



**2011 Annual Report
For the Cooperative Environmental Agreement
Between 3M -Menomonie
And the Department of Natural Resources**

March 23, 2012

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Introduction

This annual performance report is submitted in part to meet the requirements of Section XIII, Baseline and Periodic Performance Evaluations, of the October 2007 Extended Agreement. Included in the report is the following information concerning the environmental performance and commitment to superior environmental performance of 3M Company – Menomonie during 2011:

- Involvement and input from the Interested Person's Group to the Agreement
- Evaluation of the EMS (Environmental Management System), areas of success and areas for improvements beyond those specified, in addition to other objectives and targets set in the previous year's report
- 2011 3P (Pollution Prevention Pays) project summaries (goal of at least five approved projects during 2011)
- Status of reductions of hazardous waste levels per pound of good output
- Status of the goal of maintaining or reducing the emissions of VOC (volatile organic compounds) per pound of good output (semi-finished and finished goods) to a level equal or less than 4.11 pounds VOC / 1000 pounds good output through 2011 (2010 baseline)
- Status of progress toward the goal of a 2% reduction in waste per pound of good output by the end of 2011 (2010 baseline)
- Status of progress toward the goal of reducing energy usage per pound of good output by 3% by the end of 2011 (2010 baseline)
- Status of progress made by the Wildlife Team to meet annual goals established by the team to maintain the Wildlife Habitat Council (WHC) site certification
- Water usage in the facility (2006-2011)
- General assessment of the success of the Agreement in reducing time and money spent by 3M and the DNR on paperwork and other activities that may not directly benefit the environment

Regarding Commitment to Superior Environmental Performance

As stated in Section IX of the Extended Agreement, 3M Menomonie commits to pursue superior environmental performance while achieving a balance between economic, social, and environmental impacts for its efforts. The plant's commitment to reducing its environmental footprint continues to contribute to 3M's reputation in the community, the country, and the world and demonstrates that economic progress and environmental improvement can go hand-in-hand. The Environmental Targets 2015 (ET15) program is the corporate initiative that will serve as the basis for our commitment to superior environmental performance for the next five year period beginning in 2011. These goals were designed to drive continued reductions in volatile organic compounds (VOCs), waste and energy efficiency, and continue the emphasis on the Pollution Prevention Pays (3P) program. Specific Menomonie goals for this program by the end of 2015 (2010 baseline) were:

- **Reduce Waste per pound of good output (semi-finished and finished goods only) by 10% by the end of 2015 (2010 baseline)**

Waste, as defined in the ET15 program, includes chemical waste sent for treatment, waste sent to waste to energy (W/E) facilities for disposal, and landfill. Plant recycle and reuse of raw materials, and the off site recycle and reuse of materials sent to waste vendors are considered "neutral" in this

program and serve as an incentive for 3P projects for cost reduction and pollution prevention.

- **Sustain or reduce Volatile Air Emissions (VOC) per 1000 pound of good output < 4.11 pounds VOC/1000 pound good output each year (2010 baseline)**
- **Improve Energy Efficiency per pound of good output by 15% by the end of 2015 (2010 baseline)**
- **Sustain wildlife management plan and certification to Wildlife Habitat Council (WHC) standards**
- **Submit at least five accepted 3P (Pollution Prevention Pays) projects each year**

These goals set the basis for superior environmental performance under the Extended Agreement.

Regarding the Interested Persons Group

The 3M Company–Menomonie Interested Persons Group is composed of representatives from business, government and academia in the Menomonie area who are interested in environmental stewardship and the impact of manufacturing on local communities. Group members include the following individuals:

- Barbara Thomas, Chippewa Valley (WI) Chapter of the Sierra Club
- Mike Beaupre, Director, Indianhead Enterprises
- Keith Bergeson, Dunn County Department of Public Health
- Mark Harings, Wisconsin Department of Natural Resources
- Paul Sterk, Superintendent, Menomonie Wastewater Utility
- Dr. Martin Ondrus, UW-Stout, Chemistry Department
- Ed Smith, City of Menomonie Planning Commission Member

Two meetings of this group were held in 2011. The first meeting was held on March 25, 2011. The purpose of this meeting was to review the content of the 2010 annual performance report prior to submittal to the WDNR. The second meeting was held on December 11, 2011. Refer to the meeting minutes attached as Appendix A of this report.

