



MICHIGAN OPERATIONS  
March 10, 2011

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**REVISED ANTIDegradation DEMONSTRATION: NPDES PERMIT MI0000868**

Attached is a revised Antidegradation Demonstration as requested by DNRE for The Dow Chemical Company's draft NPDES permit issued on June 7, 2010. This revision includes more detailed information in Sections 3 and 4 than the previous Antidegradation Demonstration submitted on September 28, 2010. The factors affecting social and economic benefits to the area that would be foregone if the discharge is not allowed are addressed in Section 323.1098(4)(a).

If you have any questions regarding the attached information, please contact Mary Haslam at (989) 638-7401.

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Attachment

**The Dow Chemical Company  
Michigan Operations  
NPDES Permit Number MI0000868  
Antidegradation Demonstration**

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## 1.0 INTRODUCTION

Antidegradation demonstrations are required by state and Federal regulations for certain NPDES permit actions that may result in a new or increased loading of pollutants to surface waters of the state. The permit applicant is required to demonstrate that the discharge is exempt from the antidegradation requirements or identify the social and economic benefits that will be forgone if the new or increased loading is not allowed.

Antidegradation regulations require maintenance of water quality to protect existing uses. Lowering of water quality is not allowed if designated uses are not attained with respect to the pollutant that is the cause of non-attainment. The antidegradation regulations protect designated uses of Michigan's surface waters while allowing for residential, commercial and industrial changes and growth as markets and the overall economy grow and change. Michigan's antidegradation regulations are in Rule 323.1098 of the administrative rules for Part 31 of Public Act 451 of 1994, as amended.

The Dow Chemical Company's Michigan Operations (Dow MiOps) in Midland, Michigan is requesting that the Michigan Department of Natural Resources and Environment (MDNRE) include certain minor changes in the facility's renewed NPDES permit that will provide economic benefits to the area, maintain the service water intake system, and improve management of wastes generated or treated at Dow MiOps. Dow does not believe that the requested permit will result in increased discharge of pollutants or will degrade water quality as compared with current conditions. However, we are providing this demonstration in response to the Department's request.

### 1.1 Basis for Antidegradation Requirement

The proposed changes in the Dow MiOps NPDES permit that the Department has said may require the antidegradation demonstration are new process wastewater, remediation wastewater from off-site operations, commercial incinerator wastewater, and wastewater from maintenance cleaning of the Service Water intake area. The new process discharges include:

- The Dow Automotive Diesel Particulate Filter unit;
- The Photovoltaics units (both a pilot plant and future production unit);
- The Dow Kokam Lithium Battery unit;
- The Dow Battery Components unit;
- The Dow Solar photovoltaics production unit;
- A portion of the hazardous waste incinerator load, which may become Commercial Hazardous Waste Combustion;
- Maintenance silt removal at the service water intake lagoon on the Tittabawassee River;
- Michigan Chemical Conversion's (MCC's) new plasma melter (includes sanitary and caustic scrubber blowdown), located at Dow Corning Corporation's site.

A portion of the wastewater load from the hazardous waste incinerator load may be reclassified as originating from Commercial Hazardous Waste Combustion instead of from chemical manufacturing. This will result in an increase in flow subject to Treatment Technology Based Effluent Limits (TTBEL) for incineration and a decrease in flow subject to TTBEL for manufacturing. The actual composition and flow of these wastewaters is not expected to change as a result of the reclassification.

Several other effluent limits in the new permit may be increased slightly to reflect increases in production. Dow MiOps requests coverage for the additional loading of pollutants that will result from recalculated effluent limitations based on increases in production. These increases do not constitute a lowering of water quality according to Rules 323.1098(9)(iii) and (iv).

### 1.2 Current Water Quality Conditions

The designated uses of the Tittabawassee River are agriculture, navigation, industrial water supply, warm-water fish, and other indigenous aquatic life and wildlife.

The MDNRE Water Bureau lists the Tittabawassee River as having "impaired use" due to the bacterium *Escherichia coli* (*Total Maximum Daily Load for E. coli for Tittabawassee River, Midland County, Michigan*, Department of Environmental Quality, Water Bureau, May 2009). The impaired uses are total and partial body contact recreation (swimming). The Water Bureau report identifies the most likely sources of *E. coli* as illicit connections to storm drains, pet and wildlife waste, failing residential septic systems, livestock, urban storm water runoff, overland flow and agriculture. Concentrations of *E. coli* in samples from Dow MiOps effluent were very low and the MDEQ concluded that Dow MiOps' effluent was most likely not the cause of the *E. coli* exceedances in the river.

