

FRAMEWORK FOR AN AGREEMENT BETWEEN THE STATE OF MICHIGAN AND THE DOW CHEMICAL COMPANY

PURPOSE AND SCOPE OF FRAMEWORK

This Framework for a proposed agreement between the State of Michigan ("State") and The Dow Chemical Company ("Dow") (collectively "the parties") establishes the path forward to achieving three goals:

- (1) Ensuring that certain immediate actions will be initiated to address government and public concerns about the presence of dioxins/furans in the City of Midland and in and along the Tittabawassee River;
- (2) Creating a defined process for moving forward to address remaining concerns regarding these areas and the Saginaw River and Bay by ensuring that ecological and human risk reduction and restoration projects can be implemented that provide environmental protection and meaningful local environmental and public benefits, including enhancement of ongoing regional economic development efforts; and
- (3) Providing a structure for Dow to resolve with finality potential government claims arising from various historical releases.

This Framework results from discussions between the Michigan Department of Environmental Quality ("DEQ") and Dow that occurred at the request of the Governor and various elected representatives and under the oversight of the Lieutenant Governor. The parties agree that an innovative approach on these issues will provide greater and more rapid public benefits than a traditional litigation-based approach.

This Framework takes into account the information that has already been developed regarding the river system and the actions that DEQ and Dow have already taken with respect to issues of concern. The Framework contemplates the eventual and essential participation of numerous other stakeholders in shaping the path forward, including multiple State agencies, the relevant Federal agencies, local governments, residents and community groups. The parties acknowledge that the interests of all stakeholders are served by a comprehensive approach to and resolution of major pending issues.

DEQ and Dow are committed to: 1) a results-based rather than process-focused approach, with certainty and measurable progress toward finality as the goal; 2) response activities focused on the greatest health and environmental risks first, meaning those areas where surface concentrations of dioxin may exceed 1,000 parts per trillion (ppt); and 3) a process that is flexible and will allow Dow to pursue available regulatory approaches. DEQ and Dow will work together to implement the immediate actions proposed to be taken under the Framework in a manner that will seek to expeditiously and efficiently achieve EPA's RCRA Corrective Action Environment Indicator goal of "no significant human exposures."

This Framework will provide for action identified by DEQ in priority areas as well as provide Dow flexibility to pursue a bioavailability study and/or development of potential area wide and site specific cleanup criteria pursuant to a schedule to be agreed upon. The DEQ remains open to discussions regarding presumptive remedies and potential area wide and site specific criteria development and is committed to responding to Dow proposals in this regard.

Nothing in this Framework affects the potential responsibility of other persons or entities for conditions in any of the areas to which this Framework relates, nor does this Framework affect the authorities, rights, or obligations of any person or entity that is not a party. Neither party is making any admissions by entering into this Framework, and both parties are reserving their rights and defenses pending a final agreement. The elements of the Framework to which the State and Dow agree are set forth below.

I. IMMEDIATE ACTIONS

A. Priority 1 IRAs

Priority 1 IRAs are interim response actions to: 1) address potential exposure at certain residential locations (including certain day care centers) based on existing information and assumptions about the potential for exposure, and 2) provide public education/outreach.

1. The Priority 1 IRA Areas are depicted in the attached maps (Attachments 1 and 2) and identified as follows:

- a. City of Midland
 - i. Corning Lane
 - ii. Neighborhood North of Dow Facility
 - iii. Neighborhood East of Corning Lane
- b. Tittabawassee River Properties

Residential properties where the home or yard close to the home was inundated during the March 2004 flood (a 7-10 year flood event)

2. The following Priority 1 IRAs must be completed/in place by December 31, 2005 or as provided for in an agreed upon schedule.

- a. The Communications IRA prepared by Dow and as approved with modifications by DEQ will be implemented.
- b. The attached IRA Work Plans issued by DEQ for the City of Midland (Attachment 3) and Tittabawassee River Floodplain (Attachment 4) areas identified above will be implemented by Dow.

B. Interim Actions Other Than Priority 1 IRAs

1. Recreational Property

- a. As set forth in the Communications IRA, Dow will fund an escrow account for DEQ to install warning/advisory signs at Imerman Park, Freeland Festival Park, Germania Golf Course, and the Shiawassee National Wildlife Refuge as part of the public education/outreach efforts.
- b. Dow will fund exposure mitigation and enhancements at Freeland Festival Park, Imerman Park and West Michigan Park specified in Attachment 5.

2. Response to Flooding Prior to Final Remediation

Dow will continue to provide the following assistance along the Tittabawassee River after flood events until a final remedy is implemented or information indicates that other actions or no actions are needed to address soil or sediment movement resulting from flood events:

- a. Providing funding or the services of a contractor to local governmental agencies, coordinated through the county health agencies or emergency services, and as requested by the property owner(s) or agencies, to assist with cleanup of sediment deposited by floods on paved public access areas in the flood plain.
- b. Providing funding or the services of a contractor, coordinated through the county health agencies or emergency services, and as requested by the property owner(s) or agencies, to assist homeowners who own flooded property with the following exposure mitigation measures:
 - i. After floods, removal of mud/dirt from the interior of residential buildings.
 - ii. Cleanup of sediment deposited by floods on paved areas.

3. Other Properties

If residential property that has not been identified on an attached map is found to have dioxin/furan concentrations at or above 1,000 ppt (during implementation of the IRAs, soil sampling for the bioavailability study), Dow will work with those residential property owners to reduce the potential for exposure using the appropriate mitigation options specified in the IRA work plans.

4. Additional Interim Actions

Except as provided for in I.B.3., DEQ will not require further interim action by Dow before January of 2006 unless new information becomes available that indicates further immediate actions in advance of a remedial action plan must be taken to protect human health or the environment. Dow always has the flexibility to voluntarily implement IRAs other than Priority 1 IRAs at any time.

C. Bioavailability Study

DEQ staff met with Dow to discuss a bioavailability study and other options Dow has in developing potential area wide and site specific cleanup criteria for dioxin and furans. Dow is currently conducting a pilot bioavailability study and plans to propose a full bioavailability study to an independent science advisory panel for review, comment and recommendations to DEQ and Dow based on the results of the pilot study.

1. The DEQ will use TERA to establish an independent science advisory panel to review results of the pilot bioavailability study and make recommendations to DEQ and Dow regarding the protocol for the final bioavailability study. The final study is subject to DEQ approval before it is implemented.
2. If developed pursuant to the approved work plan and protocol, the results of the bioavailability study along with other scientific information and probabilistic risk assessment will be considered in the potential development of area wide criteria for the City of Midland and along the Tittabawassee River. Such results, and any other studies or results, will be considered if relevant and appropriate to the proper development of area wide criteria. Dow will submit a protocol for developing such potential criteria, including the relevant scientific information and methodology, to the DEQ prior to implementation. DEQ will establish an independent science advisory panel to review the results of the final bioavailability study and Dow's protocol for developing area wide criteria and make recommendations to DEQ and Dow. The

protocol and any such potential criteria are subject to DEQ approval.

II. ONGOING AND FUTURE INVESTIGATION AND REMEDIAL ACTIVITIES

A. Tittabawassee River

Dow will continue to fund the following ongoing activities and provide the resultant information to DEQ and the public on a periodic basis. Dow will provide DEQ with work plans sufficiently in advance of proposed initiation dates of proposed studies to allow for DEQ review and approval of the study objectives and methodology. The objectives of these studies will include obtaining sufficient information to evaluate remedial alternatives in accordance with applicable law, including identifying those areas of dioxin and furan contaminated sediments that can be cost-effectively removed from the river in a manner that achieves the optimum environmental benefit, taking into consideration the costs of removal and the environmental impacts associated with sediment removal.

1. Studies of Tittabawassee River sediment characteristics, chemistry, history, potential risks, and dynamics. A study of floodplain soils will be performed to better understand the distribution of soil types and distribution of dioxins and furans.
2. Regularly update maps with data and information gathered under these studies.
3. Based upon the result of these studies, Dow will prepare and submit to DEQ for review and approval, a remedial plan to be implemented by Dow addressing:
 - a. Areas/criteria for any proposed sediment removal
 - b. Methods of any proposed sediment removal, management, and disposal
 - c. Other appropriate response activities

B. Saginaw River

1. Based on the parties' discussions and review of the available data regarding prior investigations, Dow will focus its investigation and remedial activities for the Saginaw River in the upper portion of the River, from the Sixth Street turning basin to the confluence. Dow will provide DEQ with work plans sufficiently in advance of

proposed initiation dates of proposed studies to allow for DEQ review and approval of the study objectives and methodology. The objectives of these studies will include obtaining sufficient information to evaluate remedial alternatives in accordance with applicable law, including identifying those areas of dioxin and furan contaminated sediments that can be cost-effectively removed from the river in a manner that achieves the optimum environmental benefit, taking into consideration the costs of removal and the environmental impacts associated with sediment removal.

2. As an initial component of the studies under paragraph II.B.1 above, Dow will conduct a preliminary scoping study of the upper Saginaw River (from the Sixth Street turning basin to the confluence) and share that data with DEQ. The results of this initial study will be used to develop more focused studies that may include an ecological risk assessment to evaluate discrete areas of interest in the river and to develop criteria for addressing those areas.
3. Based upon the result of these studies, Dow will prepare and submit to DEQ for review and approval, a remedial plan to be implemented by Dow addressing:
 - a. Areas/criteria for any proposed sediment removal
 - b. Methods of any proposed sediment removal, management and disposal
 - c. Other appropriate response activities

C. Management and Disposal of Dredged Materials

The parties understand and agree that Dow may propose dredged material disposal options other than disposal in a Type II landfill, such as an engineered disposal facility similar to confined disposal facilities used by the U.S. Army Corps of Engineers to contain dredged materials. Any disposal facility used by Dow must be operated and maintained in accordance with applicable law.

D. Remedial Investigation Work Plan

1. By December 31, 2005, Dow will submit to DEQ a Remedial Investigation work plan incorporating previously submitted work plans and addressing the remaining work to be done.

2. Until a final determination has been made on the potential site specific and/or area wide criteria that Dow will propose for DEQ consideration, only the investigative work referenced herein will be required to be performed unless additional information is discovered indicating that additional investigative work is needed in advance of such final determination in order to protect human health or the environment. Dow may undertake additional investigative work voluntarily at any time.
3. No further investigation will be required for areas where DEQ has approved a remedial plan or a DEQ approved presumptive remedy has been implemented unless additional information is discovered indicating that the approved remedial plan or presumptive remedy is not protective of human health or the environment.

III. PROCESS FOR MOVING FORWARD TO FINAL AGREEMENT

A. Multi-Stakeholder Process Supplementing Operating License

1. The parties acknowledge the critical nature of providing information to the stakeholders and receiving information and feedback from the stakeholders throughout the process. The specific processes for keeping stakeholders informed of significant developments and for gathering the input of stakeholders have not yet been determined.
2. The parties may employ the services and assistance of a facilitator to organize and enhance communications with all stakeholders.
3. To help local groups and community members understand technical issues and provide substantive input, Dow will provide a grant of \$50,000, for retention by the group of stakeholders of an independent expert from a list of qualified, neutral individuals developed by Dow and the State.
4. The parties envision that to achieve an integrated, comprehensive, and accelerated approach to off-site issues, Dow's offsite corrective action obligations will be further defined by the parties in one or more supplemental agreement(s) intended to involve additional governmental parties, additional statutory authorities, and innovative approaches to addressing and resolving the pertinent issues. The agreement(s) may include presumptive remedies or other approaches acceptable to the agencies in lieu of further investigative activities. Proposed supplemental agreement(s) will be subject to public comment.

B. Best Available Data and Science

1. The parties will build on the body of information about the watershed that already exists.
2. The parties will use independent scientific panels to review and evaluate proposed studies and data to supplement the resources of the parties.
3. Decisions and actions will take into consideration if available and relevant the results of the ongoing University of Michigan Exposure Study.
4. DEQ will assist in and consider on the merits the results of the ongoing bioavailability study in developing potential area wide and site specific cleanup criteria for dioxins. If Dow demonstrates that the use of probabilistic risk assessment improves the analysis and characterization of variability and uncertainties regarding exposure and risks, DEQ will consider the results of Dow's proposed use of probabilistic risk assessment in developing potential area wide and site specific cleanup criteria for dioxins in accordance with applicable law. These activities will proceed pursuant to an agreed-upon schedule.
5. Decisions and actions will take into consideration if available and relevant the ecological assessment work of Michigan State University and other investigations based on site specific information. Any ecological assessment work must be consistent with a work plan submitted to and approved by DEQ.

C. Restoration/Preservation/Enhancement of the Watershed

The parties will consider options that include habitat preservation and restoration and other improvements to the watershed when evaluating approaches to address any significant ecological risks and/or resource injuries that may have occurred.

D. Trust Funds to Resolve Certain Claims

1. The parties contemplate that, as part of a comprehensive agreement, potential government claims associated with the Saginaw River and Bay, and certain other government claims relating to the Tittabawassee River and flood plain, may be resolved through establishment of a trust fund (or multiple funds as appropriate) or a combination of other actions and mechanisms, with stakeholder input, to pay for various ecological, human use

enhancement, and other projects. The funds may also be used to pay for any necessary long term maintenance.

2. The parties contemplate that the projects achieved through the trust fund(s) will provide significant environmental and other benefits to the public at large and for local communities.
3. The parties acknowledge that the Saginaw watershed faces many problems, including loss of wetlands; runoff of agricultural chemicals, animal wastes, and soil; invasion of exotic species; insufficient numbers of top aquatic predators; atmospheric deposition of organic and inorganic compounds; and the residue in sediments of 100 years of industrial activity from multiple sources. Therefore, any determination of the scope of proposed projects to be funded by a trust fund must consider the conditions that would have existed in the river system and Bay whether or not any release from Dow had occurred. The parties agree that the trust fund should reflect only the incremental nature of any impacts from releases that have come from Dow. In addition, any determination of the scope of the project must take into account the baseline effects of the projects that have already been implemented to address watershed conditions.

IV. FINALITY


- A. The parties agree to work toward a comprehensive settlement that will resolve with "finality" potential State and Federal government claims associated with alleged off-site releases to soils in the City of Midland, the Tittabawassee River and flood plain, and the Saginaw River and Bay.
- B. The parties acknowledge that any final agreement will depend on reaching terms that are acceptable to Dow and to the State and Federal Governments, including terms that provide appropriate finality and "reopeners" to assure protection of public health and the environment. The parties agree that they will attempt in good faith to reach such terms.

V. RESERVATIONS OF RIGHTS AND DEFENSES

- A. Both parties reserve their rights and defenses pending a final agreement. The parties reserve the right to terminate negotiations of the final agreement to pursue such rights and defenses.
- B. This agreement does not give any rights to, or affect any liabilities of, any persons or entities who are not parties to this agreement.