Regarding an Evaluation of the EMS

A third party auditor, BSI (British Standards Institute), conducted a recertification audit of our EMS in late October. The BSI auditors recommended that our registration be renewed, but the auditors found eight minor non-conformities that required an action plan response to BSI. This plan was submitted, corrective actions were implemented, and the effective implementation of the plan will be verified at the next BSI audit visit (November 2012).

Internal assessments of the EMS were conducted in all operational and service areas (14 internal audits) of the facility during the year. These audits resulted in eight corrective or preventive actions being issued from the fourteen audits conducted. At the present time all corrective actions have been addressed. Regular management review is held at least quarterly with the EMS Core team and members of the plant management team to review progress towards the plant environmental goals and targets. An annual review of all EMS elements was held with upper management during late October 2011.

Several internal and external environmental compliance audits were conducted during the year. In March a full air compliance inspection was conducted by WDNR with no findings. An internal 3M Environmental compliance audit was conducted in July with 14 audit findings that have been resolved at this time. In October there was a WDNR waste management inspection audit that resulted in one minor finding that was resolved during the audit so no formal response was required by the auditor.

Regarding a Summary of 2011 Approved 3P (Pollution Prevention Pays) Projects

Even though there is no longer a formal 3P goal in the ET15 program, a standing EMS goal for the facility is to generate at least 5 approved 3P projects each year. In 2011 there were five approved projects submitted with three projects receiving Level I recognition. A summary of these projects is shown in Table 1:

Table 1: 3P (Pollution Prevention Pays) Project Summary

Project	Project Description	Pollution Prevented	\$ Saved (first year)
Decatur Reusable Packaging for Multi-layer Optical Film (Level 1 Award)	Returned packaging materials to Decatur for reuse rather than recycling locally	37.5 tons of packaging material reused avoiding purchasing replacement materials	\$ 65,000
Unassembled BEF (brightness enhance film) Packaging (Level I Award)	Re-designed packaging to use fewer materials, and avoid excess packaging waste.	165 tons of landfill avoided; use of less new materials	\$ 120,000

Project	Project Description	Pollution Prevented	\$ Saved (first year)
C5 Tape - Reduce and recycle adhesive landfill waste	Recycle mixed scrap adhesive rather than landfill	18.75 tons landfill avoided	\$3,000
TSS Film at Base of Core	Use scrap film at base of core allowing to convert all usable good film that will be wound on core	4.5 tons landfill or incineration avoided	\$41,600
PCD Menomonie Hook Jumbo Reclaim (Level I Award)	Regrind scrap polypropylene and reuse back into the process	212 tons reused	\$ 317,000
Total Pollution Prevented & First year Savings:		437.75 tons	\$ 546,600

Regarding Status of the Goal of Maintaining or Reducing VOC Emissions

Results:

Actual VOC emissions increased 19,000 lbs or 11% in 2011 compared to 2010. Therefore the actual ratio increased from the goal of 4.11 pounds VOC/ 1000 pounds good output to 4.7 pounds. The ratio increase is primarily due to the increase of VOC emissions from C5 Tape operations during the year. This is mainly influenced by product demand from the higher solvent tapes. Results of this goal are shown in Figure 1 and Table 2. Actual emissions by area (2006-2011) are shown in Figure 2.