The proposed new discharges should not affect *E. coli* concentrations from MiOps. The additional load of sanitary wastewater from new processes is well within the Dow MiOps wastewater treatment system capabilities.

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## 2.0 RELEVANT GEOGRAPHIC AREA

The relevant geographic area is Midland County. The Dow Chemical Company's corporate office and Dow MiOps are located in Midland County. Approximately 45% of the employees live in Midland County.

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## 3.0 NECESSITY AND BENEFITS OF NEW AND INCREASED LOADINGS

The new or increased loadings associated with these proposed discharges are necessary to appropriately manage wastewater and to allow Dow's MiOps to adapt to changing market conditions. These changes also allow for the potential feed of non-Dow waste to the incinerator. In addition, these loadings allow more efficient use of Dow MiOps existing wastewater treatment plant (WWTP). The proposed new or increased loadings have certain benefits that will be foregone if the discharge is not allowed. The necessity and benefits are discussed below for each of the new or increased loadings.

The Diesel Particulate Filter and the Dow Solar Photovoltaics units are new manufacturing units at Dow MiOps. The Dow Kokam lithium battery and Dow Battery Components units are new processes that are scheduled to begin production in approximately October 2011. These discharges are necessary to effectively and efficiently manage waste water generated by these new processes. The foregone benefits if this discharge is not allowed are the benefits associated with manufacturing new products in Michigan, meeting market demand, and the associated employment and tax benefits to the State and community. Specifically, Phase 1 of the Dow Kokam lithium battery facility is scheduled to employ 320 full-time positions when completed in 2012. There are also approximately 1,000 temporary jobs required during the construction of Phase 1. Dow Kokam's Phase 2 will require an additional 400 full-time employees by 2014, and employment of up to 1000 construction personnel. The Dow Solar facility is slated to hire 1,200 employees by 2014. These new jobs will significantly increase employment in the area, and increase State and local tax benefits. These two manufacturing units are new technology for Michigan, and are leading the way for new job growth and sustained employment in the State.

The increased treatment technology based effluent limits (TTBELs) for the incinerator are a result of potential reclassification of a portion of this unit from an Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) process to a Commercial Hazardous Waste Combustor (CHWC) process. Flows to the WWTP from the incinerator will not change if it operates under the CHWC classification. This administrative change is necessary to allow Dow MiOps the flexibility to accept and manage wastes from other facilities that are not owned by The Dow Chemical Company at times when there is excess capacity available in Dow's incinerator. Treatment of wastes in the Dow MiOps incinerator, which operates at a 99.999% destruction and removal efficiency, provides efficient and effective management of waste and avoids construction of similar facilities in the mid-Michigan area for this purpose. The foregone benefits if this discharge is not allowed are the effective treatment of industrial wastes at a central facility, and a reduction in hauling distances for industrial wastes generated in the area. There are no hazardous waste kilns in the mid-Michigan area of the state, so commercial operation of the incinerator would potentially be an efficient means of waste treatment for many Michigan businesses.

Maintenance dredging of the service water intake bay is necessary to ensure a reliable supply of service water to Dow MiOps. This service water is used for both non-routine purposes, such as fire-fighting; and routine purposes (scrubbing air emissions; heating, ventilation and air conditioning; condensate cooling; equipment washing; and the ash conveyor bath). The foregone benefits if this discharge is not allowed are provision of a reliable supply of service water for use in emergencies and these other uses at Dow MiOps. Service water would need to be obtained from another source.

MCC's plasma melter is a new unit at Dow Corning Corporation's site for reclaiming fuel and product from material that otherwise would be handled as waste. The foregone benefit if this discharge is not allowed is efficient and effective management of sanitary waste water and scrubber blowdown from plasma melter operations.

## **4.0 ALTERNATIVES**

Rule 323.1098 (4)(b) requires identification of alternatives evaluated and alternatives to be implemented to prevent pollution or improve treatment so as to minimize loadings of bioaccumulative chemicals of concern (BCCs). There are no increases in BCCs resulting from the projects identified as pertinent to this antidegradation demonstration. However, Dow MiOps evaluated several alternatives for reducing or eliminating the new or increased loadings. Some of these alternatives regarding minimizing flow have been and will continue to be implemented while others are not feasible. The following sections address several alternatives:

- Pollution prevention;
- Reduction in scale of project;
- Water recycling or reuse;
- Process changes; and
- Innovative or advanced treatment technologies.