- C. Dow and the State agree that this Framework shall not constitute any admission of fact or law or an admission of liability, fault, negligence or wrongdoing on the part of Dow, moreover; nothing herein constitutes any determination that any individual or property has suffered any interference, injury or damage as a result of any actions of Dow.
- D. Dow and the State agree that this document shall not be used in any litigation or other proceeding without the consent of both Dow and the State.
- E. Nothing in this Framework is intended to modify Dow's hazardous waste treatment storage and disposal facility operating license. In the event of any conflict, the license controls.
- F. This Framework, as a whole, shall be superseded and replaced by the final agreement(s) and, in part, by DEQ approved work plans.

STATE OF MICHIGAN

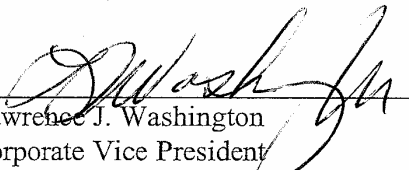


Steven Chester
Director, Department of Environmental Quality

1-18-05

Date

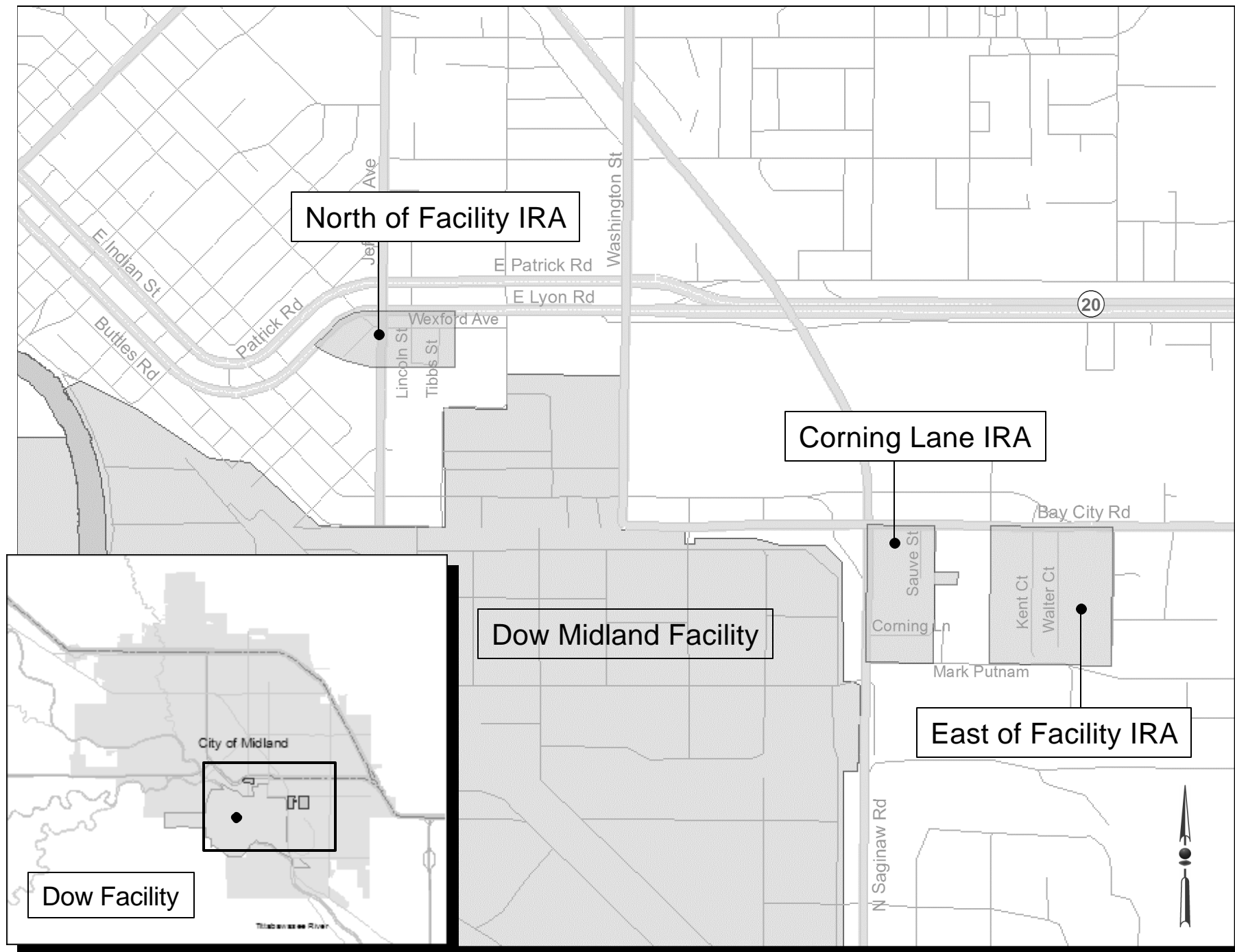
THE DOW CHEMICAL COMPANY

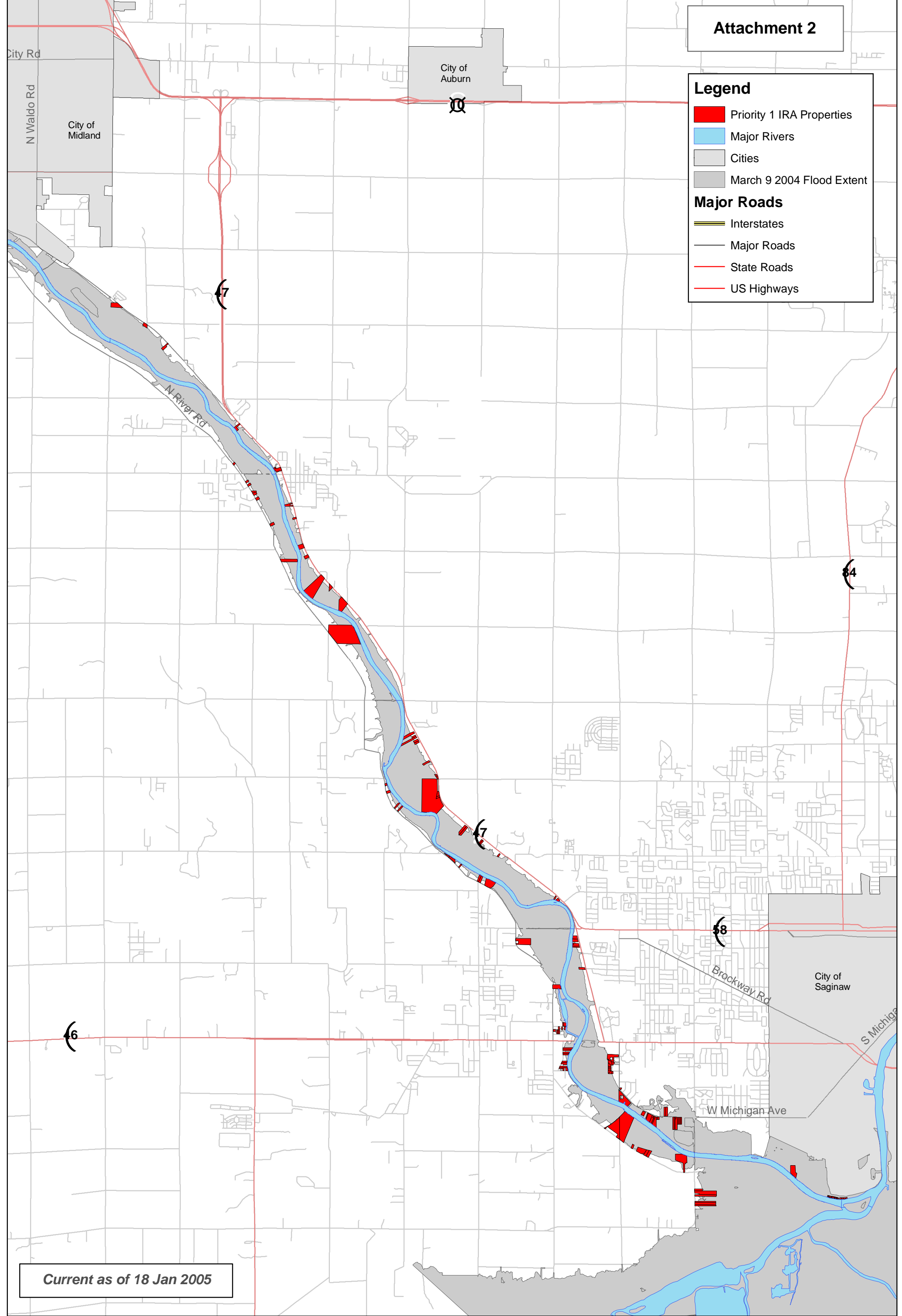


Lawrence J. Washington
Corporate Vice President
Sustainability, Environment, Health and Safety

1-20-05

Date





Legend

- Priority 1 IRA Properties
- Major Rivers
- Cities
- March 9 2004 Flood Extent
- Major Roads**
 - Interstates
 - Major Roads
 - State Roads
 - US Highways

Current as of 18 Jan 2005

0 0.5 1 2 3 4 Miles

Midland Area Soils Interim Response Activities Work Plan

Prepared for
The Dow Chemical Company

Midland, Michigan

February 2004
Modified by the Michigan Department of Environmental Quality January 2005

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- 1 Interim Response Activities Mitigation Decision Matrix

Attachments

- A Map Depicting Priority 1 Property Areas
- B Sampling and Analysis Plan
- C Schedule

Acronyms and Abbreviations

ATSDR	Agency for Toxic Substances and Disease Registry
Dow	The Dow Chemical Company
DQO	Data Quality Objectives
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
IRA	Interim Response Activity
License	Dow's Part 111 Hazardous Waste Facility Operating License
MDEQ	Michigan Department of Environmental Quality
PCOI	Potential Contaminants of Interest
ppt	parts per trillion
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedures
SSCC	Site-specific Cleanup Criteria
TEQ	2,3,7,8-TCDD Toxic Equivalent

Midland Area Soils Interim Response Activities Work Plan

1. Introduction

This document describes the overall scope and process Dow will use to perform Interim Response Activities (IRAs) for the Midland Soils Area of Concern. This IRA is being performed pursuant to Condition XI.B.3.(a) of the Hazardous Waste Facility Operating License (License) issued to Dow on June 12, 2003, by the Michigan Department of Environmental Quality (MDEQ).

1.1 Overall IRA Objectives

IRAs are short-term actions that are taken to control ongoing risks while site characterization is underway and before a final remedy is implemented. Data collected by the U.S. Environmental Protection Agency (U.S. EPA), Dow and the MDEQ indicates that surficial soils in certain areas of the City of Midland and adjacent areas are contaminated with dioxins and furans in excess of the Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), residential direct contact criteria. Properties located close to and downwind of the Dow Plant Site appear to be contaminated at higher concentrations. A number of these properties are actively used for residential purposes.

The primary objectives of this IRA are to identify and mitigate potential human exposure to dioxins and furans that have been or may be found in soils prior to implementation of final response activities. The initial priority for interim, short-term activities to mitigate exposure will be given to properties with residential use and soil concentrations that are known or presumed to exceed the Agency for Toxic Substances and Disease Registry (ATSDR) action level of 1,000 parts per trillion toxic equivalent (ppt TEQ).

Mitigation options will be offered to the owners of those properties in residential use in the areas identified on Attachment A. Residential use includes properties with exposure potential that is similar to residential (e.g., schools, child care facilities, nursing homes, adult day care facilities). More specifically, this IRA will:

- Identify residential properties that are located in the neighborhoods identified on Attachment A and are, therefore, likely to have elevated concentrations of dioxins and furans.
- Establish the priority for mitigating exposure to elevated concentrations of dioxins and furans.
- Identify a range of interim response activities for specific land uses that can be implemented immediately and are acceptable to the property owner, given property-specific conditions, or presumptively. Priority will be given to identification of properties with residential use that exceed or are presumed to exceed the ATSDR action level of 1,000 ppt.
- Implement the mitigation options agreed to by the property owner/occupant [herein referred to individually and collectively as “owner”] to limit or prevent exposure to contaminants prior to the implementation of the final remedy.

Based on existing sampling data, the MDEQ believes that properties close to and downwind of the Dow Midland Plant Site are those most likely to contain levels of dioxins and furans in soil above the ATSDR action level. These properties are identified on Attachment A and are presumed to contain levels of dioxins and furans above the ATSDR action level and hence are the focus of interim response activities required by this IRA.

This IRA provides that Dow must undertake activities based upon the presumption described above unless Dow demonstrates through sampling and/or property use that soils in the identified areas do not require presumptive mitigation activities. Any soil sampling associated with this IRA will be conducted in accordance with a Sampling and Analysis Plan (SAP) that is reviewed and approved, or approved with modifications, by the MDEQ. This IRA provides that if information is obtained through such sampling, it may be used for development of site-specific cleanup criteria (SSCC), as well as the planning of future soil sampling activities to be conducted under the Remedial Investigation Work Plan (RIWP). This would be proposed in the IRA SAPs to be specifically developed and submitted to the MDEQ for review and approved for this purpose. Implementation of these IRAs will not be delayed due to any component(s) of the proposed SAPs related to the development of the SSCC. However, work plans to collect data related to the development of the SSCC must have MDEQ approval prior to implementation.

2. IRA Components and Prioritization for Interim Response Activities

The determination of interim response activities appropriate to reduce the potential human exposure to dioxins and furans associated with contaminated soils in the Midland Area of Concern is based on the following questions:

1. What is the location of the property with respect to the Dow plant site? Which properties are residential?
2. What are the physical characteristics of the property? Is it wooded? Is there grass or other vegetative ground cover present that is substantive enough to act as a partial exposure barrier for activities conducted on that portion of the property?
3. Who occupies or frequents the property, how do they use it, and what portions of the property are actively used?
4. Where are dioxins and furans present or likely to be present at concentrations that require interim response prior to implementation of a comprehensive Remedial Investigation?

Interim response activities will be offered to property owners based upon responses to the above questions. The range of interim response activities is more fully described in Section 2.2, but will include:

- Educational materials will be sent to all owners of property that potentially exceeds the residential direct contact criteria for dioxins and furans. This information is being developed, in part, under the Communications IRA.
- Interior house cleaning including carpets, duct work, or other surfaces where contaminated soil or dust may have come to reside.

- Placement of interim cover materials.
- Other reasonable mitigation measures identified and agreed to by Dow and the property owner(s) based on their uses of the property.

The following sections outline the process for identifying interim response activities to mitigate exposure.