Figure 1: VOC lb./1000 lb. Good Output

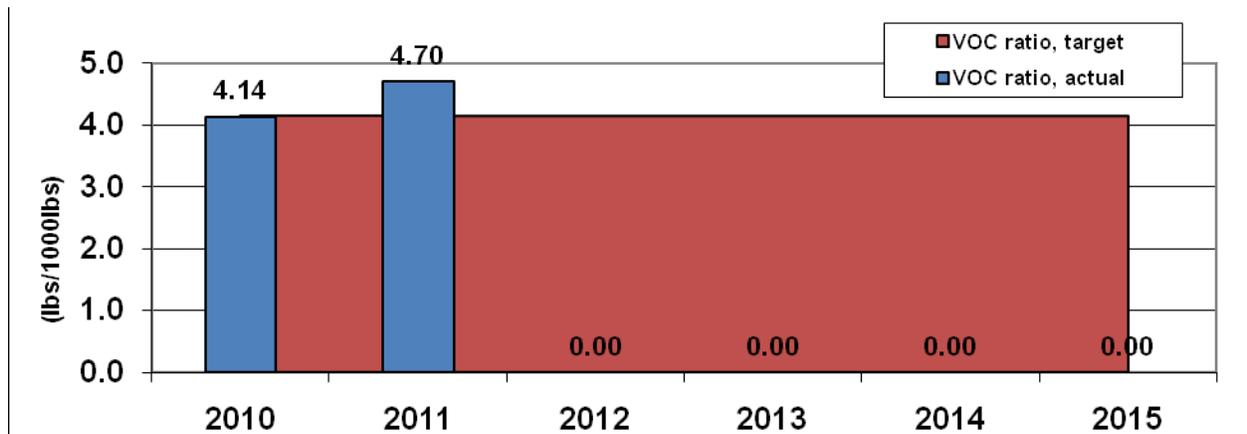
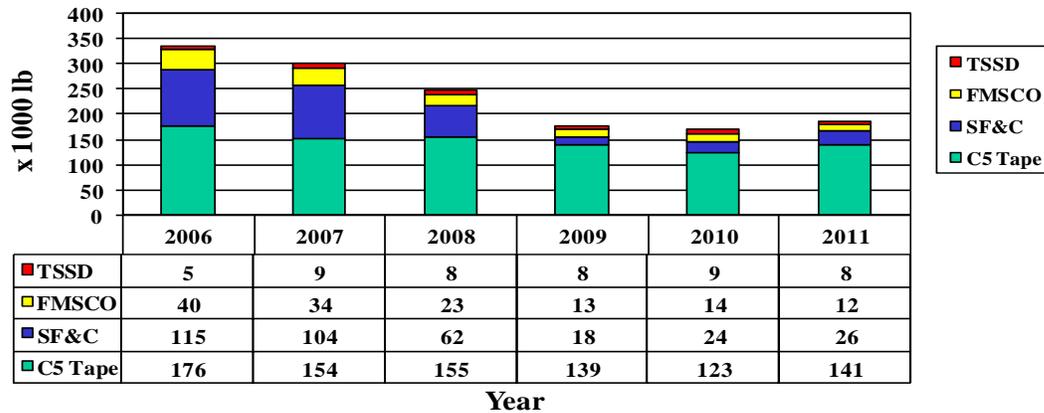


Table 2: VOC/1000 lb. Good Output

Metric	Baseline Year	Goal (%)	Baseline	2010	2011
Total good output (1000 lbs)				40,496	39,766
VOC (1000 lbs)	2010	0%	168	168	187
VOC ratio, actual (lbs/1000 lbs)			4.14	4.14	4.70

VOC ratio, target (lbs/1000 lbs)			4.14	4.14	4.14
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Fig.2 VOCs by Source (2006-2011)



Status of Progress toward Reduction in Waste per Pound of Good Output

Results:

The actual ratio for 2011 was 65.5 pounds waste/ 1000 pounds good output. This was a decrease of 11% from the baseline 2010 levels. There was a concerted effort to identify waste streams that were being sent for W/E treatment to recycle, thus reducing our waste ratio. Results of this goal are shown in Figure 3 and Table 3. As shown in Figure 4, 79% of the non product output produced in 2011 was either recycled or reused. Refer to Figure 5 to review waste by type for the period 2006-2011.

