

Suggested Outline for ATSDR Public Health Assessments (PHAs), Health Consultations (HCs), and Health Consultations-Exposure Investigations (HCs-EIs)

Instructions for Using the Outline

This suggested outline will guide health assessors in their preparation of PHAs, HCs, and HCs-EIs. Use the section headers that are appropriate for your specific documents and delete section headers that are not applicable. You may also add appropriate sub-headers into your document. Refer to the [PHAGM Putting It All Together section](#) for details on the specific information to include in these sections in your document.

Contents

1. Summary.....	3
2. Background.....	3
2.1. Statement of Issue and Purpose.....	3
2.2. Site Description and Timeline.....	3
3. Community Description and Concerns.....	3
3.1. Community Demographics	3
3.2. Health Equity Considerations (optional until guidance is developed)	3
3.3. Community Concerns	3
4. Sampling Data (for Non-EI PHAs/HCs).....	4
4. Methods and Sampling Data (for EI-HCs).....	4
4.1. Recruitment	4
4.2. Data Collection	4
4.3. Laboratory and Data Analysis.....	4
5. Scientific Evaluations.....	4
5.1. Exposure Pathway Analysis	4
5.2. Household Water Evaluation.....	4
5.2.1. Screening Analysis.....	4

5.2.2.	Evaluation of Drinking Water.....	4
5.2.3.	Evaluation of Breathing Indoor Air (if showering/bathing)	5
5.2.4.	Evaluation of Skin Contact (if showering/bathing)	5
5.3.	Soil or Sediment Evaluation.....	5
5.3.1.	Screening Analysis.....	5
5.3.2.	Evaluation of Combined Ingestion and Skin Contact.....	6
5.4.	Vapor Intrusion Evaluation	6
5.4.1.	Screening Analysis.....	6
5.5.	Outdoor or Indoor Air Evaluation	6
5.5.1.	Screening Analysis.....	6
5.5.2.	Evaluation of Breathing Air	6
5.6.	Surface Water Evaluation	7
5.6.1.	Screening Analysis.....	7
5.6.2.	Evaluation of Ingestion of Surface Water (if swimming)	7
5.6.3.	Evaluation of Skin Contact with Surface Water (if swimming or wading)	7
5.7.	Food Evaluation	7
5.7.1.	Screening Analysis.....	7
5.7.2.	Evaluation of Eating Food	8
5.8.	Evaluation of Health Outcome Data (HOD)	8
5.9.	Addressing Community Concerns.....	8
5.10.	Summary of Limitations and Uncertainties	8
6.	Conclusions.....	8
7.	Recommendations and Public Health Action Plan	8
8.	Who Prepared the Document	8
9.	References.....	8
10.	Appendices	9

1. Summary

Provide a brief introduction of the site that includes why ATSDR evaluated the site and what ATSDR did. Use information mapping format and plain language to present the conclusion hazard category and basis for each conclusion, followed by the Next Steps (combining recommendations and public health actions).

PHAGM Section: Putting It All Together

Conclusion #¹	What ATSDR found
Basis for Conclusion	Evidence and support for each conclusion
Next Steps	Recommendations and actions as follow-up to document release
For More Information	ATSDR contact information

2. Background²

2.1. Statement of Issue and Purpose

Discuss why ATSDR is here and what the issues are. Indicate for EIs that the purpose is to fill an exposure data gap.

2.2. Site Description and Timeline

Describe the site's location, use, timeline, geology/hydrogeology (if warranted), maps, site visit, and other relevant information.

PHAGM Section: Getting Familiar with the Site

3. Community Description and Concerns

3.1. Community Demographics

Describe the community demographics such as by age groups and race/ethnicity.

3.2. Health Equity Considerations (optional until guidance is developed)

Describe social vulnerability as reflected in the CDC/ATSDR [Environmental Justice Index](#) and other environmental burdens beyond the site.

3.3. Community Concerns

Introduce community concerns at the site and efforts/steps to determine health concerns. Address the concerns in a later section, if applicable. Describe children's health considerations.

PHAGM Section: Engaging the Community

¹ Each conclusion should be listed separately and be followed by its Basis for Conclusion and Next Steps. Health assessors have the option to list all the Next Steps as one section after stating all conclusions with their bases for the conclusions. If this option is chosen, it should be clear which step relates to which conclusion.

² Sections 2–5 should be prepared using clear writing techniques.

4. Sampling Data (for Non-EI PHAs/HCs)³

Discuss data sources. Focus on data used to evaluate exposure and why they are representative of exposures and are of high quality. Discuss data gaps as needed.

No specific subsections for non-EI HCs/PHAs recommended

PHAGM Section: Selecting Sampling Data

4. Methods and Sampling Data (for EI-HCs)

Describe the methods used for the exposure investigation.

4.1. Recruitment

Describe the process used to recruit participants for the exposure investigation.

4.2. Data Collection

Describe the methods used to collect data during the exposure investigation.

4.3. Laboratory and Data Analysis

Describe the laboratory methods used to measure the contaminants and how data are analyzed.

5. Scientific Evaluations

PHAGM Section: Conducting Scientific Evaluations

5.1. Exposure Pathway Analysis

Discuss potential and completed pathways.

PHAGM Section: Evaluating Exposure Pathways

5.2. Household Water Evaluation⁴

5.2.1. Screening Analysis

Describe the screening analysis process. Include a table with site contaminants that met or exceeded comparison values (CVs) for water or are included because of another factor (e.g., community concern). Consider including an optional table with a full list of contaminants in an appendix.