2.1 Identification of IRA Properties

MDEQ, Dow and U.S. EPA have conducted limited soil sampling at various locations in the City of Midland, some of which are in or adjacent to the three areas of concern identified under this IRA. This IRA bases the need for interim response activities to mitigate exposure on an ATSDR action level described as *“a concentration of dioxin in soil at which various actions may be considered to prevent or limit exposure.”* That ATSDR action level is 1,000 ppt TEQ. Unless established otherwise through sampling, properties in the three neighborhoods that are both proximate and downwind of the Dow Midland facility are presumed to exceed this action level. Accordingly, this IRA establishes the following priorities for interim response activities. The Priority 1 Areas identified under this IRA include the following:

- Corning Lane Area: This area consists of mixed residential and commercial/industrial land use bounded by Saginaw Road to the west, Bay City Road to the north, Bierlein Services to the east and Mark Putnam Road to the south as shown on Attachment A.
- North of Facility: This area consists of mixed residential and commercial/industrial land use bounded by Lyon Street on the north and west, Tibbs Street to the east, and an abandoned railroad to the south.
- East of Facility: This area consists predominantly of residential land use bounded by Bay City Road to the north, Bierlein Services to the west, Mark Putnam Road to the south, and Sam Street to the east.

The first phase of this IRA will involve the distribution of public information and educational materials to residents in Priority 1 designated areas. The public information and educational materials are being developed as part of the Communications IRA approved with modifications by the MDEQ on October 7, 2004, to provide information on limiting residential exposure to dioxins and furans in the areas of concern.

Dow will prepare a list of addresses of the properties that are identified as Priority 1 on Attachment A. It is assumed that any building located within the Priority 1 areas is in residential use unless Dow verifies otherwise through visual survey or direct contact with the owner. This list of Priority 1 addresses will be submitted to the MDEQ for review and approval within 14 days of the approval of this IRA.

Within 14 days of the approval of this IRA, Dow will submit to the MDEQ for review and approval, or approval with modifications, a proposal which identifies the area for the distribution of information and educational material outside of the Priority 1 areas. The approved area will be used to develop the mailing list for the distribution of the public information materials as described in Section 2.2.

2.2 Prioritization for Interim Response Activities and Interim Response Activities Mitigation Decision Matrix

The primary objective of this IRA is to identify and mitigate potential human exposure to dioxins and furans that have been or may be found in soils prior to commencement of final response activities by Dow in accordance with an MDEQ approved Remedial Action Plan. Such final responses activities will be based on criteria established under Part 201 of Act 451.

This IRA bases the need for interim response activities to mitigate exposure on an ATSDR action level described as “*a concentration of dioxin in soil at which various actions may be considered to prevent or limit exposure.*” That ATSDR action level is 1,000 ppt TEQ. Unless established otherwise through sampling, properties identified on Attachment A are presumed to exceed this action level and are designated as Priority 1.

This initial IRA establishes mitigation options for Priority 1 properties to reduce exposure potential during the corrective action process before the final remedy is implemented.

Dow will offer the owner of Priority 1 properties the mitigation options identified in the Interim Response Activities Mitigation Decision Matrix in Section 2.2.1. For example, a Priority 1 property will receive educational materials and outreach, temporary exposure barriers for exposed or poorly covered areas used by the resident, and house cleaning adequate to remove contamination, as well as other reasonable mitigation measures identified and agreed to by the property owner(s) based on their uses of the property. Mitigation measures will be monitored and maintained or restored to provide continuing prevention or barrier to exposure. The process by which these options will be presented and implemented is described in Section 2.3. This process will be completed by December 31, 2005.

Dow has the option to offer to implement presumptive final remedies in lieu of the interim response activities described herein. The implementation of any presumptive final remedy will require the prior approval of the MDEQ and of the property owner. Examples of possible presumptive remedies that Dow has the option to offer include affecting a change of use of the property so that the use is no longer residential and excavation and removal of contaminated soil.

2.2.1 Interim Response Activities Mitigation Decision Matrix

The Interim Response Activities Mitigation Decision Matrix shown in Table 1 provides a description of the Priority 1 exposure category and the corresponding range of Mitigation Options.

TABLE 1

Interim Response Activities Mitigation Decision Matrix The Dow Chemical Company

Exposure Category	Exposure Category Description	Mitigation Options
<p>Priority 1</p> <p>Property presumed or determined to be impacted over 1,000 ppt TEQ proximate to a residence.</p> <p>Those residential properties identified through the above process as identified on Attachment A or those residential properties where it is otherwise known or comes to be known that the ATSDR action level is exceeded in soils proximate to the residence.</p>	<p>Residential use, dioxin and furan concentrations in surface soil (0 to 1 inch and/or 0 to 8 inches for garden areas) above 1,000 ppt TEQ. Residential use includes properties with exposure potential that is similar to residential (e.g., schools, child care facilities, nursing homes, adult day care facilities).</p>	<p>Mitigation options to be offered to the property owner(s):</p> <ul style="list-style-type: none"> • Education and outreach • Provide temporary exposure barriers for exposed or poorly covered areas used by the owner : <ul style="list-style-type: none"> ○ Cover (e.g., sod, soil, raised garden bed, raised area, paving, mulch) ○ Augment existing cover ○ Provide paving or cover at entryways to minimize track in of contaminated soils. • House cleaning, including cleaning of carpeting , interior ductwork, and other surfaces where contaminants may potentially accumulate • Identification of affected areas (via sampling) by means agreeable to resident [e.g., flagging, marked aerial photographs]) • Monitoring, maintenance and restoration of mitigation measures as necessary. • Other reasonable mitigation measures identified and agreed to by property owner(s) based on their uses of the property.

2.2.2 Explanation of Selected Mitigation Options

Several of the mitigation options cited in Table 1 above are further explained as follows:

- House cleaning would be performed for residential properties where surface soils are presumed or were found to have dioxins and furans at concentrations greater than the ATSDR action level of 1,000 ppt TEQ in areas immediately adjacent to the house or other areas and conditions likely to result in transport of contaminants into the house. Cleaning would focus on the interior of the house and would include cleaning of surfaces where contaminants may potentially accumulate (e.g., carpets, duct work) and replacing furnace filters.

- Mitigation activities involving a cover could include, for example, placing clean topsoil sod, plastic, geotextile, or mulch, in garden, plan, or recreational areas. Another mitigation option could involve the relocation or raising garden beds. The purpose of an exposure barrier is to prevent or limit direct exposure to, and movement of, contaminated materials. Other types of exposure barriers, not identified above, may be proposed.
- The approximate area where sampling results indicate that dioxins and furans may exceed the ATSDR action level may be identified. Identification for purposes of limiting exposure may be made using flags, demarcation on a map or photo, stakes, fencing or other practical methods, based on Dow's agreement with the individual owners. Where there is or may be elevated levels of contamination at depth, the property owners will be notified that disturbance of those soils at depth will likely increase exposure.
- Periodic monitoring is necessary to verify the continued effectiveness of any implemented mitigation. The type and frequency of monitoring will be included as a component of the property-specific IRA, as documented in Section 2.7, Completion Report. Mitigation measures will be maintained and/or restored for continued effectiveness.
- Dow will periodically reassess the adequacy of mitigation measures based on maintenance needs and changes in use/occupancy.

2.3 Property Owner Contact

The objective of contacting property owners in the estimated geographical area that may exceed the Part 201 residential direct contact criterion and the owners of the Priority 1 properties is to provide them with educational information designed to limit their potential exposure to contaminated soils and, in the case of the Priority 1 property owners, to use "best efforts" to obtain participation in the Interim Response Activity process. Educational materials will be mailed to the residents affected by this IRA on the schedule identified in Section 3. The proposed mailing packages will be provided to the MDEQ for review and approval prior to distribution in accordance with the Schedule identified in Section 3.

The mailing to Priority 1 property owners will include a cover letter describing the purpose of the mailing which will include a description of the overall IRA process, a copy of the MDEQ approved IRA (or the location where a copy of the IRA can be conveniently obtained), the name, telephone number, and e-mail address of the MDEQ contact person for this IRA activity, and a summary of sampling results collected to date (if any) for the particular property. Copies of applicable educational materials already developed by the MDEQ, Michigan Department of Community Health, or Michigan Department of Agriculture, and/or developed as part of the Communications IRA will be included in the mailing, as available.

In the cover letter, Dow will request that the property owner contact Dow to confirm receipt of the materials and indicate their willingness to participate in the IRA or, if they choose not to participate, to indicate the reason(s) for their refusal. To the extent Dow is able to obtain telephone numbers for individual property owners, Dow will also attempt to follow the mailing with a telephone call. Dow will post on a secure website a copy of the cover letter to the MDEQ on these initial mailings so the Agency has a record of the initial contact.

If the owner elects to participate:

- Dow will arrange to meet with the owner to discuss the use of the property, walk the property to observe the condition and physical characteristics, and develop an understanding of how the property is being used based on the information provided by the owner(s). The owner will be informed that the MDEQ may attend these meetings. Dow will provide notification (e.g., maintained on a web site accessible by the MDEQ) containing the name, address and times for each meeting as soon as the meeting is scheduled to the MDEQ for audit purposes. If possible, notification to the MDEQ will occur at least a week before the meeting between Dow and the owner.
- Within 14 days of the meeting, Dow will provide the owners and post a copy for MDEQ a letter that summarizes the meeting and describes the agreed upon or proposes other future activities to mitigate potential exposure. Dow will offer vouchers to the property owner to obtain the services of service provider(s) who can implement the mitigation options identified in Interim Response Activities Mitigation Decision Matrix as appropriate for that property, at no cost to the owner.
- The property owner may agree to the proposed mitigation options and/or sampling activities or request an audit of the proposal by the MDEQ. Dow will implement the agreed-upon sample collection activities and/or mitigation options on a schedule convenient to the property owner.
- The MDEQ may audit proposed data collection activities and/or proposed or implemented mitigation options for any property to evaluate the need for further mitigation at any time. The MDEQ will consult the property owners and consult with Dow as part of that evaluation. If the MDEQ determines that the proposed or implemented mitigation options are not adequate, the MDEQ will notify Dow and the owner in writing, the basis why the proposed options are inadequate. Dow will respond to MDEQ and owner within 14 days and propose further mitigation activities consistent with the IRA to address the notice of inadequacy.

2.4 Sampling

As discussed elsewhere in this IRA, Dow must undertake activities at Priority 1 properties based upon a presumption that the Priority 1 properties identified on Attachment A have soil concentrations that exceed the ATSDR action level on the Schedule contained in Section 3, unless Dow demonstrates through sampling and/or other information that actual soil concentrations in the identified areas do not exceed the ATSDR action level. If Dow elects to use sampling to make such a demonstration:

- Sampling shall be done in accordance with an MDEQ approved SAP as further described in Attachment B.
- Dow will negotiate and seek to execute an Access Agreement with the property owner that allows Dow or their representatives to enter the property to observe site conditions and perform sampling.
- The owner(s) will be informed that the MDEQ may attend and may collect audit samples.

- Dow will discuss with the property owner what type of sampling may be appropriate for the property. Dow and the property owner will identify sample locations and finalize necessary access agreements.
- Within 14 days of the meeting, Dow will provide the owners and the MDEQ with a letter that summarizes the meeting and proposes future activities to mitigate potential exposure and/or a proposed SAP, a schedule for sampling and/or other activities, as appropriate, and other information as requested by the owner or resident. Upon agreement by the owner and contingent on MDEQ approval of the SAP, Dow will implement the agreed-upon sample collection activities and/or mitigation options on a schedule convenient to the owner.
- The MDEQ may audit proposed data collection activities and/or proposed or implemented mitigation options for any property to evaluate the need for further mitigation at any time. The MDEQ will consult the property owners and consult with Dow as part of that evaluation. If the MDEQ determines that the proposed or implemented mitigation options are not adequate, the MDEQ will notify Dow and the property owner in writing why the measures are inadequate and will require Dow to propose and conduct further mitigation to adequately reduce or limit exposure on a schedule specified in the notification.
- If the analytical results indicate that no immediate exposure mitigation activities are indicated (as described in Section 2.2), Dow will send the owner and the MDEQ a letter proposing “no action at this time” and the rationale for that proposal.
- The MDEQ may audit proposals for no action for any property to evaluate the need for exposure controls at any time. The MDEQ has the option to approve or deny the proposal in consultation with the owner or resident and in consultation with Dow. If the “no action at this time” proposal is denied, the MDEQ will specify the reasons for denial in writing to Dow and the property owner and will require Dow to conduct further sampling and/or mitigation to reduce or limit exposure on a schedule specified in the notification.
- Dow will periodically reassess the adequacy of “no action at this time” determination with respect to changes in property use or occupancy.

2.5 Best Efforts

If the owner initially elects not to participate in the IRA, Dow will use reasonable “best efforts” to work with the property owners to obtain a property access agreement and/or secure agreement on appropriate exposure mitigation measures. If the owner still declines to participate in the IRA, Dow will document the specific reason(s) for refusal and the “best efforts” that Dow made to gain site access and obtain agreement on appropriate exposure mitigation activities for purposes of implementing the IRA.

Dow will notify the MDEQ of the refusal and provide the above noted documentation to the MDEQ within 14 days of the refusal. The MDEQ, in consultation with the property owners, and separately with Dow, has the option to determine if reasonable “best efforts” were used pursuant to R 299.9629(2). If MDEQ decides to undertake this evaluation, following its evaluation, the MDEQ may require Dow to conduct further efforts to obtain agreement on the implementation

appropriate exposure mitigation activities or determine that no further efforts by Dow are necessary. MDEQ's determination will be provided, in writing, to Dow and to the owner within 30 days of MDEQ's receiving the initial documentation of an owner's refusal to participate in this IRA.

Dow is not obligated to offer any compensation to an owner, or to seek a court order, for access to the owner's property in order to fulfill its obligations to implement this IRA.

If Dow is unable to obtain any response to the initial mailing, a follow up attempt at a telephone contact and a follow up visit to the residence, then Dow will document its best efforts to encourage an owner's participation in this IRA.

2.6 Implementation of Mitigation Options

Upon property owner agreement and contingent upon any necessary MDEQ approvals, Dow will implement any mitigation measures determined to be necessary, as described in Sections 2.2 and 2.3 of this IRA, on a schedule that is agreeable to the property owner. The mitigation measures will be implemented as soon as practicable to begin reducing exposures at the IRA properties, and shall be completed as described in Section 2.2.

2.7 Completion Reports

Dow will send a letter to each owner describing the mitigation provided, documenting any analytical results, and confirming that the mitigation options have been completed. These letters will be sent to owners, with a copy posted for MDEQ, within two weeks of completion of the mitigation measures at the subject property. The MDEQ may choose to audit at any time, in consultation with the property owner, to determine if further mitigation measures are required.

A Summary Completion Report will be submitted by Dow, consistent with the schedule identified in Section 3, that identifies each property included in the implementation of this IRA, all sampling results, mitigation activities completed, and any recommendations for further mitigation measures to further reduce exposures.

