

GUIDELINES FOR THE COORDINATION OF
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION,
AND LIABILITY ACT (CERCLA) ACTIVITIES
BETWEEN
THE AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY
AND
THE DEPARTMENT OF DEFENSE

February 1995
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DOD Seal

DHHS Seal

PREFACE

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA, also known as ASuperfund@), as amended, established the Agency for Toxic Substances and Disease Registry (ATSDR), a federal agency of the Public Health Service, U.S. Department of Health and Human Services, as the lead agency for implementing the health-related provisions of CERCLA. ATSDR is charged with assessing the presence and nature of health hazards at each facility on, or proposed for the National Priorities List, helping to prevent or reduce any exposure and illnesses that result, and expanding what is known about the health effects of exposure to hazardous substances.

This guide represents an interagency effort by ATSDR and the Department of Defense (DOD) to promote timely execution of ATSDR=s activities at DOD installations. Both organizations have the same goal: the protection of public health and the environment. To meet this goal, it is essential to facilitate the exchange of accurate, complete, and current information between DOD and ATSDR. This guidance manual prescribes the manner in which coordination will occur and the responsibilities of each agency. We hope this will be a useful tool to expedite efforts to protect public health and the environment.

(Original signed)
(Original signed)
Sherri Wasserman-Goodman
Deputy Under Secretary of Defense
General
(Environmental Security)

Barry L. Johnson, Ph.D.
Assistant Surgeon
Assistant Administrator

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I. INTRODUCTION

This document was developed with suggestions from the offices and divisions of the Agency for Toxic Substances and Disease Registry (ATSDR) and representatives of the Department of the Army, Department of the Navy, and the Department of the Air Force. Its purpose is to facilitate exchange of accurate, complete, and current information between ATSDR and the Department of Defense (DOD); provide written documentation of the ATSDR review processes and procedures for DOD sites; and facilitate the timely dissemination of ATSDR findings.

At the beginning of each fiscal year, after the Annual Plan of Work (APOW) is final, ATSDR will develop a projected schedule of planned activities and provide monthly an updated schedule that projects activities for the next 3 months. This schedule will be sent to the DOD lead agent, the Component liaison offices, and the Component laboratories.

II. PUBLIC HEALTH ASSESSMENTS

Information for development of public health assessments should be sent to the following address:

Chief, Program Evaluation, Records and Information Services Branch
Attention: Insert Section (Army Section; Navy/Air Force Section),
Federal Facilities Assessment Branch
ATSDR, Mail Stop E-56
1600 Clifton Road
Atlanta, GA 30333

A. INFORMATION EXCHANGE

Lists of information needed from sites during the public health assessment process are provided in Appendix A, "ATSDR Data Needs by Category." Categories include 1) sites scoped but not targeted in the current APOW; 2) sites listed in the APOW for public health assessment activity; and 3) sites listed in the APOW for scoping. A general list of the data needed by ATSDR to develop a public health assessment can be found in "Environmental Data Needed for Public Health Assessments" (Appendix B). Situations requiring immediate action are covered in Section III, Site-Specific Health Consultations.

In order to be consistent with the Environmental Protection Agency (EPA) policy on electronic data reporting (59 FR 31030) and comply with Executive Order 12906 on Coordinating Geographic Data Acquisition and Access (59 FR 17671), ATSDR requires that electronically transmitted environmental monitoring and analysis information be transferred in the Interchange File Format (IFF). Specific information on the format can be found in Appendix C.

1. SITES SCOPED BUT NOT TARGETED IN CURRENT APOW

ATSDR will maintain annual contact with installations for which initial scoping visits have occurred but for which activities are not projected in the current APOW, provided adequate resources are available. During this contact, ATSDR will request information about items listed in the preliminary findings of the site summary report and may request updated copies of other documents. Components should supply the requested documentation within 60 calendar days or as mutually agreed upon.

Component officials should notify ATSDR immediately if the following circumstances occur:

- # confirmed or potential human exposure is identified, both past or present (e.g., suspected or confirmed fish contamination, drinking water supply contamination, or surface soil contamination in areas with current land use);
- # physical or explosive hazards are present in a condition that cannot be immediately abated and where people may be at risk (e.g., newly discovered unexploded ordnance, deteriorated buildings where newly discovered trespassing has occurred, or monitoring data for methane from a landfill close to residences indicating a danger to residents);
- # changes in land use near, in, or affected by the source areas have been documented that may have resulted or could result in human exposure (e.g., leases, land transfers, or new military use involving people);
- # off-site migration of contaminants has been identified or characterized, or is probable;
- # new community health concerns are expressed;
 - # health outcome data, studies, or other information reviewed or generated by DOD addresses adverse health outcomes plausibly associated with site contaminants; or
- # a rating of "High" has been designated on the relative risk site evaluation.

2. SITES SCOPED AND TARGETED IN CURRENT APOW

ATSDR will coordinate with the Installation Restoration Program (IRP) manager or Component contact to keep abreast of the most current information about these sites. The IRP manager (or the Component designee) should notify ATSDR of all decisions, remediation plans, sampling plans, or efforts as they occur that would have public health significance. ATSDR will take the following steps:

- # periodically communicate (by mail, electronically or facsimile) to the installation and Component laboratory for verification of the data tables to be used in the public health assessment. NOTE: Data tables are developed only for sites with relevant pathways and typically include this information:

- ,contaminants detected at levels above comparison values

- ,range of concentrations detected and the dates

- ,location of the highest detected concentrations and the media

- ,reference(s) from which data originated

- # periodically communicate (by mail, electronically or facsimile) to the installation and Component laboratory for verification of environmental, land use, or other data in the pathways tables to be used in the public health assessment;

- # communicate for verification, as appropriate, other data used in the public health assessment;

- # communicate list of documents used and reviewed during development of the public health assessment;

- # conduct additional site visits, as necessary; and

- # inform the installation and Component laboratory of the cut-off date for receiving information to be included in the public health assessment. Information received by ATSDR after that date will be evaluated for inclusion in future documents.

The Component will take the following steps:

- # respond to ATSDR, within a mutually agreed upon time frame, with the most current data or information pertaining to the verification request. This time frame will normally not exceed 14-20 working days after receipt of the request;

- # immediately notify ATSDR when errors or inconsistencies in the documents submitted to ATSDR are identified;

- # provide information concerning sites where exposure to hazardous substances in the environment is possible but is not known;

- # provide results of relative risk site evaluations; and

- # provide information about the presence of physical hazards that cannot be immediately abated and that may pose a risk for people.

3. SITES FOR SCOPING IN CURRENT APOW

ATSDR will arrange site visits with the installation and Component laboratory. When appropriate, the Component laboratory will brief base officials before ATSDR's scheduled visit. ATSDR will send a letter to the installation at least 45 calendar days before the scheduled site visit requesting copies of relevant documents. The documents requested will include, but are not limited to, these:

- # latest newsletter, Technical Review Committee (TRC) or Restoration Advisory Board (RAB) minutes, and pertinent newspaper articles;
- # administrative record index;
- # list of on-site contacts and phone numbers;
- # list of community leaders with whom installation has been coordinating;
- # Remedial Investigation/Feasibility Study (RI/FS) schedule, latest RI/FS documents or sampling data, and site safety plan (condensed);
- # description of the operable units (or other designations) and site maps;
- # list of removal actions, interim remedial actions, and any mitigation efforts;
- # description of off-site sampling efforts and data;
- # Federal Facilities Agreements (with EPA and the state);
- # community relations plan; and
- # list of TRC or RAB members with addresses and phone numbers.

Before the initial site visit, ATSDR will send a letter to the installation commander (copying the IRP manager and Component laboratory) containing the following information:

- # purpose of the site visit;
- # names of installation staff coordinating the visit;
- # persons tentatively scheduled for meetings, both on and off site (by title or discipline);
- # list of ATSDR team members;
- # list of state and local health or environmental agency members who may make the site visit and a request for clearance when indicated; and
- # request for in- and exit-briefings.

A sample letter has been provided in Appendix D.

Before the initial site visit, the Component will take the following steps:

- # send requested documents within 30 calendar days of ATSDR's request,
- # arrange on-site meetings or request that ATSDR set the agenda,
- # arrange for clearances, and
- # coordinate logistics support (transportation, camera passes, etc.).

During the initial site visit, ATSDR's activities will generally include the following:

- # provide an in-briefing for the commander or staff or both;
- # visit all pertinent IRP sites and other areas of public health concern;
- # meet or contact by phone representatives from the appropriate offices (environmental, public affairs, housing, occupational medicine, safety/industrial hygiene, hospital/clinic, preventive medicine, bioenvironmental engineering, public health, natural resources, water department, fire/emergency response, historian, real estate) or other appropriate representatives;
- # review and discuss pertinent DOD documents with persons familiar with their contents;
- # request copies of relevant information; and
- # provide an exit-briefing to the commander or staff or both on preliminary findings, recommendations, and the projected focus of the public health assessment.

ATSDR will prepare site summary reports within 90 calendar days of the initial scoping visit to new sites on the National Priorities List (NPL). Copies of the reports will be sent to the installation commander and the Component laboratory.

4. SITES WITH COMPLETED PUBLIC HEALTH ASSESSMENTS

The installation will update ATSDR in October of each year on actions taken in response to the public health action plan and the public health recommendations in the final release of the public health assessment. In January of each year, ATSDR will compile an annual report, including ATSDR project updates and information provided by DOD and other agencies on the status of recommendations and public health actions at each site. The annual report will be provided to the Component liaison offices.

5. COMMUNITY INVOLVEMENT

Health concerns from community members are gathered and evaluated during the public health assessment process to determine how people may have been or might be exposed to hazardous substances in the environment. Community health concerns are obtained from individuals living or working at or near the site, the public affairs office, the site restoration advisory board, the community relations plan, EPA's community relations representative, state and local health agencies, and state and local environmental agencies.

In conjunction with on-site activities, ATSDR may conduct off-site activities to obtain information:

- # meetings with concerned members of the public; community leaders; local, state, and federal health and environmental agencies; and local health care providers;
- # public availability sessions (on and off site); and
- # requests for copies of relevant information and data.

Community members can meet individually with ATSDR staff during public availability sessions. Because of concerns about confidentiality, DOD participation is as a member of the community and not as a meeting co-organizer. Community concerns not within ATSDR's authority to address will be referred to the appropriate parties. ATSDR will notify the installation and Component laboratory of all referrals and community concerns in a timely manner.

ATSDR may also hold public meetings to disseminate information. DOD's participation as a co-organizer at such meetings will be addressed on a site-by-site basis.

Advertisement and Notification

ATSDR announces public availability sessions and public meetings in local newspapers (including installation newspapers) and through flyers distributed throughout the community (e.g., libraries, document repository sites, churches, installation bulletin boards, etc.). ATSDR may also use the electronic media to notify the public of such meetings.

If ATSDR holds a public availability session as part of the public health assessment process, the sessions are usually held before the initial release of the public health assessment or during the public comment period. ATSDR will notify the installation of off-site public availability sessions 2 weeks before the scheduled meeting or as soon as the final arrangements are made. ATSDR will

coordinate the arrangements for on-site public availability sessions with the IRP manager or Component designee, as appropriate.

ATSDR will coordinate with the installation any release of information about the installation restoration program or site history. DOD will coordinate any release of information provided by ATSDR.

B. REVIEW PROCESS

A general description of the ATSDR public health assessment review process is detailed in the Federal Register (56 FR 11221 No. 51) (Appendix E). Public health assessments are distributed in three phases: initial release (red cover), public comment release (brown cover), and final release (blue cover). ATSDR will provide copies of the public health assessments (and their addenda) to the designees detailed in the Memorandum of Understanding (MOU) between ATSDR and DOD at the same time they are provided to the Environmental Protection Agency (EPA) and the state.

ATSDR allows 45 calendar days for response from all parties. Any request for extension of this schedule must be handled in the manner described in the MOU between ATSDR and DOD. Briefly, DOD must submit a written request for waiver which addresses why the delay in releasing the public comment is warranted. Such a waiver, if granted by ATSDR, shall extend the comment period an additional 30 days, but no longer.

C. COMPONENT RESPONSE

The DOD written response to ATSDR public health assessments should meet the following criteria:

- # explicitly address site-specific issues,
- # provide documentation for information ATSDR could not find with a specific indication of where in the source document it is located,
- # include DOD's response to the public health recommendations, and
- # include the completed audience needs survey.

ATSDR will include in the public health action plan in future releases the actions being taken by DOD and others in response to ATSDR recommendations. Updates will indicate which recommended actions DOD plans to implement with the projected schedule. The

updates will also list recommendations DOD and others do not plan to implement, with explanations for those decisions.

If information is received by ATSDR after the close of a comment period, ATSDR will evaluate the information for inclusion in future versions of the public health assessment or, if appropriate, consider developing an addendum. An addendum may be considered appropriate if new data or information significantly changes the pathways analysis, conclusions, recommendations, or public health action plan. Public health assessments will be updated with addenda as needed, but not more frequently than annually. Public health issues of immediate concern will be addressed with a health consultation rather than an addendum.

III. SITE-SPECIFIC HEALTH CONSULTATIONS

A. INITIATION

At times, DOD may identify focused, site-specific public health issues where an ATSDR opinion is needed. Based upon the complexity of the issue, the level of effort required for ATSDR's response may vary. If ATSDR projects that the level of effort required to respond may significantly affect activities on other DOD sites, ATSDR will request that DOD make a written request for a health consultation to the Office of Federal Programs (OFP). Also, if DOD specifies the need for a written response, a written request must be submitted to OFP. OFP will ensure that appropriate coordination between ATSDR and the DOD lead agent occurs.

Questions regarding the level of response anticipated should be discussed with the Federal Facilities Assessment Branch (FFAB) within the Division of Health Assessment and Consultation (DHAC). Based upon the data or information needed, the technical expertise available, or the time frame of response required, FFAB will determine what the appropriate response should be (e.g., site visit, verbal comment, or written health consultation) and whether the level of effort will affect activities at other sites. If FFAB determines that other site activities will be significantly affected, DOD will be instructed to submit a written request for a health consultation to OFP. If no significant impact on other DOD activities is anticipated, a written request from DOD will not be required.

In the case of an emergency, the installation or Component may request emergency assistance through the emergency response network at (404)639-0615.

When ATSDR identifies issues of public health concern that should be addressed through a health consultation, ATSDR will notify the installation and Component laboratory.

B. INFORMATION EXCHANGE

When DOD requests a health consultation, DOD will supply ATSDR with pertinent information following ATSDR's acceptance of the request.

When ATSDR identifies the need for a health consultation, ATSDR will obtain information for the consultation in the same manner as for a public health assessment.

IV. HEALTH STUDIES

A. HEALTH STUDY ACTIVITIES

Upon identification of the need for a follow-up health study, ATSDR will provide DOD with a notice of intent@ briefly describing ATSDR's planned activity. The notice of intent will be written in a manner appropriate for release to the community. ATSDR will submit to DOD, as part of the APOW, funding requirements for health studies. An ATSDR point of contact for the health study will be identified and communicated to the appropriate DOD component.

ATSDR will develop a draft protocol describing the planned activity which will undergo scientific peer review. An overview of the study purpose, methods, and limitations are orally presented to an established Community Assistance Panel (see Section C) before peer review. The draft protocol may include the following topics:

- # introduction and background, including site description and location, listing of major off-site contaminants and exposure pathways, description of the populations at risk, and discussion or listing of the health concerns expressed by the community;
- # purpose of the study;
- # study objectives;
- # methods including the rationale for the study design, sample selection, and the methods to carry out the study;
- # community involvement and notification plan;
- # specimen collection protocol including how biologic specimens will be collected, transported, and analyzed;
- # data analysis methods, plan, and power of the study; and
- # study limitations.

The ATSDR peer review policy statement and procedures can be found in Appendices F and G. Following the peer review process, the study protocol will be simultaneously shared with the community, the installation, and the Component laboratory. All parties receiving the draft protocol will have an opportunity for comment. Written comments should be provided to ATSDR within 45 calendar days. ATSDR's Division of Health Studies (DHS) prepares written responses to the peer reviewer comments and a summary of other comments received; these will be sent to the Component liaison when they are completed.

Each protocol will undergo procedures that could also include human subjects review. The process for the human subjects review fulfills the requirements set forth in 45 Code of Federal Regulations (CFR) 46, revised June 18, 1991.

DOD participation in field study activities will be discussed and determined on a site-specific basis.

Following a scientific peer review process on the study findings, a public comment period is provided on draft final reports of health studies. The draft final reports will be simultaneously furnished to the community, the installation, the site restoration advisory board, and the Component laboratory. All parties receiving the draft final report will have an opportunity for comment. Written comments should be provided to ATSDR within 45 calendar days. DHS prepares written responses to the peer reviewer comments and a summary of other comments received; these will be sent to the Component liaison when they are completed.

