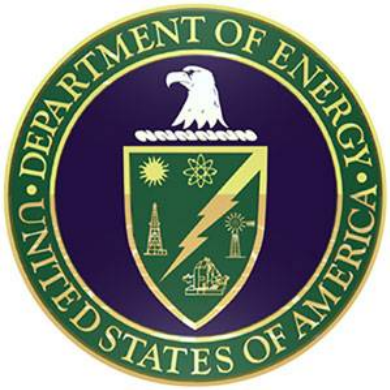
DOE/EA-1699

FINAL ENVIRONMENTAL ASSESSMENT

POPE/DOUGLAS
THIRD COMBUSTOR EXPANSION PROJECT

ALEXANDRIA, MINNESOTA



U.S. DEPARTMENT OF ENERGY
National Energy Technology Laboratory

MAY 2010

THIS PAGE INTENTIONALLY LEFT BLANK

COVER SHEET

Responsible Agency: U.S. Department of Energy

Title: Final Environmental Assessment for the Pope/Douglas Third Combustor Expansion Project (DOE/EA-1699)

Location: Alexandria, Minnesota

Contact:

Mark Lusk, Document Manager
National Energy Technology Laboratory
U.S. Department of Energy
3610 Collins Ferry Road
P.O. Box 880, MS B07
Morgantown, WV 26507-0880
Email: mark.lusk@netl.doe.gov
Fax: (304) 285-4403

Abstract:

The United States Department of Energy, National Energy Technology Laboratory (DOE NETL) prepared this Environmental Assessment (EA) to analyze the potential environmental impacts of providing funding for the proposed Pope/Douglas Third Combustor Expansion Project in Alexandria, Minnesota.

The Proposed Action is for DOE to provide $927,514 of cost-shared funding for this project, or 5% of the overall total project cost of $19,400,000. The proposed project is a Congressionally Directed Project selected by the DOE Office of Energy Efficiency and Renewable Energy (EERE) to advance research and the development and demonstration of energy efficiency or renewable energy technologies or programs. The proposed project would construct and operate a third Municipal Waste Combustor (MWC) to complement the two existing MWCs at the Pope/Douglas Solid Waste Management (PDSWM) waste-to-energy facility. The proposed project would be consistent with DOE's goal to increase the use and amount of renewable energy generation projects.

The third MWC would have a nominal capacity of 120 tons of waste per day and would double the facility's overall capacity. Expansion of the facility would enable PDSWM to manage the solid waste of five counties and provide steam to three customers. Excess steam produced at the facility would be used to produce electricity for in-house use or would possibly be sold to the local energy grid.

The proposed third MWC unit would be designed and operated similarly to the two existing MWC units, and would be constructed on an already paved surface, immediately south of the existing MWCs. The proposed project would require a construction permit and a Major Amendment to the facility's existing air emissions operating permit. However, no other permits are anticipated to be required. No significant adverse impacts are anticipated to result from implementation of this proposed project.

Public Participation:

DOE invited comments on the Draft EA for this project for a period of 30 days following publication of the public notice in two local newspapers; the *Minneapolis-St. Paul Star Tribune* and the *Alexandria Echo Press*. The public notice was published for 3 consecutive days on Thursday, March 11; Friday, March 12; and Saturday, March 13. Copies of the Draft EA were made available through the DOE NEPA website, the Douglas County Public Library System, and at the Pope/Douglas Waste-to-Energy facility in Alexandria. The public was encouraged to submit written comments regarding the proposed project at the above address to Mark Lusk, DOE NEPA document manager.

By the close of the comment period on April 14, 2010, a total of three (3) comments on this project were received during the public comment period. The comments came from the Minnesota Pollution Control Agency (MPCA), the Minnesota Department of Natural Resources (DNR) Division of Ecological Resources, and the Minnesota Historical Society, respectively. These comments have been included in Appendix B of this document. The MPCA asked for clarification and additional information on a few specific items related to wastewater, stormwater, and waste management associated with the proposed project. These items have been clarified and addressed in this Final EA. DNR had no further comment on this project. Finally, the Minnesota Historical Society concluded that no properties listed on or eligible for listing on the National Register of Historic Places will be affected by the proposed project.

Availability:

This EA is available on the DOE website at:
http://www.netl.doe.gov/publications/others/nepa/index.html

TABLE OF CONTENTS

List of Tables iii
List of Figures iii
Acronyms and Abbreviations iv

1.0 INTRODUCTION 1-1
1.1 Background 1-1
1.2 Purpose of and Need for the Proposed Action 1-2
1.3 Location and General Description of the Affected Area 1-2
1.4 Scope of the EA 1-4
1.4.1 Resource Topics Dismissed from Further Analysis 1-4
1.4.2 Compliance with Laws and Executive Orders 1-7

2.0 PROPOSED ACTION AND ALTERNATIVES 2-1
2.1 DOE's Proposed Action 2-1
2.2 Proposed Project 2-1
2.3 No Action Alternative 2-6
2.4 Alternatives Considered and Dismissed 2-7

3.0 AFFECTED ENVIRONMENT 3-1
3.1 Land Use and Soils 3-1
3.2 Water Resources 3-1
3.3 Air Quality 3-3
3.3.1 NAAQS and Ambient Air Quality 3-4
3.3.2 Permitting and Existing Air Emission Sources 3-5
3.4 Noise 3-5
3.5 Biological Resources 3-7
3.5.1 Vegetation 3-7
3.5.2 Wildlife 3-8
3.5.3 Threatened and Endangered Species 3-8
3.6 Human Health and Safety 3-9
3.7 Infrastructure 3-9
3.7.1 Hazardous Materials and Waste Management 3-9
3.7.2 Traffic and Transportation 3-10
3.8 Socioeconomics 3-11

4.0 ENVIRONMENTAL CONSEQUENCES 4-1
4.1 Land Use and Soils 4-2
4.1.1 Proposed Project 4-2
4.1.2 No Action 4-4
4.2 Water Resources 4-4
4.2.1 Proposed Project 4-4
4.2.2 No Action 4-6

4.3 Air Quality 4-7
4.3.1 Proposed Project 4-7
4.3.2 No Action 4-11
4.4 Noise 4-12
4.4.1 Proposed Project 4-12
4.4.2 No Action 4-13
4.5 Biological Resources 4-14
4.5.1 Proposed Project 4-14
4.5.2 No Action 4-14
4.6 Human Health and Safety 4-14
4.6.1 Proposed Project 4-14
4.6.2 No Action 4-16
4.7 Infrastructure 4-17
4.7.1 Proposed Project 4-17
4.7.2 No Action 4-19
4.8 Socioeconomics 4-19
4.8.1 Proposed Project 4-19
4.8.2 No Action 4-20
4.9 Cumulative Impacts 4-20