Figure 3: Waste lbs/ 1000 lb. Good Output

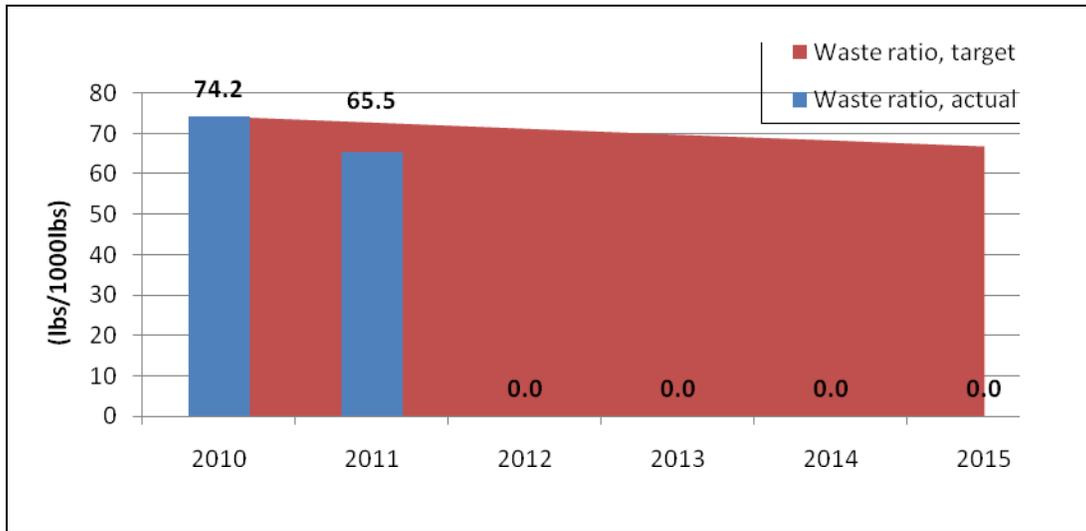
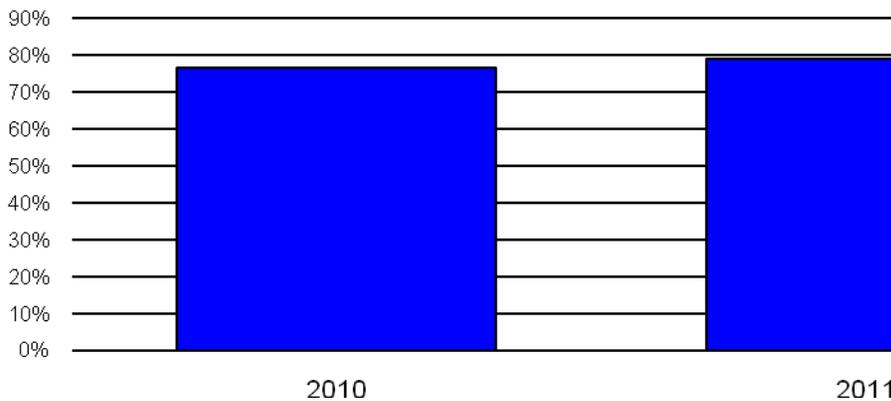


Table 3: Waste / 1000 lb. Good Output

Metric	Baseline Year	Goal (%)	Baseline	2010	2011
Total good output (1000 lbs)				40,496	39,766
Waste (1000 lbs)	2010	10%	3,005	3,005	2,603
Waste ratio, actual (lbs/1000 lbs)			74.20	74.2	65.5
Waste ratio, target (lbs/1000 lbs)			74.20	74.2	72.7