Dow will provide paper copies of the following documents to MDEQ, on a quarterly basis that have not previously been provided to MDEQ in paper copy:

- 1) Initial mailings to Priority 1 property owners;
- 2) All "best efforts" documentation;
- 3) Copy of letter describing initial meeting and the results of that meeting (e.g., agreed to mitigation/sampling/will not participate, etc);
- 4) Any proposed Sampling and Analysis Plans;
- 5) Any determination of "no action at this time" and basis; and
- 6) Individual property IRA Completion Reports.

3. Schedule

The schedule for the implementation of this IRA is detailed in Attachment C.

4. Contacts

The following individuals will be available to provide information on IRA activities throughout the process.

4.1 Dow

Ben Baker – Senior Environmental Project Leader
The Dow Chemical Company
47 Building
Midland, Michigan 48667
Telephone: 989-636-0787

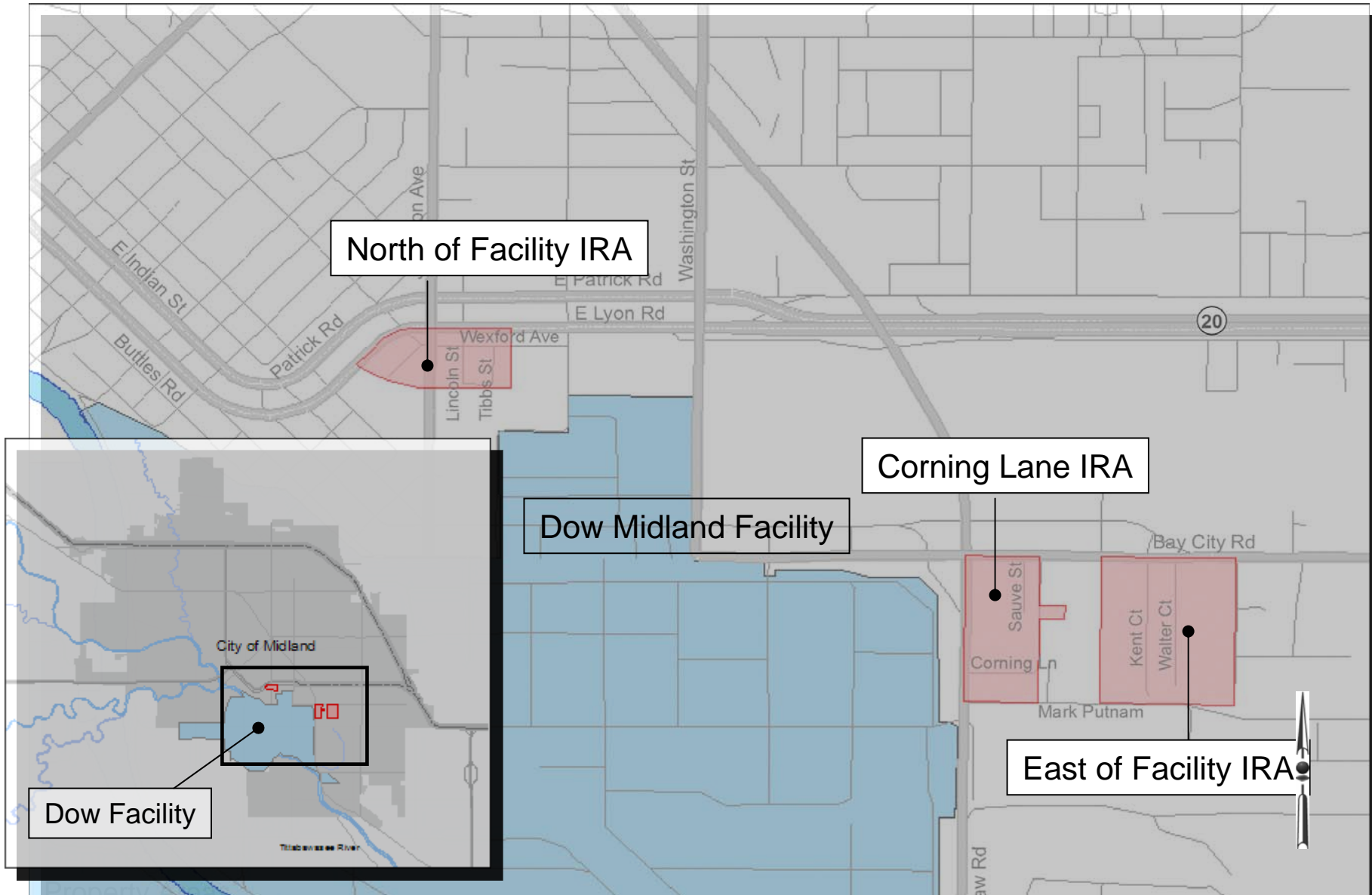
4.2 MDEQ

Allan Taylor, Senior Geologist
Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
P.O. Box 30241
Lansing, MI 48909-7741
Telephone: 517-335-4799

Cheryl Howe, Senior Environmental Engineer
Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
P.O. Box 30241
Lansing, MI 48909-7741
Telephone: 517-373-9881

Attachment A

Map Depicting Priority 1 Property Area



ATTACHMENT B

SAMPLING AND ANALYSIS PLAN

If Dow elects to collect environmental samples, Dow will develop and submit a proposed Sampling and Analysis Plan (SAP) to MDEQ for review and approval. Dow will evaluate the data according to the Prioritization for Interim Response Activities outlined in Section 2.2, determine the prioritized Exposure Category(ies), and propose the corresponding Mitigation Options to the property owners as outlined in the Interim Response Activities Mitigation Decision Matrix in Table 1 and as otherwise described in this IRA.

The proposed SAP will consider existing MDEQ and other relevant information to identify the areas that require the collection of additional data ("sampling area[s]"). The sampling area(s) will be established to determine whether sampling and analytical data taken at certain points could be considered reasonably representative of conditions within the area. The sampling area(s) may be a single parcel or a group of properties if the group were found to be similar in elevation, topography, physical characteristics, proximity to the river, historical flooding, etc.

The primary objectives of sampling activities must be identified in the proposed SAP. In addition, the proposed SAP must identify how the primary objectives will be met by the proposed sampling and analytical activities. If Dow intends for IRA data to be useful for future RI and IRA work, the IRA SAPs will be developed in a manner to ensure that data are consistent, of the same quality, and can all be considered as part of the RI evaluation. This could include analysis for other PCOLs, physical properties of soils, better delineation of floodplain boundaries on properties, evidence of past sediment deposition, and other information that will be incorporated into the RI. If the proposed IRA SAP sampling does not comprehensively characterize site conditions at a specific sampling area, additional work will be conducted as part of the RI process to satisfy the requirements of R 299.5528 for that sampling area.

An additional objective of the IRA sampling plans may be to obtain information that can be used to establish an SSCC. If Dow chooses to pursue an SSCC, the purpose, sampling design, rationale, and details for the collection of data proposed for use in the development of the SSCC will be proposed in a separate SSCC SAP that will be submitted for MDEQ review and approval prior to implementation. The implementation of location-specific mitigation activities is not contingent on and will not be delayed by the need to gain MDEQ approval of the SSCC component(s) of the proposed SAPs.

Sampling and Analysis Plan Content

Core Program Plans and Standard Operating Procedures (SOPs) have been developed by Dow and will be used for all sampling performed as part of the Offsite Corrective Action Work. Core Program Plans such as the Health and Safety Plan and the Quality Assurance Project Plan (QAPP) will be incorporated into the IRA plans by reference, as will applicable SOPs to describe specific methodologies and protocols for sampling and analytical work. These documents were provided to the MDEQ in April 2004 for review

The individual SAPs for the IRAs will be prepared to support the overall RI objectives and strategies where possible. These SAPs will provide the specific details associated with field sampling efforts, and will include:

- A clear and concise statement of study objective(s) including statement of the hypothesis(es) to be tested (Sampling event objective[s]).
- A description of the population(s) to be sampled.
- A description of the proposed approach to sampling, to ensure that representative data sets are collected (note that approaches are anticipated to include a combination of biased/judgmental and statistical methodologies).
- A description of the intended uses for the data and of the necessary level of precision and accuracy for these intended uses (Data Quality Objectives [DQOs]).
- A description of the rationale used to ensure that the data accurately represent a characteristic of a population, or an environmental condition (e.g., sampling objective). Examples of factors which will be considered and discussed include:
 - Explanation of sampling strategy and objectives (e.g., biased or random)
 - Identification of factors that influence the nature and extent of contamination
 - Identification of and justification for using bias(es) in selecting sampling locations
 - Justification for the number of sampling points
 - Samples will be evaluated to determine if they are representative of selected media as described in the SAP.
 - Sampling locations (figure with locations shown on a GIS aerial photo base map)
 - Sample details (a matrix indicating media, sampling interval, and analytes)
 - Analyte lists which may include the PCOLs identified to date as part of the development of the Current Conditions Report
 - Basis for selected analytical parameters
 - Environmental conditions at the time of sampling

Field Sampling and Analytical Work

Dow will be sending property owners notifications and mailings, obtaining property access agreements, assembling field crews, and obtaining utility clearances and any permits associated with the proposed field work. Dow will initiate field sampling activities upon MDEQ approval of the SAP(s).

Dow will develop and implement a mechanism to provide notification to the MDEQ of the field activities associated with all SAPs. This mechanism will provide both MDEQ and the property owners with 14 days notice prior to implementation of the SAPs on the proposed sampling date(s), if possible. Sampling will be conducted at a time convenient to the property owners.

Data Evaluation and Reporting

Once sampling and analysis have been completed for an IRA, the following tasks will be performed:

- Analytical data will be submitted to the MDEQ (via posting on the e-Project site) and a paper copy to the property owner(s) and/or residents within 60 days of sample collection unless otherwise approved in the SAP. Data validation to ensure appropriate quality assurance and quality control (QA/QC) and to check that DQOs were met will be performed during this period. A paper copy of the analytical data will be submitted to the MDEQ as part of the Completion Report described in Section 2.7 of the IRA.
- Dow will evaluate the data according to the Prioritization for IRAs outlined in Section 2.2 below, determine the prioritized Exposure Category(ies) and propose the corresponding Mitigation Options to the property owners as outlined in the Interim Response Activities Mitigation Decision Matrix in Table 1 and as otherwise described in this IRA.

Review and Approval of Proposed Sampling and Analysis Plans

The proposed SAP(s) will be submitted to the MDEQ at least 30 days prior to the proposed collection of samples. Field approvals to individual SAPs may be conducted as necessary to avoid delays in the IRA process.

The MDEQ will approve, modify and approve, or disapprove the SAP, or provide a written Notice of Deficiency on the SAP. Dow shall modify the SAP in accordance with or based on the resolution of the Notice of Deficiency and submit a new SAP or revisions to the SAP to the MDEQ within 14 days after receipt of the Notice of Deficiency.

Dow will implement the approved SAP in accordance with the schedule contained in the approved SAP.

Attachment C
General Mailing Schedule

Item	Milestone	Required Completion Date	MDEQ Review Requirements
1	Submit proposed mailing package to MDEQ.	Within 60 days of MDEQ approval of the IRA.	Must be submitted to MDEQ for review. Requires MDEQ approval prior to mailing.
2	Distribute MDEQ approved mailing package to all potentially affected Midland residents.	Within 30 days of MDEQ approval of the mailing package.	Provide list of package recipients.

Attachment C
Priority 1 Schedule

Item	Milestone	Required Completion Date	MDEQ Review Requirements
1	Initiate Priority 1 mitigation activities for properties identified in Attachment A.	By December 31, 2005. For Priority 1 properties, initiation of mitigation activities will begin immediately upon approval of the IRA.	MDEQ will conduct audit(s) of Dow interim mitigation activities.
2	Submit proposed mailing package to MDEQ.	Within 14 days of MDEQ approval of the IRA.	Must be submitted to MDEQ for review. Requires MDEQ approval.
3	Distribute MDEQ approved mailing package to list of property owners.	Within 14 days of MDEQ approval of mailing package.	Copy MDEQ on cover letter.
4	Begin contacting property owners/ occupants to schedule initial visits and obtain any necessary site access agreements.	Within 30 days of MDEQ approval of mailing package.	Provide schedule of initial visits to MDEQ. MDEQ may participate in these meetings.
5	Submit a letter that summarizes the meeting and proposes future activities (e.g., SAP, sampling schedule, etc.) to the property owners and MDEQ.	Within 14 days of meeting with property owners and/or obtaining property access for implementation of the IRA.	Submit letters to MDEQ. MDEQ may audit.
6	If necessary, conduct "best efforts" to gain property access for sampling and/or mitigation.	If property access is refused for sampling and/or mitigation, submit to MDEQ documentation of "best efforts" to gain property access within 14 days of each refusal.	MDEQ may audit.
7	Implement any required mitigation measures.	Mitigation measures for all Priority 1 Properties, excluding monitoring and maintenance, must be completed by December 31, 2005.	MDEQ may audit.

Tittabawassee River Floodplain Interim Response Activities Work Plan

Prepared for
The Dow Chemical Company

Midland, Michigan

February 2004
Modified by the Michigan Department of Environmental Quality January 2005

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- E Schedule
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Acronyms and Abbreviations

ATSDR	Agency for Toxic Substances and Disease Registry
Dow	The Dow Chemical Company
DQO	Data Quality Objectives
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
IRA	Interim Response Activity
License	Dow's Part 111 Hazardous Waste Facility Operating License
MDEQ	Michigan Department of Environmental Quality
PCOI	Potential Contaminants of Interest
ppt	parts per trillion
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedures
SSCC	Site-specific Cleanup Criteria
TEQ	2,3,7,8-TCDD Toxic Equivalent

Tittabawassee River Floodplain Interim Response Activities Work Plan

1. Introduction

This document describes the overall scope and process Dow will use to perform Interim Response Activities (IRAs) for the Tittabawassee River Floodplain. This IRA is being performed pursuant to Condition XI.B.3.(a) of the Hazardous Waste Facility Operating License (License) issued to Dow on June 12, 2003, by the Michigan Department of Environmental Quality (MDEQ).

1.1 Overall IRA Objectives

IRAs are short-term actions that are taken to control ongoing risks while site characterization is underway and before a final remedy is implemented. Existing data indicates that property that floods frequently or was flooded during the March 2004 high water event is likely to be contaminated. A number of these properties are actively used for residential, agricultural, and recreational purposes. The primary objectives of this IRA are to identify and mitigate potential human exposure to dioxins and furans that have been or may be found in soils prior to implementation of final response activities. Priority for interim, short-term activities will be given to properties with residential use and soil concentrations that are known or presumed to exceed the Agency for Toxic Substances and Disease Registry (ATSDR) action level of 1,000 parts per trillion toxic equivalent (ppt TEQ). Initially, this will be determined by identifying those properties that flooded in March of 2004. Residential use includes properties with exposure potential that is similar to residential (e.g., schools, child care facilities, nursing homes, adult day care facilities). More specifically, this IRA will:

- Identify properties that are subject to flooding by the Tittabawassee River and are, therefore, likely to have elevated concentrations of chemicals of concern.
- Establish the priority for mitigating exposure to elevated concentrations of dioxins and furans.
- Establish the process by which the need for and range of interim response activities will be determined. This process will consider the potential for human exposure, based on the use of the property and known or potential contaminant concentrations.
- Identify a range of interim response activities for specific land uses that can be implemented immediately and are acceptable to the property owner, given property-specific conditions, or presumptively. Priority will be given to identification of properties with residential use that exceed or are presumed to exceed the ATSDR action level of 1,000 ppt.
- Implement the mitigation option(s) agreed to by the property owner/occupant [hereafter referred to individually and collectively as "owner"] to limit or prevent exposure to contaminants prior to the implementation of the final remedy.
- Implement exposure mitigation measures in response to flood events.