5.0 COORDINATION AND PUBLIC REVIEW 5-1
5.1 Coordination 5-1
5.2 Public Review 5-1

6.0 REFERENCES CITED 6-1

7.0 DOCUMENT PREPARERS 7-1

APPENDICES

APPENDIX A **AIR EMISSIONS CALCULATIONS**
APPENDIX B **AGENCY CORRESPONDENCE**
APPENDIX C **DISTRIBUTION LIST**

LIST OF TABLES

TABLE 3-1: COMMON SOUNDS AND THEIR LEVELS 3-6
TABLE 3-2: NOISE LIMITS IN THE MINNESOTA NOISE ORDINANCE 3-7
TABLE 3-3: ESTIMATED EXISTING NOISE LEVELS AT THE FACILITY SITE 3-7
TABLE 4-1: IMPACT SIGNIFICANCE THRESHOLDS 4-1
TABLE 4-2: PROJECT EMISSIONS COMPARED TO APPLICABILITY THRESHOLDS 4-8
TABLE 4-3: AIR QUALITY REGULATORY REVIEW 4-8
TABLE 4-4: PTE AIR POLLUTANTS AT THE PDSWM FACILITY 4-10
TABLE 4-5: PREDICTED CONCENTRATIONS OF CRITERIA POLLUTANTS 4-11
TABLE 4-6: NOISE LEVELS ASSOCIATED WITH CONSTRUCTION 4-13

LIST OF FIGURES

FIGURE 1-1: PDSWM WASTE-TO-ENERGY FACILITY (PHOTO) 1-1
FIGURE 1-2: PROJECT VICINITY MAP 1-3
FIGURE 2-1: PROPOSED PDSWM THIRD COMBUSTOR LOCATION 2-2
FIGURE 2-2: PROPOSED PROJECT SITE (PHOTO) 2-5
FIGURE 3-1: WIND ROSE PATTERNS FOR ALEXANDRIA 3-4

ACRONYMS AND ABBREVIATIONS

ANSI	American National Standard
AQCR	Air-Quality Control Region
BACT	Best Available Control Technology
BMP	Best Management Practice
Btu	British thermal units
CAA	Clean Air Act
CEMS	Continuous Emission Monitoring System
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2E	Carbon Dioxide Equivalent
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted Decibel
DNL	Day-night Average Sound Level
DNR	Minnesota Department of Natural Resources
DOE	Department of Energy
EA	Environmental Assessment
EERE	Office of Energy Efficiency and Renewable Energy
EPACT	Energy Policy Act
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
gpd	gallons per day
HAP	Hazardous Air Pollutant
HAZMAT	Hazardous Material
HRA	Health Risk Assessment
Hz	Hertz
kW	kilowatt
L_{50}	Level of noise exceeded 50 percent of the time
L_{10}	Level of noise exceeded 10 percent of the time
L_{eq}	Equivalent Sound Level
LFG	Landfill Gas
LOS	Level of Service
MACT	Maximum Achievable Control Technology
MAR	Minnesota Administrative Regulations
MMREM	Minnesota Mercury Risk Estimation Method
MPCA	Minnesota Pollution Control Agency
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
MWC	Municipal Waste Combustor

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
ng/dscm	nanograms per dry standard cubic meter
NMOC	Non Methane Organic Chemical
NO_2	Nitrogen Dioxide
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NSR	New Source Review
NWS	National Weather Service
O_3	Ozone
OSHA	Occupational Safety and Health
PDSWM	Pope/Douglas Solid Waste Management
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
ppm	parts per million
ppmv	parts per million by volume
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RCRA	Resource Conservation Recovery Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SWPPP	Stormwater Pollution Prevention Plan
tpd	tons per day
tpy	tons per year
$\mu g/m^3$	micrograms per cubic meter
µm	micrometer
USC	United States Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The United States Department of Energy, National Energy Technology Laboratory (DOE NETL) prepared this Environmental Assessment (EA) to analyze the potential environmental impacts of providing cost-shared funding for and implementing the proposed Pope/Douglas Third Combustor Expansion Project in Alexandria, Minnesota. This Congressionally Directed Project was selected by the DOE Office of Energy Efficiency and Renewable Energy (EERE) to advance research and the development and demonstration of energy efficiency or renewable energy technologies or programs.

The proposed project would construct and operate a third combustor at the existing Pope/Douglas Solid Waste Management (PDSWM) waste-to-energy facility. The expansion would double the facility's overall capacity, and allow the facility to meet growing demands for increased regional solid waste processing capacity and supply of renewable energy to local steam customers. Expansion of the facility would enable PDSWM to manage the solid waste of five counties and provide steam to three customers.

1.1 BACKGROUND

The PDSWM Joint Powers Board was formed in 1983 with the overall goal of owning and operating a complete solid waste management system. The system is owned and operated by Pope County (25%) and Douglas County (75%).

The PDSWM waste-to-energy facility was constructed in 1986 (**see Figure 1-1**), and began accepting Municipal Solid Waste (MSW) in April of 1987. In order to sustain the life of the incinerators and keep harmful elements such as glass and metals out of the waste stream, a recycling program was adopted in 1988. Similarly, in 2003, a Material Recycling Facility (MRF) was added to the front end of the waste combustors.

Existing equipment at the PDSWM waste-to-energy facility consists of two Municipal Waste Combustors (MWCs), with a capacity of 120 tons per day as an annual average. Each MWC is an independent system consisting of excess air mass burn refractory combustion chambers followed by two heat recovery boilers. Both units operate pollution control systems, continuous emission monitoring systems (CEMS), and related auxiliary systems. The steam generated during the combustion process is sold to the Douglas

Figure 1-1. PDSWM Waste-to-Energy Facility

County Hospital for heating purposes and to the 3M manufacturing plant for heating and production purposes. Steam is also used by the Pope/Douglas waste-to-energy facility for heating purposes. Any excess steam is used to generate electricity using an existing, 500-kilowatt (kW) steam turbine generator.

The proposed project would add a third MWC to complement the two existing MWCs at the PDSWM waste-to-energy facility. The third MWC would have a nominal capacity of 120 tons of waste per day and would double the facility's overall capacity. The facility expansion would enable PDSWM to manage the growing demands for regional solid waste processing of five counties and would enable the facility to provide an increased amount of renewable energy in the form of steam to local customers.