B. EXCEPTIONAL SITUATIONS

In the case of either an imminent public health hazard or a time-critical situation that prevents ATSDR from incorporating the health study into the development cycle for the APOW, ATSDR will submit the funding requirements as a request for modification of the APOW.

C. COMMUNITY INVOLVEMENT

A community involvement plan defining specific procedures and participation needs of the community will be developed for each health study, as appropriate. As part of the community involvement plan, ATSDR, with community concurrence, may form a Community Assistance Panel (CAP). A description of the panel and how it is created was published in the Federal Register (57 FR 27779 No. 120; Appendix H).

Some health studies may be developed for previous residents or may use existing health information; the community involvement may be limited to periodic communications in these situations.

A site-specific community coordinator from DHS will be identified for each site where a health study is taking place. Unless other arrangements are agreed upon with the site community, the site-specific community coordinator and the community involvement liaison will provide quarterly updates that outline the health activity progress to date to the community, the CAP, the lead agent, the Component laboratory, other identified interested individuals, and the media.

ATSDR may also hold public availability meetings in conjunction with health study activities. The meetings are designed to foster an exchange of information about site-specific health activities. Topics discussed may include general expectations and limitations of study activities and the role of DHS as it applies to other agencies and local government. Public availability sessions may be deemed appropriate during the following activities:

- # protocol development,
- # field activities,
- # public comment periods,
- # draft report dissemination,
- # final report dissemination, and
- # follow-up sessions.

ATSDR will contact the Component laboratory and the base representative to advise them of any community meetings not scheduled in time to be included in the monthly schedule of planned activities.

V. TOXICOLOGICAL INFORMATION

A. EMERGENCY EVENTS

Inquiries about toxicological information should be made through one of the following ways:

- # the ATSDR Toxicology Information line (404) 639-6000,
- # the ?toxic chemical release@ menu choice on the Centers for Disease Control and Prevention (CDC)/ATSDR emergency response number (404) 639-0615,
- # the Federal Emergency Response System, or
- # referral from general information numbers or other agencies.

On both the 639-6000 and 639-0615 numbers, an interactive recorded message gives menu choices for ATSDR's emergency response unit. For the 639-6000 number, the menu choices direct site-specific calls to the Division of Health Assessment and Consultation, medical questions to the Division of Health Education, and substance-specific calls to the Division of Toxicology (DT). Callers to either 639-0615 or 639-6000 who select the ATSDR emergency response unit are routed to the duty officer for emergency response. Calls may also be routed to the ATSDR emergency response unit duty officer through other federal agencies.

The duty officer transfers calls about DOD lethal agents or petroleum products to CDC's National Center for Environmental Health (NCEH). The duty officer addresses any immediate needs of the caller until the transfer to CDC/NCEH is made; the duty officer also ensures that the transfer has been made to CDC/NCEH.

All other calls involving emergency events are handled by ATSDR emergency response duty officers. As appropriate, the ATSDR emergency response duty officer will assemble a team suitable to the needs of the situation and act as needed.

Any emergency event response will be reported to the Component liaison office as expeditiously as possible.

B. SUBSTANCE-SPECIFIC HEALTH CONSULTATIONS

Requests for substance-specific health consultations should be submitted to ATSDR's OFP through the DOD lead agent. Requests should detail the specific need and the desired time frame of response. OFP will forward the request to DT for concurrence.

Requests concerning DOD lethal agents or petroleum will be referred to CDC/NCEH. Requests concerning other agents will be evaluated for the level of response required. Requests that can be met by the toxicologist on duty will be handled immediately; the written consultation will be provided to the Component laboratory and requesting installation. If the request requires an extensive response, ATSDR will notify DOD within 72 hours of the time frame and resources needed for the response. Only after coordination with the DOD lead agent will ATSDR pursue these requests.

C. TOXICOLOGICAL PROFILES

A typical schedule for development of a toxicological profile is included in Appendix I. Implementation will be through the DOD lead agent. ATSDR and DOD chemical managers may occasionally contact each other directly to discuss issues related to a specific profile.

1. DOD NOMINATION OF TOXICOLOGICAL PROFILE CANDIDATES

The DOD lead agent will notify OFP in writing of requests for development of toxicological profiles. OFP will ensure that the activity is coordinated between ATSDR and DOD. Upon ATSDR's acceptance of the requested activity, ATSDR will notify the DOD lead agent of the schedule for development of the profile.

2. ATSDR IDENTIFICATION OF TOXICOLOGICAL PROFILE CANDIDATES

If ATSDR identifies the need to develop a toxicological profile, ATSDR will notify the DOD lead agent in writing. OFP will ensure that the proposed toxicological profile is coordinated with DOD (via the APOW whenever possible).

3. REVIEW PROCESS

ATSDR will transmit copies of toxicological profiles when they reach the third pre-comment draft stage. The documents will be transmitted to the DOD lead agent and the designated DOD chemical manager (Appendix J). Comments on the document should be delivered to ATSDR within 45 calendar days of their receipt by the lead agent and chemical manager.

ATSDR will schedule a conference call between the ATSDR chemical manager, DOD chemical manager, and the contractor's principal author 2 weeks after receipt to discuss the comments received. Any issues involving a change in scope, profile subject, or cost will be forwarded to the ATSDR profile contract project officer for decision. DOD will be notified in writing of the decision.

Written responses to the comments will be prepared, and a revised profile (fourth draft) will be prepared and transmitted to DOD. DOD response to the fourth pre-comment draft will be due 21 calendar days after receipt. The response letter from DOD should indicate if there are any remaining critical issues.

The public comment release of the toxicological profile will be sent to individuals listed on a distribution list specific for toxicological profile public comment. The public comment period will last 90 days. Comments received during the public comment

period will be addressed in the final release of the toxicological profile.

VI. HEALTH EDUCATION

A. SITE-SPECIFIC PREVENTIVE HEALTH EDUCATION ACTIVITIES

Site-specific preventive health education is a health education activity recommended by ATSDR's Health Activities Recommendation Panel or identified by ATSDR or DOD. Health education is designed to assist communities in understanding, preventing, or mitigating the adverse health effects of exposure to hazardous substances. Target audiences include community members and community health professionals.

The priority categories for performing site-specific preventive health education are these:

- # ongoing exposure of significant public health concern,
- # potential exposure when specific actions can prevent adverse health effects,
- # past completed exposure pathway when specific actions or knowledge can prevent or mitigate adverse health effects, and
- # indeterminate exposure of significant public health concern.

Personnel in ATSDR's Division of Health Education (DHE) will obtain background information and research the community's needs through contact with health assessors, regional representatives, state and local health officials, base personnel, community representatives, the site restoration advisory board, health professionals, and EPA personnel. Site visits will be performed as necessary. The schedule of visits will be provided in the monthly schedule of federal activities. ATSDR will advise the lead agent and the base representative of any site visits not included in the monthly schedule.

DHE will develop a needs assessment for each site detailing the public health problems, community concerns, health professional and community educational needs, and the primary target populations. Special needs groups, such as children, minorities, and people of low socioeconomic status, will be noted. ATSDR will work closely with the community during the needs assessment to identify target audiences.

A community health education proposal will be developed for each site based on what is discovered during the needs assessment. The

proposal will include a description of the problem, purpose of the health education activities, and observable and measurable objectives that will be an integral part of the evaluation plan. The plan will include requisite tasks, essential personnel, team member responsibilities, and evaluation methods. ATSDR will work closely with community members to ensure that the site-specific preventive health education proposal reflects the educational needs of the community. Educational activities proposed will conform to the needs of the age, educational level, primary language, and culture of the target population.

ATSDR will transmit copies of the needs assessment and preventive health education proposal to the DOD lead agent, the Component liaison, the Component laboratory, the site restoration advisory board, and the relevant base either simultaneously or after transmission of the initial release of the public health assessment or the health consultation. DOD will provide comments or recommendations regarding the proposal within 45 calendar days. Funding requirements will be submitted as part of the APOW. After coordination with DOD, the health education program will be implemented cooperatively with the appropriate organizations. ATSDR will work closely with community members during implementation of the preventive health education plan.

ATSDR will perform an assessment of the impact of the individual site-specific programs. The assessment will evaluate satisfaction with the information provided, increased awareness and knowledge, anticipated behavior changes, and costs. The methodology for impact assessment will be developed on a site-specific basis, with community involvement.

B. DOD-REQUESTED HEALTH EDUCATION ACTIVITIES (NON-SITE-SPECIFIC)

ATSDR will work with DOD to plan, develop, implement, and evaluate health education activities identified by DOD. These activities will be negotiated between ATSDR and DOD and incorporated into the APOW. Any deviations from activities detailed in the APOW will be carried out only after written confirmation on the part of ATSDR and DOD.

VII. PETITION NOTIFICATION

Upon receipt of a petition, as described in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 104 (i)(6)(B), ATSDR will notify the DOD lead agent in writing. The notification will identify the site name and petitioner concerns, but the identity of the petitioner will be withheld.

VIII. REFERRALS TO OTHER FEDERAL AGENCIES

When issues are identified that must be referred to other federal agencies for resolution, the information will be provided to OFP for coordination. OFP will work with the Deputy Assistant Administrator, ATSDR, to determine the appropriate mechanism of referral. The DOD lead agent, liaison office, and installation will be notified of any anticipated referrals.

APPENDIX A. ATSDR DATA NEEDS BY CATEGORY

1. SITES SCOPED BUT NOT TARGETED IN THE CURRENT APOW

ATSDR needs the following data:

- # TRC or RAB minutes, newsletters, and pertinent news articles
- # public meeting minutes or summaries
- # technical assistance grants (TAGs) awarded
- # administrative record index
- # proposed records of decisions (RODs) that have or may generate specific public health issues or community health concerns
- # proposed workplans (if specific public health issues are not covered by the data ATSDR needs to develop a public health assessment document [Appendix B]). Allow 6 weeks for review, subject to availability of resources.
- # any mandates driving DOD site activities (e.g., land transfer legislation, lawsuits, dispute resolutions, or other documents describing changes or proposed changes in clean-up values that may alter the focus of the ROD and possibly public health assessment issues)

Requests for additional information may be made annually. The Component will send the documents within 60 days of the request or as mutually agreed upon.

2. SITES LISTED IN THE APOW FOR PUBLIC HEALTH ASSESSMENT ACTIVITY

For sites targeted for activity in the APOW for the current fiscal year, ATSDR will coordinate regularly with the IRP manager and Component contact to keep abreast of the most current information. The Component will send the requested documents within 14-20 working days or as mutually agreed upon.

3. SITES LISTED IN THE APOW FOR SCOPING

ATSDR needs the following data:

- # latest newsletter, TRC or RAB minutes, and pertinent newspaper articles
- # administrative record index
- # list of on-site contacts and phone numbers
- # list of community leaders with whom the installation has been coordinating

RI/FS schedule and latest RI/FS documents or sampling data
description of the operable units (or other designations) and
site maps
list of removal actions, interim remedial actions, and any
mitigation efforts
description of off-site sampling efforts and data
federal facilities agreements (with EPA and the state)
community relations plan
list of TRC or RAB members with addresses and phone numbers

APPENDIX B.

ENVIRONMENTAL DATA NEEDED

FOR PUBLIC HEALTH ASSESSMENTS

June 1994

Prepared by

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

ATSDR Environmental Data Needed
for Public Health Assessments

ATSDR Environmental Data Needed
for Public Health Assessments
Disclaimer

Use of trade names is for identification only and does not imply endorsement by the Agency for Toxic Substances and Disease Registry, the Public Health Service, or the U.S. Department of Health and Human Services.

DATA NEEDS WORKGROUP

Gary H. Campbell
Rita Ford
Diane L. Jackson
Stephanie R. Ostrowski
Betty C. Willis, Editor

Paul A. Charp
Emilio Gonzalez
John H. Mann
Lynn C. Wilder

FOREWORD

The highest priority of the Agency for Toxic Substances and Disease Registry (ATSDR) is the protection of public health. The Agency addresses that priority through specific public health activities as directed by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and other federal statutes. Although the CERCLA mandate covers a wide range of health-related activities, this document focuses on data needs for the specific requirement of preparing a public health assessment for each site on or proposed for inclusion on the National Priorities List (NPL). When appropriate, this may also apply to ATSDR's response to petitions requesting investigation of particular facilities or toxic substance releases.

Public health assessments challenge ATSDR to integrate environmental sampling data, health outcome data, and community concerns successfully in the evaluation of the health implications of hazardous substances released to the environment. Doing so enables ATSDR staff members to make the difficult decisions as to why, where, and for whom public health actions should be undertaken.

ATSDR's public health activities have documented human exposure to releases from about 40 percent of the hazardous waste sites Agency scientists have examined; potential exposure could occur at another 40 percent. In fiscal year 1992, sufficient environmental data were available to indicate the need for health investigations at about 35 percent of the sites evaluated by public health assessments. Included were sites where concern was for current or past exposures to hazardous substances released from the site.

More important to the focus of this document, there was insufficient environmental data to determine whether health investigations should be conducted at approximately 40 percent of the sites evaluated. Thus, environmental data are critical to ATSDR's public health algorithm, but only to the extent that such data can be used in a manner that contributes to and facilitates the Agency's public health practice.

Recognizing that data are collected at hazardous waste sites for a variety of purposes, ATSDR has focussed this guidance on the needs of the environmental public health professional. This guidance is not intended to supplant the professional judgment and discretion

of those responsible for sampling and monitoring the environment; instead, it provides a framework for further dialogue and discussion among health assessors and environmental risk managers.

The draft guidance was made available for public comment through publication in the Federal Register and was distributed to federal, state, and local entities; private consultants and corporations; and trade/professional organizations. Comments received were considered and, when appropriate, incorporated into the document. ATSDR is responsible for the technical accuracy of this guidance and is committed to updating it as new information becomes available. Comments from the users of this guidance document are welcome. Please send comments to Robert C. Williams, P.E., DEE, Director, Division of Health Assessment and Consultation, ATSDR, E-32, 1600 Clifton Road, Atlanta, Georgia 30333.

Robert C. Williams, P.E., DEE
Ph.D.
Director,
Surgeon General
Division of Health Assessment
Administrator
and Consultation
Substances
and Disease Registry

Barry L. Johnson,

Assistant

Assistant

Agency for Toxic

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INTRODUCTION

This document describes the general purpose and focus of a public health assessment (PHA) and provides a list of general site information and environmental data that ATSDR usually obtains from the Environmental Protection Agency (EPA), the potentially responsible party (PRP), or other lead agencies responsible for conducting environmental investigations. It is intended for use by EPA Remedial Project Managers (RPMs), Federal Facility Installation Restoration Program Managers, ATSDR Regional Representatives, PRPs, and other parties involved in the public health assessment process.

A PHA is the evaluation of data and information on the release of hazardous substances into the environment in order to assess any past, current, or future impact on public health, to develop health advisories or other recommendations, and to identify studies or actions needed to evaluate and mitigate or prevent human health effects. For further information on the PHA process and ATSDR's methodologies for evaluating public health effects, see ATSDR Public Health Assessment Guidance Manual, March 1992. The PHA evaluates three primary types of information: environmental data, community health concerns, and health outcome data. This data needs document addresses only environmental data needs.

During analysis of human exposure pathways, environmental data are used to determine how human exposure may have occurred, may be occurring, or may occur. An exposure pathway consists of five elements:

1. source (landfill, spill, etc.);
2. transport media (groundwater, air, etc.);
3. exposure point (drinking water well, food source, shower, etc.);
4. route of exposure (ingestion, inhalation, etc.); and
5. receptor population (families, schoolchildren, etc.).

During preparation of a public health assessment, ATSDR must evaluate specific data that address pathways, especially at potential exposure points. Much of that needed information is available in reports of remedial investigations (RIs) and other environmental studies conducted by EPA, federal facilities, state agencies, and PRPs. Other environmental information critical to exposure pathway analysis, such as contaminant concentrations at off-site human exposure points, is not as likely to be available

at the beginning of the RI process. The following sections describe specific environmental data that are needed for a thorough evaluation of potential human exposure to hazardous substances and the related health effects. The availability of this information early in the remediation process could contribute to the timely identification of needed public health actions and would eliminate the need for "preliminary health assessments," which usually conclude that more data are needed for full evaluation of the public's exposure.

ATSDR depends on other agencies or corporate PRPs to generate the environmental data necessary to determine the degree of public exposure to toxic chemicals at hazardous waste sites. Most of the environmental information that ATSDR needs is the same as that routinely required by EPA at NPL/hazardous waste sites. ATSDR typically requires additional information in the following categories:

1. contaminant concentrations in all off-site media to which the public may be exposed;
2. an appropriate detection limit and level of quality assurance/quality control (QA/QC) in samples to ensure the resulting data are adequate for assessing possible human exposures;
3. discrete samples that reflect the potential range of exposure of the public;
4. surface soil and sediment samples not deeper than 3 inches;
5. more extensive biota studies, and analyses of edible portions only;
6. more ambient and indoor air sampling; and
7. lists of physical hazards and barriers to site access.

