

DOW'S HISTORY OF IMPEDING MDEQ EFFORTS TO IMPLEMENT CORRECTIVE ACTION FOR OFF-SITE CONTAMINATION

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The Dow Chemical Company (Dow) has a documented history of impeding the efforts of the Michigan Department of Environmental Quality (MDEQ) to require the characterization and remediation of off-site contamination associated with Dow's Midland, Michigan facility. Examples of these efforts are list below; however, this is not an exhaustive list.

IMPROPER CHANGES TO DOW'S OPERATING LICENSE

Dow's hazardous waste operating license (RCRA License) was re-issued to Dow by MDEQ on June 12, 2003. Prior to the re-issuance, Dow spent approximately a decade negotiating the terms and conditions of its expired RCRA License (expired 1993) with MDEQ, including off-site corrective action requirements. Off site corrective action issues came to a head in approximately 2002 when it was proposed that the corrective action requirements of Dow's RCRA License be removed from the license and placed in a separate consent order with terms and conditions more favorable to Dow. EPA vigorously objected to this proposal via public comments on the draft consent order. The proposal was determined by Michigan's Attorney General to be illegal. Dow, nevertheless, continued its efforts to prevent any specific off-site corrective action requirements from being included in Dow's RCRA License. EPA finally had to require MDEQ, pursuant to 40 CFR 271.19, to include these off-site corrective action provisions in Dow's permit.

ILLEGAL CONCEALMENT OF DATA AND STUDIES

On numerous occasions, Dow has conducted unapproved studies and collected off-site corrective action data without notifying MDEQ or EPA. On a least one occasion, Dow may have benefited from such data when negotiating its compliance with off-site corrective action requirements with MDEQ (Framework Agreement).

- On 8/18/04, MDEQ discovered a Dow contractor conducting soil sampling on Dow property outside the fence line, but within a Midland Interim Response Action (IRA) sampling area on Dow's behalf. Dow resolved this issue by requiring its contractor to destroy all collected samples prior to analysis.
- Between April 12-15, 2005, EPA and MDEQ toured the Saginaw Bay watershed, and conducted a site visit at the Dow Midland facility. During the watershed tour, Dow contractors were observed at two separate locations taking samples for dioxin/furan analysis. Dow had not provided prior notice to MDEQ or EPA of this sampling effort.
- On May 6, 2005, MDEQ sent an information request to Dow to obtain information on the sampling observed on 4/13/05, by MDEQ and EPA. Dow subsequently notified MDEQ that it had conducted or was conducting 12 or more studies concerning off-site contamination from its facility in violation of Dow's RCRA License.
- On 9/19/05, MDEQ issued a Notice of Violation (NOV) for failure to notify and provide data from the above studies. The NOV resulted in a 1/3/06 consent order with a \$69,998 penalty.

NEGOTIATING REGULATORY COMPLIANCE WITH UPPER MANAGEMENT OF MDEQ

Dow has often elevated regulatory matters (normally resolved at a staff level) to upper level management at MDEQ. Corrective action meetings are often attended by the Deputy Director of MDEQ and the Division Director of the Waste Management Division. At most other facilities in Michigan, corrective action meetings are handled directly by technical staff. This approach has significantly complicated the corrective action process by requiring the approval of the Deputy Director of MDEQ, Director of MDEQ, and sometimes the Governor of Michigan of corrective action decisions which are usually made by technical staff.

Framework Agreement

Dow used this approach in negotiating the 1/20/05 Framework Agreement (FA) between Dow and the State of Michigan which contains conditions that have limited the ability of MDEQ to require timely and comprehensive corrective action in the Saginaw Bay watershed. The FA was negotiated between the Governor's office, senior management at MDEQ, and Dow. Some of the provisions of the FA are:

- Dow must submit Remedial Investigation Workplans (RIWPs) to MDEQ by December 2005 (RIWPs are still not approvable).
- Prevents MDEQ from requiring soil characterization sampling in Midland until after site-specific cleanup criteria are developed by Dow and approved by MDEQ.
- Provides for the development of site-specific cleanup criteria based on a time consuming probabilistic risk assessment.
- MDEQ may not require further investigation for areas where an MDEQ approved remedial plan or a presumptive remedy has been implemented.
- Requires MDEQ to consider the results of a bioavailability study.