DOE's Proposed Action would provide cost-shared funding for approximately 5% of the overall total project cost, or $927,514 of the projected total project cost of $19,400,000. Private industry partners would provide the remaining project cost. The project would be considered a permanent installation, and would have a minimum 25 year operating life. However, the period of performance for the government funded action is much shorter (3/1/2010 through 6/1/2011).

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The overall purpose of this Congressionally Directed Project is to advance research and the development and demonstration of energy efficiency or renewable energy technologies or programs. On a national level, there is a need for projects to demonstrate and implement energy generation through more efficient and environmentally preferable means. Projects need to support innovative technologies that would provide fuel flexibility options for manufacturers and consumers and reduce fossil fuel requirements. The proposed project would utilize MSW as the fuel source, which is considered a renewable energy fuel. By utilizing MSW, the project would assist DOE meet the requirements set forth in the Energy Policy Act (EPACT) of 2005, Public Law 109-58, as strengthened by Executive Order 13514, which call for increases in renewable energy generation and use.

The proposed project also assists DOE meet the goals set forth in the Energy Independence and Security Act of 2007 by increasing national energy security through increased production of biofuels. The increased use of biofuels will result in a variety of benefits to the nation, including: improved national energy security, increased economic growth, and broad-based environmental benefits (DOE, 2007a).

1.3 LOCATION AND GENERAL DESCRIPTION OF THE AFFECTED AREA

The existing PDSWM waste-to-energy facility is located on a 6-acre property owned by the PDSWM in Douglas County, in west-central Minnesota **(see Figure 1-1)**. The PDSWM facility is located within the southeast side of the City of Alexandria, north of Interstate 94, at the northeast corner of Jefferson Street and 22nd Avenue.

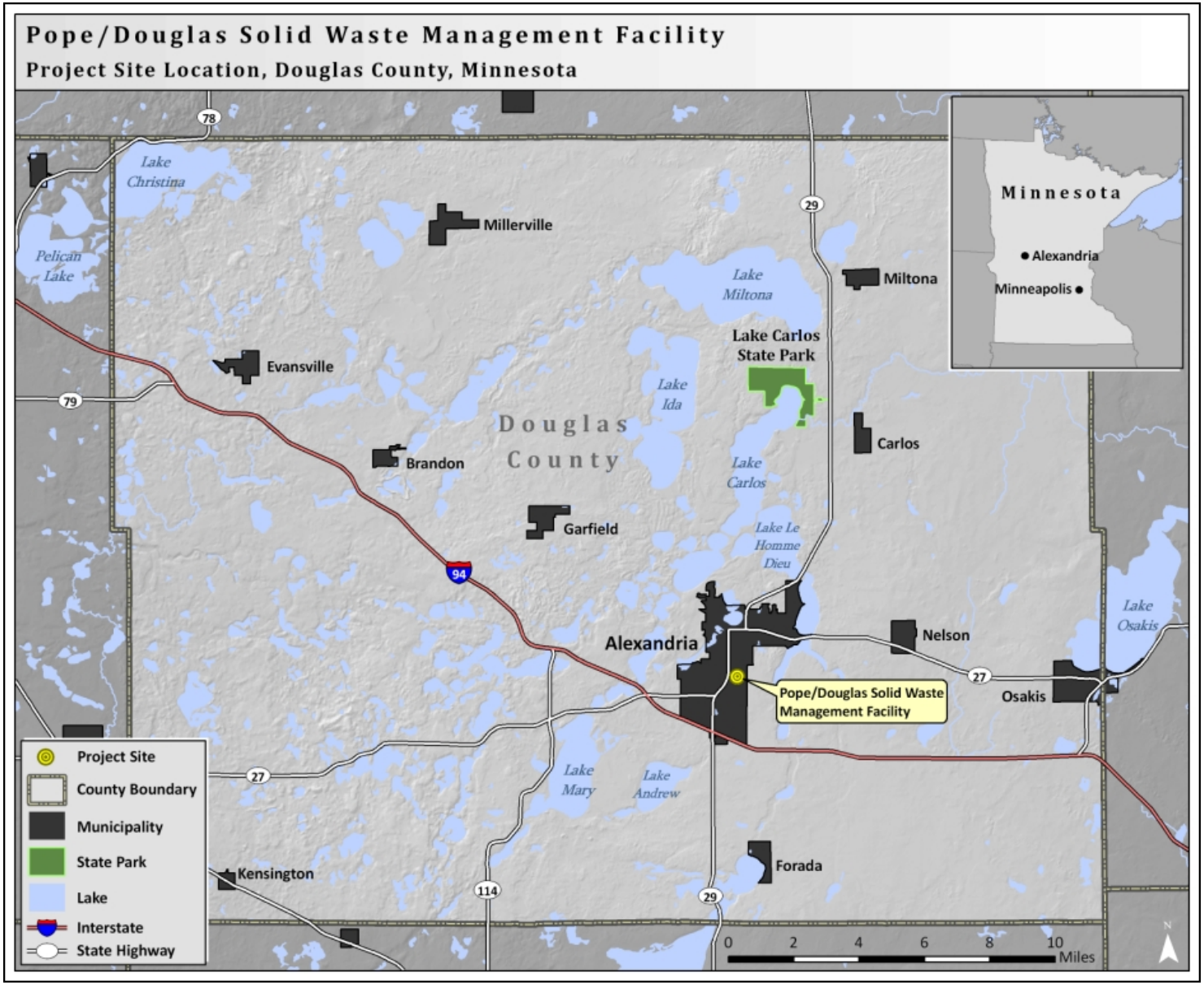


Figure 1-2. Project Vicinity Map

Property west and immediately south of the PDSWM facility is owned by the 3M Company. Property to the north and east of the facility is owned by Alexandria Technical College. Southwest of the facility, a light commercial district featuring office buildings is under development. The PDSWM facility was constructed in 1986, and the facility grounds are mostly paved with an impervious bituminous surface.

1.4 SCOPE OF THE EA

This Environmental Assessment (EA) analyzes the potential environmental impacts that would result from DOE's Proposed Action, which would result in implementation of the proposed project, and its alternative, the No Action alternative. This EA was prepared in compliance with the National Environmental Policy Act of 1969 (P.L. 91-190), the Council of Environmental Quality Regulations dated 28 November 1978 (40 CFR Parts 1500-1508), and the DOE NEPA Implementing Procedures (10 CFR Part 1021).

Key goals of NEPA are to help federal agency officials make well-informed decisions about agency actions and to provide a role for the general public in the decision-making process. The study and documentation mechanisms associated with NEPA seek to provide decision-makers with sound knowledge of the comparative environmental consequences of the courses of action available to them. NEPA studies, and the documents recording their results, such as this EA, focus on providing input to the particular decisions faced by the relevant agency officials.