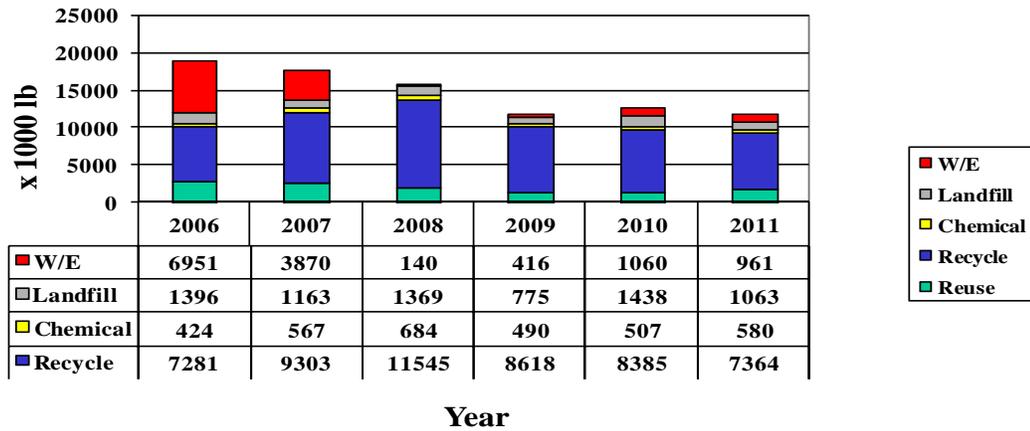
Figure 4: Percent Recycle & Reuse

% Reuse and Recycle



Metric	2010	2011
% Reuse and Recycle	76.5%	78.8%

**Figure 5: Waste Output by Type
2006-2011**



The following table indicates the amount, type, and recovered value of recycled by-product or reused materials from the facility in 2011:

Table 4: 2011 Recycled/Reused Materials

<u>Recycled Waste</u>	<u>Pounds</u>	<u>\$ Recovered</u>
• Plastics	5,195,960	\$ 621,056
• Metals	464,590	\$ 1,007,179
• Aluminum cans	1,986	\$ 932
• Paper/Cardboard	648,768	\$ 48,373
Total:	6.3 MM	\$ 1.678 MM

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- Security waste paper 8,000 lb.
 - Returnable pallets/wood 1,733,440 lb.
 - Landfill 1,202,767 lb @ cost of \$36,217
 - Waste to Energy 1,002,450 lb @ cost of \$66,077
 - Recycled Drums 2,244 drums

Status of Progress toward the Goal of Reducing Energy Usage per Pound of Good Output

Results:

Energy usage was 10,562 Btus/ pound of good output at the end of 2011 vs. a goal of 9,328. The full completion of Building 17 (10,000 square feet) added to the energy load during 2011 with no production output increases from this area. Refer to Figure 6 and Table 5 to review the energy usage results.

Figure 6: Energy Use/ Lb Good Output

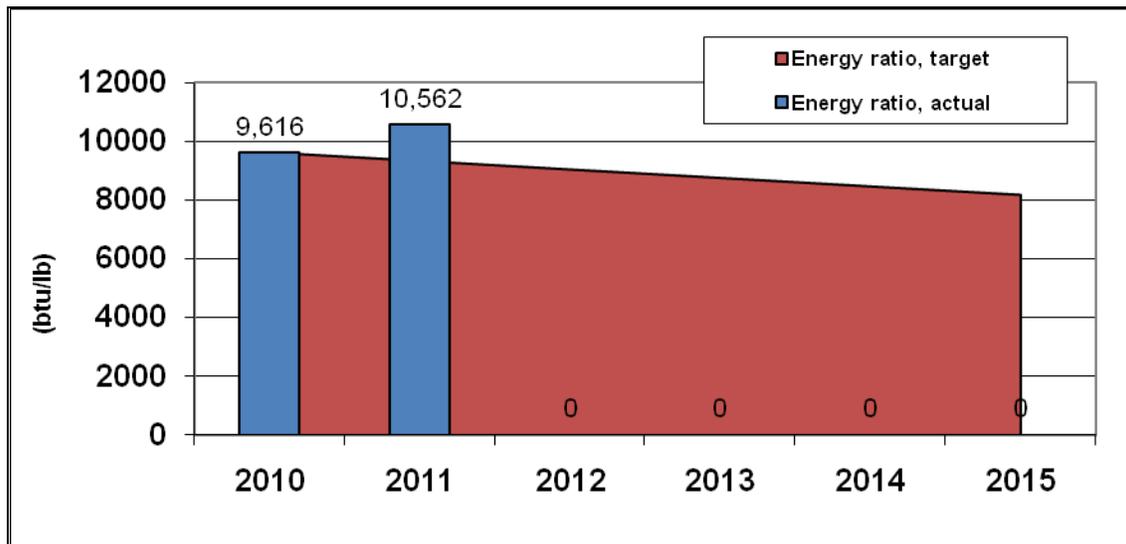


Table 5: Energy Use/Lb. Good Output

Metric	Baseline Year	Goal (%)	Baseline	2010	2011
Total good output (1000 lbs)				40,496	39,766
Energy Usage (MMBtu)	2010	15%	389,432	389,432	420,011
Energy ratio, actual (Btu/lb)			9,616	9,616	10,562
Energy ratio, target (Btu/lb)				9,616	9,328