This IRA will evaluate properties along the Tittabawassee River from the upstream boundary of the Dow Midland Facility to the confluence with the Shiawassee River in Saginaw County, per Condition XI.B.3.(a) of the License.

Based on current sampling data, the MDEQ believes that properties subject to frequent flooding are those most likely to contain levels of dioxins and furans in soil above the ATSDR action level. Because it is considered to be indicative of a frequent flooding event (7- to 10-year flood), the March 2004 flooding is used to identify those properties that are presumed to contain levels of dioxins and furans above the ATSDR action level and hence the focus of interim response activities required by this IRA.

This IRA provides that Dow must undertake activities based upon the presumption described above unless Dow demonstrates through sampling and/or property use that soils in the identified areas do not require presumptive mitigation activities. Any soil sampling associated with this IRA will be conducted in accordance with a Sampling and Analysis Plan (SAP) that is reviewed and approved, or approved with modifications, by the MDEQ. This IRA provides that if information is obtained through such sampling, it may be used for development of site-specific cleanup criteria (SSCC), as well as the planning of future soil and sediment sampling activities to be conducted under the Remedial Investigation Work Plan (RIWP). This would be proposed in the IRA SAPs to be specifically developed and submitted to the MDEQ for review and approved for this purpose. Implementation of these IRAs will not be delayed due to any component(s) of the proposed SAPs related to the development of the SSCC. However, work plans to collect data related to the development of the SSCC must have MDEQ approval prior to implementation.

2. IRA Components and Prioritization for Interim Response Activities

The determination of interim response activities appropriate to reduce the potential human exposure to dioxins and furans associated with contaminated soils along the Tittabawassee River is based on the following questions:

1. What properties located along the river flood? Which properties are residential and which are agricultural, and what portion(s) of those properties flood?
2. What are the physical characteristics of the property? Is it wooded? Is there grass or other vegetative ground cover present that is substantive enough to act as a partial exposure barrier for activities conducted on that portion of the property?
3. Who occupies or frequents the property, how do they use it, and what portions of the property are actively used?
4. Where are dioxins and furans present or likely to be present at concentrations that require interim response prior to implementation of a comprehensive Remedial Investigation (RI)?

Interim response activities will be offered to property owners based upon responses to the above questions. The range of interim response activities is more fully described in Section 2.2, but may include, for example:

- Educational materials will be sent to all owners of property abutting the Tittabawassee River and/or that flooded during the March 2004 flood. These materials are being developed as part of the Communications IRA. In addition, these materials will also be

sent to owners of properties where it can be determined that the relocation of potentially contaminated soils from the Tittabawassee River floodplain to the property has occurred.

- Interior house cleaning, including carpets, duct work, or other surfaces where contaminated soil or dust may have come to reside.
 - Physical identification of potentially contaminated areas on the property that are known to flood.
 - Placement of interim cover materials.
- Other reasonable mitigation measures identified and agreed to by Dow and the property owner(s) based on their uses of the property.

The following sections outline the process for identifying interim response activities to mitigate exposure.

2.1 Identification of IRA Properties

A number of properties have been determined to be high priority (Priority 1 as described below in Section 2.2) for immediate response. These include properties on Riverside Boulevard that flood frequently and a number of other properties where MDEQ data show that soil concentrations above 1000 ppt. These properties are listed in Attachment A. Interim response activities for these properties will begin upon approval of this IRA. The interim response activities for these properties will be conducted in accordance with this document and the Schedule identified in Section 3. Interim response activities that will be conducted in response to flood events will be conducted in accordance with Attachment B.

2.1.1 Mapping

The primary objective of mapping is to obtain and compile existing mapping data, such as previous sample locations, topography, property ownership information, etc., for use in IRA and RI planning and implementation. The secondary objective of mapping is to identify all residential properties and agricultural properties that abut the Tittabawassee River and/or were flooded during the March 2004 flooding event.

Mapping activities have been underway since December 2003. Dow has obtained information regarding property ownership, current zoning designations, Federal Emergency Management Agency's (FEMA's) estimated floodplain boundaries, and aerial photographs, and this information has been incorporated into the Geographic Information System (GIS) database. MDEQ sampling data, aerial photographs of the March 2004 flooding event, and updated topographic information have also been, or will be, added to the GIS database.

The FEMA's estimated floodplain boundaries and the high water contour of the March 2004 flood event have been superimposed on property and zoning maps. This will allow:

- Preliminary identification of all properties that abut the river.
- Preliminary information on all properties that flooded during the March 2004 flooding event and are presumed to exceed the ATSDR action level.
- Preliminary information on those properties where waters of the March 2004 flood event inundated, surrounded or approached a building.

- Preliminary information regarding how much of the property is located within the estimated 100-year floodplain and the proximity of active or developed areas. Aerial photographs will be used to make an initial assessment of developed versus undeveloped areas based on the presence or absence of buildings, woods, cleared areas, etc.
- Preliminary identification of the current land use, based on zoning, property ownership, and review of aerial photographs.

This information has been reviewed with MDEQ and will be provided in electronic format (ArcGIS) within 14 days of approval of this IRA. Dow and MDEQ will jointly work to resolve any technical issues associated with electronic submittals of the mapping information.

The available mapping information has initially been used to identify those properties that were flooded during the March 2004 flooding event. Attachment A, is a list of those properties where waters of the March 2004 flood event inundated, surrounded, or approached the residence or other buildings, including properties on Riverside Boulevard and a number of other properties where MDEQ data show that soil concentrations exceed 1,000 ppt TEQ proximate to the residence.

2.2 Prioritization for Interim Response Activities and Interim Response Activities Mitigation Decision Matrix

The primary objective of this IRA is to identify and mitigate potential human exposure to dioxins and furans that have been or may be found in soils prior to commencement of final response activities by Dow in accordance with an MDEQ approved Remedial Action Plan. Such final responses activities will be based on criteria established under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

This IRA bases the need for interim response activities to mitigate exposure on an ATSDR action level described as *“a concentration of dioxin in soil at which various actions may be considered to prevent or limit exposure.”* That ATSDR action level is 1,000 ppt TEQ. Unless established otherwise through sampling, properties flooded by the March 2004 flood event are presumed to exceed this action level. Accordingly, this IRA establishes the following priorities for interim response activities:

Priority 1: Those residential properties identified through the above process where waters of the March 2004 flood event inundated, surrounded or approached the residence and those residential properties where it is otherwise known that the ATSDR action level is exceeded in soils proximate to the residence. In addition, non-frequently flooded residential properties where analytical data collected proximate to the residence indicates that the ATSDR action level is exceeded, will be addressed as Priority 1.

Priority 2: Any property 1) flooded by the March 2004 flood event, or 2) where it is otherwise known that the ATSDR action level is exceeded in soils not proximate to the residence, or 3) where it becomes known that the ATSDR action level is exceeded before completion of the final remedy, or 4) occupied by a sensitive individual (children and women of child-bearing age) where it is known or becomes known that dioxin levels in the soil approach the ATSDR action level. Dow shall propose a soil contaminant level to be used for this purpose in the RI Work Plan and employ the level as approved by the MDEQ.

This IRA establishes mitigation options to reduce exposure potential during the corrective action process before the final remedy is implemented.

Dow will offer the owner of Priority 1 properties the mitigation options identified in the Interim Response Activities Mitigation Decision Matrix in Section 2.2.1. For example, a Priority 1 property will receive educational materials and outreach, temporary exposure barriers for exposed or poorly covered areas used by the resident, and house cleaning adequate to remove contamination, as well as removal of water and deposited sediment and soil after subsequent flooding events. Mitigation measures will be monitored and maintained or restored to provide continuing prevention or barrier to exposure. The process by which these options will be presented and implemented is described in Section 2.3.1. This process will be completed by December 31, 2005.

Except as described below, Dow will offer owners of Priority 2 properties the mitigation options identified in the Interim Response Activities Mitigation Decision Matrix in Section 2.2.1 based on the use of the property and the potential for exposure to presumed or known concentrations of dioxin in soil. The process by which these options are presented and implemented is described in Section 2.3.2. This process will begin no later than January 1, 2006 and will be completed, for Priority 2 properties known as of that date, by December 31, 2006. For Priority 2 properties identified after that date, this process will be completed within 180 days of identification. Dow may seek a modification of the schedule based on weather and other conditions beyond its control.

The IRA activities for Priority 2 properties will occur as described herein unless an alternative IRA is proposed by Dow and approved by the MDEQ. Dow may propose at any time an alternative IRA for Priority 2 properties. That alternative IRA may, for example, provide alternative means of addressing exposures risks on Priority 2 properties and/or an alternative schedule setting priorities among the different categories of Priority 2 properties.

Dow has the option to offer to implement presumptive final remedies in lieu of the interim response activities described herein. The implementation of any presumptive final remedy will require the prior approval of the MDEQ and of the property owner. Examples of possible presumptive remedies that Dow has the option to offer include affecting a change of use of the property so that the use is no longer residential; and excavation and removal of contaminated soil.

2.2.1 Interim Response Activities Mitigation Decision Matrix

The Interim Response Activities Mitigation Decision Matrix shown in Table 1 provides a description of two prioritized Exposure Categories with a corresponding range of Mitigation Options.

TABLE 1

Interim Response Activities Mitigation Decision Matrix The Dow Chemical Company

Exposure Category	Exposure Category Description	Mitigation Options
<p>Priority 1</p> <p>Property presumed or determined to be impacted over 1,000 ppt TEQ proximate to a residence.</p> <p>Those residential properties identified through the above process where waters of the March 2004 flood event inundated, surrounded or approached the residence and those residential properties where it is otherwise known that the ATSDR action level is exceeded in soils proximate to the residence.</p>	<p>Residential use, dioxin and furan concentrations in surface soil (0 to 1 inch and/or 0 to 8 inches for garden areas) above 1,000 ppt TEQ. Residential use includes properties with exposure potential that is similar to residential (e.g., schools, child care facilities, nursing homes, adult day care facilities).</p>	<p>Mitigation options to be offered to the property owner(s):</p> <ul style="list-style-type: none"> • Education and outreach • Provide temporary exposure barriers for exposed or poorly covered areas used by the owner : <ul style="list-style-type: none"> ○ Cover (e.g., sod, soil, raised garden bed, raised area, paving, mulch) ○ Augment existing cover ○ Provide paving or cover at entryways to minimize track-in of contaminated soils. • House cleaning, including cleaning of carpeting , interior ductwork, and other surfaces where contaminants may potentially accumulate • Identification of affected areas (known through sampling and or identification of flooding) by means agreeable to resident [e.g., flagging, marked aerial photographs]) • Monitoring, maintenance, and restoration of mitigation measures as necessary. • Removal of water and deposited sediment and soil after flooding events • Other reasonable mitigation measures identified and agreed to by property owner(s) based on their uses of the property

Exposure Category	Exposure Category Description	Mitigation Options
Priority 2 Any non-Priority 1 property flooded by the March 2004 flood event, or any property where it is otherwise known that the ATSDR action level is exceeded in soils not proximate to the residence, or any property where it becomes known that the ATSDR action level is exceeded before commencement of the final remedy or any property occupied by a sensitive individual (children and women of child-bearing age) where it is known or becomes known that dioxin levels in the soil approach the ATSDR action level.	Residential or other use, with lower potential for routine or prolonged direct contact with soils, dioxin and furan concentrations in surface soil greater than 1,000 ppt TEQ because of the location of the contaminated soils and/or the use of the property. Residential use by sensitive individuals at soil concentrations approaching 1,000 ppt TEQ.	As described below for use categories. Use categories will be determined through the process identified in Section 2.3.2.

Exposure Category	Exposure Category Description	Mitigation Options
	Residential use	<p>Mitigation options to be offered to the property owner(s):</p> <p>Education and outreach</p> <p>Additional mitigation options that may be considered:</p> <ul style="list-style-type: none"> <li>• Identify affected areas (through sampling and demarcation [e.g., flagging]) <li>• Provide temporary exposure barriers as described for Priority 1 <li>• House cleaning as described for Priority 1 <li>• Other reasonable mitigation measures identified and agreed to by property owner(s) based on their uses of the property <li>• Monitoring, maintenance and restoration of mitigation measures as necessary.

Exposure Category	Exposure Category Description	Mitigation Options
	Agricultural use	<p>Required mitigation options:</p> <ul style="list-style-type: none"> • Notification to owner that property is or may be contaminated. • Notification of activities that can reduce dioxin exposure from crops, and for persons farming the affected property and neighbors. <p>Additional mitigation options that may be considered:</p> <ul style="list-style-type: none"> • Identify affected areas through sampling and demarcation (e.g., flagging). • Remove contaminated property from agricultural operations. • Other reasonable mitigation measures identified and agreed to by owner.

Exposure Category	Exposure Category Description	Mitigation Options
	Recreational use (if not addressed in a separate IRA).	<p>Required mitigation options:</p> <ul style="list-style-type: none"> • Education and outreach • Provide for appropriate signage <p>Additional mitigation options that may be considered:</p> <ul style="list-style-type: none"> • Identify affected areas (through sampling and demarcation [e.g., flagging]) • Remove area from use (e.g., fencing) or limit use • Provide temporary exposure barriers as described in Priority 1 • Other reasonable mitigation measures identified and agreed to by property owner(s), based on their uses of the property • Monitoring to evaluate effectiveness, as appropriate, based on selected mitigation measure(s) • Provide additional information and educational materials, as appropriate.

2.2.2 Explanation of Selected Mitigation Options

Several of the mitigation options cited in Table 1 above are further explained as follows:

- House cleaning would be performed for residential properties where surface soils are presumed or were found to have dioxins and furans at concentrations greater than the ATSDR action level of 1,000 ppt TEQ in areas immediately adjacent to the house or other areas and conditions likely to result in transport of contaminants into the house. Cleaning would focus on the interior of the house and would include cleaning of surfaces where contaminants may potentially accumulate (e.g., carpets, duct work) and replacing furnace filters.
- Mitigation activities involving a cover could include, for example, placing clean topsoil, sod, plastic, geotextile, or mulch in garden, play, or recreational areas. Another mitigation option could involve the relocation or raising of the garden beds. The purpose of an exposure barrier is to prevent or limit direct exposure to, and movement of, contaminated materials. Other types of exposure barriers, not identified above, may be proposed.
- The approximate area where sampling results or flooding indicate that dioxins and furans may exceed ATSDR action level may be identified. Identification for purposes of limiting exposure may be made using flags, demarcation on a map or photo, stakes, fencing, or other practical methods, based on Dow's agreement with the individual owners. Where there is or may be elevated levels of contamination at depth, the property owners will be notified that disturbance of those soils at depth will likely increase exposure.