- Requires the MDEQ to use an independent science advisory panel to review results of the pilot bioavailability study and make recommendations to MDEQ and Dow regarding the protocol for the final bioavailability study.
- Requires MDEQ to consider a dioxin exposure study (DES) to be conducted by the University of Michigan.
- Requires MDEQ to consider the results of ecological population studies being conducted by Michigan State University.

IMPROPER ATTEMPTS TO KEEP PUBLIC INFORMATION & DOCUMENTS CONFIDENTIAL

Dow has used the alternative dispute resolution (ADR) process, initiated in this matter in 2005, to keep non-confidential information from the public. EPA believes the corrective action process should be an open and public process conducted pursuant to the requirements of Dow's state operating license and that the ADR process should be reserved for Natural Resource Damage Assessment activities only.

In addition, the activities of the City of Midland have prevented the sample results from specific sampling locations from being provided to the public.

- On 3/1/06, Dow submitted a work plan to the ADR parties in this matter for the investigation of the Upper Saginaw River to the ADR neutral in the matter, claiming it to be confidential. EPA and MDEQ objected to this tactic and required Dow to re-submit the document as a public document pursuant to its RCRA License.
- During 2006, it appears that at least some aspects of the Dredged Material Disposal Facility (DMDF) were discussed under the ADR process, despite the ACOE not being a party to this process. There have been numerous complaints from the public about activities associated with the DMDF being conducted in a confidential manner, and excluding the public from this process. It should be noted that EPA was not directly involved in the DMDF discussions.
- Under the ADR process, Dow has established an independent database held by a third party to hold relevant data in the matter. While the data itself is not considered to be confidential, some of the documents in the database are considered confidential (including some Agency documents) and because the data is not held by a government, it is not subject to FOIA.
- The City of Midland has required that the results of soils samples collected within city limits by Dow be protected by the use of a double blind methodology so that sample results cannot be correlated with sample locations. A compromise was reached between MDEQ and Midland where a 3rd party (a law firm paid by Dow) is confidentially holding the sampling data, and MDEQ is only allowed to look at the data at the office of the law firm (no copying or notes). In addition, Midland attempted (unsuccessfully) to get MDEQ to sign a confidentiality agreement with respect to the data.

POLITICAL/LEGISLATIVE INVOLVEMENT

The repeated involvement of political figures and legislators in the corrective action process has resulted in significant delays.

City of Midland

- On 5/26/04, a community meeting on dioxin was held by the City of Midland. The format of the meeting was highly controlled, and only one spokesperson was allowed for each organization. Other staff from an organization were allowed to attend, but they were not allowed to speak or answer questions. All questions were required to be submitted in writing, and the City selected the questions which were asked and answered. Outside the meeting location, there were approximately 100 demonstrators who were opposed to soil sampling in the City of Midland. Dow and the City of Midland stated the following positions:
 - There is much uncertainty over the health effects of dioxin, and there is no consensus on dioxin health effects.
 - The Michigan 90 ppt standard is not supported by sound science.
 - There is no evidence of any health effects as a result of exposure to dioxins in the Midland area.
 - In the 1980s, the EPA determined that the Midland soils do not pose a health risk.
 - Dow will fund a University of Michigan health study of the Midland area to determine if the current level of dioxin in the environment presents a health risk.
 - No sampling should take place until completion of the health study, or dioxin reassessment.
- On 5/26/04, U.S. Rep. Dave Camp, R Midland approached EPA staff to state that he was not pleased with the MDEQ's 90 ppt standard. He requested that EPA urge the MDEQ to provide maximum flexibility with the 90 ppt standard, and requested that EPA keep him informed of the MDEQ's activities.
- The City of Midland has required that the results of soils samples collected within city limits by Dow be protected by the use of a double blind methodology so that sample results cannot be correlated with sample locations. A compromise was reached between MDEQ and Midland where a 3rd party (a law firm paid by Dow) is confidentially holding the sampling data, and MDEQ is only allowed to look at the data at the office of the law firm (no copying or notes). In addition, Midland attempted (unsuccessfully) to get MDEQ to sign a confidentiality agreement with respect to the data.