This document is intended to provide general guidance that will help persons responsible for designing hazardous waste site characterizations include the data that ATSDR needs to develop a public health assessment of the site. It is recommended that, when possible, ATSDR review draft environmental sampling workplans for areas at each NPL site where there is an exposure potential to provide site-specific guidance on data that will be needed to address site-related public health issues that may arise.

SAMPLING STRATEGY

Most NPL site sampling plans start at the area or areas where the releases are thought to have occurred and work out from that point or those points in an iterative process until the full extent of contamination has been characterized. This process often takes years to progress off site to collect data at the potential points of public exposure. ATSDR recommends that the initial evaluation of the site include an assessment of probable routes of public exposure/contaminant migration off site, and that the sampling begin at the public exposure points to determine if interim actions are needed to reduce or eliminate public exposure. If contamination at public exposure points is determined not to be at levels of health concern, then the on-site sampling to characterize the site fully and determine what remedial actions may be necessary should proceed. However, if at any point during the site characterization, a medium (such as groundwater) is found to be contaminated on site at levels of public health concern, and that medium was not previously tested off site, then sampling should be conducted immediately at the potential public exposure points for that medium if such points exist (e.g., if private or municipal wells exist near the site in the case of groundwater).

Certain information should be included in any sampling study.

1. Geographic area or source the sampling plan is designed to represent
2. Intent of sampling strategy, e.g., to define average or range of concentrations
3. Rationale or statistical method used to select sampling locations, i.e., random, grid, stratified, composite, grab, etc.
4. Sampling equipment used and method(s) for decontamination between samples
5. Location and rationale for selection of background samples

DATA QUALITY INFORMATION

To determine the likelihood of human exposure, health assessors evaluate all available environmental data. Different organizations collect environmental data for a variety of purposes. Such data often are not of the quality necessary for use in PHAs and are not intended for use in assessments. Therefore, the following information should accompany data sent to ATSDR:

1. Data quality objectives (DQOs) -- The anticipated use for which samples were taken, which then determines the types of laboratory analysis used; sensitivity of the analytical technique; detection limits; confidence limits; precision, accuracy, representativeness, completeness, and comparability (PARCCs); appropriate sampling design; and resulting data quality.
2. QA/QC requirements -- The criteria by which data accuracy and precision are judged.

When formulating DQOs for sampling and analysis of contaminated media at human exposure points (water supply wells, playground soils, etc.), the level of QA/QC should not be less than that used for risk assessment data (Levels III to V), as specified in the EPA Office of Solid Waste and Emergency Response (OSWER) Directive 9355.0-7B, March 1987, Data Quality Objectives for Remedial Response Activities Development Process, and the OSWER Directive 9285.7-09A, June 1992, Final Guidance for Data Usability in Risk Assessment (Parts A & B), or current versions of these documents. These documents are available from the U.S. Environmental Protection Agency, OSWER, 401 M Street, S.W., Washington, D.C. 20460.

The ATSDR data evaluation process is discussed in detail in Appendix C of the ATSDR Public Health Assessment Guidance Manual (reference Federal Register, 57 FR 21987, May 26, 1992).

ELECTRONIC DATA TRANSFER

Currently, health assessors receive most information from EPA and other organizations in written reports, e.g., remedial investigation/feasibility studies (RI/FSS) and data sheets, with accompanying maps, figures, and tables. A few sites are making their environmental databases available to ATSDR in machine-readable formats or through communication linkages. An interagency workgroup, including representatives from EPA, Army, Air Force, Department of Energy, ATSDR, and U.S. Geological Survey (USGS), is attempting to develop a standard format for transferring electronic data between agencies. Site-specific data transfer is ongoing at a few sites. However, many federal facilities have expressed interest in electronic data transfer for use in the near future.

Electronic transfer greatly speeds the review and analysis process by eliminating the need for duplicative data entry and verification. Also, data in an electronic format can be imported to a Geographic Information System (GIS) so that disparate, geographically based information, such as contaminant distributions, census data, and land uses, can be integrated and interpreted. Generally, the entire analytical data set should be transmitted, rather than only selected or summary data. However, if the data set is extremely large, the health assessor may request that only a subset of the data be transmitted. ATSDR supports the use of electronic reporting methods and is actively pursuing their use during preparation of public health assessments.

GENERAL INFORMATION NEEDS

ATSDR needs background information and analytical data for each site it evaluates.

A. SITE IDENTIFIERS

1. Site name and alias
2. Site address or location
3. Site type (e.g., mine tailings, landfill, surface impoundment, spill, etc.)
4. EPA technical contact's name and phone number (e.g., Remedial Project Manager, On-Scene Coordinator, etc.)
5. Descriptions of problems/concerns
6. Current owner's name

B. SITE HISTORY

1. Dates of operation and significant events (e.g., fires, changes in ownership or products, etc.)
2. Descriptions of previous releases and actions taken by EPA or the facility to remedy them
3. NPL listing document, i.e., why the site was listed on the NPL
4. Descriptions of physical barriers to prevent pollutant transport (e.g., liners, slurry walls, fences, dikes)
5. Current CERCLA and Resource Conservation and Recovery Act (RCRA) status of site
6. Current structural condition of containers, vessels, and buildings holding substances
7. Current and past operational information regarding the treatment, storage, or disposal of hazardous waste at the site
8. Current use (and past uses, if different) of all buildings and areas where the public or workers may be exposed to contaminants, e.g., former pesticide formulation building and outside rinse area converted to day care center or office space

C. GEOGRAPHIC AND DEMOGRAPHIC DATA

1. Plotting of the site on the USGS quadrangle map, including the scale and map name if the complete map is not furnished
2. Political geography, i.e., city/town, county, state
3. Distance from site to closest residence
4. Approximate population residing within 1 mile of site or within the potentially affected area, whichever is greater

5. Sensitive land uses and features within 1 mile of the site or within the potentially affected area (e.g., schools, day care facilities, hospitals, retirement homes, streams, rivers, wetlands, aquifer recharge zones, water wells, etc.)
6. Copies of photographs or databases that depict past or current site conditions, including aerial photographs, satellite imagery, and GIS coverage (databases)
7. Proposed land transfers
8. Sensitive or potentially impacted land leases on site or off site

D. RELATIONSHIP TO NEARBY COMMUNITY

1. On-site activities and the estimated number of people involved in each activity (e.g., working, dirt-biking, camping, hunting, fishing, etc.)
2. Copy of the community relations plan
3. Types of barriers or signs used to prevent public access
4. Estimated frequency of on-site activities
5. Number and types of other potential environmental contamination sources within 1 mile of the site (or within the potentially affected area), including RCRA operating industrial facilities and other NPL or CERCLA Information System (CERCLIS) sites

E. SUBSTANCES IDENTIFIED

1. List of chemical names and Chemical Abstract System (CAS) numbers (if known)
2. Estimate of the quantities of contaminants released to each medium (soil, air, surface water, and groundwater)
3. Maximum concentration, range, and extent of contamination in each medium (including biota)
4. Identification of waste materials and quantities
5. Documentation of any chemical, mechanical, meteorologic, or other phenomena that might rapidly alter the current physical state of the chemicals present or the general condition of the site (e.g., earthquake zone, flood plain, etc.)

F. ANALYTICAL INFORMATION

1. All analytical results for each sample taken (raw data may be requested under certain circumstances), in addition to documents that summarize data
2. Detection and quantitation limits for all analytical data
3. Description of the level of QA/QC used and copies of the QA/QC results and data validation reports

4. Blank and spike sample results (specify lab or field samples)
5. Care and decontamination of tools, instruments, and sampling equipment in the field to prevent cross-contamination of samples
6. Sample storage protocol and holding times
7. Analyses of total concentrations, not only RCRA extraction analyses concentrations
8. Analyses that identify which form of a chemical is present if toxicity of the agent's various forms is significantly different (e.g., chromium III and chromium VI, elemental mercury and methylated mercury, etc.)

SOIL EXPOSURE PATHWAY

Contaminated soils may expose individuals who live, play, or work near the site to multiple contaminants at levels of health concern. Ingestion of contaminated surface soil, particularly by children, is a primary concern. Inhalation of contaminated dusts and direct dermal contact with contaminated soils also can lead to adverse health effects. Generally, the public is exposed to only the top few inches of soil; therefore, ATSDR has defined surface soil as the top 3 inches. For its evaluation, ATSDR needs concentrations of contaminants found in surface soil reported separately from those found in subsurface soil. Because ATSDR considers past, current, and future exposure scenarios, the Agency needs to know the concentrations of contaminants in the soil before and after removal or remedial actions. Information relevant to ATSDR's evaluation of the soil pathway is listed below.

1. Exact sample locations, including descriptions and map locations, and the purpose of the sampling
2. Depth of sampling points: specify if sample is a vertical composite of soil between specified depth ranges (e.g., 0-3 inches, 3-12 inches, 1-3 feet)
3. Type of sample (e.g., grab or composite)
4. Sampling scheme for composite samples (e.g., composite of five grab samples from a 100-square-foot grid, etc.)
5. Constituents analyzed for, analytical methods used, detection limits, and concentrations detected
6. Date of sampling
7. Discrete samples (grab) as well as composite samples because composited samples may not be representative of the maximum contaminant concentration to which individuals are exposed
8. Type of soil (sandy, silty, clayey, etc.)
9. Description of vegetative cover
10. Land use or special features during sampling

SURFACE WATER EXPOSURE PATHWAY

Representative sampling of surface water upgradient and downgradient of the site is necessary to distinguish health implications associated with the site. All surface water bodies on or impacted by the site should be sampled, including ditches, gullies, arroyos, and perennial and intermittent streams that could transport contaminants away from the site. Samples should be taken in areas where there is potential for human exposure. Information needed for evaluation of the surface water pathway is listed below.

1. Indication on map(s) of site location, boundaries of the 100-year flood plain, location of surface waters, and all surface water samples
2. Locations of all downstream surface water intakes for a distance of potential impact from the site
3. Identification and descriptions of National Pollution Discharge Elimination System (NPDES) effluents from the site and sources upstream and downstream of the site at distances potentially affecting the surrounding community (copies of NPDES permits and compliance reports may also be requested)
4. Past, current, and future uses of surface water on site and downstream (e.g., recreational, agricultural, drinking water, livestock watering, etc.)
5. Hydrologic characteristics
6. Relationship of surface water to groundwater
7. Copies of surface water sampling record and log, including sample locations and site conditions, e.g., water flow rate and/or depth, visual observations, etc.
8. pH and specific contaminant concentrations
9. Sampling and analytical methods used, detection limits, QA/QC data, and concentrations detected
10. Identification and description (including a map when appropriate) of any storm water drainage system on or adjacent to the site

SEDIMENT EXPOSURE PATHWAY

Residents may be exposed to contaminated sediment either through direct dermal contact, ingestion, and inhalation or through a secondary pathway: ingestion of contaminated biota. Sediment sampling is needed at possible human exposure points, such as recreational areas or children's play areas, and at locations where contaminated sediment may enter the food chain, such as known fishing and hunting areas, if there is the possibility of uptake of contaminated sediments by wildlife, fish, or shellfish that may be eaten by people later. Upstream sediments may be collected to determine background concentrations of the contaminants.

Sediments may also be mechanically disturbed and transported to possible human exposure points by dredging. Therefore, sampling and analysis of the dredged sediments, as well as the stream channels and impoundments, may be needed at some sites.

Contaminated sediments are not always found in constantly wet drainage areas. Many drainage ditches, surface impoundments, and ephemeral streams associated with releases of hazardous waste are dry part of the year. To prevent confusion between "soil" and "sediment," ATSDR defines sediment to be any solid material, other than waste material or waste sludge, that lies below a water surface; that has been naturally deposited in a waterway, water body, channel, ditch, wetland, or swell; or that lies on a bank, a beach, or floodway land where solids are deposited. For best evaluation of the potential exposure of the public, sediment samples, like soil samples, should be shallow (0-3 inches). The information listed below is needed for ATSDR's analysis of the sediment pathway.

1. Descriptions and locations on map of samples obtained
2. Depths of sampling points: specify if sample is a composite of soil between specified depth ranges (e.g., 0-3 inches, 3-12 inches, 1-3 feet, etc.)
3. Type of sample (e.g., grab or composite)
4. Sampling scheme for composite samples (e.g., composite of five grab samples from a 100-foot length of stream, whether the sampling program was designed to collect samples at regular intervals or from depositional areas, etc.)
5. Constituents analyzed for, analytical methods used, detection limits, QA/QC data, and concentrations detected
6. Date of sampling event and site conditions at that time

GROUNDWATER EXPOSURE PATHWAY

Human exposure to contaminated groundwater from water supply wells is a common public health problem associated with hazardous waste sites. To prevent or mitigate such exposure, the location and use of potentially contaminated wells or springs should be identified as soon as possible after discovery of the hazardous waste problem. Characterization of the vertical and lateral extent of the groundwater contamination plume is also needed to evaluate the groundwater exposure pathway, but only as it relates to past, present, and future contaminant movement to human exposure points.

Groundwater pathways analysis and public health recommendations can be enhanced by the following approaches to groundwater monitoring:

1. Correlation of groundwater contaminants measured in site monitoring wells to contaminants measured in water supply wells can be greatly improved if some of the site monitoring wells are screened in the same groundwater zone as the water supply wells.
2. Because of the heterogeneous nature of groundwater systems, water supply wells and springs within or at the leading fringe of a groundwater contamination plume usually need more than a one-time sampling to be evaluated for possible human exposure. Quarterly monitoring for at least one year is preferred.
3. Valid comparisons between analyses of metals from groundwater samples and EPA drinking water standards can be made only if the groundwater samples are NOT FILTERED during sampling; EPA drinking water standards and health studies are based on total metals (UNFILTERED samples). Unfiltered samples should always be taken at points of exposure, e.g., private wells, municipal drinking water systems, etc. All groundwater data, for filtered and unfiltered samples, should be provided to ATSDR.
4. A few tap water samples should be included in any sampling of contaminated municipal or community wells because concentrations of contaminants measured at the wellhead may vary by an order of magnitude or more from concentrations measured at the drinking water taps in the system. Environmental samples at human exposure points (drinking water taps) provide a better data set than wellhead samples to evaluate actual human exposure.

Several types of information are needed for the groundwater exposure pathway analysis.

A. WELL SURVEY

1. Well survey and inventory within at least 1 mile of the site or within the potentially affected area, whichever is greater.
2. An inventory of a larger area downgradient of any known groundwater plumes, depending on site-specific hydrogeology and the extent of contamination. The well inventory should include the number, total depth, screen interval, well use, yield, status, installation date, pump type and age, and location of all local wells and developed springs.

B. WATER SOURCES

Water sources designated by the following categories:

1. Monitoring wells
2. Facility water supply wells
3. Municipal/utility wells, springs, or reservoirs
4. Residential wells or springs or small, unregulated water systems
5. Commercial/industrial production wells
6. Irrigation wells (including wells that are part of lawn-watering systems)
7. Community wells, such as wells serving mobile home parks
8. Piezometers
9. Livestock water wells/springs

C. HYDROGEOLOGY

Descriptions of site-specific and regional hydrogeology, including these characteristics:

1. Depth, thickness, extent, name, and characteristics (including flow direction) of all groundwater zones and aquifers affected or potentially affected by contaminants
2. Depth, thickness, extent, name, and characteristics (including flow directions) of all local drinking-water aquifers
3. Vertical and lateral extent of groundwater contamination
4. Natural geochemistry (may be the same as background) of all contaminated groundwater zones and drinking water aquifers

D. GROUNDWATER MONITORING

Descriptions of past and current groundwater monitoring, including the following information:

1. Dates and frequency of past and current monitoring
2. List of analytes and detection limits
3. Sampling procedures
4. Water level measurement procedures
5. Dates of and procedures used for aquifer tests

E. ANALYTICAL DATA

Analytical results of groundwater monitoring, including the following information:

1. For each sample, field measurements for temperature, conductivity, and pH
2. Tables of analytical results listed by sample location
3. Any available summaries of analytical results in which the maximum concentrations of contaminants are identified
4. QA/QC analyses for different sampling episodes
5. Analytical results of metal contaminants derived from unfiltered groundwater samples
6. Water level measurements, calculated gradients, potentiometric contour maps, and figures
7. Monitoring well construction logs, boring logs, and site-specific cross-sectional maps
8. Descriptions of past, current, or planned groundwater remedial actions, including provision of alternative water supplies
9. Descriptions and results of any geophysical, geochemical (including tracer studies), or soil-gas surveys performed for the purpose of defining sources and extent of groundwater contamination
 10. Descriptions and locations of all known or surmised facility- or site-related sources of groundwater contamination. Non-site-related sources may also be included if pertinent to contamination of water supply wells or springs.
 11. Descriptions and locations of any on-site or near-site groundwater/surface water recharge/discharge areas, such as sinkholes, sinking or disappearing streams, stream bank or drainage ditch seeps, leachate seeps, or undeveloped springs

AIR EXPOSURE PATHWAY

Adverse health effects (acute and chronic) associated with inhalation of air contaminants are a common concern of citizens living and working near hazardous waste sites. Air emissions from past or current production processes, as well as volatilization of organic compounds, airborne particulates, and acid gases from hazardous waste areas, may expose residents who live or work near the sites to contaminants at levels of health concern.