- Periodic monitoring is necessary to verify the continued effectiveness of any implemented mitigation. The type and frequency of monitoring will be included as a component of the property-specific IRA, as documented in Section 2.7, Completion Report. Specific monitoring may be necessary in response to events such as flooding to determine if the existing mitigation measures continue to be adequate. Mitigation measures will be maintained and/or restored for continued effectiveness.
- Dow will periodically reassess the adequacy of mitigation measures based on maintenance needs and changes in use/occupancy.

2.3 Property Owner Contact

The objective of contacting the owners of the IRA Properties is to provide them with educational information designed to limit their potential exposure to contaminated soils and to use “best efforts” to obtain participation in the IRA process, and, for Priority 2 properties, obtain additional information about current land use and activity(ies) so that their appropriate mitigation measures can be identified, offered, and implemented. Educational materials will be provided to all Tittabawassee River Floodplain residents downstream of the Dow dam on the Schedule identified in Section 3. The proposed mailing packages will be provided to the MDEQ for review and approval prior to distribution in accordance with the Schedule identified in Section 3.

2.3.1 Priority 1 Properties

The first step is to send a mailing to property owners that are subject to this IRA. The mailing will include a cover letter describing the purpose of the mailing which will include a description of the overall IRA process, a copy of the MDEQ approved IRA (or the location where a copy of the IRA can be conveniently obtained), the name, telephone number, and e-mail address of the MDEQ contact person for this IRA activity, and a summary of sampling results collected to date (if any) for the particular property. Copies of applicable educational materials already developed by the MDEQ, Michigan Department of Community Health, or Michigan Department of Agriculture, and/or developed as part of the Communications IRA will be included in the mailing, as available.

In the cover letter, Dow will request that the owner contact Dow to confirm receipt of the materials and indicate their willingness to participate in the IRA or, if they choose not to participate, to indicate the reason(s) for their refusal. To the extent Dow is able to obtain telephone numbers for individual property owners, Dow will also attempt to follow the mailing with a telephone call. Dow will post on a secure website a copy of the cover letter to the MDEQ on these initial mailings so the Agency has a record of the initial contact.

If the owner elects to participate:

- Dow will arrange to meet with the owner to discuss the use of the property, walk the property to observe the condition and physical characteristics, and develop an understanding of how the property is being used based on the information provided by the owner(s). The owner will be informed that the MDEQ may attend these meetings. Dow will provide notification (e.g., maintained on a web site accessible by the MDEQ) containing the name, address, and times for each meeting as soon as the meeting is scheduled to the MDEQ for audit purposes. If possible, notification to the MDEQ should be at least a week before the meeting between Dow and the owner.
- Within 14 days of the meeting, Dow will provide the owners a letter that summarizes the meeting and describes the agreed upon or proposed future activities to mitigate

- potential exposure. The letter will be posted on the secure web site. Dow will offer vouchers to the property owner to obtain the services of a service provider who can implement the mitigation options identified in Interim Response Activities Mitigation Decision Matrix as appropriate for that property, at no cost to the owner.
- The property owner may agree to the proposed mitigation options and/or sampling activities or request an audit of the proposal by the MDEQ. Dow will implement the agreed-upon sample collection activities and/or mitigation options on a schedule convenient to the property owner.
- The MDEQ may audit proposed data collection activities and/or proposed or implemented mitigation options for any property to evaluate the need for further mitigation at any time. The MDEQ will consult with the property owners as part of that evaluation and MDEQ will separately consult with Dow. If the MDEQ determines that the proposed or implemented mitigation options are not adequate, the MDEQ will notify Dow and the property owner in writing why the measures are inadequate and will require Dow to propose and conduct further mitigation to adequately reduce or limit exposure on a schedule specified in the notification.

2.3.2 Priority 2 Properties

The process for notification of Priority 2 property owners and development of agreed upon mitigation measures is the same as that for Priority 1 properties. However, because the presumed exposure is less proximate to a residence, related to the presence of sensitive individuals, or not associated with a residential use, the use and occupancy of the property is more important for determining appropriate exposure mitigation measures for Priority 2 properties. Accordingly, in addition to the steps described for Priority 1 properties:

- Dow will include in the initial mailing to the property owner an Activity Survey as provided in Attachment C. Completion of the Activity Survey by the owner is voluntary. The Activity Survey will request basic information about the property and the people who use the property (such as age, frequency of use, history of flooding, etc.), how they use the property (gardening, recreation, outdoor eating, farming [raising crops and/or livestock], etc.), and the location of the various activities. The results of this Activity Survey or information gathered orally from the owner will be used in the initial meeting with the owner to discuss any necessary sampling and potentially appropriate exposure mitigation measures.
- If the results of the Activity Survey and meeting, and subsequent analytical results, if any, indicate that no exposure mitigation activities are necessary, (as described in Section 2.2), Dow will send the owner and the MDEQ a letter proposing “no further action at this time” and the rationale for that proposal.
- The property owner may request an audit of the “no action at this time” proposal by the MDEQ. At any time, the MDEQ may audit proposals for “no action at this time” for any property to evaluate the need for exposure controls. The MDEQ has the option to approve or deny the proposal in consultation with the owner and in consultation with Dow. If the “no action at this time” proposal is denied, the MDEQ will specify the reasons for denial in writing to Dow and the property owner and will require Dow to conduct further mitigation to reduce or limit exposure on a schedule specified in the notification.

- Dow will periodically reassess the adequacy of “no action at this time” determinations with respect to changes in property use or occupancy.

2.4 Sampling

As discussed elsewhere in this IRA, Dow must undertake activities at Priority 1 properties and/or Priority 2 properties based upon a presumption that frequently flooded properties have soil concentrations that exceed the ATSDR action level on the Schedule contained in Section 3 unless Dow demonstrates through sampling that actual soil concentrations in the identified areas do not exceed the ATSDR action level. If Dow elects to use sampling to make such a demonstration:

- Sampling shall be done in accordance with an MDEQ approved SAP that shall be consistent with Attachment D.
- Dow will negotiate and seek to execute an Access Agreement with the property owner that allows Dow or their representatives to enter the property to observe site conditions and perform sampling.
- The owner(s) will be informed that the MDEQ may attend and may collect audit samples.
- Dow will discuss with the owner what type of sampling may be appropriate for the property. Dow and the owner will identify sample locations and finalize necessary access agreements.
- Within 14 days of the meeting, Dow will provide the owners and the MDEQ with a letter that summarizes the meeting and proposes future activities to mitigate potential exposure and/or a proposed SAP, a schedule for sampling and/or other activities, as appropriate, and other information as requested by the owner or resident. Upon agreement by the property owner and contingent on MDEQ approval of the SAP, Dow will implement the agreed-upon sample collection activities and/or mitigation options on a schedule convenient to the owner and approved by the MDEQ.
- The MDEQ may audit proposed data collection activities and/or proposed or implemented mitigation options for any property to evaluate the need for further mitigation at any time. The MDEQ will consult the owners as part of that evaluation and will consult with Dow. If the MDEQ determines that the proposed or implemented mitigation options are not adequate, the MDEQ will notify Dow and the owner in writing why the measures are inadequate and will require Dow to propose and conduct further mitigation to adequately reduce or limit exposure on a schedule specified in the notification.
- If the results of the Activity Survey, meeting(s), and subsequent analytical results (if required) indicate that no immediate exposure mitigation activities are necessary (as described in Section 2.2), Dow will send the owner and the MDEQ a letter proposing “no action at this time” and the rationale for that proposal.
- The MDEQ may audit proposals for no action for any property to evaluate the need for exposure controls at any time. The MDEQ has the option to approve or deny the proposal in consultation with the owner or resident and in consultation with Dow. If the “no action at this time” proposal is denied, the MDEQ will specify the reasons for denial.

in writing to Dow and the property owner and will require Dow to conduct further sampling and/or mitigation to reduce or limit exposure on a schedule specified in the notification.

2.5 Best Efforts

If the owner initially elects not to participate in the IRA, Dow will use reasonable “best efforts” to work with the property owners to obtain a property access agreement, if necessary, and secure agreement on appropriate exposure mitigation measures. If the property owner still declines to participate in the IRA:

Dow will document the specific reason(s) for refusal and the “best efforts” that Dow made to gain site access and obtain agreement on appropriate exposure mitigation activities for purposes of implementing the IRA.

Dow will notify the MDEQ of the refusal and provide the above noted documentation to the MDEQ within 14 days of the refusal. The MDEQ, in consultation with the property owners, and separately with Dow, has the option to determine if reasonable “best efforts” were used pursuant to R 299.9629(2). If MDEQ decides to undertake this evaluation, following its evaluation, the MDEQ may require Dow to conduct further efforts to obtain agreement on the implementation appropriate exposure mitigation activities or determine that no further efforts by Dow are necessary. MDEQ's determination will be provided, in writing, to Dow and to the owner/occupant within 30 days of MDEQ's receiving the initial documentation of an owner/occupant's refusal to participate in this IRA.

Dow is not obligated to offer any compensation to an owner, or to seek a court order, for access to the owner's property in order to fulfill its obligations to implement this IRA.

If Dow is unable to obtain any response to the initial mailing, a follow up attempt at a telephone contact and a follow up visit to the residence, then Dow will document its best efforts to encourage an owner's participation in this IRA.

2.6 Implementation of Mitigation Options

Upon property owner agreement and contingent upon any necessary MDEQ approvals, Dow will implement any mitigation measures determined to be necessary, as described in Sections 2.2 and 2.3 of this IRA, on a schedule that is agreeable to the property owner. The mitigation measures will be implemented as soon as practicable to begin reducing exposures at the IRA properties, and shall be completed as described in Section 2.2 and Section 3.

2.7 Completion Reports

Dow will send a letter to each owner, describing the mitigation provided, documenting any analytical results, and confirming that the mitigation options have been completed. These letters will be sent to owners, with a copy posted for MDEQ, within two weeks of completion of the mitigation measures at the subject property. The MDEQ may choose to audit, in consultation with the property owner, to determine if further mitigation measures are required.

A Summary Completion Report will be submitted by Dow, consistent with the Schedule identified in Section 3 that identifies each property included in the implementation of this IRA, all sampling results, mitigation activities completed, and any recommendations for further mitigation measures to further reduce exposures.

Dow will provide paper copies of the following documents to MDEQ, on a quarterly basis, that have not previously been provided to MDEQ in paper copy:

- 1) Initial mailings to Priority 1 and 2 property owners;
- 2) All "best efforts" documentation;
- 3) Copy of letter describing initial meeting and the results of that meeting (e.g., agreed to mitigation/sampling/will not participate, etc.);
- 4) Any proposed Sampling and Analysis Plans;
- 5) Any determination of "no activity at this time" and basis; and
- 6) Individual property IRA Completion Reports.

3. Schedule

The schedule for the implementation of this IRA is detailed in Attachment E. Flow charts depicting the Priority 1 and Priority 2 processes are identified in Attachment F.

4. Contacts

The following individuals will be available to provide information on IRA activities throughout the process.

4.1 Dow

Ben Baker – Senior Environmental Project Leader
The Dow Chemical Company
47 Building
Midland, Michigan 48667
Telephone: 989-636-0787

4.2 MDEQ

Allan Taylor, Senior Geologist
Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
P.O. Box 30241
Lansing, MI 48909-7741
Telephone: 517-335-4799

Cheryl Howe, Senior Environmental Engineer

Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
P.O. Box 30241
Lansing, MI 48909-7741
Telephone: 517-373-9881

Attachment A

29-13-3-20-1018-000	29-13-3-21-2013-003	16-12-4-32-3009-000	28-12-4-30-2143-000	23-12-4-32-4030-000	23-12-3-11-4013-000
28-12-4-30-2140-000	29-13-3-20-1002-000	23-CONDOMINIUM	28-12-4-19-3002-000	23-12-4-32-4005-000	23-12-3-11-4015-000
23-12-3-02-3012-000	29-13-3-20-1019-000	23-CONDOMINIUM	19 0014A01900	23-12-4-32-2016-000	23-12-3-12-3507-000
28-12-3-24-1004-000	28-12-4-30-2137-000	23-12-3-12-3408-000	23-12-4-32-2012-000	23-12-4-32-4039-000	23-12-3-12-3506-000
29-13-3-21-4009-000	29-13-3-16-3027-000	23-12-4-32-2024-000	23-12-4-19-2008-000	23-12-4-32-4039-001	23-12-4-18-3002-000
28-12-4-30-3052-000	29-13-3-28-1002-002	16-11-4-05-2023-000	23-12-4-32-2168-000	23-12-4-32-4018-900	23-12-3-11-2001-000
28-12-4-30-3050-000	29-13-3-17-4002-002	16-11-4-05-2014-000	28-12-3-13-3010-000	29-13-3-16-3027-001	
28-12-4-30-3047-000	29-13-3-17-1020-000	23-12-3-02-2004-001		29-13-3-21-4006-000	
28-12-4-30-3045-000	29-13-3-07-1010-000	23-12-4-30-4106-000	29-13-3-34-2001-000	29-13-3-21-3006-000	
28-12-4-30-3010-000	29-13-3-07-2005-000	23-12-3-02-2014-000	19 0014A01800	28-12-3-14-1107-000	
28-12-4-30-3083-000	29-13-3-06-3007-000	23-12-4-19-2005-000	19 0014A03600	16-12-4-32-3008-000	
28-12-4-30-3007-000	29-13-3-27-2003-000	23-12-4-19-4023-000	19 0014A04000	23-12-3-02-2013-000	
23-12-4-18-3001-001	29-13-3-20-1001-001	23-12-4-30-4111-000	19 0014A02600	16-11-4-04-3014-000	
28-12-4-30-3006-000	28-12-3-14-1101-000	23-12-4-30-4110-000	19 0014A02400	16-11-4-04-3011-000	
28-12-4-30-2107-000	23-12-4-32-2017-000	23-12-4-30-4109-000	19 2259 00100	16-11-4-04-3010-000	
28-12-4-30-2106-000	28-12-4-30-2144-000	23-12-4-19-2003-000	19 0014A02300	16-11-4-04-3003-000	
28-12-4-30-2105-000	28-12-3-13-3003-013	23-12-4-30-4107-000	19 0014A01600	16-11-4-05-1012-000	
28-12-4-30-2103-000	28-12-3-13-3012-000	23-12-4-19-2002-000	19 0014A01300	19 2247 00100	
28-12-4-30-3009-000	29-13-3-28-1003-000	23-12-4-30-4105-000	19 0014A01200	16-12-4-32-3006-000	
23-12-4-32-4023-000	28-12-3-14-1102-000	23-12-4-30-4112-000	19 0014A00800	19 0014A00100	
23-12-4-32-2023-000	29-13-3-28-2007-000	23-12-4-30-4113-000	19 0014A00700	16-12-4-31-4006-006	
23-12-4-32-2019-000	28-12-3-10-1034-000	23-12-4-32-1018-000	19 0014A00101	16-11-4-04-3005-000	
23-12-4-32-2010-000	28-12-3-10-1033-000	23-12-4-32-1007-000	19 0014A02200	16-11-4-04-2005-001	
23-12-4-32-4007-000	28-12-3-10-1006-000	23-12-4-30-4108-000	19 0014A03100	23-12-3-02-3019-000	
23-12-4-32-4020-000	28-12-3-10-1022-000	23-12-3-11-2003-000	23-12-4-32-4018-000	23-12-3-02-3010-000	
23-12-4-32-4024-000	29-13-3-27-3005-000	23-12-3-02-2005-001	28-12-4-30-2142-000	23-12-4-19-2009-000	
28-12-4-30-3051-000	29-13-3-21-2022-000	23-12-3-02-2005-000	23-12-4-32-4034-000	23-12-3-11-2004-000	

Attachment B
Tittabawassee River Flood Response Support
Performance Based Interim Response Activity

I. Introduction

This describes the process that The Dow Chemical Company (Dow) will use to perform an Interim Response Activity (Activity) along the Tittabawassee River, if flooding of residential structures, recreational areas, and paved public roads occurs before a final remedy is implemented or other information becomes available which recommends that other actions or no actions are necessary to address soil and sediment movement caused by floods. This Activity is being performed pursuant to Condition XI.B.3(a) of the Hazardous Waste Facility Operating License (License) issued to Dow on June 12, 2003, by the Michigan Department of Environmental Quality (MDEQ).