### **4.1 Pollution Prevention Measures**

Dow MiOps has initiated pollutant minimization programs (PMPs) for hexachlorobenzene, chlorpyrifos, 2,3,7,8-TCDD and 2,3,7,8-TCDD toxicity equivalent concentrations as required by the October 2004 NPDES permit. These pollutant minimization programs were submitted to and approved by the MDNRE. Dow MiOps will continue to implement these pollution prevention measures as required. The new discharges will not interfere with these PMPs.

Another pollution prevention measure in place at the Dow MiOps site is the collection of stormwater from the general site area, and treatment of this stormwater at the WWTP. This assures that trace amounts of chemicals cannot be discharged into a public waterway during rain events. To facilitate the collection of stormwater, the Dow MiOps site utilizes three 15 million gallon diversion tanks, and one 10 million gallon diversion tank to collect and meter stormwater to the WWTP.

The Dow MiOps site also utilizes a Revetment Groundwater Interception System (RGIS) to collect and transfer groundwater from the site perimeter to the WWTP. Monitoring equipment is in place to assure that a groundwater gradient into the site is maintained, in order to prevent migration of potentially contaminated groundwater off-site.

### **4.2 Reduction in Scale of Project**

The new discharges will not require an increase in authorized flow due to offsets in flow from other site operations, such as shutdowns and water conservation efforts. Since the 2004 NPDES permit went into effect, discharges from some processes have decreased while others have increased in response to market conditions. Additional reductions in overall site effluent will continue to be considered as opportunities arise.

#### **4.3 Water Recycling or Re-use**

Dow MiOps improved the efficiency of water use (measured as pounds of water used per pounds of production) by approximately 30% between 1995 and 2007. This reduced water usage is due to several factors:

- Normal business attrition of processes at the site during the multi-year transformation from bulk commodity chemical production to smaller-scale specialty production;
- Implementation of a site-wide cooling tower blowdown project, which optimized cooling tower efficiency and resulted in lower discharge volumes to the WWTP from cooling towers at the site;
- The shutdown of two incinerators at Dow MiOps in 2002, and replacement with one incinerator with a lower water use.
- Dow MiOps also has an annual incentive program to encourage further large-scale reductions in water use.

#### **4.4 Process Changes**

The new discharges are not due to any significant changes to existing Dow MiOps processes.

Dow MiOps has improved storm water management. A separate storm water discharge point to the Tittabawassee River (005A) has been eliminated. Other improvements in storm water management, such as the addition of detention ponds that minimize stormwater runoff, have been implemented as presented in the storm water pollution prevention plan.

Other processes at Dow MiOps have been modified or production decreased so as to decrease loads to the WWTP. However, these decreases are for processes not subject to the antidegradation demonstration requirement.

#### **4.5 Innovative or Advanced Treatment Technologies**

The new discharges will be treated at Dow MiOps, and will benefit from improvements in the Dow MiOps wastewater treatment facilities.

The final steps in wastewater treatment at Dow MiOps include ballasted clarification, followed by sand filtration. The ballasted clarification system is an innovative solids removal technology that allows advanced treatment of Dow's wastewater prior to discharge. A carbon filtration system is also available to provide final polishing of the effluent if necessary.

#### **4.6 Seasonal or Controlled Discharge Options**

The tertiary treatment ponds at Dow MiOps have some capacity to allow for control of discharge flows. This capacity is used to manage variable storm water flows and to discharge appropriate amounts during variable seasonal river flows (i.e., when river flow is low the discharge flow is also decreased). Dow MiOps operates year-round and the storage capacity to allow seasonal discharge of daily flow is not available. Seasonal discharge is not a feasible alternative.

#### **4.7 Improved Operation and Maintenance of Existing Treatment Systems**

Management of storm water has been improved by eliminating almost all storm water runoff from the site. Storm water from manufacturing areas is treated with process water at the WWTP. Maintenance at the Dow MiOps WWTP is based on a predictive and preventive program that continuously assesses the status of existing equipment and indicates when maintenance or replacement should be performed.

#### **4.8 Alternative Discharge Locations**

Dow MiOps is located adjacent to the Tittabawassee River, and the Tittabawassee River is the only feasible location with sufficient flow capacity for this discharge.

The City of Midland Waste Water Treatment Plant (Midland WWTP) is located nearby and also discharges to the Tittabawassee River (via Lingle Drain). The Midland WWTP has a design flow of 10 million gallons per day (MGD), which is insufficient to allow this facility to accept the authorized flow from Dow MiOps (35 MGD).