Hazardous waste areas from which air releases may be significant are surface impoundments, where there may be leaking drums or tanks containing volatile organic compounds, landfills that produce methane gas, which can migrate, waste piles of materials that may be easily entrained by winds or that contain volatile organic contaminants, and contaminated soils that may become entrained in the air by winds or vehicular traffic. Air emissions may also be generated by excavation, landfarming or bioremediation, air stripping, pond aeration, incinerator stack emissions and ash, and handling of decontaminated soil.

Air releases from past and/or current production processes may cause off-site deposition of contaminants that may lead to soil, biota, and surface water contamination, which in turn may result in the population near the site having secondary exposure. Therefore, site characterization should include an evaluation of production area air releases, meteorologic data (including wind rose or wind speeds and directions), and, possibly, modeling of those releases to determine potential off-site air-exposure points and deposition areas that may need to be sampled. Grab samples are generally not very representative of the long-term exposure the public may receive from a facility, since air concentrations can vary widely. If grab samples are taken, ATSDR recommends that several samples representative of the area be taken over time to assess the areal distribution and variation in concentration of the contaminants. Information relevant to the air pathway is listed below.

A. AMBIENT AIR DATA

1. Locations where samples were taken, including descriptions and illustrations on maps
2. Meteorologic conditions, temperature, wind speed, and wind direction when samples were taken (i.e., which samples were upwind, and which were downwind), cloud cover, (i.e., sunny, overcast), time of year, and time of day or night

3. Sampling log, including descriptions of activities in the area during sampling that may have contributed to concentrations of constituents detected (e.g., 10 feet from busy intersection, 20 feet downwind from bulldozers excavating contaminated soil, etc.), and descriptions of measures taken to reduce emissions if ambient air monitoring is in conjunction with remediation activities (e.g., dust-control measures, etc.)
4. Height at which samples were taken. Samples should be taken in the breathing zone (4-5 feet above ground)
5. Descriptions of sampling methods used and constituents collected by each method (personal monitors, fixed monitoring stations, Tenax7 tubes, total particulate or PM10, Drager7 tubes, OVA7, HNU7, etc.)
6. Sampling frequency and dates (duration of continuous or integrated composite sampling, grab samples, etc.). If grab samples are taken, samples may need to be taken both at night and during the day in case the concentrations are affected by the change in meteorologic conditions.
7. Constituents analyzed for, analytical methods used, detection limits, QA/QC, and concentrations detected
8. Ambient air sampling where people may be exposed at on- and off-site locations if fugitive air emissions are the only source of potential human air exposure and if on-site or fence-line sampling indicates contaminants are present at levels that could cause adverse health effects
9. Ambient air data from the maximum predicted off-site exposure locations to ensure that modeling predictions are accurate and to protect public health if there are current stack emissions from production areas or remedial technologies and if modeling of those emissions indicates a potential for people off site to be exposed to constituents at levels that may cause health effects
10. Ambient air samples even if modeling does not indicate a potential for off-site exposure at levels of health concern but exposure is plausible and there is community concern about site emissions

B. STACK EMISSIONS DATA

1. Detailed descriptions of the treatment technology or manufacturing process associated with each stack, including design drawings, raw feed materials, operating temperatures and conditions, products and by-products of the system, any air pollution control equipment, etc.
2. All permits (state and federal, Clean Air Act, polychlorinated biphenyls [PCB], and hazardous waste [RCRA]), if permitted under those programs or, if a CERCLA unit, all documents relevant to the unit's design and operating requirements

3. All compliance reports required under any of the previously described permits and any other documents that discuss past planned and unplanned air releases
4. All stack testing or trial burn results for the units (including testing or trial burn plans, sampling, analytical, and QA/QC reports, and any written reviews of the data)
5. Identification of the closest meteorologic station and general meteorologic conditions (including wind rose, prevalence of air stagnation events, or other unusual conditions for that area) and a determination that the information is representative of the meteorologic conditions at the site and surrounding areas
6. Any air modeling for the stack(s) and/or fugitive emissions at the site (including all parameters used in the modeling, such as land use, terrain features, nearby building dimensions, meteorologic conditions used or dates and source of meteorologic data used in the modeling, flue gas temperature and velocity, stack height, contaminant emission rate, etc.)

C. SOIL GAS DATA

1. Analytical results from any soil gas surveys and a description of the sample locations and survey methods
2. Measurements of flammable and explosive gases, such as methane or ethylbenzene, at landfills and other waste source areas, as well as at nearby buildings where such gases may be generated, migrate, or accumulate
3. Descriptions of calibration gases and concentrations needed in addition to the instrument readings of a combustible gas meter or other instrument calibrated to determine concentrations at or above the lower explosive limit of gases under investigation
4. Gas pressure measurements to estimate how far soil gas contaminants may migrate from their source to human exposure points, such as occupied residences
 - a. Permanent gas monitoring wells should be equipped with a permanent pressure gauge that should be read before sampling.
 - b. Vertical and lateral zones of soil gas movement can best be determined when gas monitoring wells are screened in the most likely subsurface zone of movement and not over the entire depth of the unsaturated zone.
5. Investigation of buried utility lines that lie beneath or adjacent to the hazardous waste area to determine if they serve as preferential pathways for soil gas movement from the source area into occupied buildings

D. INDOOR AIR QUALITY DATA

Indoor air sampling data may be needed to determine potential health effects on building occupants (workers and/or residents) if on-site buildings that are occupied (or may be occupied by people in the future) are constructed of contaminated materials or the buildings became contaminated during use. Indoor air sampling may also be needed if gases or volatile organic compounds are known to be migrating through the soil or if soil gas measurements around the building indicate that gases may accumulate in the building. If flammable or explosive atmospheres are possible, instruments capable of detecting flammable and explosive gases at and above the lower explosive limit should be used. Specific indoor air sampling data are needed.

1. Type of instruments and sample collection methods used (include air volume sampled)
2. Analytical data and analytical methods used, including detection limits for all contaminants, calibration of equipment, and QA/QC procedures and results
3. Date, time, and temperature when samples were taken
4. Diagram of building showing sampling locations
5. Descriptions of building construction materials and significant construction features (on concrete slab, basement, number of stories, below grade, on stilts, etc.)
6. Descriptions of sampling locations, including type of room (bedroom, den, garage, basement, attic, process area, or storage area, etc.); height in the room; and distances from significant structures in the room, such as ceilings, hoods, vents, workbenches, chemical storage or use areas, doors or other large openings, etc.
7. Descriptions of building air flow before and during the sampling (e.g., was the building unoccupied and closed with no air circulation? Was central heating or air conditioning operating for sufficient time to reach equilibrium in air quality?)
8. Descriptions of other contaminants that may be present in the air because of normal building use (especially important for residential sampling), such as chemicals or solvents used for hobbies, freshly painted surfaces, cleaners, lawn care products, tobacco smoke, etc.
9. Data from aggressive air sampling of buildings that are/may be contaminated with metals, particulates, or fibers. Aggressive air sampling is any method used to agitate particulates or fibers that may have settled out of the air or that could easily become airborne because of human activity (usually the use of high-powered fans or leaf blowers). The air should be agitated either during the entire time that an air sample is being collected or at regular intervals during the sampling period. Aggressive air

sampling gives the most conservative of worst-case results of a given contaminant in indoor air.

a. ATSDR recommends that such sampling be performed because it is difficult to interpret surface wipe sampling data for health purposes.

b. Aggressive air sampling should be conducted when buildings are not occupied, with the indoor air constantly "stirred up" to simulate worst-case conditions.

c. Contaminants may be in homes as a result of contaminated soil being tracked in, contaminated clothing being brought home from work, or air deposition through open windows, vents, etc.

E. INDOOR DUST DATA

In some cases, indoor air sampling may not be appropriate or possible. If sampling must be done while the building is occupied, conducting aggressive air sampling for particulate and fiber contaminants may increase the exposure of occupants by making contaminants airborne. If this is a concern, dust sampling should be used to determine human exposure.

A typical scenario for which indoor dust sampling may be appropriate would be a residential setting where soil lead contamination is at or near levels of health concern. In this case, lead contamination's being tracked indoors and being ingested by infants or young children would warrant indoor dust sampling. Any contaminant that can be analyzed from a particulate sample can be measured via dust sampling.

If indoor dust sampling is conducted, the data listed below are needed.

1. Surface area vacuumed (i.e., square feet).

2. Description of the area sampled. Is activity in the area high or low? Is the area accessible (i.e., kitchen floor vs. behind couch, or a combination)? Are floors in the sampled building or area carpeted, hardwood, concrete, linoleum, etc.?

3. Description of the sampling equipment and collection media.

a. High Efficiency Particulate Air (HEPA) filters are recommended.

b. ATSDR recommends that samples not be taken from the resident's vacuum cleaner because the resident may use the vacuum in other areas besides the home (e.g., garage, workplace, etc.) and the smaller particles are not captured in a vacuum bag. Some studies have shown that more contaminants are attached to small particles than to large particles.

4. A copy of the indoor dust sampling plan. The detection limits that will dictate how large a sample to collect must be at or below the level of health concern for the contaminants present.
5. Are there any other possible contributing factors to the contamination besides surface loading (i.e., hobbies, lead paint, etc.)?

If the results of indoor dust sampling indicate a health threat, sampling after an indoor cleanup will be needed to verify that the threat has been eliminated. In theory, this should be easy. If the cleaning is sufficient, there should be no dust remaining to collect and therefore no contamination. However, this has not always been the case. In some instances, the contaminant concentrations appeared to have increased as a result of remediation. ATSDR recommends that the same area be vacuumed before and after cleanup but acknowledges that it will sometimes be necessary to vacuum a larger area after cleanup to get enough dust to analyze. If that is required in the sampling plan, the plan should also include a requirement for wipe sampling a same-sized area before and after cleanup. Wipe sampling will document the contaminant surface loading before and after remediation.

FOOD-CHAIN EXPOSURE PATHWAY

People may be exposed to site contaminants by eating plants or animals that have incorporated the contaminants into their bodies. Both on- and off-site hunting, fishing, foraging, and farming activities may bring people into contact with those contaminants. Some substances, particularly fat-soluble substances and heavy metals, may reach concentrations in animal tissues that are thousands of times higher than those found in water, soil, and sediment. For discussion in the PHA, it is important that the edible portions of such food items be analyzed for contaminants of concern. Edible portions of food items needs to be determined at each site based on the eating habits of the various ethnic populations that may ingest the various food items being analyzed; e.g., residents of one community may eat skinned fillets of fish, while those in another community eat the whole fish. If several ethnic groups are present in the potentially exposed community, it would be desirable to have samples analyzed based on each ethnic group's eating habits; however, if this is not possible, the worst-case eating habits should be used to determine the samples to be analyzed. It is difficult to draw meaningful human food-safety conclusions when the whole body of a fish is analyzed rather than fillet samples, if the community typically eats only fillets of that type of fish, or when a whole plant is analyzed and only the fruits are normally ingested.

When planning and designing an investigation of food-chain contamination, it is important to have a well-designed biota sampling protocol, with sample size large enough to be statistically significant (more than 20 samples per location per sampling episode are recommended when parametric statistical methods will be used). In particular, organisms of different species, ages, or reproductive status should not be sampled without strong justification. For example, when assessing the impact of contaminated sediment upon the edible fish populations in a stream, results of analyses of tissues from bottom-feeding fish should not be combined with those from water-column feeders; because of their different feeding habits, very different effects may be expected. Discrete (grab) samples are preferred because ATSDR tries to determine the maximum contamination in order to model worst-case scenarios.

Special handling of biologic samples needs to be considered. Some analytical procedures require that live or fresh-frozen fish be transported to the lab immediately for analysis; the accuracy of other procedures may not be affected if formalin-preserved

specimens or those held frozen for weeks or months are used. Such considerations, along with any special problems encountered, should be included in an appendix to the document for quality assurance review.

When contamination of consumable plants and/or animals is suspected, specific data are needed by ATSDR to evaluate the food-chain pathway.

A. NONSAMPLING INFORMATION (past/present)

1. Animal and plant species that may be eaten by people if these species are potentially affected by the site (e.g., annual animal population or crop volume harvested)
2. Descriptions of populations consuming each potentially contaminated crop and animal (e.g., residential gardens containing tomatoes, corn, and peas consumed by owners [include ethnicity, if known]; local subsistence hunting for rabbits, dove, and deer; commercial and subsistence fishing for salmon and catfish; commercial beef cattle ranches and feedlots in the area; etc.)
3. Descriptions of past, present, and intended future land use

B. SAMPLING INFORMATION

If contamination exists only on site:

1. Sampling and analysis of edible plants and on-site edible animal species
2. Sampling and analysis of off-site edible animal species likely to pass through the contaminated area

If contamination exists off site, sampling and analysis should include all plant and animal species believed to be exposed to contaminated media if they have potential to be used as human food sources.

C. BIOTA STUDIES

When biota studies are performed:

1. A copy of the protocol used, including how each species was harvested; how representative samples were selected of each species; what portions were sampled and analyzed; size of samples; special specimen-handling procedures, including sample storage procedures; contaminants analyzed for and rationale for their selection; methods used and their detection limits, etc.

2. All analytical results and reports, including any QA/QC data and reports, and a list of samples and their corresponding sample number
3. A sample size of at least 20 individuals per species, per episode
4. Analysis of edible portions
5. Analysis of individual (grab) rather than composite samples. If composite samples are necessary because of the size of the species, include compositing strategy.
6. A control population of at least 20 individuals from a comparable uncontaminated location for background levels

IDENTIFICATION OF PHYSICAL HAZARDS

PHAs include evaluations of site hazards that may endanger human populations that live or work on or near the sites. Physical hazards at hazardous waste sites are often overlooked during initial site documentation and remediation activities. The absence of an adequate barrier between the site hazards and the community often is the single most important factor in determining whether members of the community are likely to enter the site and risk physical injury. A gate or fence that can be entered or climbed easily is not an adequate barrier to curious children. On-site workers are issued appropriate personal protective equipment and made aware of the hazards on site; community members are not.

Listed below are data needed for identification and evaluation of physical hazards.

1. Descriptions and locations of physical barriers that would prevent access to on-site physical hazards.
2. Descriptions and locations of on-site and perimeter warning signs that would warn trespassers of dangerous conditions. Descriptions should specify language(s) in which the signs are written and whether the signs are sufficient to warn all subpopulations in the surrounding communities.
3. Descriptions of all existing potential physical hazards at the site. Examples of physical hazards include these:
 - a. confined spaces, especially underground areas (danger of entrapment and accumulation of toxic or suffocating gases);
 - b. industrial equipment (danger of falls from such equipment or of unsecured equipment falling onto individuals);
 - c. explosive or hazardous vapors, especially soil gases;
 - d. explosive, shock-sensitive, air- or water-reactive, or incompatible materials stored on site;
 - e. electrocution hazards, such as exposed wires and unsecured fuse boxes;
 - f. structures that are unsafe or deteriorating because of poor repair or weather damage;
 - g. open pits or vats containing chemicals or water;
 - h. sinkholes or soil erosion;
 - i. stored materials (danger of collapse because of deteriorating packaging);
 - j. leachate (may be strongly acidic or caustic, causing chemical burns); and
 - k. cables, chains, wires, ropes (danger of entanglement, breaking under loads).

RADIOLOGIC PARAMETERS AND SAMPLES

Interpretation of radiologic samples can be quite difficult if certain important information is not included in the data package. In some cases, improper calibration standards might be used, resulting in erroneous readings. In many cases, it is unclear if the readings are gross (including background) or net. Efficiencies of the actual monitoring probes can vary; probes can be specific for certain types of radiation. Those and other factors must be clarified for ATSDR to evaluate the information. ATSDR needs the specific information listed below for review of radiologic data.