Status of Progress Made by the Wildlife Team

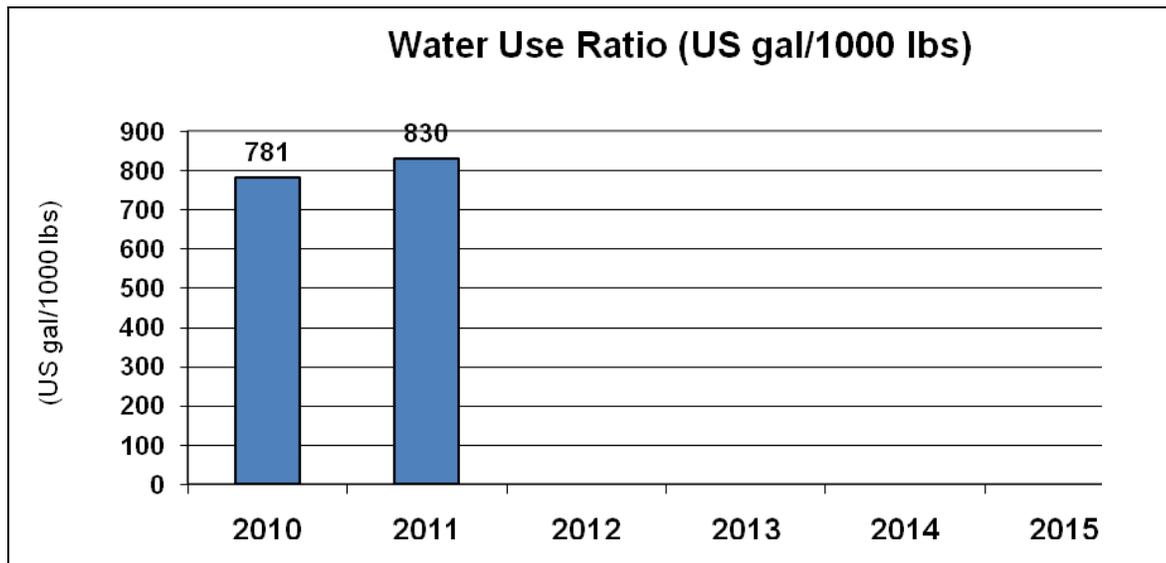
Results:

For the sixth straight year the team conducted nest box monitoring for bluebirds and wood ducks. The blue bird project was again quite successful with 34 confirmed bluebirds and 29 tree swallows raised from the 15 nest boxes. For the sixth straight year the plant provided funding for the Menomonie public schools for their annual Earth day activities and provided volunteers for the event. In late June approximately eight acres of land in the northwest portion of the site was planted in native grasses and flowers that had previously been leased for farming. This was after a project to stabilize some ongoing erosion problems were remediated. See Appendix B for a few pictures of these activities. Plans for 2012 include the potential planting more acreage along the land bordering the wetlands to the west and planting a more visible plot for the public and employees at the intersection of 3M Drive and Stokke Parkway.

Regarding Actual Water Usage Ratio

Although water usage is not part of the Agreement environmental commitments, water usage is tracked as part of the overall corporate ET15 reporting. Water usage, although essential and important to our environmental impact, is not a significant resource consumed in the facility. The majority of the water used by the plant is for makeup water used by the plant chilled water cooling towers. Refer to Figure 7 for water use ratio in gallons in 2010 and 2011.

Figure 7: Plant Water Use Ratio



Regarding Actual Waste Reductions

A summary of 2010/2011 3M-Menomonie actual wastes and air emissions are shown in Table 6:

Table 6: 2010/2011 Waste & Air Emissions
(Lb.)