This EA identifies, describes, and evaluates the potential environmental impacts that would result from the implementation of the proposed project and the no action alternative, and takes into consideration possible cumulative impacts from other actions. As appropriate, the affected environment and environmental consequences of the action will be described in both site-specific and regional contexts. In instances where mitigation measures may lessen any potentially adverse impacts, this EA identifies such measures that could be implemented to further minimize environmental impacts.

The following resource areas have been identified for study within this EA: soil and land use, water resources (including surface water, wetlands, and floodplains), air quality, noise, biological resources (including threatened and endangered species), human health and safety, infrastructure, and socioeconomic resources. Resource areas considered but dismissed for further analysis are discussed below.

1.4.1 Resource Topics Dismissed from Further Analysis

Several resource topics and issues were raised during internal DOE scoping for this project that were not considered to warrant detailed analysis in this EA because they were: 1) outside the scope of the proposed project; 2) already decided by law, regulation, or other higher level decisions; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The rationale for eliminating these issues is provided in the descriptions below.

Wild and Scenic Rivers

The National Wild and Scenic Rivers Act is administered by four federal agencies; the Bureau of Land Management, the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. The Act protects selected rivers, and their immediate environments, which possess outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values. In Minnesota, several reaches of only one river, the St. Croix River, are designated as a National Wild and Scenic River. At its closest point, the St. Croix River is located approximately 120 miles east of Alexandria, where it forms the state line between Minnesota and Wisconsin. The St. Croix River is not located within the same watershed as the proposed project, and as a result, the river will not be impacted by the proposed project. Therefore, this topic is dismissed from further analysis.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,* requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities (e.g. those persons who identify themselves as something other than White, not Hispanic or Latino, in the U.S. Census) and low-income populations and communities.

The U.S. had a minority population of 34.4% in 2008. Comparatively, the State of Minnesota (14.6%), Douglas County (2.6%), and the City of Alexandria (2.9%) all have very low percentages of minority populations (USCB, 2009). Additionally, compared to the U.S. percentage of individuals below the poverty line in 2008 (13.0%), both the State of Minnesota (9.5%) and Douglas County (10.6%) were below averages (USCB, 2009). No 2008 census data on poverty was available for the City of Alexandria.

No residential areas, or minority or low-income areas, are located in the immediate vicinity of the PDSWM facility. No disproportionate impacts on either minority or low-income populations are anticipated to result from the proposed project. Therefore, this topic is dismissed from further analysis.

Recreation

The project area is contained entirely within the PDSWM waste-to-energy facility property; public access and use of the property is strictly limited, as are natural resources at or near the property. The proposed project is not anticipated to impact any public or recreational uses of the land. Furthermore, the offsite impacts of the proposed project (e.g. air emissions from facility operations) are not anticipated to have any impact on recreation activities offsite of the proposed project area. Because the proposed project would not appreciably diminish recreation opportunities or the quality of recreation activities in the vicinity of the project area, this topic is dismissed from further analysis.

Cultural and Historic Resources

Cultural and historic resources are protected by a variety of laws and regulations, including the National Historic Preservation Act, as amended, and the Archaeological Resources Protection Act. Section 106 of the National Historic Preservation Act and implementing regulations (36 CFR 800) outline the procedures to be followed in the documentation, evaluation, and mitigation of impacts to cultural resources. The Section 106 process applies to any federal undertaking that has the potential to affect cultural resources.

Douglas County has fourteen properties that are included on the National Register of Historic Properties database; nine of these properties are located within the City of Alexandria and include residences, a train depot, a post office, a courthouse, and a library (MNHS, 2007). None of the buildings on or immediately adjacent to the PDSWM property are included in the historic properties database. Additionally, there are no known archaeological resources on the property.

The Minnesota State Historic Preservation Office (SHPO) and Office of the State Archaeologist have been contacted regarding this project by the project proponent's consultant, as part of the requirements of the Minnesota Environmental Policy Act. On May 17, 2007, the SHPO indicated that no archaeological sites or historic structures were identified in the search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the project site (see **Appendix B**).

Additionally, DOE provided the SHPO with a copy of the Draft EA for review. In a letter dated April 6, 2010, the Minnesota SHPO concluded that no properties listed on or eligible for listing on the National Register of Historic Places will be affected by the proposed project (see **Appendix B**).

The Minnesota SHPO would be notified immediately if any item of potential archaeological significance is discovered during construction of the third combustor unit. If any historically or culturally significant materials or artifacts were to be unearthed, activities would halt immediately and not resume until consultation with the SHPO has been completed, in accordance with 36 CFR 800.13. With the understanding that the preceding steps will be taken, and that the potential for the discovery of any significant cultural resources is low at the PDSWM facility site, the impact topic of cultural and historic resources is dismissed from further analysis.

Odor

The PDSWM waste-to-energy facility has been specifically designed to contain odors within the facility in order to minimize offsite impacts from odors. Delivery trucks unload the waste into the enclosed fuel reception area. Negative pressure is maintained by drawing combustion air from the tipping floor into the furnace. At the temperatures encountered within the combustion furnace, odors associated with the wastes are removed. No odor complaints have been received by the facility (Hellerman, 2009).

Because the proposed project is not anticipated to noticeably increase odors in the vicinity of the project area, this topic is dismissed from further analysis.

1.4.2 Compliance with Laws and Executive Orders

This EA complies with the NEPA, CEQ regulations (40 CFR Parts 1500-1508), and DOE regulations for compliance with NEPA (10 CFR Part 1021). The EA also addresses all applicable laws and regulations, including but not limited to the following:

- Energy Policy Act (EPACT),
- National Historic Preservation Act (NHPA),
- Archeological Resources Protection Act (ARPA),
- The Noise Control Act of 1972, as amended,
- Addressing Environmental Justice (EO 12898)
- Clean Air Act (CAA),
- Clean Water Act (CWA),
- Coastal Zone Management Act,
- Protection of Wetlands (EO 11990),
- Floodplain Management (EO 11988),
- Endangered Species Act (ESA),
- Pollution Prevention Act (PPA),
- Resource Conservation and Recovery Act (RCRA), and
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The proposed project will meet the new emission standards promulgated under 40 CFR Part 60.1000 to 60.1465, Subpart AAAA "Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001". Implementation of the Proposed Action will also help carry out Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,* by promoting pollution prevention through the elimination of waste by diverting solid waste. Finally, the Proposed Action will help DOE meet the provisions set forth in the Energy Independence and Security Act of 2007.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 DOE'S PROPOSED ACTION

DOE's Proposed Action is to provide cost-shared funding for the proposed Pope/Douglas Third Combustor Expansion Project in Alexandria, Minnesota. This Congressionally Directed Project would advance research, and the development and demonstration of energy efficiency or renewable energy technologies, and would be consistent with DOE's goal to increase the use and amount of renewable energy generation projects. The proposed project would add a third Municipal Waste Combustor (MWC) to complement the two existing MWCs at the Pope/Douglas Solid Waste Management (PDSWM) waste-to-energy facility (**see Figure 2-1**). The third MWC would have a nominal capacity of 120 tons of waste per day and would double the facility's overall capacity. Expansion of the facility would enable PDSWM to manage the solid waste of five counties and provide steam to three customers. Excess steam produced at the facility would be used to produce electricity for in-house use or would possibly be sold to the local energy grid.