1. The types of instruments used (e.g., solid state, ionization, scintillation) and the manufacturer and model number for each type of detector and probe
2. Calibration information such as the radioisotope used (e.g., Cs/Ra/Co), date of last calibration, and the instrument efficiency for each radioisotope
3. Detection limits for each radioisotope, including length of time the sample was counted, the statistical error, total counts, and/or counts per minute
4. For laboratory instruments, the average background value and how often the background was determined
5. For multi-channel analyzers, specification of channels and whether a standard was run before and/or following the analysis
6. Field measurements information, including the following elements:
 - a. probe location (e.g., distance from the surface or surface contact)
 - b. background reading, what instrument was used, and where the background data were collected
 - c. results with a notation identifying gross or net readings
 - d. the proper units (e.g., counts per minute converted to dose rate or to exposure rate)
7. Smears results

Although the level of uncertainty can be high because of variability in the sampling technique, these are indicative of the mobility of radioactive materials from surfaces. The results should indicate the area covered by smears (e.g., 100 cm²) and what type of laboratory instrument (GeLi, HPGe, "/\$, etc.) was used to analyze the samples.

8. Air sample reports

These should include a description of the sampler; the height above ground of the sampling system; volumetric flow through the filter; sample time; and area, pore size, and type of filter used

(charcoal, AgI, etc.). See Air Exposure Pathway section for additional information needs.

9. Soil sample reports

These should include information about the area represented by the sample (grid size) and sampling depths. The number of samples collected should be stated, and, if the results are for composite samples, reports should reflect the number of individual samples that made up the composite before sample counting. See Soil Exposure and Sediment Exposure Pathways sections for additional information needs.

10. Water sample reports

These should include information on whether the sample was filtered before counting and how the samples were prepared (e.g., ashed, co-precipitated and radioisotope percent recovery, or distilled, etc.). Information on the type of EPA method used to analyze the water sample is also needed. See Surface Water Exposure and Groundwater Exposure Pathways sections for additional information needs.

11. Radon level determinations

These should state what type of detector was used (e.g., charcoal canisters, alpha track, etc.). If indoor measurements were taken, was the house or building vacant, sealed, or inhabited? What time of year was the sample collected, and what were the indoor and outdoor temperatures during the collection period? How long was the detector in the structure? Was the laboratory that performed the monitoring approved by the EPA radon program?

APPENDIX C. ELECTRONIC DATA TRANSFER

Data should be transported as four ASCII file types:

STATION Å contains basic information about monitoring station location and type.

WELL Å contains detailed information about construction and characteristics of groundwater monitoring stations.

SAMPLE Å contains basic information about the collection and characteristics of samples.

PARAMETER Å contains measured values and reporting units for specific constituents.

The first line of EACH of the four file types MUST contain the following text starting in position one: 19921001

The files should be transmitted in ASCII format using flexible disk or magnetic tape or via communications channels. Additional files may be defined in the future should the need arise.

Several of these files will contain data that are usually static in nature. For example, the basic information contained in a STATION file will not normally change for any single station; therefore, once the data have been submitted for a particular station, it will not be required to resubmit that information. If, however, the station record is updated or corrected, the record would have to be resubmitted. After the initial report then, STATION.DAT would be submitted only when new stations are created, or when an old station record is modified, and need only contain the new or modified records. The same is true of the WELL file. The SAMPLE file would, of course, be submitted each time one or more new samples were to be reported, or any sample record required updating. Again, the file need only contain the new or updated records. The PARAMETER file is expected to be submitted at each reporting interval. It must contain all new results for the reporting interval, and may contain corrections and updates to older records. As may be observed, the format allows for

asynchronous reporting, provided that no sample be reported before the station with which it is associated, and no parametric record before its sample record.

For each file described in the appendices, all fields must be reported. The null, or "no data," value for all fields is the pound sign (#), and must appear in the first column position of its field. Field values may be listed one per line in the export file, or multiple values may be reported on a single line, provided that field values are reported in the specified order, and each value is terminated by a comma (,). Lines containing multiple values may not exceed 80 characters in length, including the delimiters.

DO NOT CREATE LINES LONGER THAN 80 CHARACTERS! EVEN THOUGH LONGER RECORDS MAY APPEAR TO LIST PROPERLY ON SCREEN, LINES LONGER THAN 80 CHARACTERS WILL NOT BE ACCEPTED BY THE IFF POST PROCESSOR!

Since the comma is used as a delimiter for data values, the values themselves may not contain any comma, even though the value may be a text stream.

Fields flagged with an asterisk are required for each record submitted in an electronic report. Other fields may also be required under certain circumstances!

FILE TYPE: STATION

Field Number	Field Name	Field Description
1	* EPAID	Unique site identifier as assigned by EPA. An alphanumeric field containing 12 characters.
2	* STATID	Unique station identifier. Alphanumeric, containing up to 15 characters. Assigned by organization submitting report.
3	* LATITUDE	Geographic position of the station in degrees north of the equator. Mixed numeric field with 11 character positions. Must be in the format DDDMMSS.xxxx, where DD represents degrees, MM represents minutes, and SS.xxxx represents seconds, with available precision up to 4 decimal places.
4	* LONGITUDE	Geographic position of the station in degrees west of the Prime Meridian. Mixed numeric field with 12 character positions. Must be in the format DDDMMSS.xxxx, where DDD represents degrees, MM represents minutes, and SS.xxxx represents seconds, with available precision up to 4 decimal places.
5	* ELDAT	Identifier for the datum used in reporting elevations. An alphanumeric field containing up to 15 characters. Acceptable entries consist of either the STATID for another station at the same site, or the character string "AMSL," indicating "above mean sea level."
6	* LSDAT	Elevation in feet of the land surface at the location of the monitoring station, relative to the datum referenced in ELDAT. A decimal numeric field, containing up to 12 characters (including the decimal point), and having up to 2 digits after the decimal point.
7	* RFDAT	Vertical displacement in feet relative to land surface from which height above ground, water level, or sampling depth measurements are taken. Decimal numeric field containing up to 12 characters (including the decimal), and having up to 2 digits after the decimal point.
8	* ACCUR	Assumed accuracy, in meters, for the method used to obtain the reported latitude and longitude of the station. Decimal numeric field containing up to 6 characters

(including the decimal point), and having up to 2 digits after the decimal point.

9 * LLMETH Code to the method used to determine the latitude and longitude of the station. A single-character alpha field containing one of the following:

- C - Calculated from a map
- D - Digitized from a map
- G - Global positioning system
- L - Loran-C
- U - Unknown
- O - Other method, not listed above.

10 OMETH Method used to determine latitude and longitude of the station. Text field of up to 32 characters to record the method. REQUIRED for any method for which the LLMETH code is "O."

11 MSI Code to indicate the principal purpose for establishing the station. A single-character alpha field containing one of the following:

C - Compliance monitoring, i.e., monitoring in response to the requirements of a permit, an administrative or court order, or a consent agreement or decree.

B - Baseline monitoring, i.e., monitoring for the purpose of establishing existing environmental conditions, in anticipation of some significant change.

A - Other ambient monitoring.

O - Other monitoring.

12 * TYP Station type code. A single-character field consisting of one of the following:

- A - Air monitoring station.
- W - Surface water station.
- G - Groundwater station.
- D - Soil sampling location.
- M - Stream sediment sampling location.
- S - Process sludge sampling station.
- P - Process waste stream station.
- O - Other station type.

13 OTY Station type descriptor. Text field of up to 20 characters, in which to describe the medium being sampled. REQUIRED if TYP is "O."

14 OPU Solid waste management unit (SWMU) or operational unit for the site. Alphanumeric, with up to 10 characters.

15 CONDT For permanent stations, the date on which construction of the station was completed. A numeric field of 8 digits in the format YYYYMMDD, where YYYY represents the year, including the century, MM represents the month, and DD represents the day.

16 COM Text field with up to 40 character positions. Contents are user defined.

FILE TYPE: WELL

Field Number	Field Name	Field Description
1 *	EPAID	Unique site identifier as assigned by EPA. An alphanumeric field containing 12 characters.
2 *	STATID	Unique station identifier. Alphanumeric, containing up to 15 characters. Assigned by organization submitting report.
3	AQNAM	USGS Aquifer Code for aquifer from which samples are obtained. Alphanumeric field with up to 8 characters.
4	TOTDP	Total depth to which the hole was drilled, bored, or dug in feet below land surface datum. DECIMAL NUMERIC field with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point.
5	DRMTH	Method by which well was constructed. Must be ALPHANUMERIC, consisting of a single character. The character must be one of the following: H Ä hollow stem auger S Ä solid stem auger C Ä cable tool R Ä rotary

V Ä reverse rotary
D Ä dug
J Ä water jet
A Ä air percussion
O Ä other

6 DRFLD Fluid used to lubricate cutting tool and/or remove materials from hole. Must be ALPHANUMERIC, consisting of a single character. The character must be one of the following:

A Ä air
M Ä other mud
B Ä bentonite
N Ä none
W Ä water
O Ä other fluid

7 DVMTH Method by which well was developed. Must be ALPHANUMERIC, consisting of a single character. The character must be one of the following:

A Ä air lift pump
B Ä bailed
C Ä compressed air
J Ä jetted
P Ä other pump
S Ä surged
Z Ä other method
N Ä none

8 DVHRS Time in hours during which well was developed. Must be INTEGER NUMERIC, consisting of up to 5 digits.

9 SPLTRT Any special treatment that was applied during the well development process. Must be ALPHANUMERIC, consisting of a single character, which must be one of the following:

C Ä chemicals
D Ä dry ice
E Ä explosives
F Ä deflocculant
H Ä hydrofracturing
M Ä mechanical
Z Ä other
N Ä none

10 LIFT Type of lift indicator. Must be Alphanumeric, consisting of a single character. The character must be one of the following:

A Ä air lift
R Ä rotary pump
B Ä bucket
S Ä submersible pump
C Ä centrifugal pump
T Ä turbine
J Ä jet pump
U Ä unknown
P Ä Piston pump
Z Ä other

BORE HOLE DATA:

11 NOSEG Number of bore hole sections. A bore hole section is defined as a length of bore hole of constant diameter. Bore hole sections are designated numerically from top to bottom of bore hole. INTEGER NUMERIC field containing a value of one, two, or three.

HOLE SEGMENT DIAMETERS: Each of the SGDIAX fields is DECIMAL NUMERIC, containing up to 12 characters (including the decimal point), and may have up to 2 digits following the decimal point.

12 SGDIA1 Diameter of first bore hole section, in inches.

13 SGDIA2 Diameter of second bore hole section, in inches.

14 SGDIA3 Diameter of third bore hole section, in inches.

TOP OF HOLE SEGMENT: Each of the STELVx fields is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. These depths are measured relative to land surface datum.

15 STELV1 The depth to the top of the first bore hole section.

16 STELV2 The depth to the top of the second bore hole section.

17 STELV3 The depth to the top of the third bore hole section.

BOTTOM OF HOLE SEGMENT: Each of the SBELVx fields is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. These depths are measured relative to land surface datum.

18 SBELV1 The depth to the bottom of the first bore hole section.

19 SBELV2 The depth to the bottom of the second bore hole section.

20 SBELV3 The depth to the bottom of the third bore hole section.

CASING INFORMATION:

21 NOCAS Number of casing sections. A casing section is defined as a length of casing of constant diameter and uniform material. Casing sections are designated numerically from top to bottom of well. INTEGER NUMERIC field containing a value of one, two, or three.

TOP OF CASING SEGMENT: The TCELVx fields are DECIMAL NUMERIC, each with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. These depths are measured relative to land surface datum.

22 TCELV1 The depth to the top of the first section of casing (in feet).

23 TCELV2 The depth to the top of the second section of casing (in feet).

24 TCELV3 The depth to the top of the third section of casing (in feet).

BOTTOM OF CASING SEGMENT: The BCELVx fields are DECIMAL NUMERIC, each with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. These depths are measured relative to land surface datum.

25 BCELV1 The depth to the bottom of the first section of casing, in feet.

26 BCELV2 The depth to the bottom of the second section of casing, in feet.

27 BCELV3 The depth to the bottom of the third section of casing, in feet.

CASING SEGMENT INSIDE DIAMETER: The CIDIAx fields are DECIMAL NUMERIC, each with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point.

28 CIDIA1 Inside diameter of the first section of casing, in inches.

29 CIDIA2 Inside diameter of the second section of casing, in inches.

30 CIDIA3 Inside diameter of the third section of casing, in inches.

CASING SEGMENT OUTER DIAMETER: The CODIAx fields are DECIMAL NUMERIC, each with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point.

31 CODIA1 Outside diameter of the first section of casing, in inches.

32 CODIA2 Outside diameter of the second section of casing, in inches.

33 CODIA3 Outside diameter of the third section of casing, in inches.

CASING SEGMENT MATERIAL: The CMATRx fields are ALPHANUMERIC, each with a maximum of 8 characters.

34 CMATR1 Description or name of casing material from which the first section of casing is made.

35 CMATR2 Description or name of casing material from which the second section of casing is made.

36 CMATR3 Description or name of casing material from which the third section of casing is made.

OPEN INTERVAL Ä any portion of the well in which the interior of the well is not isolated from the surrounding soil and rock by unbreached casing.

37 OPTYP Indicator of the type of opening in the open interval. The field is ALPHANUMERIC, consisting of a single character. The character must be one of the following:

- O Ä open end
- P Ä perforated or slotted
- S Ä screened
- T Ä sand point
- W Ä walled
- X Ä open hole
- Z Ä other

38 TOELV The depth to the top of the open interval. The TOELV field is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. Measured relative to land surface.

39 BOELV The depth to the bottom of the open interval. The BOELV field is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. Measured relative to land surface.

40 OMATR Description or name of material used to screen the open interval. The OMATR field is ALPHANUMERIC with a maximum of 8 characters.

41 OWIDT Width or short dimension of slot or mesh of screen material for the open interval, in inches. The OWIDT

field is DECIMAL NUMERIC with up to 12 characters (including the decimal), and may have up to 3 digits following the decimal point.

42 OLENG Length or long dimension of slot or mesh of screen material for the open interval, in inches. The OLENG field is DECIMAL NUMERIC with up to 12 characters (including the decimal), and may have up to 3 digits following the decimal point.

FILTER PACK Ä material placed in the annulus of the well between the bore hole wall and the well screen to prevent formation material from entering through the well screen.

43 FPMTH Indicator for method of filter pack placement. Must be ALPHANUMERIC consisting of a single character. The character must be one of the following:

A Ä dropping material down the hole and tamping
B Ä dropping material down hollowÄstem auger
T Ä tremie pipe
O Ä other

44 FPMAT Description or name of the material which forms the filter pack. Must be ALPHANUMERIC, consisting of up to 8 characters.

45 FPGRN Grain size of the material which forms the filter pack, in mesh gauge. Must be INTEGER NUMERIC, with up to 4 characters.

46 TFELV The depth to the top of the filter pack. The TFELV field is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. Measured relative to land surface.

47 BFELV The depth to the bottom of the filter pack. The BFELV field is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. Measured relative to land surface.

ANNULAR SEALANT Ä material used to seal the space between the bore hole and the casing of the well. The annular sealant is placed directly above the filter pack to prevent the migration of contaminants to the sampling zone from the surface or intermediate zones and prevent cross contamination between strata.

48 SLMTH Indicator for method of sealant placement. Must be ALPHANUMERIC consisting of a single character. The character must be one of the following:

- A Ä dropping material down the hole and tamping
- B Ä dropping material down hollow-stem auger
- T Ä tremie pipe
- O Ä other

49 SLMATR Description or name of the material which forms the seal above the filter pack against entry of surface water. Must be ALPHANUMERIC, consisting of a single character. The character must be one of the following:

- B Ä bentonite
- C Ä other clay
- G Ä cement
- Z Ä other
- N Ä none

50 TSLELV The depth to the top of the annular seal. The TSLELV field is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. Measured relative to land surface.

51 BSLELV The depth to the bottom of the annular seal. The BSLELV field is DECIMAL NUMERIC with a maximum of 12 characters (including the decimal point) and may have up to 2 digits after the decimal point. Measured relative to land surface.

52 SRFSL Surface seal indicator. Indicates whether the upper portion of the bore hole is sealed to prevent inflow of surface water. Single character ALPHANUMERIC, containing one of the following:

- Y - well is surface sealed
 - N - no surface seal
- (other surface seal codes being developed)

53 DNGRAD Downgradient indicator. Indicates whether the well has been installed hydraulically downgradient of the source of potential groundwater pollution, and is capable of detecting the migration of contaminants. Single character ALPHANUMERIC, containing "Y" if well is downgradient from waste disposal site. Otherwise contains "N."

54 DRLOG Drillers log indicator. Indicates availability of drillers log. Single character ALPHANUMERIC, containing "Y" if log is available. Otherwise contains "N."

55 LTHLG Lithologic log indicator. Lithologic log shows distribution of lithology with depth in the bore hole. Single character ALPHANUMERIC, containing "Y" if log is available. Otherwise contains "N."