Type of Waste	2010	2011	% Change	Comment
Regulated Hazardous Waste	193,303	344,399	+ 78 %	The reclassification of the 610 sol waste from the continuous evaporator as a corrosive hazardous waste during midyear caused a large increase in the amount of hazardous waste generated for the year
Non-regulated chemical waste	313,860	316,587	+ 1 %	A slight increase from 2010 levels. The majority of this waste is non-hazardous scrap adhesives and resin waste from film processes sent to the corporate waste incinerator.
Landfill waste	1,437,000	1,063,000	-17%	A decrease in total landfill waste in 2011. Diverted mixed adhesive C5 Tape waste from landfill to recycle
3M waste to energy	1,060,000	961,000	-10 %	A slight decrease in 2011 with efforts focusing on diverting W/E waste streams to recycle
VOC emissions	168,000	187,000	+11%	More VOC content in tapes produced by C5 Tape accounted for the increases of the actual emissions seen in 2011.
Reportable TRI (toxic release inventory) chemicals releases	131,200 (RY2009)	146,150	+ 11%	Offsite releases of toluene and Dimethylformamide account for these releases with the bulk of the releases being toluene air emissions from C5 Tape

Regarding Operational Flexibility:

There were several exempt processes and modifications that were added during 2011 and one submittal for a pre-approved project. This project is the addition of CF8 and CF9 furnace lines that began construction in late 2011. These two ceramic makers are expected to be completed during late 3rd quarter 2012.

Regarding Additional Time Requirements for Fulfilling this Agreement include:

<u>Requirements Added:</u>	<u>Additional Time</u>
Compiling this Performance Report	30 hours/year
Coordinating the Interested Persons Group	20 hours/year

Regarding Overall Assessment of the Success of the Agreement:

Again in 2011 3M Menomonie utilized the operational flexibility provided in this agreement. This again showcases the business advantage of the operational flexibility allowed under the extended Agreement and the ability to expand product manufacturing capability in such a short time frame.

Questions and requests for additional information should be directed to Michael Wendt, EHS Department, at the address below:

3M Company – Menomonie Plant
1425 Stokke Parkway
Menomonie, WI 54751
Phone: 715/235-5541
E-mail: mrwendt@mmm.com

Appendix A: IPG Meeting Minutes

Meeting Minutes – Interested Person Group (IPG)

March 25, 2011

Attendees

Mark Harings – WDNR
Barb Thomas – Sierra Club
Ed Smith – City of Menomonie
Keith Bergeson –Dunn County Health Dept
Paul Sterk – Waste Water Superintendant with Menomonie
Tom Waldon – 3M
Mike Wendt – 3M
Gary Lewis– 3M
Katrina Hendricks– 3M

Meeting welcome and introductions

Tom Waldon - gave introduction and our 3M's dedication to environment, brief business update.
Mike Wendt - update on changes in business.

Environmental Performance Report highlights

ET 2010 end and ET 2015 has started, new metric for 2011 – 2015

Next 5 year goals for VOC reduction

Waste reduction

Energy Reduction

Community Stakeholder Engagement Plan

Sustainability Goal – Katrina will address

Global Company

Sustainability definition

Corporate Goal for Suitability

3M recycle or reuse 24 times more waste than what is sent to landfill

Reduce Greenhouse gas emissions by 77%

Developed Supplier standards in 2008

Sustainability Website

Demonstrated the Website and Sustainable Reports

Interested Persons Group last meetings reviews

Mark –Clarified Green Tier meeting goals and review

Possibly new recurring for the IPG , Bill Dingwald, someone from the Lake Association or others?

Mike Wendt - Environmental Performance

Discussion on March Meeting Minutes

Mark –Clarified Green Tier meeting goals and review. Discussed Green Tier (7 company)

Stakeholders Group committed to Environment Management Systems.

EMS Goals

BSI Audit will be the last week in October - ISO recertification

Regulator Air Audit from the DNR - went well

Internal Compliance Audit this July

Mercury Minimization will be done by Sept. 1

3P projects for 2010 – discuss goal for 2011
VOC Reduction – Tape reformulation will have the largest impact
Non Product Out – Higher than the goal (discussed project to reduce)
Energy - metric went up (add 30% more floor space)
Wildlife Team – recertification
 Discussed Prairie Restoration project and working to stop erosions
 Possible rain garden project
Water Usage
Hazardous Waste