The DOE Office of Energy Efficiency and Renewable Energy (EERE) would provide funding for approximately 5% of the overall total project cost, or $927,514 of the projected total project cost of $19,400,000. Private industry partners would provide the remaining project funding and be responsible for project implementation. The proposed project would be considered a permanent installation, and would have a minimum 25 year operating life.

2.2 PROPOSED PROJECT – POPE/DOUGLAS THIRD COMBUSTOR EXPANSION PROJECT

The proposed project would construct and operate a third MWC immediately south of two existing MWCs, on 0.2 acres of property owned by the project proponent. The proposed project would be implemented by the Pope/Douglas Solid Waste Management. The following discussion provides background and details about the PDSWM's proposed project.

Municipal Solid Waste

Municipal Solid Waste (MSW) consists of any garbage or refuse and other discarded material, including solid, liquid, semi-solid, or contained gaseous material from residential, community, and commercial activities. MSW also consists of some non-hazardous institutional and industrial wastes (USEPA, 2009a). MSW can be directly combusted in waste-to-energy facilities to generate electricity. Approximately 14% of all MSW generated in the U.S. was combusted with energy recovery in 2007 (DOE, 2007b).

MSW consists both of renewable resources and of materials derived from fossil fuels, such as tires and plastics. MSW renewable resources include paper and paper board, wood, food, leather, textiles and yard trimmings. These resources are termed biogenic resources and are a form of biomass. MSW has in the past been classified as a renewable energy fuel only to the extent that the energy content of the MSW source stream is biogenic (DOE, 2009a). However, in accordance with Executive Order 13514 (signed into effect

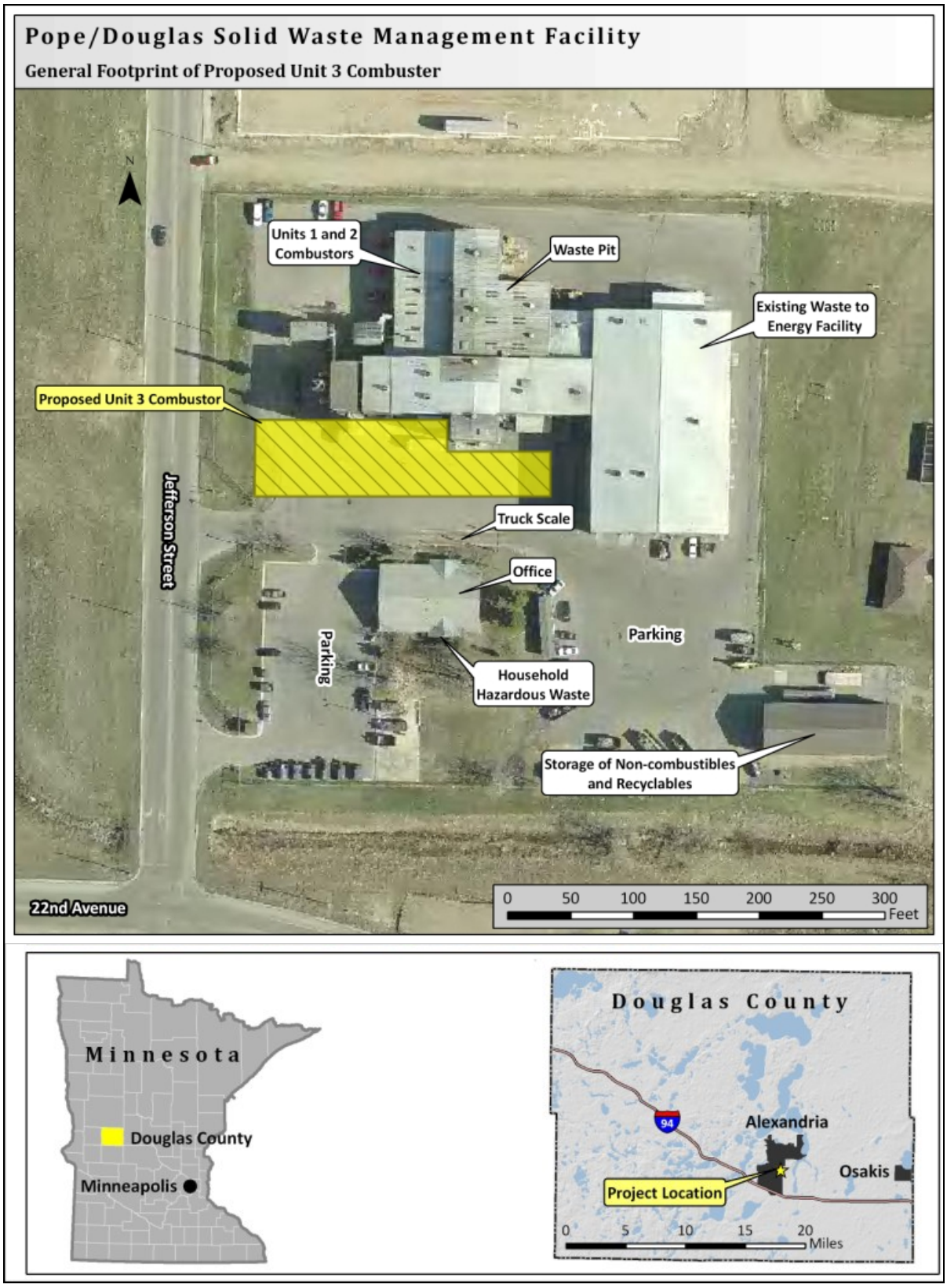


Figure 2-1. Proposed PDSWM Third Combustor Location

October 5, 2009), all energy produced by MSW is specifically designated as renewable energy.

