- ☐ Very little
- ☐ Not at all
- ☐ I have not paid for testing or remediation

Q6.9 If you have central heating and cooling system (HVAC) in your home, has the filter been changed since the chemical spill and fires? If so, when?

- ☐ Yes. It was changed on: _____
- ☐ I don't know
- ☐ No

Relocation and Insurance: We would like to understand how the East Palestine chemical spill and fires financially affected your property and relocation decisions.

***Skip To: Q7.4 If No to Q2.1, that you do not live in one of the counties specified and Q2.2 is Yes, I own a business. Skip To: Q8.1 if Q2.2 is Yes, I work in the following county.*

Q7.1 Did you have homeowner's or renter's insurance for the property that was affected by the East Palestine chemical spill and fires?

- ☐ Yes
- ☐ No
- ☐ I don't know

Q7.2 If insured, to the best of your knowledge today, what percent of your losses will be covered by your insurance?

- ☐ 0% to 25%
- ☐ 26% to 50%
- ☐ 51% to 75%
- ☐ 76% to 100%
- ☐ I don't know

Q7.3 Have you relocated or considered relocating from the community because of the chemical spill and fires?

- ☐ I have not relocated or considered relocating
- ☐ I have not relocated, but I have considered relocating
- ☐ I have relocated or I am trying to relocate
- ☐ I am not sure

***Skip To: Q8.1.*

Q7.4 If you are a business owner, have you relocated or considered relocating from the community because of the chemical spill and fires?

- ☐ I have not relocated or considered relocating the business
- ☐ I have not relocated, but I have considered relocating the business
- ☐ I have relocated the business or I am trying to relocate the business
- ☐ I am not sure

Crisis Communications: In this section, we ask questions about the effectiveness of communication to your household. This will help us recommend communication policies to responding agencies based on community experiences.

Q8.1 Since February 3, 2023, how often have you obtained information about East Palestine chemical spill and fires recovery from the following sources?

	Never	A few times a month	Weekly	A few times a week	Daily
TV	☐	☐	☐	☐	☐
Radio	☐	☐	☐	☐	☐
Social media	☐	☐	☐	☐	☐
Newspaper	☐	☐	☐	☐	☐
Media compilation sites (ex., Reddit)	☐	☐	☐	☐	☐
Word of mouth	☐	☐	☐	☐	☐
Community organizations	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐

Q8.2 Please rate the extent to which you agree with the following statements regarding communications to your household from responding agencies about the chemical spill and fires:

	Extent you agree (check one)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Guidance provided by responding agencies was explicit and clear (ex. information provided was specific to the questions I had about what actions I needed to take)	☐	☐	☐	☐	☐
Guidance provided by responding agencies told me when I needed to take action and for how long (ex., exact times and days to act were provided)	☐	☐	☐	☐	☐
Guidance provided by responding agencies identified the exact location of the affected areas (ex., areas impacted by water, air contamination, or evacuation zones were clear to me)	☐	☐	☐	☐	☐
Guidance provided by responding agencies specified the hazards from the chemical spill and fires (ex., fire, possible explosion, chemical exposure, air quality)	☐	☐	☐	☐	☐
Guidance provided by responding agencies specified the possible consequences from the chemical spill and fires (ex., my questions about short-term and long-term impacts from exposure were addressed)	☐	☐	☐	☐	☐
The source of information was clear (ex., an authority or responding agency provided it, and I did not need to “double check” this information with another source)	☐	☐	☐	☐	☐

Q8.3 Please indicate your level of agreement with the following statements regarding your local government's response to the East Palestine chemical spill and fires:

	Extent you agree (check one)				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Local government decision-making processes have been transparent (ex., anyone can find out what is happening)	☐	☐	☐	☐	☐
Local government decision-making processes have been open (ex., anyone can participate and have their opinions heard)	☐	☐	☐	☐	☐
Local government decision-making processes have been fair (ex., community members have been treated equitably, considering their unique circumstances)	☐	☐	☐	☐	☐
Everyone in my community has had equal access to resources after the chemical spill and fires (ex., water testing, shelter)	☐	☐	☐	☐	☐

Q8.4 To what extent do you think each of the following is knowledgeable about air, water, and soil contamination after the chemical spill and fires?

	Extent you agree (check one)				
	Not at all	Very little	Neutral	Somewhat	To a great extent
Local water utility personnel	☐	☐	☐	☐	☐
Local public health personnel	☐	☐	☐	☐	☐
Local emergency management personnel (ex., fire department, police)	☐	☐	☐	☐	☐
Local elected officials (ex., your mayor, city manager)	☐	☐	☐	☐	☐
Local news media	☐	☐	☐	☐	☐
Your personal physician or health provider	☐	☐	☐	☐	☐
Friends, relatives, neighbors, and coworkers	☐	☐	☐	☐	☐
You and your immediate family	☐	☐	☐	☐	☐

Social Involvement and Trust: This set of questions focuses on your activity in the community and what sources you trust for guidance in response to the East Palestine chemical spill and fires.