PHAGM Section: Screening Analysis

5.2.2. Evaluation of Drinking Water

5.2.2.1. Exposure Point Concentrations (EPCs) and Exposure Calculations

Describe the calculation method. Include a table that shows EPCs with doses. Identify potential contaminants of concern (COCs) above hazard quotients (HQs) or cancer risks (CRs) that need further

³ There are two versions of Section 4 in the template, one for non-EI PHAs/HCs, and another version for EIs. Only one version of Section 4 needs to be in the document, depending on whether it's EI or non-EI PHA/HCs.

⁴ This outline includes all media and routes a health assessor could encounter. Only those related to exposures at a site should be included. Present the media in order of priority.

evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.2.2.2. Health Evaluations

Describe the evaluation process. Summarize decisions about possible health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.2.3. Evaluation of Breathing Indoor Air (if showering/bathing)

5.2.3.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with adjusted air concentrations. Identify COCs above HQs or CRs that need further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.2.3.2. Health Evaluations

Describe the evaluation process. Summarize decisions about possible health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.2.4. Evaluation of Skin Contact (if showering/bathing)

5.2.4.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with EPCs and dermal doses. Identify COCs above HQs or CRs that need further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.2.4.2. Health Evaluations

Describe the evaluation process. Summarize decisions about possible health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.3. Soil or Sediment Evaluation

5.3.1. Screening Analysis

Describe the screening analysis process. Include a table showing site contaminants that met or exceeded CVs for soil/sediment or are included because of another factor (e.g., community concern). Consider including an optional table with a full list of contaminants in an appendix.

PHAGM Section: Screening Analysis

5.3.2. Evaluation of Combined Ingestion and Skin Contact

5.3.2.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with EPCs and doses. Identify COCs above HQs or CRs that need further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.3.2.2. Health Evaluations

Describe the evaluation process. Summarize decisions about possible health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.4. Vapor Intrusion Evaluation

5.4.1. Screening Analysis

Describe the screening analysis process. Include a table with site contaminants that met or exceeded soil gas or groundwater Vapor Intrusion (VI) CVs or are included because of another factor (e.g., community concern). Consider including an optional table with a full list of contaminants in an appendix. Proceed to the Outdoor or Indoor Air Evaluation section if these CVs are met or exceeded. Recommend collection of indoor air samples if indoor air data of sufficient quality are not available.

PHAGM Section: Screening Analysis

5.5. Outdoor or Indoor Air Evaluation

5.5.1. Screening Analysis

Describe the screening analysis process. Include a table with site contaminants that met or exceeded CVs for air or are included because of another factor (e.g., community concern). Consider including an optional table with a full list of contaminants in an appendix.

PHAGM Section: Screening Analysis

5.5.2. Evaluation of Breathing Air

5.5.2.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with EPCs and adjusted air concentrations. Identify COCs above HQs or CRs that need further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.5.2.2. Health Evaluations

Describe the evaluation process. Summarize decisions about possible health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.6. Surface Water Evaluation

5.6.1. Screening Analysis

Describe the screening analysis process. Include a table with site contaminants that met or exceeded CVs for surface water or are included because of another factor (e.g., community concern). Consider including an optional table with a full list of contaminants in an appendix.

PHAGM Section: Screening Analysis

5.6.2. Evaluation of Ingestion of Surface Water (if swimming)

5.6.2.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with EPCs and doses. Identify COCs above HQs or CRs that need further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.6.2.2. Health Evaluations

Describe the evaluation process. Summarize decisions about health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.6.3. Evaluation of Skin Contact with Surface Water (if swimming or wading)

5.6.3.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with EPCs and dermal doses. Identify COCs above HQs or CRs that need further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.6.3.2. Health Evaluations

Describe the evaluation process. Summarize decisions about possible health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.7. Food Evaluation

5.7.1. Screening Analysis

Determine which chemicals to evaluate based on the available data, the request for assistance, community concerns, or other factors. Note that ATSDR currently has not developed CVs for the food pathway. Consider including an optional table with a full list of contaminants in an appendix.

PHAGM Section: Screening Analysis

5.7.2. Evaluation of Eating Food

5.7.2.1. Exposure Point Concentrations and Exposure Calculations

Describe the calculation method. Include a table with EPCs and doses. Identify COCs above HQs or CRs needing further evaluation. Include HQs/CRs for all contaminants evaluated (preferred approach) or HQ/CRs for COCs with a full list of contaminants in an appendix (optional approach).

PHAGM Section: Exposure Point Concentrations and Exposure Calculations

5.7.2.2. Health Evaluations

Describe the evaluation process. Summarize decisions about health effects. Include information on the optional mixtures evaluation, if conducted.

PHAGM Section: In-depth Toxicological Effects Analysis

Other Resource: ATSDR Mixtures Framework

5.8. Evaluation of Health Outcome Data (HOD)

Include this section if there are HOD available that were evaluated.

PHAGM Section: In-depth Toxicological Effects Analysis

5.9. Addressing Community Concerns

Include this section if there are specific health concerns from community members that can be addressed.

5.10. Summary of Limitations and Uncertainties

Summarize major limitations and uncertainties identified throughout the PHA process.

6. Conclusions

Use the same conclusion text as included in the Summary Conclusions and put in plain language. Do not follow an information mapping format.

PHAGM Section: Putting It All Together

7. Recommendations and Public Health Action Plan

Use the same text as included in the Next Steps Section from the Summary and put in plain language.

PHAGM Section: Putting It All Together

8. Who Prepared the Document

List authors, site team, and others who contributed to the report.

9. References

List sources cited in the document.

10. Appendices

Include supplemental materials for any parts of the evaluation, such as Screening Analysis, EPCs and Exposure Calculations, PHAST output table, and In-Depth Toxicological Effects Analysis. Consider providing the pertinent information in the text that leads to and supports the conclusions and recommendations and add other information into these appendices as needed. Include the [Brief Summary of ATSDR's Public Health Assessment \(PHA\) Process](#) as an appendix in all documents.