Legislative Activity

Significant legislative activity has occurred with respect to off-site contamination which complicates the regulatory landscape, and has required significant MDEQ staff resources for comment to the legislature.

- 5/27/04 legislation was introduced in the house and senate to change the Michigan dioxin cleanup level to 1,000 ppt. Further action on the legislation was put on hold pending negotiations between the Governor's office, Dow, and the MDEQ on a process to address the dioxin contamination in the Midland area.
- In 2004 the House Appropriations Committee of the MI legislature approved legislation eliminating all funding for MDEQ's Hazardous Waste Division, and cut the Director's salary by 20 percent.
- Later in 2004, the Michigan House Appropriations Committee withdrew legislation eliminating all funding for MDEQ's Hazardous Waste Division, and instead drafted a bill reducing MDEQ's staffing levels by 8%, and general fund support for the department by 15%. Further action on this bill was delayed until meetings between the MDEQ, the Governor's office, and Dow reached an acceptable compromise (Framework Agreement).
- On June 29, 2005 legislation was passed by the State House which would require that on-site testing show dioxin levels in excess of the state's residential contact criteria of 90 parts per trillion before the "facility" designation is applied to property, and would require consideration of a risk assessment based on bioavailability and human exposure studies.
- In 2006, a bill was introduced that would require MDEQ to "incorporate into a remedial action plan prepared or approved under this part area wide or site Specific cleanup criteria derived from peer-reviewed bioavailability studies, peer-reviewed site-specific human exposure data, and any other peer-reviewed scientifically based risk assessment studies that are available and relevant. A person who is or may be liable under section 20126 may submit to the department studies or data described in this subsection, or other relevant information, including information that has not been peer reviewed, that the person believes may assist the department in developing or approving a remedial action plan."
- Dec. 2006 – a bill was signed into law stating that MDEQ may recalculate dioxin cleanup criteria based upon the recommendations in the 2006 NAS report on EPA's draft Dioxin Reassessment.
 - This bill allows Dow to propose replacing the state's current dioxin cancer slope factor with a more favorable value. It should be noted that the development of cancer slope factors is usually done at the national level using a consensus, peer reviewed process.
 - Dow is currently discussing with the state any necessary rule changes to allow for the replacement of the state's current dioxin cancer slope factor, since current state rules may be in conflict with the recently passed legislation.

Political Activity

- In early 2004, as a result of meetings between MDEQ, Dow, the Governor's office, and State Legislators, soil sampling in the City of Midland which was to have started in 2004 was delayed until completion of a bio-availability study.
- On February 24, 2004, Dow submitted the document Pilot Study Report: Oral Bioavailability of Dioxin/Furans in Midland and Tittabawassee River Flood Plain Soils to MDEQ. However, soil sampling in Midland did not occur until 2006, partly due to issues with the City of Midland.
- In 6/04, MDEQ intended to issue a Scope of Work (SOW) to Dow (Dow was unable to provide an approvable SOW for over nearly a year). However, the SOW issuance was delayed while negotiations between MDEQ senior management, Dow, and the Governor's office took place (Framework Agreement). The deadline for these negotiations was extended 5 times.
- On 1/19/05, MDEQ announced an agreement with Dow on a Framework document that was to lead Dow to begin immediate work towards the cleanup of dioxin contamination in Midland, the Tittabawassee River, the Saginaw River, and Saginaw Bay. Characterization work did not begin until 8/06.
- In response to EPA's strongly worded comments on Dow's Tittabawassee and Midland RIWPs sent on February 10, 2006, a meeting took place in March between Tom Skinner, U.S. Congressman Dave Camp, and the City of Midland to discuss EPA's involvement in Dow's corrective action.