Biogenic MSW was the source of about 15% of the total biomass energy generated in the U.S. in 2008. In turn, biomass energy accounted for approximately 16% of all renewable energy generated in the U.S. in 2008 (DOE, 2009a). Each ton of combusted MSW is roughly equivalent to the combustion energy of one third ton of coal or one barrel of oil.

The State of Minnesota characterizes all mixed MSW as biomass, and all energy generated from the combustion of mixed MSW in Minnesota is considered renewable energy (MNORS, 2009).

PDSWM Waste-to-Energy Facility

The existing PDSWM waste-to-energy facility consists of two MWCs (Units 1 and 2), with a total capacity of 120 tons of waste per day as an annual average. Each MWC is an independent system consisting of excess air mass burn refractory combustion chambers followed by two heat recovery boilers. The steam generated during the combustion process is sold to the Douglas County Hospital for heating purposes and to the 3M manufacturing plant for heating and production purposes. Steam is also used by the PDSWM waste-to-energy facility for heating purposes. Any remaining steam is used to generate electricity using an existing, 500-kilowatt (kW) steam turbine generator.

Flue gases from both existing MWC systems exit through a common stack. Pollution control equipment consists of the following: (1) dry lime injection for control of acid gases, (2) activated carbon injection for the control of dioxins and mercury, (3) a fabric filter for the control of particulate matter and metals, and (4) flue gas recirculation (FGR) for reduced formation of thermal oxides of nitrogen (NOx). Exhaust gases enter the atmosphere through a single 70-feet (ft) tall steel stack. Exhaust gases are continuously monitored for carbon monoxide (CO), sulfur dioxide (SO_2), opacity, and oxygen (O_2). A number of operating parameters, including fabric filter inlet temperature, steam flow rate, and activated carbon feed rate are also monitored continuously.

The original waste combustors were installed in 1986 and became operational in 1987. The waste combustors were replaced in 1999, and the waste heat recovery boilers were replaced in 2003. The facility is regulated as a "Class C" waste combustor under state rules and as a "Small Class II" waste combustor under federal rules, due to the facility having an aggregate plant combustion capacity of no more than 250 tons of municipal waste per day. The facility employs an average of 35 workers.

The existing facility burns a total of 120 tons of mixed MSW, refuse-derived fuel, and/or other solid waste per day, based on an annual average. This currently translates into a heat input rate of 27.5 million British thermal units per hour (Btu/hr) for each waste combustor, assuming a heat content of 5,500 Btu/lb (Wenck, 2009d).

MSW is delivered and unloaded at the PDSWM waste-to-energy facility from solid waste collection trucks. Approximately 5,700 trucks deliver MSW to the facility from Pope,

Douglas, and Grant counties each year. The majority of these trucks (5,544) deliver MSW to the facility between 6 a.m. and 6 p.m., Monday through Friday. A small percentage of trucks (156 trucks per year) deliver MSW to the facility on Saturdays from 6 a.m. to 6 p.m. Once unloaded, the MSW is manually and mechanically processed at the facility's Materials Recovery Facility (MRF). All MSW received by the PDSWM waste-to-energy facility is processed at the MRF before the combustion process in order to:

- Identify and remove problem materials (e.g. large metal items; concrete blocks and chunks; gypsum board [sheet rock]; lead acid batteries; propane cylinders; mercury switches and thermostats);
- Remove recyclables, such as aluminum, ferrous metals, and cardboard; and
- Remove non-combustible materials.

Natural gas is used to warm-up the waste combustor and pollution control equipment at start-up and as necessary to maintain proper combustion conditions. In 2008, the facility used 1.5 million cubic feet of natural gas. The facility also has an existing 3.5 MMBtu/hr auxiliary boiler. This boiler is used to heat the facility in the event that both the MWCs are shut down during the winter. The auxiliary boiler has not been used since 2005.

Ash produced in the course of waste combustion is loaded into a truck in an enclosed area at the facility. Approximately 7,300 tons of ash is produced by the facility each year. The ash is wetted, covered, and transported via trucks to dedicated ash cells at the Pope/Douglas Ash Monofill in Solem Township, approximately 20 miles away. Approximately 620 truck loads of ash are transported from the facility to the monofill each year. Any non-processable wastes (such as water heaters, water softeners, mattress, etc.) from the facility are transferred to a MSW landfill located in Gwinner, North Dakota.

Third Combustor Expansion

The proposed expansion of the PDSWM waste-to-energy facility would involve the construction and operation of a third MWC (Unit 3), which would have a nominal capacity of 120 tons of waste per day as an annual average. The addition of the proposed third MWC would double the facility's overall capacity from 120 tons per day to 240 tons per day as an annual average. Similar to the two existing MWC units, the third unit would produce steam to be sold to steam customers, and would also be used by the facility for heating purposes. An additional 1,055-kW steam turbine generator may also be installed to generate electricity from steam produced by the proposed third MWC unit. The output of this generator was not included in the third MWC unit estimates. If the generator is installed, more electricity than is required would be produced and this electricity would, in turn, be sold to the power grid.

The third MWC unit would be designed and operated similarly to the two existing MWC units. The third unit would have the same emission control configuration as the existing MWC units, including dry lime injection, activated carbon injection, and a fabric filter. Exhaust gases would also continuously be monitored for carbon monoxide, sulfur dioxide, nitrogen oxides, opacity, and oxygen. The proposed third MWC would have a

total waste combustion capacity of 120 tons per day, which translates into a heat input rate of 55 million Btu/hr (assuming a heat content of 5,500 Btu/lb). The unit would exhaust through a new, separate 110-foot steel stack.

The third MWC and its supporting infrastructure would be constructed on an already paved surface, immediately south of the existing MWCs. A new ash handling system would be needed to accommodate ash production from the third MWC. The amount of ash generated from operation of the expanded facility would roughly double the quantity of ash currently produced. The total amount of domestic water required and the amount of wastewater generated from the expanded facility would also increase with the addition of the third combustor unit. Lighting, heating, electrical power, service air, service water, communications, and fire protection services would all be expanded from the existing buildings into the third unit building.

The third combustor expansion would allow two additional counties (Stearns and Stevens) to utilize the PDSWM facility for their solid waste disposal needs while continuing to service the three counties currently using the facility. The PDSWM facility received a commitment from Stearns County for 45,000 tons of waste per year and an unguaranteed commitment of 5,000 tons of waste per year from Stevens County. The Proposed Action would enable the facility to accommodate this addition of approximately 50,000 tons of waste per year.