This IRA incorporates a results-based approach and requires that Dow meet the performance criteria set forth herein and that Dow will comply with all applicable local, state and federal regulations, including Parts 111, Hazardous Waste Management, 115, Solid Waste Management, and 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), and the terms and conditions of the License.

II. Overall Activity Objectives

Interim Response Actions (IRAs), generally, are short-term actions that are taken to control ongoing risks while site characterization is underway, before a final remedy is implemented. The MDEQ has identified that flood events may deposit sediments and move soil into and near residential structures, recreational areas and onto paved public roads. These sediments and soils may contain dioxins and furans at levels above regulatory criteria which could result in an increased potential for exposure.

This Activity will assist the Saginaw and Midland County and other local officials and owner/occupants of residential structures to reduce the potential for exposure to sediments and soils after flooding.

The objectives of this IRAs are to:

- Mitigate human exposure to soils and sediments deposited on paved surfaces in recreational areas, on paved public roads, and in occupied residential structures caused by flooding of the Tittabawassee River.

The boundaries of the areas subject to this Activity are the boundaries of the March 2004 flood event, which was a 7- to 10-year flood, and as depicted in aerial photographs taken on March 8, 2004, for MDEQ.

This Activity will also include properties with an exposure potential that is similar to residential use (e.g., schools, child care facilities, nursing homes, adult day care facilities) that meet the criteria set forth herein.

III. Performance Requirements

A. Criteria

The Performance Criteria for this Activity are:

1. Dow will contract with at least two third party service providers who can provide the required service, if this Activity is triggered.
2. Establish communication plan so that the local health and emergency services departments and owner/occupants of homes subject to flooding can request this service.
3. Document support services provided in a summary report after every flood event that triggered the use of this Activity.

B. Mitigation Measures

Mitigation measures to be offered to residential home owners/occupants and to the government officials and implemented under this Activity include:

1. Removal of damaged carpet or furniture if requested by owner/occupant.
2. Owner/occupant would be responsible for disposal of items removed.
3. Interior house cleaning to remove deposited mud/sediments.
4. Removal of mud/sediment deposited on paved surfaces.
5. Removal of mud/sediment deposited on paved public roads

The mitigation measures being implemented under this Activity may be audited by the MDEQ at any time during their implementation.

IV. Implementation of Mitigation Options

A. Main Tasks

1. Third Party Service Providers

Dow will establish contracts with at least two service providers to provide flood support cleanup for residential properties.

2. Establish Procedures to Request/Document Service Provided

Dow will work with the Saginaw and Midland County health and emergency services departments as well as other local officials to develop procedures (including contacts and phone numbers) that can be used by owner/occupants whose residence(s) are flooded by the Tittabawassee River. These services will be made available through local government agencies.

3. Scheduling of Response Services

Through local governmental agencies, the owner/occupants will be able to schedule the level of flood support required for their property/situation at their convenience, with the service provider(s). Work performed under this IRA will be without cost to the residential owner/occupant or to the local government agencies.

B. Activity Implementation

Dow will contract with at least two providers of each of the services listed above. The contract will specify the scope of potential services, the timeframes within which the provider must respond to the local health or emergency services department and the owner/occupant and the types of documentation the providers must submit to Dow regarding actual work performed.

C. Assemble and Post Activity Logs

Dow will collect and review activity logs from each of the service providers to track work performed. This information will be assembled in a central record to document the work performed under this Activity and will be posted on a secure web site for access and audit by the MDEQ.

D. Prepare Performance Report

Dow will assemble the information necessary to document that the IRA work performed under this Activity has met the performance criteria cited above. A Performance Report will be provided to MDEQ within 30 days

of receipt of the documentation that all the requested work has been completed.

V. Demonstration of Meeting Performance Criteria

To demonstrate that Dow has met the performance criteria specified for this Activity, Dow will submit the following documentation to MDEQ in the form of a Performance Report:

- A. A table which documents the residential properties and paved public roads and park areas for which services were provided under this IRA.
- B. A table summarizing all measures implemented.

Schedule

Task	Timeframe
A. Establish Contracts with Third Party Service Providers	February 2005
B. Develop Process/Procedures with local agencies for implementation of flood response services	February 2005
C. Activity Implementation and Completion of Field Work as requested	As requested
D. Assemble and Post Activity Logs	Within 30 days of service provided being completed
E. Prepare Performance Report	Within 30 days of completing Task C

10. Is there is a basement at the residence? Yes No
What type of construction (e.g., poured, concrete block or Michigan basement)? _____
11. Describe any gardening or landscaping activities household members engage in? Where and how often?
Are garden or landscaped areas located in frequently flooded areas? Are any floodplain soils used for these activities (e.g., soil amendment)?

12. Is any livestock (e.g., chickens, rabbits, pigs) raised at the residence? Yes No
Does anyone eat animals or animal products raised here? Yes No
Where are the animals located (e.g., free ranging, pen or other enclosure)?

13. Is there river frontage on the property? Yes No
14. Do you use the river for recreation? What activities and how often? Yes No Frequency
Fishing _____
Wading _____
Swimming _____
Boating/canoeing _____
Other: _____

15. Are construction, renovation or landscaping projects planned in the near future at the residence? Yes No
Description of planned activities.

Please use the back of this form for any comments

Residence Information

Name: _____

Address: _____

Phone: _____

E-Mail: _____

Surveyor Information

Date: _____

Completed by: _____
Phone: _____
E-Mail: _____

Agricultural Use Form
Activity Survey

1. Is there a residence? Yes No

If yes, please also complete Residential Information Form Activity Survey also (enclosed)

2. Does any part of the property flood? What portions? How frequently?

3. Leased for agricultural use?

4. Any of the property in the CRP or CREP programs?

5. Current farming practices?

6. Current crops, rotations?

7. Are there residential properties near the agricultural operations?

8. Does the family eat any crops raised on the property?

9. Is any livestock (e.g., cattle, sheep, chickens, rabbits, pigs) raised on the property Yes No
Does anyone eat them? Yes No
Where are they located? _____
What are their feed sources? _____

10. Is there river frontage on the property? Yes No

11. Do you recreate in the river (e.g. fishing, wading, swimming, boating, and canoeing)? What activities and how often? Yes No

—

—

12. Are construction, renovation or landscaping projects planned in the near future at the property? Description of planned activities. Yes No

Please use the rest of form for any comments

ATTACHMENT D

SAMPLING AND ANALYSIS PLAN

If Dow elects to collect environmental samples, Dow will develop and submit a proposed Sampling and Analysis Plan (SAP) to MDEQ for review and approval. . Dow will evaluate the data according to the Prioritization for Interim Response Activities outlined in Section 2.2, determine the prioritized Exposure Category(ies) and propose the corresponding Mitigation Options to the property owners as outlined in the Interim Response Activities Mitigation Decision Matrix in Table 1 and as otherwise described in this IRA.

The proposed SAP will consider existing MDEQ and other relevant information to identify the areas that require the collection of additional data ("sampling area[s]"). The sampling area(s) will be established to determine whether sampling and analytical data taken at certain points could be considered reasonably representative of conditions within the area. The sampling area(s) may be a single parcel or a group of properties if the group were found to be similar in elevation, topography, physical characteristics, proximity to the river, historical flooding, etc.

The primary objectives of sampling activities must be identified in the proposed SAP. In addition, the proposed SAP must identify how the primary objectives will be met by the proposed sampling and analytical activities. If Dow intends for IRA data to be useful for future RI and IRA work, the IRA SAPs plans will be developed in a manner to ensure that data are consistent, of the same quality, and can all be considered as part of the RI evaluation. This could include analysis for other PCOLs, physical properties of soils, better delineation of floodplain boundaries on properties, evidence of past sediment deposition, and other information that will be incorporated into the RI. If the proposed IRA SAP sampling does not comprehensively characterize site conditions at a specific sampling area, additional work will be conducted as part of the RI process to satisfy the requirements of R 299.5528 for that sampling area.

An additional objective of the IRA sampling plans may be to obtain information that can be used to establish an SSCC. If Dow chooses to pursue an SSCC, the purpose, sampling design, rationale, and details for the collection of data proposed for use in the development of the SSCC will be proposed in a separate SSCC SAP that will be submitted for MDEQ review and approval prior to implementation. The implementation of location-specific mitigation activities is not contingent on and will not be delayed by the need to gain MDEQ approval of the SSCC component(s) of the proposed SAPs.

Sampling and Analysis Plan Content

Core Program Plans and Standard Operating Procedures (SOPs) have been developed by Dow and will be used for all sampling performed as part of the Offsite Corrective Action Work. Core Program Plans such as the Health and Safety Plan and the Quality Assurance Project Plan (QAPP) will be incorporated into the IRA plans by reference, as will applicable SOPs to describe specific methodologies and protocols for sampling and analytical work. These documents were provided to the MDEQ in April 2004 for review

The individual SAPs for the IRAs will be prepared to support the overall RI objectives and strategies where possible. These SAPs will provide the specific details associated with field sampling efforts, and will include:

- A clear and concise statement of study objective(s) including statement of the hypothesis(es) to be tested (Sampling event objective[s]).
- A description of the population(s) to be sampled.
- A description of the proposed approach to sampling, to ensure that representative data sets are collected (note that approaches are anticipated to include a combination of biased/judgmental and statistical methodologies).
- A description of the intended uses for the data and of the necessary level of precision and accuracy for these intended uses (Data Quality Objectives [DQOs]).
- A description of the rationale used to ensure that the data accurately represent a characteristic of a population, or an environmental condition (e.g., sampling objective). Examples of factors which will be considered and discussed include:
 - Explanation of sampling strategy and objectives (e.g., biased or random)
 - Identification of factors that influence the nature and extent of contamination
 - Identification of and justification for using bias(es) in selecting sampling locations
 - Justification for the number of sampling points
 - Samples will be evaluated to determine if they are representative of selected media as described in the SAP.
 - Sampling locations (figure with locations shown on a GIS aerial photo base map)
 - Sample details (a matrix indicating media, sampling interval, and analytes)
 - Analyte lists which may include the PCOIs identified to date as part of the development of the Current Conditions Report
 - Basis for selected analytical parameters
 - Environmental conditions at the time of sampling

Field Sampling and Analytical Work

Dow will be sending property owners notifications and mailings, obtaining property access agreements, assembling field crews, and obtaining utility clearances and any permits associated with the proposed field work. Dow will initiate field sampling activities upon MDEQ approval of the SAP(s).

Dow will develop and implement a mechanism to provide notification to the MDEQ of the field activities associated with all SAPs. This mechanism will provide both MDEQ and the property owners with 14 days notice prior to implementation of the SAPs on the proposed sampling date(s), if possible. Sampling will be conducted at a time convenient to the property owners.

Data Evaluation and Reporting

Once sampling and analysis have been completed for an IRA, the following tasks will be performed:

- Analytical data will be submitted to the MDEQ (via posting on the e-Project site) and a paper copy to the property owner(s) and/or residents within 60 days of sample collection unless otherwise approved in the SAP. Data validation to ensure appropriate quality assurance and quality control (QA/QC) and to check that DQOs were met will be performed during this period. A paper copy of the analytical data will be submitted to the MDEQ as part of the Completion Report described in Section 2.7 of the IRA.
- Dow will evaluate the data according to the Prioritization for Interim Response Activities outlined in Section 2.2 below, determine the prioritized Exposure Category(ies) and propose the corresponding Mitigation Options to the property owners as outlined in the Interim Response Activities Mitigation Decision Matrix in Table 1 and as otherwise described in this IRA.

Review and Approval of Proposed Sampling and Analysis Plans

The proposed SAP(s) will be submitted to the MDEQ at least 30 days prior to the proposed collection of samples. Field approvals to individual SAPs may be conducted as necessary to avoid delays in the IRA process.

The MDEQ will approve, modify and approve, or disapprove the SAP, or provide a written Notice of Deficiency on the SAP. Dow shall modify the SAP in accordance with or based on the resolution of the Notice of Deficiency and submit a new SAP or revisions to the SAP to the MDEQ within 14 days after receipt of the Notice of Deficiency.

Dow will implement the approved SAP in accordance with the schedule contained in the approved SAP.

Attachment E
General Mailing Schedule

Item	Milestone	Required Completion Date	MDEQ Review Requirements
1	Submit proposed mailing package to MDEQ.	Within 60 days of MDEQ approval of the IRA.	Must be submitted to MDEQ for review. Requires MDEQ approval prior to mailing.
2	Distribute MDEQ approved mailing package to all Tittabawassee floodplain residents downstream of the Dow dam.	Within 30 days of MDEQ approval of the mailing package.	Provide list of package recipients.