56 * WLUSE Well use indicator. Must be ALPHANUMERIC, consisting of a single character. The character must be one of the following:

- D Ä domestic (private) water supply
- I Ä industrial water supply
- M Ä monitoring well
- P Ä public water supply
- O Ä other

57 COMMENT Supplemental information as needed. May contain up to 80 alphanumeric characters.

FILE TYPE: SAMPLE

Field Number	Field Name	Field Description
1 *	EPAID	Unique site identifier as assigned by EPA. An alphanumeric field containing 12 characters.
2 *	STATID	Unique station identifier. Alphanumeric, containing up to 15 characters. Assigned by organization submitting report.
3 *	SAMPLID	Unique sample identifier. Alphanumeric, containing up to 15 characters. Assigned by organization submitting report.
4 *	DELTH	Vertical displacement of sample from land surface datum (in feet) of the sampling location. For surface water, soils, and groundwater stations this would be the depth of the sample and for air monitoring stations, the height above ground. Must be DECIMAL NUMERIC consisting of a maximum of 6

characters (including the decimal) and may have up to 2 digits after the decimal point.

5 * DATE Date of sample collection. A numeric field of 8 digits in the format YYYYMMDD, where YYYY represents the year, including the century, MM represents the month, and DD represents the day.

6 * TIME Time (in military format) of sample collection. INTEGER NUMERIC consisting of 4 characters.

7 * SSTAT Station status or condition. Used primarily for groundwater monitoring stations. ALPHANUMERIC consisting of one character. The character must be one of the following:

D Ä dry
F Ä flowing
O Ä obstructed
P Ä pumping
W Ä destroyed
X Ä surficial inflow
Z Ä other

FIELD MEASUREMENTS:

8 TEMP Sample temperature in degrees Celsius. DECIMAL NUMERIC consisting of 6 characters (including the decimal) and may have up to 2 digits after the decimal point.

9 ATEMP Air temperature in degrees Celsius. DECIMAL NUMERIC consisting of 6 characters (including the decimal) and may have up to 2 digits after the decimal point.

10 PH Sample pH in standard units. DECIMAL NUMERIC consisting of 4 characters (including the decimal) and may have 1 digit after the decimal point.

11 COND Specific conductance in uMhos. INTEGER NUMERIC consisting of a maximum of 6 characters.

12 TURB Turbidity. INTEGER NUMERIC consisting of a maximum of 8 characters. May be reported in JTU or NTU, as required by program.

13 WLEVEL Well water level, or stream gage height, in feet. Measured relative to the reference datum. Item is

DECIMAL NUMERIC consisting of a maximum of 6 characters (including the decimal) and may have up to 2 digits following the decimal point.

14 WINDSP Wind speed in km/h. DECIMAL NUMERIC consisting of a maximum of 6 characters (including the decimal), and may have up to 2 digits after the decimal point.

15 WINDIR Wind direction in degrees. INTEGER NUMERIC consisting of a maximum of 4 characters.

16 SAMMETH Method used to collect sample. ALPHANUMERIC field, left justified, consisting of up to 20 characters.

17 SAMPAGN Name of agency or organization that collected the sample. Must be ALPHANUMERIC consisting of up to 20 characters.

18 SAMPLER Name of individual who collected the sample. Must be ALPHANUMERIC consisting of up to 20 characters.

19 COMMENT Any additional information the user feels necessary, which may not be accommodated in a defined field. Must be ALPHANUMERIC consisting of up to 40 characters.

FILE TYPE: PARAMETER

Field Number	Field Name	Field Description
1 *	EPAID	Unique site identifier as assigned by EPA. An alphanumeric field containing 12 characters.
2 *	STATID	Unique station identifier. Alphanumeric, containing up to 15 characters. Assigned by organization submitting report.
3 *	SAMPLID	Unique sample identifier. Alphanumeric, containing up to 15 characters. Assigned by organization submitting report.
4 *	PARAMID	Parameter identifier. For chemical constituents for which CAS numbers exist, the CAS number will be the identifier. For other constituents, the identifier will be determined on an as-needed basis.

5 REPID Replicate number. Identifies the value as one of two or more analytical results for the same parameter on the same sample. INTEGER NUMERIC, right justified, up to 4 characters. REQUIRED when replicate results are reported.

6 QUALF Qualifier field. ALPHANUMERIC, may contain up to 4 STORET qualifier codes.

7 * VALUE The reported analytical result for the chemical. Must be DECIMAL NUMERIC, consisting of up to 12 characters (including the decimal), and may have up to 4 digits after the decimal point.

8 * UNITS The units of measurement in which analytical results are reported. ALPHANUMERIC, consisting of up to 6 characters.

9 METHOD The name or code of the analytical method or technique used to obtain the reported value. ALPHANUMERIC, containing up to 14 characters.

10 * DATE Date of analysis. A numeric field of 8 digits in the format YYYYMMDD, where YYYY represents the year, including the century, MM represents the month, and DD represents the day.

11 DETLIM Detection limit. MUST BE IN SAME UNITS AS THE REPORTED VALUE. Must be DECIMAL NUMERIC, consisting of up to 12 characters (including the decimal), and may have up to 4 digits after the decimal point.

12 LAB Name of lab that performed the analysis. ALPHANUMERIC field containing up to 28 characters.

13 COMMENT Any additional information the user feels necessary, which may not be accommodated in a defined field. Must be ALPHANUMERIC consisting of up to 40 characters.

APPENDIX D. SAMPLE LETTER

Name
Installation
Address

Dear name:

The Agency for Toxic Substances and Disease Registry (ATSDR) is scheduled to visit site on date. The site visit was coordinated by name of your staff and the other command or liaison (e.g., Chesapeake Division Naval Facilities Engineering Command).

The purpose of the site visit is to gather information for a public health assessment of facilities at the installation, which are listed on the Environmental Protection Agency's (EPA) National Priorities List (NPL). The information from reports and on-site discussions with your staff will be combined with the information from other installation activities, concerned members of the public, community leaders, and state and federal agencies to determine priorities and schedules for public health assessments to be performed by ATSDR.

An ATSDR public health assessment evaluates data and information on the release of hazardous substances from installation into the environment and assesses if there is any past, current, or future impact on public health. It is used to identify studies or actions needed to evaluate, mitigate, or prevent adverse human health effects. The public health assessment may also be used to develop health advisories or other recommendations when warranted.

Provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, require ATSDR to prepare public health assessments for all sites listed on the NPL, including federal facilities such as installation. Enclosed is a copy of the Memorandum of Understanding between the Department of Defense and ATSDR, which provides further information on ATSDR's role at DOD Branch NPL sites.

The ATSDR field team -name, Environmental Health Scientist; name, an ATSDR regional representative from EPA Region __; and name, Environmental Engineer- will be available to brief you. The ATSDR

team intends to visit each Installation Restoration Program site and meet with staff from selected base/installation activities. ATSDR usually meets with installation representatives from the following offices: environmental, public affairs, housing, occupational medicine, safety/industrial hygiene, hospital/clinic, natural resources, water department, fire/emergency response, historian, and real estate. If you have any questions either before or after the visit, please do not hesitate to contact name at phone.

We thank you and your staff for the excellent cooperation and assistance. Your continued support of our efforts is greatly appreciated.

Sincerely yours,

Director
Division of Health Assessment
and Consultation

Enclosure

APPENDIX E. ATSDR PUBLIC HEALTH ASSESSMENT REVIEW PROCESS
FEDERAL REGISTER NOTICE

56 FR 11221 No. 51 03/15/91
DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
[ATSDRÄ28]
NOTICE OF INTERIM GUIDELINES FOR
PUBLIC COMMENT ON HEALTH ASSESSMENTS

AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR),
Public Health Service (PHS), Department of Health and Human
Services (DHHS).

ACTION: Notice

SUMMARY: This notice announces the intent of ATSDR to make draft
health assessments available for public comment; it contains a
summary of the interim procedures that will be used to obtain
comments from the public concerning these health assessments.
These procedures will be used on an interim basis, subject to
change based on experiences gained during the implementation
period.

FOR FURTHER INFORMATION CONTACT: Robert C. Williams, P.E.,
Director, Division of Health Assessment and Consultation, Agency
for Toxic Substances and Disease Registry, 1600 Clifton Road,
Atlanta, Georgia 30333,
404Ä639Ä0610, FTS 236Ä0610.

SUPPLEMENTARY INFORMATION: The Comprehensive Environmental
Response, Compensation, and Liability Act (CERCLA) [42 U.S.C.
9604(i)], as amended, requires that ATSDR perform a health
assessment for all sites that are proposed for or are on the
CERCLA National Priorities List (NPL). In addition, CERCLA
authorizes ATSDR, at its discretion, to conduct health assessments
for sites in response to requests from the public (petitioned
health assessments). A health assessment is an evaluation of data
and information on the release of hazardous substances into the
environment in order to assess any current or future impact on
public health, develop health advisories or other recommendations,
and identify studies or actions needed to evaluate and mitigate or
prevent human health effects. ATSDR has completed the pilot study
of the impact and effectiveness of providing a public comment
period for health assessments that was mentioned in the final rule

for health assessments and health effects studies of hazardous substances releases and facilities (55 FR 5136, to be codified at 42 CFR Part 90). The interim procedures for the conduct of a comment period for health assessments have been developed as a result of that analysis and are as follows.

PUBLIC COMMENT ON HEALTH ASSESSMENTS
SUMMARY OF INTERIM PROCEDURES

1. A public notice announcing that a health assessment is available for public comment will appear in at least one newspaper serving the community near the site. A press release may also be used to announce that a health assessment is available for public comment.
2. The draft health assessment will be distributed to certain repositories (e.g., local libraries) so that any interested person may review the draft health assessment. The repositories will be announced in the public notice. The draft health assessment will not be available through the mail.
3. The public comment period will extend for 30 days from the date of the public notice. To be considered, public comments must be in writing and be received at the ATSDR offices by the close of business on the 30th day.
4. After the close of the public comment period, a response will be prepared to all written comments received during the public comment period. These comments from the public and ATSDR's responses will become part of the Agency's record for individual sites.
5. After all public comments are addressed, the health assessment will be finalized; the responses to the comments will be contained as an appendix.
6. ATSDR may use public meetings to present health assessments contingent upon community interest and the extent and complexity of comments received during the public comment period.

AVAILABILITY: The interim procedures for public comment on health assessments are available for public inspection at the Division of Health Assessment and Consultation, Agency for Toxic Substances and Disease Registry, Building 31, Executive Park Drive, Atlanta, Georgia, (not a mailing address) between 8:00 a.m. and 4:30 p.m., Monday through Friday except legal holidays.

BILLING CODE 4160-70-M

APPENDIX F. ATSDR PEER REVIEW POLICY STATEMENT

APPENDIX G. ATSDR Peer Review Procedures

APPENDIX H. PROCEDURES FOR ESTABLISHING A COMMUNITY ASSISTANCE PANEL - FEDERAL REGISTER NOTICE

57 FR 27779 No. 120 06/22/92
DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
[ATSDR - 53]
Development of Community Assistance Panels

AGENCY: Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service (PHS), Department of Health and Human Services (DHHS).

ACTION: Notice.

SUMMARY: This notice announces the development and formation of Community Assistance Panels at selected Superfund sites. The purpose of these panels is to enhance effective communication of environmental health concerns to ATSDR by the public, and to establish an avenue for ATSDR to inform the community of site-specific scientific findings as they become available. In addition they provide a means for community participation in ATSDR activities. The Community Assistance Panel process is subject to change, based on experience gained during implementation.

FOR FURTHER INFORMATION CONTACT: Michael Greenwell, Agency for Toxic Substances and Disease Registry, 1600 Clifton Road, NE, Mailstop E-28, Atlanta, Georgia 30333, telephone 404-639-0727.

SUPPLEMENTARY INFORMATION: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, authorizes ATSDR, as the lead agency within the U.S. Public Health Service, to address the human health effects of exposure to hazardous substances in the environment. This mandate requires ATSDR to conduct various site-specific scientific evaluations within communities nationwide. These communities can provide ATSDR with valuable information about health and environmental factors, and ATSDR can inform the community of scientific knowledge that becomes available.

Information from the community regarding health concerns, health outcomes, and environmental factors is an important component of ATSDR site evaluations. An important characteristic of public health management concerning these sites is communicating risk and health and scientific information to the community. Community involvement activities include public availability sessions, public meetings, small group briefings, and other formal and

informal communication. Community Assistance Panels may be established as an additional means to enhance communication avenues and foster information exchange and understanding.

The purposes of a Community Assistance Panel are to:

1. Facilitate effective communication between ATSDR, local officials, and the community.
2. Convey community health and environmental concerns to ATSDR from the community regarding site-specific activities being conducted or contemplated.
3. Ensure that ATSDR documents accurately reflect community knowledge and concern about the site under investigation.
4. Provide an opportunity for community involvement at each phase of a scientific evaluation or study with ATSDR seeking community understanding regarding scientific findings through active communication.
5. Encourage community participation in ATSDR site-specific public health activities.

A Community Assistance Panel will be composed of individuals, generally 12 to 15, from the concerned community. Serving on the Community Assistance Panel will be a voluntary, unpaid activity. Preference will be given to nominees who:

1. Are at least 18 years of age.
2. Reflect area residents' various viewpoints as ATSDR understands them.
3. Have understanding or knowledge of the site, the contaminants of concern, and/or the community health concerns.
4. Are permanent residents of the affected area.

The factors that will influence ATSDR to establish a Community Assistance Panel at a particular site are the degree of community interest; whether there are varying viewpoints regarding the health issues; and a willingness on the part of the public to actively participate in the process. Community Assistance Panels may not be appropriate for all communities; ATSDR will make that determination on a site-specific basis.

Once it has been determined that a Community Assistance Panel will be established:

1. Written nominations will be requested from the concerned community using various methods of notification. Media releases, mass mailings, distribution of fliers, and communication with community groups are the most common means.
2. ATSDR will accept nominations for 30 days from the date of the announcement.
3. ATSDR will respond in writing to all applicants within approximately 30 days of the last accepted nomination form.
4. ATSDR will make all efforts to create a panel that reflects the community's interests regarding health concerns, varied viewpoints, general knowledge of the site, and demographics.

ATSDR acknowledges that a degree of subjectivity will enter into the selection process. All Community Assistance Panel meetings will be advertised in the media and open to the general public. All attendees will be given the opportunity to comment. Minutes will be completed for each meeting and maintained in at least one local repository for review.

Other Requirements

Data collection initiated by this announcement has been approved by the Office of Management and Budget under number 0923-0007, "Nominations for Community Assistance Panels," April 1992.

BILLING CODE: 4160-70-M

APPENDIX I. TOXICOLOGICAL PROFILE DEVELOPMENT PROCESS

Pre-Public Comment

1. Development of draft 1 (3 months)
 - # identify substances to be included in the profile
 - # prepare supplemental documents
 - # prepare Chapter 2 Health Effects
 - # propose minimal risk levels (MRLs)
 - # prepare Chapter 7 Regulations and Advisories
 - # prepare Chapter 3 Chemical and Physical Information, Chapter 4 Production, Import, Use and Disposal, Chapter 5 Potential for Human Exposure, Chapter 6 Analytical Methods, Chapter 8 References.
 - # prepare Chapter 1 Public Health Statement

2. Development of draft 2 (2 months)

Revise profiles based on the comments submitted from the chemical managers, and the health effects review committee.

3. Development of draft 3 (2 months)

Revise profiles based on the comments submitted from chemical managers, National Center for Environmental Health, external peer reviewers, internal minimal risk level workgroup, health effects review committee, and the Quality Assurance Branch, Division of Toxicology (DT).

4. Development of camera-ready profile (2 months)

Revise profiles based on the comments submitted from chemical managers, green border reviewers, interagency minimal risk level workgroup, Centers for Disease Control and Prevention (CDC), editor, and the Research Implementation Branch, DT.

5. Request replacement pages for camera-ready profiles. (3 weeks)

6. Submit profiles to the branch chiefs for review and approval. The branch chiefs forward the profiles to the Division Director for approval and sign-off. (3 weeks)

7. Submit profiles to the Office of Policy and External Affairs for approval. (2 weeks)
8. Submit profiles to the Management Analysis and Services Office, CDC, for printing. (2 months)
9. Distribute profiles for public comment. The public comment period lasts 90 days; however, time frame may be adjusted to 120 days to account for any unforeseen difficulties.

The profile development process time for pre-public comment profiles is 12 months. Occasionally a profile schedule has to be modified based on issues that will affect the scientific quality of the documents.

Post-Public Comment

1. Development of draft 1 (3 months)
 - # prepare issues classification outline and response to public comment report
 - # search the scientific literature and identify all references applicable to the post-public comment
 - # update supplemental document
 - # prepare actual draft based on the comments received and on new literature identified
 - # propose and or revise MRLs
2. Development of draft 2 (2 months)

Revise profiles based on the comments submitted from the chemical managers, external peer reviewers, health effects review committee, internal minimal risk levels workgroup, editor, and the Quality Assurance Branch, DT.