The MiOps Waste Water Treatment Plant (WWTP) currently provides efficient and effective wastewater treatment for several local industries, including Dow Corning Corporation, Cabot Corporation, Hemlock Semiconductor Corporation, the Dow Corning Medical Plant (in Hemlock, MI), Michigan Airgas Inc., Midland Cogeneration Venture, Air Products and Chemicals Inc., Transport Service Company, QualaWash, and Midland Chemical Conversion. Each of these facilities would need to construct separate treatment plants or install separate infrastructure and contract with the City of Midland Waste Water Treatment Plant to treat waste water. However, the City of Midland Waste Water Treatment Plant has a much lower capacity than MiOps' WWTP (10 MGD vs 35 MGD), and is not primarily operated for treatment of industrial wastes. Use of the MiOps WWTP is efficient because the waste water is managed in one central facility with a treatment system that is specific to these industrial wastes. In addition, the MiOps WWTP is operating lower than its designed capacity and is capable of treating these additional wastewater flows.

#### **4.9 Groundwater Discharge**

Groundwater discharge is not feasible in this area because of the large volume of the discharge (up to 35 MGD) and because the geology is not favorable. There is a thick layer of impermeable clay near the ground surface in this area (*Hydrologic Atlas of Michigan*. Western Michigan University, Department of Geology, 1981). This impermeable layer would restrict infiltration of large volumes of water to groundwater.



## 5.0 GENERAL CONDITIONS IN GEOGRAPHIC AREA

### 5.1 Population

The population of Midland County in 2000 was 82,874 according to the 2000 census. The estimated population in 2009 was 82,545 (Debbie Marquardt, City of Midland), so there was a small decrease in population. The population of Midland County is projected to continue to decrease slightly through 2014 (*Midland Tomorrow demographic information*).

### 5.2 Major Employers and Manufacturing Profile

Major employers in Midland County, the types of business they are engaged in, estimated numbers of employees, and measures of dollar value of the employers are listed in Table 1.

**Table 1**

**Major Employers, Type of Business, Number of Employees in Midland County and Value**

Employer	Type of Business	Estimated Number of Employees in Midland Co.	Value
The Dow Chemical Company	Industrial chemicals and consumer products	5,300	\$44,875,000,000 total revenue
Mid-Michigan Medical Center	Hospital	3,200	\$932,000,000 gross revenue
Dow Corning Corporation	Silicones, specialty and health care products	1,350	\$5,092,500,000 net sales
Midland Public Schools	Education	1,100	\$87,435,000 2009-2010 total revenue
Chemical Bank and Trust	Financial services	460	\$3,867,000,000 2009 total assets
City of Midland	Government	460	\$33,771,000 2009 budget

#### 5.2.1 Trends

Trends in employment in Midland County are generally for increased employment in service-related jobs such as health care and financial services and decreases in manufacturing jobs (*City of Midland Master Plan, 2007*).

### 5.3 Employment

Unemployment in Midland County and nearby areas has increased from approximately 2% in 2000 to approximately 9.9% in May 2010. (*U.S. Bureau of Labor Statistics, updated July 26, 2010*)

### 5.4 Household Income

Median household income according to the 2000 census was \$45,674. The estimated median household income in 2009 is approximately \$52,000 (2010 census data are not yet available).

### **5.5 Local Tax Revenue**

Local tax revenue for the City of Midland was \$27,660,000 in 2009 (*Dana Strayer, City Treasurer*). The County tax revenue in 2009 was \$16,700,000 (*Bridgette Grandson, County Tax Assessor*).

## **6.0 BASELINE SOCIAL AND ECONOMIC CONDITIONS**

### **6.1 Baseline Employment**

The Dow Chemical Company's corporate offices and Dow MiOps are located in Midland. The corporate offices and Dow MiOps combined employ approximately 5,300 persons. An additional approximately 1,100 contract employees work at the corporate offices or Dow MiOps.

### **6.2 Baseline Production Levels**

The Diesel Particulate Filter operations, Dow Solar Photovoltaics operations, Dow Kokam lithium battery operations, and Dow Battery Components operations are new to this permit application, and the baseline production levels are zero. The MCC plasma melter at Dow Corning Corporation's site is also new with no baseline production.

Current operations of the incinerator at Dow MiOps is approximately 100 million pounds per year of production waste.

The proposed cleaning of the service water intake lagoon and pump intake galleries on the Tittabawassee River does not occur at present, but is scheduled to take place in 2011.