Attachment E Priority 1 Schedule

Item	Milestone	Required Completion Date	MDEQ Review Requirements
1	Initiate Priority 1 mitigation activities for properties identified in Attachment A	By December 31, 2005. For Priority 1 – Table 1 properties, initiation of mitigation activities will begin immediately upon approval of the IRA.	MDEQ will conduct audit(s) of Dow interim mitigation activities.
2	Submit ArcGIS deliverable.	Within 14 days of MDEQ approval of the IRA.	Must be submitted to MDEQ for review.
3	Submit proposed mailing package to MDEQ.	Within 30 days of MDEQ approval of the IRA.	Must be submitted to MDEQ for review. Requires MDEQ approval.
4	Distribute MDEQ approved mailing package to list of property owners.	Within 14 days of MDEQ approval of mailing package.	Copy MDEQ on cover letter.
5	Begin contacting property owners/ occupants to schedule initial visits and obtain any necessary site access agreements.	Immediately for properties identified in Attachment A	Provide schedule of initial visits to MDEQ. MDEQ may participate in these meetings.
6	Submit letter that summarizes the meeting and proposes future activities (e.g., SAP, sampling schedule, etc.) to the property owners and MDEQ.	Within 14 days of meeting with property owners and/or obtaining property access for implementation of the IRA.	Submit letters to MDEQ. MDEQ may audit
7	If necessary, conduct “best efforts” to gain property access for sampling and/or mitigation.	If property access is refused for sampling and/or mitigation, submit to MDEQ documentation of “best efforts” to gain property access within 14 days of each refusal.	MDEQ may audit.

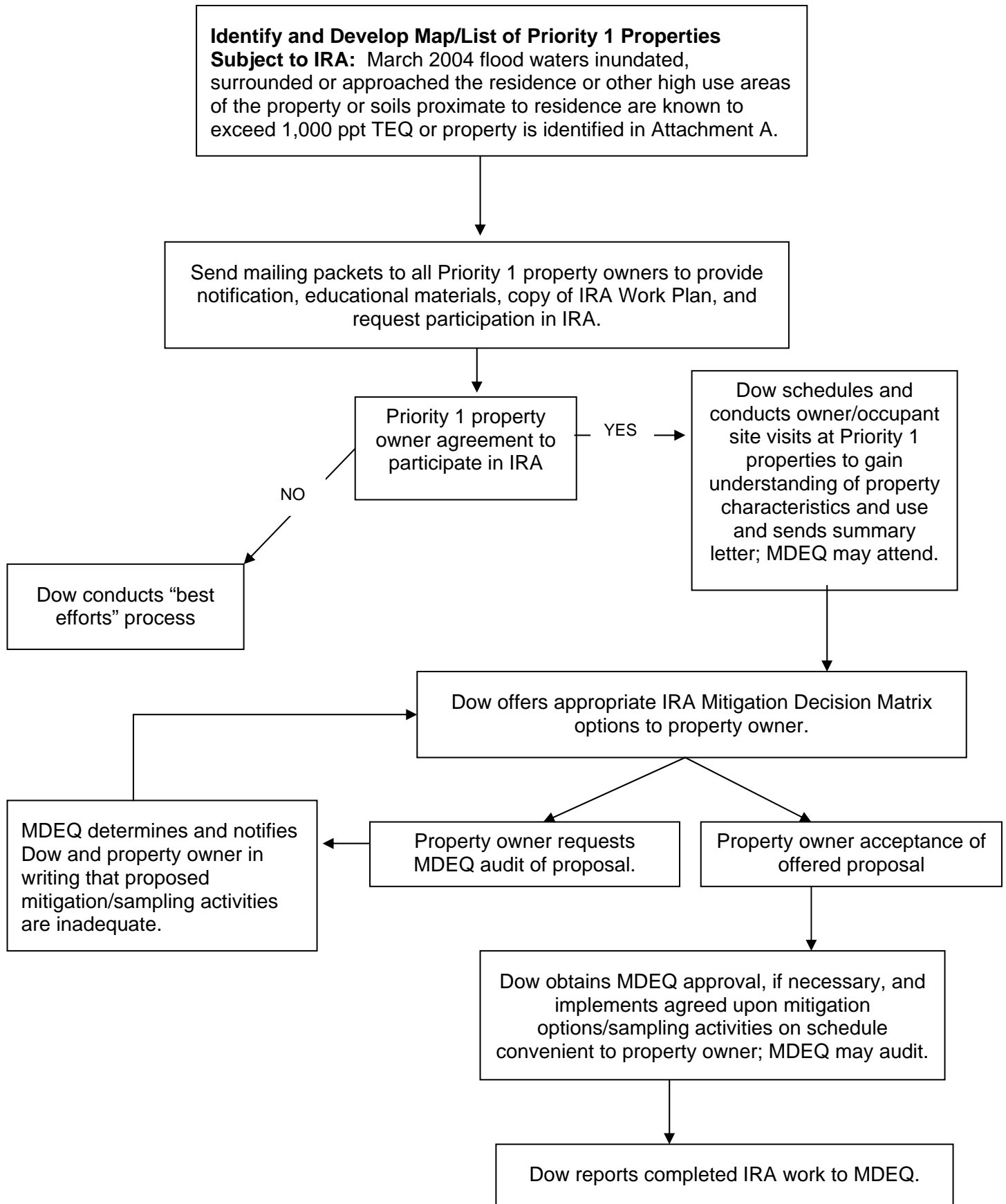
Item	Milestone	Required Completion Date	MDEQ Review Requirements
8	Implement any required mitigation measures.	Mitigation measures for all Priority 1 Tittabawassee River Floodplain IRA Properties, excluding monitoring and maintenance must be completed by December 31, 2005.	MDEQ may audit.
9	Submit completion reports for individual properties to property owners and MDEQ.	Within 14 days of completion of mitigation options described in this IRA excluding maintenance and monitoring.	MDEQ may audit.
10	Submit monthly IRA activity reports.	In accordance with Condition XI.G.6. of the License	MDEQ may audit.
11	Submit summary completion report for the Tittabawassee River Floodplain Interim Response Activity Work Plan to MDEQ.	By January 31, 2006 for Priority 1 properties.	MDEQ may audit.

Attachment E Priority 2 Schedule

Item	Milestone	Required Completion Date	MDEQ Review Requirements
1	Submit maps and lists of addresses of potential Priority 2 properties based on review of air photos and other relevant information.	January 15, 2006.	Must be submitted to MDEQ for review and approval.
2	Submit proposed mailing package to MDEQ.	January 15, 2006.	Must be submitted to MDEQ for review. Requires MDEQ approval.
3	Distribute MDEQ approved mailing package to list of property owners.	Within 14 days of MDEQ approval of mailing package.	Copy MDEQ on cover letter.
4	Begin contacting property owners to schedule initial visits and obtain any necessary site access agreements.	Within 30 days of MDEQ approval of mailing package.	Provide schedule of initial visits to MDEQ. MDEQ may participate in these meetings.
5	Submit letter that summarizes the meeting and proposes future activities (e.g., SAP, sampling schedule, etc.) to the property owners and MDEQ.	Within 14 days of meeting with property owners and/or obtaining property access for implementation of the IRA.	Submit letters to MDEQ.
6	If necessary, conduct "best efforts" to gain property access for sampling and/or mitigation.	If property access is refused for sampling and/or mitigation, submit to MDEQ documentation of "best efforts" to gain property access within 14 days of each refusal.	MDEQ may audit.
7	Implement any required mitigation measures.	Mitigation measures for Priority 2 properties must be implemented by December 31, 2006.	MDEQ may audit.

Item	Milestone	Required Completion Date	MDEQ Review Requirements
8	Submit completion reports for individual properties to property owners and MDEQ.	Within 14 days of completion of mitigation options described in this IRA excluding maintenance and monitoring.	MDEQ may audit.
9	Submit monthly IRA activity reports.	In accordance with Condition XI.G.6. of the License	MDEQ may audit.
10	Submit summary completion report for the Tittabawassee River Floodplain Interim Response Activity Work Plan for to MDEQ.	By January 31, 2007 for Priority 2 properties.	MDEQ may audit.

Attachment F
TITTABAWASSEE RIVER FLOODPLAIN IRA PRIORITY 1 FLOW CHART
January 1, 2005 - December 31, 2005

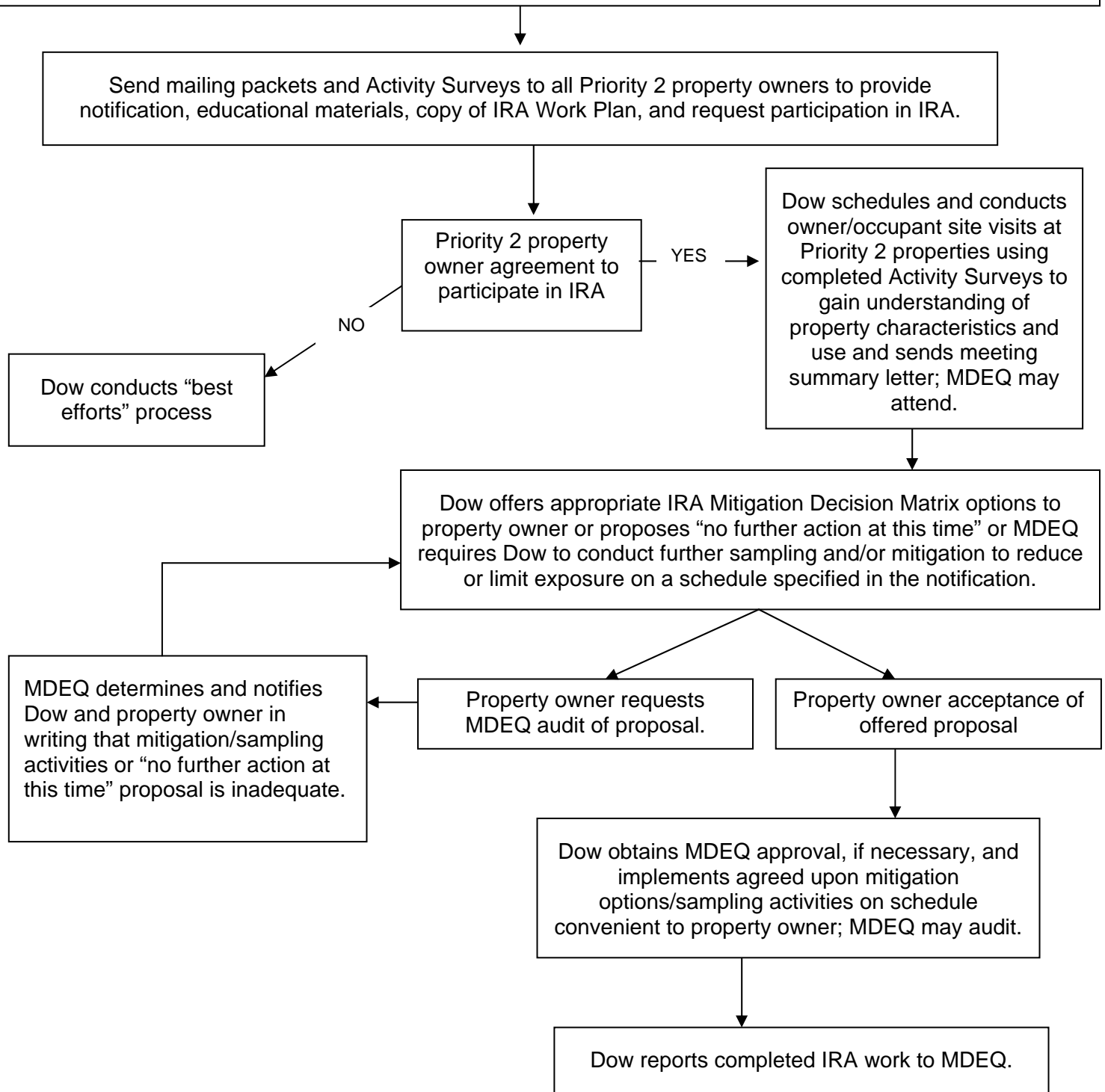


MDEQ may choose to conduct an audit at any point in this process.

Attachment F
TITTABAWASSEE RIVER FLOODPLAIN IRA PRIORITY 2 FLOW CHART
January 1, 2006 - December 31, 2006

Identify and Develop Map/List of Priority 2 Properties Subject to IRA: Any property

- 1) Flooded by the March 2004 flood event;
- 2) Where it is otherwise known that the ATSDR action level is exceeded in soils not proximate to the residence;
- 3) Where it becomes known that the ATSDR action level is exceeded before completion of the final remedy;
- 4) Occupied by a sensitive individual (children and women of child-bearing age) where it is known or becomes known that dioxin levels in the soil approach the ATSDR action level. Dow shall propose a soil contaminant level to be used for this purpose in the RI Work Plan and employ the level as approved by the DEQ



MDEQ may choose to conduct an audit at any point in this process.

Item	Milestone	Required Completion Date	MDEQ Review Requirements
8	Submit completion reports for individual properties to property owners and MDEQ.	Within 14 days of completion of mitigation options described in this IRA excluding maintenance and monitoring.	MDEQ may audit.
9	Submit monthly IRA activity reports.	In accordance with Condition XI.G.6. of the License.	MDEQ may audit.
10	Submit summary completion report for the Midland Area Soils Interim Response Activity Work Plan to MDEQ.	By January 31, 2006 for Priority 1 properties.	MDEQ may audit.

Attachment 5

Exposure Mitigation and Enhancements at Parks

Freeland Festival Park

Annual

- Hand wash station
- Each Spring augment ground cover where sparse or missing

Planned 2005 Projects

- Viewing deck along portion of river bank at park
- Wall to direct park visitors to viewing deck
- Mitigation measures in active use areas of park

Flood Response (As Requested by Park Officials)

- Removal of deposited and proper disposal of sediments on paved surfaces
- Other support requested by Park Officials as identified

Imerman Park

Annual

- Hand wash stations
- Each Spring augment ground cover where sparse or missing

2004/2005 Projects

- Bank stabilization by pavilion along river's edge (Underway)
- Handicapped fishing platform (Underway)
- Floating dock for fishing near pavilion (Underway)
- Relocation of existing dog park from lower park area to upper park area
- Construction of pad for combined cross-country track staging area & roller hockey playing surface
- Pave gravel parking lot in lower park
- Pave gravel pathway from parking lot to rest room at upper park area

Flood Response (As Requested by Park Officials)

- Removal and proper disposal of deposited sediments on paved surfaces
- Assist park personnel in replacement of cover over walking paths
- Other support requested by Park Officials as identified

West Michigan Park

Annual

- Hand wash station
- Replacement of sand at child play areas
- Each Spring augment ground cover where sparse or missing

2004/2005 Projects

- Trimming and/or removal of trees along river bank (2004)
- Covering of bare soils on path down to riverbank

Flood Response (As Requested by Park Officials)

- Removal and proper disposal of deposited sediments on paved surfaces
- Other support requested by Park Officials as identified