3. Development of camera-ready profile (2 months)

Revise profiles based on the comments submitted from the chemical managers, and the interagency minimal risk level workgroup

4. Request replacement pages for camera-ready profiles (3 weeks)
5. Submit profiles to the branch chiefs for review and approval. The branch chiefs forward the profiles to the Division Director for approval and sign-off. (3 weeks)

6. Submit profiles to the Office of Policy and External Affairs for approval. (2 weeks)

7. Submit profiles to the Management Analysis and Services Office, CDC, for printing. (2 months)

8. Distribute profiles to the public as final documents. The documents may be obtained through ATSDR or the National Technical Information Service.

The profile development process time for post-public comment profiles is approximately 12 months. Occasionally a profile schedule has to be modified based on issues that will affect the scientific quality of the documents.

APPENDIX J. DEPARTMENT OF DEFENSE CHEMICAL MANAGERS

Department of the Air Force

Mr. John P. Hinz or Dr. Ron Porter
Armstrong Laboratory/OEMH
Occupational Medicine Division
2402 E Drive
Brooks Air Force Base, TX 78235-5114

Department of the Navy

CDR Don Kennedy
Medical Service Corps
Naval Environmental Health Center
2510 Walmer Avenue
Norfolk, VA 23513-2617

Department of the Army

Glen Leach, Ph.D.
U.S. Army Environmental Hygiene Agency
Attn: HSHB-MO-T
Aberdeen Proving Ground, MD 21010-5422

Defense Logistics Agency

Director
Defense Logistics Agency
Attn: CAAE (Dr. Desai)
8725 John J. Kingman Road, Suite 2533
Fort Belvoir, VA 22060-6221

APPENDIX K. DEPARTMENT OF DEFENSE DISTRIBUTION LIST

DEPARTMENT OF THE AIR FORCE

1. HQ USAF/SGPA

Attn: Lt Col Glenn Goddard
170 Luke Avenue, Suite 400
Bolling AFB, DC 20332-5113

2. HQ USAF/CEVR

Attn: Lt Col John Selstrom
Room 5D376
Pentagon, DC 20330-1260

3. SAF/MIQ

Attn: Col Craig Postlewaite
Room 5C866
Pentagon, DC 20332-1660

4. USAF Armstrong Laboratory

Attn: AL OEMB: Maj Andy MacCabe
2402 E Drive
Brooks AFB, TX 78235-5114

5. Major Command Bioenvironmental Engineering

a. Air National Guard

Bases: Otis ANG Base, MA; Rickenbacker ANG Base, OH

HQ ANGR/SGB

Attn: Lt Col John Pontier
3500 Setchet Avenue
Andrews AFB, DC 20331-5157

b. Air Force Materiel Command

Bases: Arnold AFS, TN; Edwards AFB, CA; Eglin AFB, FL; Hanscom AFB, MA; Hill AFB, UT; McClellan AFB, CA; Robins AFB, GA; Tinker AFB, OK; Wright-Patterson AFB, OH; AF Plant 44, AZ; AF Plant PJKS, CO; AF Plant 4, TX; Air Force Plant 70, CA; AF Plant 85, OH;

HQ AFMC/SGCP
Attn: Ms. Colleen Lovett
4225 Logistics Avenue, Suite 23
Wright-Patterson AFB, OH 45433-5762

c. Air Mobility Command

Bases: Dover AFB, DE; March AFB, CA; Plattsburgh AFB, NY; Travis AFB, CA; Fairchild AFB, WA

HQ AMC/SGPB
Attn: Col David Potts
502 Scott Drive, Room 226
Scott AFB, IL 62225-5319

d. Air Combat Command

Bases: Ellsworth AFB, SD; Fairchild AFB, WA; Griffiss AFB, NY; Homestead AFB, FL; Loring AFB, ME; Mountain Home AFB, ID; Langley AFB, VA

HQ ACC/SGMT1
Attn: Mr. David Struck
162 Dodd Boulevard, Suite 100
Langley AFB, VA 23665-1995

e. Air Force Base Conversion Agency

Bases: Norton AFB, CA; Pease AFB, NH; Mather AFB, CA; George AFB, CA; Castle AFB, CA; Loring AFB, ME; Rickenbacker ANG Base, OH; Williams AFB, AZ; Wurtsmith AFB, MI; Homestead AFB, FL; Griffiss AFB, NY; March AFB, CA; Plattsburgh AFB, NY

AFBCA/EV
Attn: Mr. Jerry Cleaver
1700 North Moore Street, Suite 2300
Arlington, VA 22209-2802

f. Air Education and Training Command

Bases: Luke AFB, AZ; Mather AFB, CA; Tyndall Air Force Base, FL; Williams AFB, AZ;

HQ AETC/SGPB
Attn: Col Ron Schiller
63 Main Circle, Suite 3

Randolph AFB, TX 78150-4549

g. Pacific Air Force

Bases: Eielson AFB, AK; Elmendorf AFB, AK; Anderson AFB, Guam

HQ PACAF/SGPB

Attn: Lt Col Denton Crochet

25 Street, Suite 5318

Hickam AFB, HI 96853-5418

h. Air Force Reserves

Bases: Twin Cities Air Force Reserve Base, MN

HQ AFRES/SGPB

Attn: Lt Col Barry Savory

155 Second Street

Robins AFB, GA 31098-1635

i. Air Force Space Command

Bases: F. E. Warren AFB, WY

HQ AFSPC/SGPB

Attn: Lt Col Gene Killan

Suite 1105

150 Vandenberg Street

Peterson AFB, CO 80914-4550

6. Base or Installation Bioenvironmental Engineering (Base/SGPB)

a. Air Force Plant 4, TX

HQ AFMC/SGCP

Wright-Patterson AFB, OH 45433

b. Air Force Plant 44, AZ

HQ AFMC/SGCP
Wright-Patterson AFB, OH 45433

c. Air Force Plant 70, CA

HQ AFMC/SGCP
Wright-Patterson AFB, OH 45433

d. Air Force Plant 85, OH

HQ AFMC/SGCP
Wright-Patterson AFB, OH 45433

e. Air Force Plant PJKS, CO

HQ AFMC/SGCP
Wright-Patterson AFB, OH 45433

f. Andersen AFB, Guam

36 MDOS/SGPB
Unit 14010
APO AP 96543-4010

g. Arnold AFS, TN

AEDC/SGB
225 First Street
Arnold AFS, TN 37389-2400

h. Castle AFB, CA

93 CES/CEV
Building 1200
Castle AFB, CA 95342-5000

i. Dover AFB, DE

436 AMDS/SGPB
307 Tuskegee Blvd
Dover AFB, DE 19902-7307

j. Edwards AFB, CA

95AMDS/SGPB

5 West Popson Avenue
Edwards AFB, CA 93524-1132

k. Eglin AFB, FL

96 AMDS/SGPB
504 W Choctawhatchee Avenue, Suite 1
Eglin AFB, FL 32542-5714

l. Eielson AFB, AK

354 MDOS/SGOAB
3349 Central Avenue Suite 1M07
Eielson AFB, AK 99702-2397

m. Ellsworth AFB, SD

28 AMDS/SGPB
2900 Doolittle Dr
Ellsworth AFB, SD 57706-4821

n. Elmendorf AFB, AK

3 AMDS/SGPB
24-800 Hospital Dr
Elmendorf AFB, AK 99506-3700

o. Fairchild AFB, WA

92 AMDS/SGPB
713 Hospital Loop Suite 200
Fairchild AFB, WA 99011-8701

p. F. E. Warren AFB, WY

90 AMDS/SGPB
6900 Alden Dr
F. E. Warren AFB, WY 82005-3913

q. George AFB, CA

OL-C,AFBCA
Building 321
George AFB, CA 92494

r. Griffiss AFB, NY

OS-X,AFBCA
153 Brooks Rd
Rome, NY 13441-4105

s. Hanscom AFB, MA

66 MDOS/SGOAB
90 Vandenberg Dr
Hanscom AFB, MA 01731-2139

t. Hill AFB, UT

75 AMDS/SGPB
7238 6th Street
Hill AFB, UT 84056-5012

u. Homestead AFB, FL

OL-Y,AFBCA
360 Coral Sea Blvd Bldg 931
Homestead AFB, FL 33039-1299

v. Langley AFB, VA

1 AMDS/SGPB
45 Pine Street
Langley AFB, VA 23665-2080

w. Loring AFB, ME

OL-M,AFBCA
RRA, Box 1719
Limestone, ME 04750-0523

x. Luke AFB, AZ

56 AMDS/SGPB
7219 N Litchfield
Luke AFB, AZ 85309-1525

y. March AFB, CA

OL-1A,AFBCA
1485 Grabber Str Suite 17
Riverside, CA 92518-1728

z. Mather AFB, CA

AFBCA/OLAD-EM
10503 Kaydet Avenue; Room 2
Mather AFB, CA 95655-5000

aa. McChord AFB, WA

62 MDOS/SGOAB
160 G Street
McChord AFB, WA 98438-1130

bb. McClellan AFB, CA

77 AMDS/SGPB
3200 Peacekeeper Way, Suite 5
McClellan AFB, CA 95652-1030

cc. Mountain Home AFB, ID

366 AMDS/SGPB
90 Hope Dr Bldg 6000
Mountain Home AFB, ID 83648-1000

dd. Norton AFB, CA

OL-E,AFBCA
301 S Tippecanoe Avenue
San Bernadino, CA 92408

ee. Otis ANG Base, MA

102 FW/EM
197 Granville Ave Box 46
Otis ANGB, MA 02542-5028

ff. Pease AFB, NH

AFBCA/OLAA
61 International Drive
Building 43
Pease AFB, NH 03803-0157

gg. Plattsburgh AFB, NY

OL-3A
324 US Oval
Plattsburgh, NY 12903-3316

hh. Rickenbacker ANGB, OH

OL-R,AFBCA
Rickenbacker IAP
7556 S Perimeter Rd
Columbus, OH 43217-5910

ii. Robins AFB, GA

78 AMDS/SGPB
655 7th Street Bldg 207
Robins AFB, GA 31098-2227

jj. Tinker AFB, OK

72 AMDS/SGPB
7701 2nd Street Suite 110
Tinker AFB, OK 73145-9200

kk. Travis AFB, CA

60 AMDS/SGPB
101 Bodin Circle
Travis AFB, CA 94535-1800

ll. Tyndall Air Force Base, FL

325 AMDS/SGPB

340 Magnolia Circle
Tyndall Air Force Base, FL 32403-5612

mm. Twin Cities ARS, MN

934 SPTG/SGPB
Minneapolis-St Paul IAP ARS
Minneapolis, MN 55450-5000

nn. Williams AFB, AZ

OL-S, AFBCA
6001 S Power Blvd; Building 1
Tempe, AZ 85206-0901

oo. Wright-Patterson AFB, OH

74 AMDS/SGPB
2330 K Street
Wright-Patterson AFB, OH 45433-7021

pp. Wurtsmith AFB, MI

OL-T, AFBCA
3950 East Arrow Street
Oscoda, MI 48750

7. DOD Lead Agent

CDR, USACHPPM
ATTN: MCHB-DC-E/Dr. Buchi
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21210-5422

*For FEDEX or other carrier replace Blackhawk Road with E1677

NOTE:

- (1) As bases transfer to Base Realignment and Closure (BRAC), contact AFBCA/EV, listed above.
- (2) For Air Force Plants, contact both the MAJCOM, as listed, and:

HQ ASC/EMVR
2050 3rd Street
Area B
Wright Patterson AFB, OH 45433-7203

DEPARTMENT OF THE NAVY

1. Commander, Naval Engineering Command
Director for Environmental Programs, Code 41
Attn: Bill Judkins
200 Stovall Street
Alexandria, VA 22332-2300

2. CO, NAVENVIRHLTHCEN
Attn: EP-AL/Ms. Lunsford
2510 Walmer Avenue
Norfolk, VA 23513-2617

3. Engineering Field Division

a. SOUTHWESTNAVFACENCOM

Bases: Yuma Marine Corps Air Station, AZ; Barstow Marine Corps
Logistics Base, CA; Camp Pendleton Marine Corps Base, CA; El Toro
Marine Corps Air Station, CA

Commanding Officer Southwest Division
Naval Facilities Engineering Command 1852
Attn: Jan Corbett
1220 Pacific Highway Bldg 130
San Diego, CA 92132-5190

b. ENGFLDACT NW

Bases: Adak Naval Air Station, AK; Bangor Naval Submarine Base,
WA; Bangor Ordnance Disposal, WA; Jackson Park Housing Complex,
WA; Naval Air Station, Whidbey Island-Ault Field, WA; Naval Air
Station, Whidbey Island-Seaplane Base, WA; Naval Undersea Warfare
Engineering Station, WA; Port Hadlock Detachment, WA; Puget Sound
Naval Shipyard, WA

Engineering Field Activity Northwest
Naval Facilities Engineering Command 09ERI
Attn: Mike Sanders
3505 Anderson Hill Road
Silverdale, WA 98383-2366

c. SOUTHNAVFACENCOM

Bases: Cecil Field Naval Air Station, FL; Jacksonville Naval Air Station, FL; Pensacola Naval Air Station, FL; Whiting Field Naval Air Station, FL; Marine Corps Logistics Base, GA; Naval Industrial Reserve Ordnance Plant, MN; Marine Corps Recruit Depot, SC

Commanding Officer Southern Division
Naval Facilities Engineering Command 1869
Attn: Connie Merting
2144 Eagle Drive
North Charleston, SC 29419-9010

d. PACNAVFACENGCOM

Bases: Naval Computer and Telecommunications Area, HI; Pearl Harbor Naval Complex, HI

Commander Pacific Division
Naval Facilities Engineering Command 1822
Attn: Wes Ching
Pearl Harbor, HI 96860-5000

e. LANTNAVFACENGCOM

Bases: Camp Lejeune Military Reservation, NC; USMC Air Station Cherry Point, NC; Naval Security Group Activity, PR; Sewells Point Naval Complex, VA; Yorktown Naval Weapons Station, VA; Allegany Ballistics Laboratory, WV

Commander Atlantic Division
Naval Facilities Engineering Command 18242
Attn: Sherri Eng
1510 Gilbert Street
Norfolk, VA 23511-2699

f. WESTNAVFACENGCOM

Bases: Moffett Naval Air Station, CA; Concord Naval Air Station, CA; Treasure Island Naval Station-Hunters Point Annex, CA

Commander Western Division
Naval Facilities Engineering Command 18D
Attn: Gil Rivera
900 Commodore Drive, Building 101
San Bruno, CA 94066-2402

g. NORTHNAVFACENCOM

Bases: New London Submarine Base, CT; Naval Weapons Industrial Reserve Plant, MA; South Weymouth Naval Air Station, MA; Brunswick Naval Air Station, ME; Portsmouth Naval Shipyard, ME; Naval Weapons Station Earle, NJ; Naval Air Engineering Center, NJ; Naval Air Development Center, PA; Naval Air and Air Reserve Station, PA; Navy Ships Parts Control Center, PA; Davisville Naval Construction Battalion Center, RI; Newport Naval Education & Training Center, RI;

Commanding Officer Northern Division
Naval Facilities Engineering Command 1831
Attn: Simeon Hahn
10 Industrial Highway, Mail Stop 82
Lester, PA 19113-2090

h. ENGFLDACT CHESAPEAKE

Bases: Indian Head Naval Surface Warfare Center, MD; Patuxent River Naval Air Station, MD; Dahlgren Naval Surface Warfare Center, VA; Marine Corps Combat Development Center, VA;

Commanding Officer
Engineering Field Activity Chesapeake 181
Building 212 Washington Navy Yard
Attn: Wanda Holmes
Washington, DC 20374-2121