USE OF WORKING SESSIONS RATHER THAN NORMAL NOD AND RESUBMITTAL & DOW PROVIDES UNREALISTICALLY SHORT TIME FRAMES FOR DOCUMENT REVIEW

Dow frequently proposes to forgo the usual NOD process for submitted documents, and instead requests that issues be resolved using day-long working sessions. The working session approach has had the effect of limiting the administrative record, and places significant resource requirements on the MDEQ. EPA knows of no other facility in the State of Michigan where this type of approach to corrective action has been allowed by MDEQ. In addition, Dow often provides unrealistically short time frames for MDEQ to review workplans prior to meetings, or requested approval dates. Documents are generally provided 1 day in advance, if that, which places MDEQ at a significant disadvantage since Dow often requests MDEQ to make decisions on the spot at meetings.

Midland and Tittabawassee River RIWPs

After nearly 4 years since license issuance, Dow has yet to produce approvable workplans.

- First submitted 12/29/05 (~2 1/2 years after license issuance due to lengthy delays in the SOW process)
 - Critically deficient (e.g. proposed 1 sample per river mile)
 - Unacceptable and time intensive proposed Human Health Risk Assessment (HHRA).
 - Does not follow EPA guidance/policy.
 - No accepted methodology (and none presented) for proposed approach.
- Partially revised 5/1/06
 - Many of the remedial investigation component completion dates proposed by Dow will result in a delay of the initiation of final remedies until at least 2011 for the TR and 2017 for Midland. Based upon an estimate of 20 years for remedy implementation, the final remedies will not be complete until 2031 and 2037.
- Revised 12/1/06 (MDEQ provided a 6 month extension)
 - Incomplete (e.g. many significant sections submitted as “placeholders” where MDEQ and Dow will resolve issues through working sessions scheduled through at least 8/07).
 - Proposes same HHRA methodology that MDEQ and EPA identified as unacceptable in previous NODs.
 - MDEQ proposes to not issue an NOD (will resolve issues through biweekly working sessions).

GeoMorph SAPs

Dow management refused to attend these meetings despite repeated requests from MDEQ and EPA. The limited time frames for review and comment on the GeoMorph SAP documents were the direct result of the failure of ATS and Dow to provide GeoMorph documentation according to the agreed-to schedules established during the April 26th, May 11th, and May 18, 2006 GeoMorph meetings, schedules agreed upon during phone calls to EPA staff, and in the Response including:

- A draft SAP was due 5/16/06 according to the 4/26/06 GeoMorph meeting, and Dow's 5/1/06 NOD response. ATS proposed to provide this document on May 24th during the 5/18/06 meeting. On 5/25/06, ATS stated that this document will be provided 6/1/06. On 6/1/06, an incomplete SAP was submitted.
- ATS proposed to submit a draft SOP for the D/F analytical method by 5/26/06, and ATS submitted the draft SOP on 6/1/06. ATS submitted revised version of the SOP on 6/15/06 and 6/16/06.
- A draft PCOI study. ATS stated during the 4/26/06 GeoMorph meeting, and Dow's 5/1/06 NOD response indicated that it would be included in the SAP, but during the 5/18/06 meeting ATS stated that it may not be available until after 6/1/06. On 6/1/06, ATS submitted an incomplete PCOI study.
- ATS stated in the 4/26/06 GeoMorph meeting, and Dow's 5/1/06 NOD response indicated that that a draft Geochemistry study would be included in the SAP, but on 5/18/06, ATS stated that the geochemistry study will be conducted by Dow, will not be submitted for review and comment, and will be implemented without Agency oversight. On 5/25/06, ATS stated that the geochemistry study will be provided on 6/1/06, and MDEQ will need to approve it by 6/16/06. ATS provided the Geochemistry study on 6/8/06, and a revised version on 6/14/06.
- A. ATS indicated during the 5/11/06 GeoMorph meeting that they would provide a proposed methodology to test the GeoMorph hypothesis of homogeneity of geomorphic units, but did not provide a time frame. On 5/25/06, ATS stated that this methodology will not be provided until 6/1/06. On 6/1/06, ATS provided an incomplete methodology, and submitted a more detailed methodology on 6/7/06.