Mark – discussed the audit finding need to be communicated
Barb – April 25th in a Gaylord Nelson Award Dinner
Barb – Possible new projects add to emissions -Undetermined at this time
Keith - asked what percentages of Waste to Energy is TSCA? Unknown
Mark – What 3M product enhance Sustainability? Refer to the 3M catalog
Keith – How much water is use here in Menomonie – 31 million gallons most of what we use for cooling and is evaporated.
Mark – asked about the metrics for Energy – Mike explained differences in corporate goals vs. plant (plant goal is set from out 2010 base line.
Mark -Does 3M have plant in Japan – Gary gave an update
Mark – what drives the Sustainability? Investment community is interested in Sustainability
Barb – belongs to Sustainable Dunn (Very active group in Dunn County)
Barb – How will we know about the Mercury Minimization project completion – next IPG meeting

Meeting Minutes – Interested Person Group (IPG)

December 9, 2011

Attendees

Mark Harings – WDNR	
Barb Thomas – Sierra Club	Mike Wendt – 3M
Ed Smith – City of Menomonie	Gary Lewis– 3M
Mark McDermid – WDNR	Karen Donnelly– 3M
Paul Sterk – City of Menomonie POTW	

Meeting welcome and introductions

Individual introductions and each person was ask to state their goals for 2012.

Gary – “improvement with Safety and Environmental issue (continual improvement)”

Ed – “enjoying retirement”

Paul discussed new camera system for system lines in Menomonie

Barb – discussed environmental issue in the area (Sand mines)

Mark H. – discussed shift in movement within DNR. “Sustainability and large focus on Green Tier with the WDNR”.

Mark – Focus on environmental growth and job growth.

Mike - Working on programs for improving our environment systems

Gary Lewis - brief business update since March meeting

Mike Wendt - update on changes in business expansions and environmental updates. Discussed emissions coming off the Ceramic Fiber lines.

ET 2015 metric- opportunities in C5 Tape to reduce admissions

Next 5 year goals for VOC reduction

Possible 6 3P projects

Energy & water usage is up

New opportunities to recycle and burn for energy vs. landfill

Mercury Minimization – inventory finished in November (nicely done by PE)

Mark - asked about sharing information in Green Tier.

Wildlife Team Prairie Project – reviewed results of project:

We set-aside 20 acres - planted about 8 acres that was experiencing erosion. Worked with Dunn County Land Conservation who evaluated and helped 3M Menomonie hire a contractor to berm the soil and re seed the area. Runoff water now ponding instead of eroding.

Sponsored Earth Day with the schools

Title V renewal application coming up in April and well as Green Tier agreement.

Interested Persons Group last meeting minutes were reviewed

Mark H. –Clarified Green Tier meeting public notice requirements. We will be starting to meet in January 2012. Permit hopefully will be done by July?? The agreement deadline will be waived because of notice of interest has been given previously. A 30 day notice will be sent out for public notice. Hopefully more companies will get together for Green Tier.

Mike Wendt is part of the Lake Association Committee planning a seminar at UW-Stout in March 2012.

Appendix B Wild Life Team Activities

➤ Wildlife Team Prairie Project



8 acre prairie restoration area



Erosion area before remediation



Area after erosion control



Area after planting to native prairie

Appendix C: Earth Day 2011



Picking up trash at the local community garden



Group Picture

APPENDIX D

2012 Menomonie EMS Objectives

- Reduce waste (chemical, landfill, waste to energy) per pound of good output (finished & semifinished goods) to 72.7 #/ 1000 # output
- Sustain or reduce the ratio of VOC emissions per pound of good output at 4.11 # VOC / 1000 # output
- Submit at least **5** 3P (Pollution Prevention Pays) projects in 2012
- Reduce energy use per pound of good output to 9039 BTU/ # output in 2012
- Renew T5 flexible Air Permit and enter as a WDNR Green Tier level 2 company by October 2012
- Pilot ECOS software by end of 2nd Qtr 2012 (replaces EIM)
- WHC (Wildlife Habitat Council) wildlife team activities in 2012:
 - plant up to 8 more acres of native prairie for habitat enhancement
 - continue nest box monitoring – wood ducks & blue birds
 - support Earth Day 2012 with Menomonie schools
 - investigate land use programs/farm lease – no till and nutrient management