The PDSWM facility's two current steam customers (Douglas County Hospital and 3M) are expanding their operations and will require additional steam energy. This proposed facility expansion would allow the PDSWM to meet their energy needs while also adding an additional steam customer, Alexandria Technical College. Excess steam produced at the facility would be used to produce electricity for in-house use or would possibly be sold to the grid.

The third combustor unit would be constructed immediately south of the existing MWCs, on 0.2 acres of property that has been previously paved and is generally unused (see **Figure 2-2**). The proposed location for the third unit would allow for optimal operational and control integration with the existing facility, and would minimize the length of utility feeders to and from the new unit. The proposed third combustor building would be approximately 203 ft by 73 ft (14,819 square ft) and 58 ft tall.

Figure 2-2. Proposed Project Site

Construction and installation activities related to the third combustor unit is anticipated to take 13 to 16 months, and would employ a peak of approximately 90 construction workers; anywhere from 25 to 55 construction workers are anticipated to be onsite at any

given time. Construction equipment used during the third unit construction and installation activities would include heavy haul trucks, large tractors, cranes, and fabrication equipment.

If the Proposed Action is implemented, construction and installation of the third combustor unit is anticipated to be completed in May 2011. Current operations of the PDSWM would remain largely unchanged while the third unit is constructed and brought online. The third combustor unit would have an expected life of a minimum of 25 years. Routine operation of the proposed third combustor would require 10 additional full-time staff.

2.3 NO ACTION ALTERNATIVE

Pursuant to 40 CFR 1502.14(d), the No Action alternative must be analyzed. "No Action" means an action would not take place. The No Action Alternative provides a benchmark for decision makers to compare the magnitude of potential environmental effects of the proposed project or alternatives with the conditions that would occur if the action does not take place. Under the No Action alternative, DOE would not provide funding for the third combustor expansion at the PDSWM facility.

In reality, construction and operation of the third combustor could proceed as described, although without any federal monetary contribution, as described in the proposed project. However, for the purposes of providing a baseline for describing and quantifying the impacts associated with the proposed project, a hypothetical "No Action" alternative, which assumes that the third combustor would not be constructed, is analyzed in this EA. Under the No Action alternative scenario, the PDSWM waste-to-energy facility would continue to operate only its two existing MWCs and would undergo no additional expansion.

Without the PDSWM facility expansion, the additional MSW volumes expected to be combusted by the facility would instead, under this scenario, continue to be diverted to a different location for management (either a landfill or another waste-to-energy facility). If the waste is landfilled, the waste would need to be transported to a facility with adequate capacity (such as the Gwinner MSW Landfill in North Dakota), which would involve both increased mobile emissions from the transport trucks and consumption of landfill space. Additionally, landfill gas (LFG) would be produced as a natural byproduct from the decomposition of organic materials in the waste.

By volume, LFG is generally composed of 50 to 55 percent methane, 40 to 45 percent carbon dioxide and water vapor, and trace amounts of a variety of other gases such as nitrogen, oxygen, and hydrogen. LFG also contains trace amounts of inorganic compounds and less than 1 percent of Non-Methane Organic Chemicals (NMOCs); NMOCs in air emissions from LFG include Volatile Organic Compounds (VOCs) and Hazardous Air Pollutant (HAPS). Nearly 30 organic HAPS have been identified in uncontrolled LFG, including benzene, toluene, ethyl benzene, and vinyl chloride. If uncontrolled, HAPs and VOCs can react with sunlight to form ground-level ozone (smog) and human exposure to HAPS can lead to adverse health effects (USEPA, 2008). Although concentrations of NMOC in LFG vary on several site specific factors, the

USEPA has derived a default concentration of 595 parts per million by volume (ppmv) of NMOC in LFG (USEPA, 2006). Of this total NMOC, 110 ppmv are considered HAP compounds. Thus, total uncontrolled concentrations of organic HAP at MSW landfills are typically less than 0.02 percent of the total LFG (USEPA, 2006).

If the waste is transported to a different waste-to-energy facility, increased travel distances from the MSW collection trucks to the alternative facility(s) would likely be involved, which would increase emissions from mobile sources.

Additionally, the two current PDSWM steam customers would need to purchase energy elsewhere to support their expanded operations, and no additional steam customers could be serviced under the No Action scenario. The additional energy would most likely be purchased from Alexandria Light and Power.

2.4 ALTERNATIVES CONSIDERED BUT DISMISSED

CEQ regulations for implementing NEPA require that federal agencies explore and objectively evaluate all reasonable alternatives to a proposed project and to briefly discuss the rationale for eliminating any alternatives that are not considered in detail. For this project, no other alternatives are currently being considered. Alternate locations for the proposed third combustor unit were not considered, as the new combustor components will be located in as close proximity as possible to the existing MWCs and the MRF, and in order to minimize new construction requirements for both logistical and economic reasons.

3.0 AFFECTED ENVIRONMENT

3.1 LAND USE AND SOILS

The PDSWM waste-to-energy facility is located in Douglas County, within the southeast side of the City of Alexandria. The facility property is located at the northeast corner of Jefferson Street and 22nd Avenue. Property west and immediately south of the PDSWM facility is owned by the 3M Company. The City of Alexandria adopted numerous ordinances which enforce the City's Zoning Map and Comprehensive Plan. The facility site and 3M properties are zoned in an I-1 zoning district for light industrial development.

Property to the north and east of the facility is owned by Alexandria Technical College, located in an R-2 zoning district (single and two family residential developments). Southwest of the facility, there are I-B and B-1 zones that allow commercial businesses, such as office buildings. The I-B zoning district prohibits food establishments and hotels. This zone serves as a buffer area for 3M and the PDSWM facility, as various types of development continue to move northward from Interstate 94.

Approximately ¼ mile east of the facility, the zoning is single family residential, but the area is primarily undeveloped land at this time (Wenck, 2009a).

Staff at the PDSWM facility manages and maintain several buildings, support structures, and the infrastructure at the facility site. Facility staff also actively maintains the grounds on the site by mowing and brush clearing. The existing tallest point at the site is the single 70-ft tall steel exhaust stack. The proposed project area is located on paved land and is contained completely within the existing PDSWM facility's property boundaries.

The facility site is located within the Central Lowland physiographic province. The site is relatively flat, though gently rolling hills can be found in the vicinity. Soils underlying the facility site consist of Waukon soils. The Waukon soils consist of very deep well drained soils that formed in glacial till on glacial moraines. Surface runoff of the soils is low to high, and permeability is moderate. Slopes range from 0 to 40 percent (USDA, 2005).