Q9.1 Please indicate your level of **trust** in the following agencies, groups, or decision-makers to provide you with accurate information about the air, water, and soil contamination after the chemical spill and fires:

	Level of Trust (check one)				
	Very Low	Low	Medium	High	Very High
Community groups or relief organizations	☐	☐	☐	☐	☐
Community members (ex. word of mouth)	☐	☐	☐	☐	☐
Municipal government and/or elected officials (ex., your mayor, city manager)	☐	☐	☐	☐	☐
Your governor	☐	☐	☐	☐	☐
Federal environmental agencies (ex., U.S. EPA)	☐	☐	☐	☐	☐
Local news media (ex., local TV news, radio)	☐	☐	☐	☐	☐
Social media	☐	☐	☐	☐	☐
Academic researchers	☐	☐	☐	☐	☐
Norfolk Southern railroad	☐	☐	☐	☐	☐
State government agencies (ex., Ohio EPA)	☐	☐	☐	☐	☐
State health departments (ex., ODH)	☐	☐	☐	☐	☐
County health departments	☐	☐	☐	☐	☐
Federal health departments (ex., CDC)	☐	☐	☐	☐	☐
Federal government agencies (ex., FEMA)	☐	☐	☐	☐	☐
Your personal physician or health provider	☐	☐	☐	☐	☐
Friends, relatives, neighbors, and coworkers	☐	☐	☐	☐	☐
Local emergency management personnel (ex., fire department, police)	☐	☐	☐	☐	☐
Local water utility personnel	☐	☐	☐	☐	☐
Regional or national news media (ex., regional or cable news)	☐	☐	☐	☐	☐

Q9.2 My involvement in community response has included... (select all that apply)

- ☐ I attended one or more meetings, virtually or in person, to discuss the response to the chemical spill and fires
- ☐ I have given oral or written comments at one or more public meetings
- ☐ I helped to organize one or more meetings
- ☐ I have not attended a community meeting
- ☐ Other (please specify) _____

Q9.3 If applicable, when attending community meetings, I felt... (select all that apply)

- ☐ Afraid
- ☐ Angry
- ☐ Confident
- ☐ Disappointed
- ☐ Happy
- ☐ Satisfied
- ☐ Heard
- ☐ Worried
- ☐ Other (please specify) _____

Conclusion:

Q10.1 Is there anything else you would like to share about impacts to your home, air, water, environment or your experience with the East Palestine chemical spill and fires?

_____

_____

_____

_____

Demographics: Lastly, we want to ask a few demographic questions to end the survey.

Q11.1 Choose one or more races that you consider yourself to be (select all that apply):

- ☐ White or Caucasian
- ☐ Black or African American
- ☐ American Indian/Native American or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ Other
- ☐ Prefer not to say

Q11.2 Are you of Spanish, Hispanic, or Latino origin?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

Q11.3 What is the highest level of education you have completed?

- ☐ Some high school or less
- ☐ High school diploma or GED
- ☐ Some college, but no degree
- ☐ Associates or technical degree
- ☐ Bachelor's degree
- ☐ Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.)
- ☐ Prefer not to say

Q11.4 What was your total household income before taxes during the past 12 months?

- ☐ Less than $25,000
- ☐ $25,000-$49,999
- ☐ $50,000-$74,999
- ☐ $75,000-$99,999
- ☐ $100,000-$149,999
- ☐ $150,000 or more
- ☐ Prefer not to say

Q11.5 How do you describe yourself?

- ☐ Male
- ☐ Female
- ☐ Non-binary / third gender
- ☐ Prefer to self-describe _____
- ☐ Prefer not to say

Q11.6 How old are you?

- ☐ 18-24 years old
- ☐ 25-34 years old
- ☐ 35-44 years old
- ☐ 45-54 years old
- ☐ 55-64 years old
- ☐ 65+ years old
- ☐ Prefer not to say

Q11.7 What best describes your employment status over the last three months?

- ☐ Working full-time
- ☐ Working part-time
- ☐ Unemployed and looking for work
- ☐ A homemaker or stay-at-home parent
- ☐ Student
- ☐ Retired
- ☐ Other
- ☐ Prefer not to say

Follow Up and Drawing for $100 Gift Cards: We are giving away twenty $100 gift cards to participants who completed the survey. The winners will be randomly selected at the end of the survey deployment.

Q12.1 Do you want to be entered into the drawing? If Yes, make sure to fill out your contact information at the end of the survey.

- ☐ Yes
- ☐ No

Q12.2 We would like to follow up with some participants to ask more in-depth questions through an interview ($25 compensation for 30-minutes of participant's time). Would you like to consent to being followed-up with by email or phone? Please note that consenting to being contacted in the future does not mean you will be contacted or are currently consenting to participate in the interview.

- ☐ Yes
- ☐ No

If yes, please insert your contact information (email, phone number, or both). This will only be used to follow up with you and/or enter you into the drawing for the gift cards.

- ☐ Name_____
- ☐ Email _____
- ☐ Phone _____

Thank you! Please visit our website to keep updated on the East Palestine Chemical Spill and Fires research study (bit.ly/3JgPKQu), or contact spearing@uic.edu if you have any questions.