### **6.3 Baseline Employment Reductions**

No specific employment reductions at Dow MiOps are planned at this time.

### **6.4 Baseline Efficiency**

The MiOps Waste Water Treatment Plant (WWTP) currently provides efficient and effective wastewater treatment for several local industries, including Dow Corning Corporation, Cabot Corporation, Hemlock Semiconductor Corporation, the Dow Corning Medical Plant (in Hemlock, MI), Michigan Airgas Inc., Midland Cogeneration Venture, Air Products and Chemicals Inc., Transport Service Company, QualaWash, and Midland Chemical Conversion. Each of these facilities would need to construct separate treatment plants or install separate infrastructure and contract with the City of Midland Waste Water Treatment Plant to treat waste water. Use of the MiOps WWTP is efficient because the waste water is treated in one central facility instead of multiple facilities or the city plant, which primarily treats sanitary wastes.

The incinerator at Dow MiOps is capable of managing additional wastes efficiently and effectively.

Dow Corning Corporation currently manages chlorosilane residuals as hazardous wastes that are shipped off-site for treatment and disposal. The MCC plasma melter will allow recovery of resource value from this waste stream.

### **6.5 Baseline Industrial, Commercial or Residential Growth**

The *City of Midland Master Plan (2007)* projects a decrease in manufacturing. The Master Plan also promotes "industrial clusters" such as the arrangements between Dow MiOps and other local industries regarding use of Dow's WWTP.

*City of Midland Master Plan (2007)* promotes commercial growth in downtown Midland, the Midland mall area and in neighborhood businesses.

*City of Midland Master Plan (2007)* promotes residential growth in the downtown area. *Midland Tomorrow Demographic information* projects a small increase in residential housing in Midland County.

## **6.6 Baseline Environmental or Public Health Problems**

Dow MiOps WWTP currently treats wastes from various remediation projects. These processes are ongoing remediation activities that include, but are not limited to:

- Dow MiOps groundwater containment system, including the Revetment Groundwater Interception System (RGIS) and other remediation groundwater
- Dow Corning Corporation's SIS (Site Intercept System)
- Dow MiOps Brine Remediation
- Dow MiOps Auburn Pipeline Remediation
- Dow remediation wastewater from offsite operations
- Poseyville Landfill (closed) Remediation
- Rockwell Landfill (closed) Remediation
- Sludge Dewatering Facility

In general, "remediation waste water from offsite operations" means any waste water generated from an action undertaken to address a release of contaminants into the environment conducted voluntarily by Dow or as a regulatory requirement, and not generated from a site contiguous to MiOps (e.g., is not transferred by pipeline). These actions include, but are not limited to, investigation, evaluation, cleanup, removal, monitoring, containment, isolation, treatment, storage or management or any other action required to address the release of contaminants into the environment.

## **7.0 CHANGES IN OR MAINTENANCE OF SOCIAL AND ECONOMIC CONDITIONS**

### **7.1 Employment Increases**

The following projects are new at Dow MiOps. These projects ultimately will result in over 1900 new jobs created at the site, and have led to the retention of approximately 70 jobs:

Dow Automotive: new plants  
Dow AgroSciences: new plants  
Dow Kokam Lithium Battery: new plant  
Dow Battery Components: new plant  
Dow Solar Photovoltaics: new market development plant and production plant  
(scheduled for startup in 2012)  
Dow Automotive Diesel Particulate Filter: new plant

The Dow Kokam joint venture lithium battery production unit is scheduled to begin operations in late 2011. By 2013, it will employ an estimated 800 people, and wastewater is planned to be treated at Dow MiOps' WWTP. An additional Battery Components plant, which will provide raw

materials for Dow Kokam and similar operations, is in the planning stages and, if the project is realized, will employ between 600 and 900 people by 2013, depending on market demand.

## **7.2 Production Level Increases**

Each of the projects listed in section 7.1 has contributed to production level increases at the Dow MiOps site.

The Diesel Particulate Filter unit, Dow Solar Photovoltaics units, and Dow Kokam Lithium Battery unit will each contribute to substantial production increases at Dow MiOps. These production rates are confidential information due to competitive issues.

The maintenance cleaning of the service water intake structure will not directly affect production levels, but will remove approximately 15,000 cubic yards of sediment from the service water lagoon and intake structure.