While Dow and ATS have habitually missed due dates for the above submittals, Dow maintained that MDEQ approval of the workplan by June 30th was necessary for implementation in 2006. Dow stated that it expected to resolve many of the outstanding issues through additional working meetings throughout the month of June. While the working sessions during the month of May achieved agreement on sampling transect sampling locations, the above issues have been continuously identified by EPA, and then deferred to future dates for resolution. Additionally, ATS did not appear to have independent authority to commit to agreements reached in the working meetings. The workplan was finally approved (while several issues remained unresolved) and implementation began in 8/06. Working sessions are currently continuing to resolve some of the above issues.

Dow's Failure to Send Decision Makers to Working Sessions

At working sessions (especially during the first half of 2006) Dow did not attend working sessions on numerous occasions, instead choosing to be represented by its contractors. This has led to occasions where apparent agreement was reached with MDEQ, but later Dow indicates that it is not in agreement with the decisions made by its contractor representatives at the meetings, and the issue had to be renegotiated again.

Human Health Exposure Pathways Workgroup

- Meetings occurred over a 6 month period in 2005 and agreement was reached between Dow's contactors and MDEQ; however, none of the agreed upon pathway information was included in the 2006 RIWPs. Dow explained that they did not agree with their contractors commitments.

DOW PUTS FORTH PUBLIC INFORMATION THAT CONTRADICTS MDEQ OR CURRENT SCIENCE

Dow has frequently provided information to the public that contradicts Agency positions, and generally accepted scientific information. This has had the effect of confusing the public as to what information that they are hearing is correct.

- On 7/9/04, Dow released a Wild Game Study that demonstrated that dioxin levels in game species are significantly elevated downstream of Dow. However, Dow publicly stated that the wildlife is safe for human consumption. This contradicted MDCH's position which resulted in game consumption advisories being placed on the Tittabawassee River.
- In 11/04, Dow mailed a newsletter to residents which stated:
 - Dioxin toxicity studies are inconclusive.
 - Humans are more dioxin resistant than test animals.
 - More studies must be completed so that any actions are based upon science.
 - Dow's recent worker health study shows few health effects associated with dioxin exposure.
 - A Dow study shows that dioxin is less bioavailable than believed.
 - Risk assessment models overestimate risks.
 - The dioxin congener mixture in the watershed is less toxic than previously thought.
- On 11/9/04, Dow announced the results of a study of dioxin exposed workers. The study concluded that exposed workers do not face any additional threat of illness. In addition, Dow stated that it is reasonable to reach the same conclusion for residents along the Tittabawassee River.

University of Michigan Dioxin Exposure Study

Under a grant from Dow and pursuant to an unpublished contract with Dow, the University of Michigan has conducting a study of dioxin exposure in the Saginaw Bay watershed. EPA does not consider the study to be particularly relevant to the corrective action in this matter and believes the study was initiated at the request of Dow in order to downplay the risks of exposure to dioxin contaminated soils. While the University was quick to release its preliminary conclusions from the study the University has refused to share the data with MDEQ and EPA, and has not yet cooperated with numerous requests to conduct additional analyses of the data, and UM will not provide a date by which the report will be completed.

On August 15th, the University of Michigan released preliminary findings from a Dioxin Exposure Study funded by Dow. Initial results indicated that consumption of fish from the Tittabawassee and Saginaw Rivers is associated with elevated dioxin blood levels, and to a lesser extent, high levels of dioxin contamination in soils and household dust are associated with elevated dioxin blood levels. The results of the study are consistent with current EPA/MDEQ understanding, and will not have any significant effect on corrective action activities. However, public presentations of the preliminary results have emphasized how little effect living on contaminated soils has on an individual's dioxin blood level. This emphasis has resulted in numerous media stories, an understanding by some members of the public, that remediation of dioxin contamination is unnecessary.