4. Activity Commanding Officer

a. Adak Naval Air Station, AK

Commanding Officer
Naval Air Station Adak
PSC 486 Box 1202
FPO AP 96506-1202

b. Allegany Ballistics Laboratory, WV

Hercules Incorporated
Missiles Ordnance and Space Group
Allegany Ballistics Laboratory
Rocket Center, WV 26726-5000

c. Bangor Ordnance Disposal, WA

Commanding Officer
Naval Submarine Base Bangor
Bremerton, WA 98315-5000

d. Bangor Naval Submarine Base, WA

Commanding Officer
Naval Submarine Base Bangor
Bremerton, WA 98315-5000

e. Barstow Marine Corps Logistics Base, CA

Commanding General
Marine Corps Logistics Base
Barstow, CA 92311-5000

f. Brunswick Naval Air Station, ME

Commanding Officer
Naval Air Station
Brunswick, ME 04011-5000

g. Camp Lejeune Military Reservation, NC

Commanding General
Marine Corps Base
Camp Lejeune, NC 28542-5001

h. Camp Pendleton Marine Corps Base, CA

Commanding General
Marine Corps Base
Camp Pendleton, CA 92055-5000

i. Cecil Field Naval Air Station, FL

Commanding Officer
Naval Air Station
Cecil Field, FL 32215-5000

j. Concord Naval Weapons Station, CA

Commanding Officer
Naval Weapons Station
Concord, CA 94520-5000

k. Dahlgren Naval Surface Warfare Center, VA

Commander
Naval Surface Warfare Center
Dahlgren, VA 22448-5000

l. Davisville Naval Construction Battalion Center, RI

Commanding Officer
Naval Construction Battalion Center
Davisville, RI 02854-5000

m. El Toro Marine Corps Air Station, CA

Commanding General
Marine Corps Air Station El Toro
Santa Ana, CA 92709-5000

n. Indian Head Naval Surface Warfare Center, MD

Commander
Indian Head Division
Naval Surface Warfare Center
101 Strauss Avenue
Indian Head, MD 20640-5035

o. Jackson Park Housing Complex, WA

Puget Sound Naval Shipyard
Code 106.3
1400 Farragut Avenue
Bremerton, WA 98314-5001

p. Jacksonville Naval Air Station, FL

Commanding Officer
Naval Air Station
Jacksonville, FL 32212-5000

q. Marine Corps Logistics Base, GA

Commanding General
Marine Corps Logistics Base
Albany, GA 31704-5000

r. Marine Corps Recruit Depot, SC

Commanding General
Marine Corps Recruit Depot
Eastern Recruiting Region
P.O. Box 19001
Paris Island, SC 29905-9001

s. Marine Corps Combat Development Center, VA

Commanding General
Marine Corps Combat Development Center
2048 South Street
Quantico, VA 22134-5129

t. Moffett Naval Air Station, CA

Commander Western Division
Naval Facilities Engineering Command 181
900 Commodore Drive Building 101
San Bruno, CA 94066-2402

u. Naval Undersea Warfare Engineering Station, WA

Commanding Officer
Naval Undersea Warfare Engineering Station
Keyport, WA 98345-0580

v. Naval Air and Air Reserve Station, PA

Commanding Officer
Naval Air and Air Reserve Station
Willow Grove, PA 19090-5010

w. Naval Security Group Activity, PR

Commanding Officer
US Naval Security Group Activity
FPO AA 34053-1000

x. Naval Air Development Center, PA

Commander
Naval Air Development Center
Warminster, PA 18974-5000

y. Naval Air Engineering Center, NJ

Commanding Officer
Naval Air Engineering Center
Lakehurst, NJ 08733-5000

z. Naval Weapons Industrial Reserve Plant, MA

NWIRP Bedford
180 Hartwell Road
Mailstop S1CG38
Bedford, MA 01730-5000

aa. Naval Computer and Telecommunications Station, HI

Commander

Naval Base
Pearl Harbor, HI 96860-5000

bb. Naval Weapons Station Earle, NJ

Commanding Officer
Naval Weapons Station Earle
201 Highway 34S
Colts Neck, NJ 07722-5001

cc. Navy Ships Parts Control Center, PA

Commanding Officer
Navy Ships Parts Control Center
5450 Carlisle Pike
P.O. Box 2020
Mechanicsburg, PA 17055-0788

dd. New London Submarine Base, CT

Commanding Officer
Naval Submarine Base New London
P.O. Box 00
Groton, CT 06349-5000

ee. Newport Naval Education and Training Center, RI

Commander
Naval Education and Training Center
Newport, RI 02841-5000

ff. Naval Air Station Whidbey Island, Seaplane Base, WA

Commanding Officer
Naval Air Station Whidbey Island
Oak Harbor, WA 98278-5000

gg. Naval Industrial Reserve Ordnance Plant, MN

Naval Industrial Reserve Ordnance Plant
Code 55
5001 East River Road
Minneapolis, MN 55421-1406

hh. Naval Air Station Whidbey Island Ault Field, WA

Commanding Officer
Naval Air Station Whidbey Island
Oak Harbor, WA 98278-5000

ii. Patuxent River Naval Air Station, MD

Commanding Officer
Naval Air Station
Patuxent River, MD 20670-5409

jj. Pearl Harbor Naval Complex, HI

Commander
Naval Shipyard Pearl Harbor
401 Ave E Suite 124
Pearl Harbor, HI 96860-5350

kk. Pensacola Naval Air Station, FL

Commanding Officer
Naval Air Station
Pensacola, FL 32508-5000

ll. Port Hadlock Detachment, WA

Officer in Charge
NAVWPNSTA DET Port Hadlock
100 Indian Island Road
Port Hadlock, WA 98339-9723

mm. Portsmouth Naval Shipyard, ME

Commander
Code 121
Portsmouth Naval Shipyard
Portsmouth, NH 03840-5000

nn. Puget Sound Naval Shipyard, WA

Commander
Puget Sound Naval Shipyard
Bremerton, WA 98314-5000

oo. Sewells Point Naval Complex

Dianne Bailey
Regional Environmental Coordinators Office
Naval Base Norfolk

pp. South Weymouth Naval Air Station, MA

Commanding Officer
Naval Air Station
Code 82A
South Weymouth, MA 02190-5000

qq. Treasure Island Naval Station-Hunters Point, CA

Commander Western Division
Naval Facilities Engineering Command 181
900 Commodore Drive Building 101
San Bruno, CA 94066-2402

rr. USMC Air Station Cherry Point, NC

Commanding General
Marine Corp Air Station, PSC Code 8006
Cherry Point, NC 28533-0006

ss. Whiting Field Naval Air Station, FL

Commanding Officer
Naval Air Station Whiting Field
7550 USS Essex Street Suite 100
Milton, FL 32570-6155

tt. Yorktown Naval Weapons Station, VA

Commanding Officer
Naval Weapons Station
P.O. Box 160
Yorktown, VA 23691-0160

uu. Yuma Marine Corps Air Station, AZ

Commanding Officer
Marine Corps Air Station
Yuma, AZ 85369

5. DOD Lead Agent

CDR, USACHPPM
ATTN: MCHB-DC-E/Dr. Buchi
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21210-5422

*For FEDEX or other carrier replace Blackhawk Road with E1677

DEPARTMENT OF THE ARMY

1. Office of the Deputy Assistant Secretary of the Army
Environment, Safety and Occupational Health
Pentagon, Room 3E613
Washington, D.C. 20310-0110
2. Office of the Director of Environmental Programs
Pentagon, Room 1E685
Washington, D.C. 20310-2600
3. Office of the Surgeon General
SGPSP-PSP
5109 Leesburg Pike
Falls Church, VA 22041
4. Commander
U.S. Army Center for Health Promotion and Preventative Medicine
Attn: MCHB-DC-E/MAJ Travis
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5422
5. Major Command
 - a. Army Material Command

AMC, ENVIRONMENTAL QUALITY DIVISION
U.S. Army Materiel Command
5001 Eisenhower Ave., Room 4W20
AMCEN-A (Nancy Pomerleau, CH)
Alexandria, VA 22333-0001
 - 1) U.S. Army Chemical and Biological Defense Command
ATTN: AMSCBÄRA (Mr. Tom Sekula)
Building E5101
Aberdeen Proving Ground, MD 21010Ä5423
 - a) Program Manager
Rocky Mountain Arsenal
ATTN: AMCPM-RM (Kevin Blöse)
Building 111
Commerce City, CO 80022-2180
 - 2) U.S. Army Industrial Operations Command
ATTN: AMSMC-EQ (Mr. Robert Radciewicz)
Bldg 390, 4th Floor, NW

Rock Island, IL 61299-6000

a) Commander
Alabama Army Ammunition Plant
P.O. Box 368
ATTN: SMCAL (Thomas Hayes)
Childersburg, AL 35044-0368

b) Commander
Anniston Army Depot
ATTN: SDSANADPW-RAD (Leslie Ware)
7 Frankford Ave., Building 1
Anniston, AL 36201-5048

c) Commander's Representative
Badger Army Ammunition Plant
ATTN: SMCBA-CR (David Fordham)
2 Badger Rd., Building 200
Baraboo, WI 53913-5000

d) Commander
Cornhusker Army Ammunition Plant
ATTN: SMCCO (Tom Jamison)
102 N 60th Road
Rural Route #1, Box 396A
Grand Island, NE 68803

e) Commander
Iowa Army Ammunition Plant
ATTN: SMCIOAPPE (Leon Baxter)
17571 State Highway 79
Building 100-101, Room 55
Middletown, IA 52638-5000

f) Commander's Representative
Joliet Army Ammunition Plant
ATTN: SMCJOAEN (Tom Erdman)
29401 Route 53
Wilmington, IL 60481-5000

g) Commander
Lake City Army Ammunition Plant
ATTN: SMCLC(EN-1A) (Gary Kelso)
I-HWY 7 & 78, Building 5
Independence, MO 64051-0250

h) Commander

Letterkenny Army Depot
ATTN: SDSLE-EN
1 Overcash Ave.
Chambersburg, PA 17201-4150

i) Commander
Lone Star Army Ammunition Plant
ATTN: SMCLSÄTD
HWY 82-W, Building I-5, Room E-9-W
75505Ä9101

Texarkana, TX

j) Commander
Longhorn Army Ammunition Plant
ATTN: SMCLS-TD (Dave Tolbert)
Highway 43, Building 703
Karnack, TX 75505-9101

k) Commander
Louisiana Army Ammunition Plant
ATTN: SMCLO-EV (Doyle Williams)
Highway 80, Gate 4, Building 2629
Doyline, TX 71023

l) Commander
Milan Army Ammunition Plant
ATTN: SMCMIÄIO (Pat Brew)
HWY 104, Building T-1
Milan, TN 38358Ä5000

m) Commander
Riverbank Army Ammunition Plant
ATTN: SMCRBÄCR (James Gansel)
5300 Claus Road
Modesto, CA 95355

n) Commander
Savanna Army Depot Activity
ATTN: SESLE-VA (John Clarke)
54 Crim Drive
Savanna, IL 61074-9639

o) Commander
Seneca Army Depot
ATTN: SDSTO-SEI-P (Steve Absolom)
5786 State RTE 96
Romulus, NY 14541-5001

p) Commander
Sunflower Army Ammunition Plant
ATTN: SMCSUAÆV (Ralph Burns)

P.O. Box 640

Desoto, KS 66018Ä0549

q) Commander
Tobyhanna Army Depot
ATTN: SDSTO-EM (Craig Coffman)
11 Hap Arnold Blvd.
Tobyhanna, PA 18466-5085

r) Commander
Tooele Army Depot
ATTN: SDSTEÄIRE (Larry Fisher)
Building 115
Tooele, UT 84074Ä5000

s) Commander
Twin Cities Army Ammunition Plant
ATTN: SMCTC-EV (Martin McCleery)
Building 105
Arden Hills, MN 55112-5700

t) Commander
Umatilla Army Depot
ATTN: SIOUM-BEC (Mark Daugherty)
Hermiston, OR 97838

u) Commander
U.S. Army Materials Technical Laboratory
ATTN: SLCMT-DRK (Robert Chase)
Arsenal Street
Watertown, MA 022171-0001

3) U.S. Army Missile Command
ATTN: AMSMI-RA-EQ (Mr. Sam Fields)
Building 112, Bonford Street
Redstone Arsenal, AL 35895-5340

a) Commander
Redstone Arsenal
ATTN: AMSMI-RA-EMP (Rick Kendrick)
Building 112, Bonford Street
Huntsville, AL 35898

4) U.S. Army Tank Automotive and Armaments Command
ATTN: AMSTA-XE (Mr. Prentes Parker)
6501 Eleven Mile Road, Building 205
Warren, MI 48397-5000

a) Commander
U.S. Army Armament Research Development and Engineering Center
Picatinny Arsenal
ATTN: AMSTA-AR-PSR (Tom Solecki)
Building 1
HQ ARDEC
Picatinny Arsenal, NJ 07806-5000

5) U.S. Army Test and Evaluation Command
ATTN: AMSTE-EQ (Mr. Juan Lopez)
Building 314, Room 219
Aberdeen Proving Ground, MD 21005-5055

a) Commander
U.S. Army Aberdeen Proving Ground Garrison
Directorate of Safety, Health & Environment
ATTN: STEAP-SH-ER (Mr. Ken Stachiw)
Building E4430, 2nd Floor
Aberdeen Proving Ground, MD 21010-5423

6) U.S. Army Soldier Systems Command
ATTN: SATNCÄZSN (Mr. John Manning)
Kansas Street, Building 4, Room 042
Natick, MA 01760Ä5049

a) Commander
Natick Research, Development & Engineering Center
ATTN: SATNC-ZSN (John McHugh)
Kansas Street
Natick, MA 01760-5049

b. Forces Command

Commander
U.S. Army Forces Command
ATTN: AFPI-ENE (Mr. George Gricius)
BLDG. 200
Fort McPherson, GA 30330-6000

1) Commander
Fort Devens
BRAC Environmental Office
ATTN: AFZD-BEC (Jim Chambers)
Box 1
Fort Devens, MA 10433-5010

2) Commander
Fort Devens (Sudbury Annex)
ATTN: AFZD-EM (Joe Pierce)
Building 689
McAuther Ave.
Box 19
Fort Devens, MA 01433-5190

3) Commander
U.S. Army Fort Dix
Regional Directorate of Public Works
Building 5317
ATTN: AFZT-EHN (Ann Hawthorne)
Fort Dix, NJ 08640-5501

4) Commander
I Corps & Fort Lewis
ATTN: AFZH-DEQ (Paula Wofford)
Bldg. 4301 on Main Street
Fort Lewis, WA 98433-5000

5) Director
Environmental & Safety
Planning Restoration Division
ATTN: AFZN-ES-L (Janet Wade)
1970 2nd Street
Fort Riley, KS 66442-6016

c. Training and Doctrine Command

Commander
HQ TRADOC
Directorate of Safety, Fire Protection, and Environment
ATTN: ATBO-SE
Building 10, Room 128
Fort Monroe, VA 23651-5000

1) Commander
U.S. Army Transportation Center and Fort Eustis
ATTN: ATZF-PWE (Steve McCall)
Building 1407
Fort Eustis, VA 23604-5000

2) Commander
DLIFLC & POM
ATTN: ATZP-EP (Gail Youngblood)
Presidio of Monterey, CA 93944-5506

d. U.S. Army Pacific

Commander
U.S. Army, Pacific
ATTN: APEN-EV (Mr. Gene Kubecka)
Building T-104
Fort Shafter, HI 96858-5100

1) Commander
U.S. Army Garrison, Hawaii
ATTN: APVG-GWV (Mr. John Fukuda)
300 Wheeler Army Air Field
Schofield Barracks, HI 96857-5000

2) Director of Public Works
ATTN: APVR-PW-EV (Ms. Cristal Fosbrook)
600 Richardson Drive #5000
Fort Richardson, AK 99505-5500

3) Commander
USAED Sacramento
Attn: CESPKE-ED-E (SADA)
1325 J Street
Sacramento, CA 95814-2922

6. DOD Lead Agent

CDR, USACHPPM
ATTN: MCHB-DE-E/Dr. Buchi
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21210-5422

*For FEDEX or other carrier replace Blackhawk Road with E1677

DEFENSE LOGISTICS AGENCY

1. Director
Defense Logistics Agency
ATTN: CAAE (Dr. DeSai)
8725 John J. Kingman Rd. Suite 2533
Fort Belvoir, VA 22060-6221

2. Installation

3. DOD Lead Agent

Commander
U.S. Army Center for Health Promotion and Preventative Medicine
Attn: MCHB-DC-E/Dr. Buchi
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5422

APPENDIX L. GLOSSARY OF TERMS

Component - Specific armed services unit at Department of Defense

Laboratory - Component-specific medical representative

Navy: Naval Environmental Health Center

Air Force: Armstrong Laboratory

Army/DLA: U.S. Army Center for Health Promotion and Preventative Medicine

Lead Agent - Central coordination point for Department of Defense activities. Presently designated as U.S. Army Environmental Hygiene Agency

Liaison - designated central coordination point for Component activities

Navy: Naval Facilities Engineering Command

Air Force: Air Force Office of the Surgeon General

Army/DLA: U.S. Army Center for Health Promotion and Preventative Medicine

ATSDR: Office of Federal Programs

Installation - location of site-specific field activities

APPENDIX M. LIST OF ABBREVIATIONS USED

APOW - Annual Plan of Work

ATSDR - Agency for Toxic Substances and Disease Registry

CDC - Centers for Disease Control and Prevention

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act

DHAC - Division of Health Assessment and Consultation

DHE - Division of Health Education

DHS - Division of Health Studies

DOD - Department of Defense

DT - Division of Toxicology

EPA - Environmental Protection Agency

FFAB - Federal Facilities Assessment Branch

FR - Federal Register

IRP - Installation Restoration Program

NCEH - National Center for Environmental Health

NPL - National Priorities List

OFFP - Office of Federal Programs

RAB - Restoration Advisory Board

RI/FS - Remedial Investigation/Feasibility Study

TRC - Technical Review Committee