The MCC plasma melter will produce approximately 12,000,000 pounds of hydrochloric acid and approximately 10.5 million BTU per year. These recovered resources will be used in manufacturing processes (*Dow Corning to Use Integrated Environmental Technologies, LLC Plasma Based Waste Recycling System. Integrated Environmental Technologies, LLC press release, October 1, 2007.*)

## **7.3 Employment Reductions Avoidance**

The proposed projects that require this antidegradation demonstration will provide up to 1900 direct new jobs in the area. Many indirect jobs related to construction and support of these new units will also be added. In addition to the new job creation, approximately 70 jobs have been retained due to various capital projects at the MiOps site since 2004.

## **7.4 Efficiency Increases**

The WWTP at Dow MiOps has the available capacity to manage wastewater flows from these new processes. Use of the existing WWTP is more efficient than building separate treatment plants for these facilities or using the city's treatment plant, which is designed primarily for treatment of sanitary wastewater.

## **7.5 Industrial, Commercial or Residential Growth**

The proposed projects that require this antidegradation demonstration directly support industrial growth in the area by adding new products and services as well as more efficient services. This industrial growth will indirectly support commercial and residential growth.

## **7.6 Environmental or Public Health Problem Corrections**

These projects will not directly affect environmental or public health problems. These projects will improve management of industrial wastes at Dow MiOps and re-use of chlorosilane residuals at MCC.

## **7.7 Economic or Social Benefits to the Community**

### ***7.7.1 Family Income and Poverty***

These projects will provide additional jobs to the area. The number of jobs is substantial, and they are expected to have positive impacts on median family income and number of households below the poverty line.

### ***7.7.2 Increased Property Values***

These projects will add jobs to the community and will indirectly contribute to maintaining property values.

### ***7.7.3 Increases in Community Tax Base***

These projects will add jobs to the community and will indirectly contribute to the community tax base.

### ***7.7.4 Improvement in Quality of Life***

The Dow Chemical Company, through the Dow Foundation, contributes approximately \$2,300,000 in grants per year to various groups or institutions that enhance the quality of life in the Midland area. Recent grant recipients include:

- Midland Community Center
- Freeland Sports Zone
- Midland Center for the Arts
- Michigan Molecular Institute
- Mid-Michigan Innovation Center
- MiTech Plus Technical Training Center
- Bay City YMCA
- Temple Theatre
- United Way
- Great Lakes Bay Regional Alliance
- Habitat for Humanity
- Boy Scouts of America
- Junior Achievement
- Little Forks Conservancy
- Saginaw Basin Land Conservancy
- Watershed Initiative Network
- Saginaw, Bay City and Midland economic development corporations

Dow's employees also volunteer for many local charities and activities.

The proposed projects that require this antidegradation demonstration will support Dow's ability to provide grants and allow other opportunities that enhance the quality of life in the community.

### ***7.7.5 Provision of Necessary Public Services***

The Dow Chemical Company's Michigan Operations site contributes substantially to local public services, including:

- Providing of river rescue training to local emergency responders;
- Back-up of Midland's 911 basic life support with Dow's ambulance and EMT personnel;
- Mutual aid agreement with City of Midland Fire Department;
- Training for City and County law enforcement related to homeland security issues;
- Participant in the Midland Security Consortium related to homeland security issues;
- Donation of a fire truck in 2009 to the City of Pinconning;
- Free breathing air tank refills to area township fire departments; and
- Free incineration of narcotics, prescription drugs and contraband for local law enforcement.

While the support for public services listed above cannot be specifically attributed to the proposed projects that require this antidegradation demonstration, these projects contribute to Dow's ability to provide such support to the community.

## 8.0 SUMMARY

Table 2 summarizes the many benefits associated with the proposed projects that require this antidegradation demonstration. These benefits will be foregone if the new and increased loadings are not approved.

**Table 2**  
**Summary of Baseline and Proposed Social and Economic Conditions**

Social and Economic Condition	Impact
Employment increases	Addition of approximately 1900 direct jobs.
Production level increases	New production at Diesel Particulate Filter unit, Dow Solar Photovoltaics unit, Dow Kokam Lithium Battery unit, Dow Battery Components unit, and MCC plasma melter unit at Dow Corning Corporation.
Employment reduction avoidance	No direct quantifiable impact.
Efficiency increases	Efficient use of existing WWTP and incinerator, reduced generation and transport of hazardous waste, maintenance of service water supply.
Industrial, commercial or residential growth	Positive direct impact on industrial growth, indirect positive impacts on commercial and residential growth.
Environmental or Public Health Problem Corrections	No additional direct impacts.
Economic or Social Benefits to the Community	Employment increases, continuing support of "quality of life" activities; continuing provision of public services.