3.2 WATER RESOURCES

The PDSWM facility lies within the drainage of the Mississippi River system. Specifically, the facility is located in the Upper Mississippi River Basin, in the Long Prairie River Watershed (Hydrologic Unit Code 07010108). The Long Prairie River Watershed has approximately 606 total river miles, of which 331 miles are considered perennial. The other major rivers in the watershed include the Crow Wing River, Eagle Creek, Moran Creek, Spruce Creek and Turtle Creek. The watershed also contains approximately 329 lakes with a total acreage of 40,140. Major lakes in the watershed include Fish Trap Lake, Lake Carlos, Lake Ida, Lake Miltona and Lake Shamineau (MPCA, 2000).

No surface waterbodies are located on the PDSWM facility site. Additionally, there are no rivers or lakes in the immediate vicinity of the facility. The closest surface waterbody to the facility is Lake Victoria, approximately one mile east of the facility.

There are no federally classified or other known wetlands on or in the immediate vicinity of the PDSWM facility site (NWI, 2009). Additionally, there are no designated 100-year floodplains either on the facility property or in the immediate vicinity of the facility. The closest 100-year floodplain is over 8.5 miles northeast of the facility, along the Long Prairie River.

The National Pollutant Discharge Elimination System (NPDES) under the CWA prohibits the discharge of any pollutant, including sediments, to waters of the United States. Industrial sites require coverage under the NPDES program. The NPDES program is regulated by the U.S. Environmental Protection Agency (USEPA), and within Minnesota, the program is administered by the Minnesota Pollution Control Agency (MPCA). The PDSWM facility does not hold its own NPDES permit; instead the site is under the jurisdiction of the City of Alexandria's NPDES permit for a Municipal Separate Storm Sewer System (MS4).

Stormwater at the PDSWM facility site is collected in a storm sewer system and diverted to an onsite small stormwater sedimentation pond and associated grassy area located in the southeast portion of the site. The outfall from the sedimentation pond discharges to a Type 3 (shallow marsh) wetland, as per Minnesota Department of Natural Resources (DNR) classification (Wenck, 2009a). This onsite sedimentation pond was required to be constructed as part of the 2002 building permit for the MRF. The building permit number issued by the City of Alexandria is 0298B02 issued May 23, 2002.

Groundwater in the vicinity of the PDSWM facility site is associated with unconsolidated alluvial glacial deposits. The aquifer underlying the facility is not utilized as a water source in the immediate area, and no groundwater is used onsite.

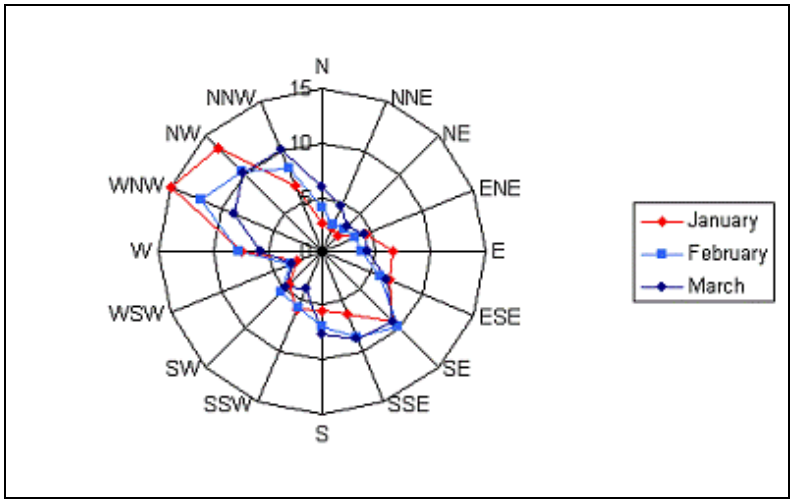
All water used at the facility is delivered by and purchased from the City of Alexandria's municipal water supply. Water is currently used at the facility for domestic, ash quenching, and boiler make-up purposes. Average annual usages are 4,354,000 gallons for domestic use and ash quenching purposes, and 4,026,000 gallons for boiler make-up feed water (Wenck, 2009a).

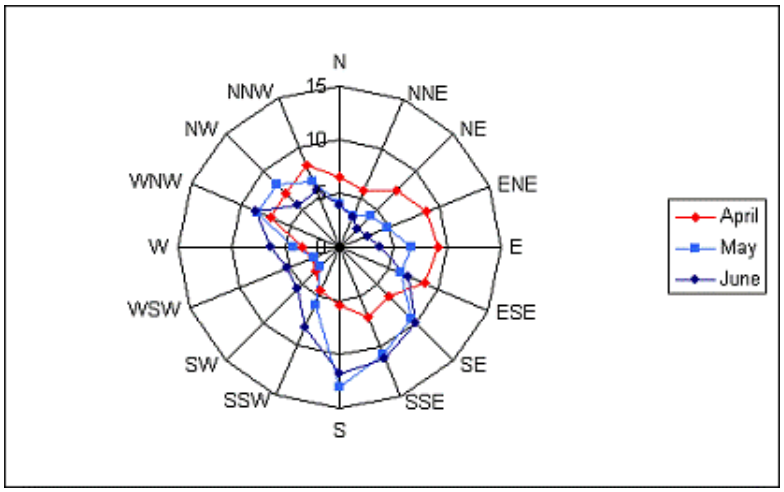
Sewer water from the facility, including domestic wastewater and process wastewater discharged from the boiler pretreatment regeneration and boiler blowdown systems, is discharged to a municipal wastewater treatment plant owned and operated by the Alexandria Lakes Area Sanitary Sewer District. All drains within the facility are connected to the sanitary sewer. The drains are protected from spills and leaks that may occur during normal operations at the facility by utilizing standard spill prevention and control measures. No pretreatment is currently provided for the industrial wastewater discharged to the municipal sanitary sewer. The facility currently produces approximately 10,000 gallons per day (gpd) of wastewater. Approximately 5,000 gpd is

from the boiler pretreatment regeneration, 3,000 gpd from the boiler blowdown and 2,000 gpd from domestic wastewater (Wenck, 2009a).

3.3 AIR QUALITY

The climate of the Alexandria region is greatly influenced by the numerous lakes and waterways in the region. Temperatures average a high of 70 degrees Fahrenheit during the month of July and a low of 8 degrees Fahrenheit in January (MRCC, 2005). Wind rose patterns observed at the Alexandria airport have been summarized by the University of Minnesota State Climatology Office. Wind patterns at the Alexandria airport seem to be predominantly from the northwest and the south. The wind rose patterns for Alexandria are included below:





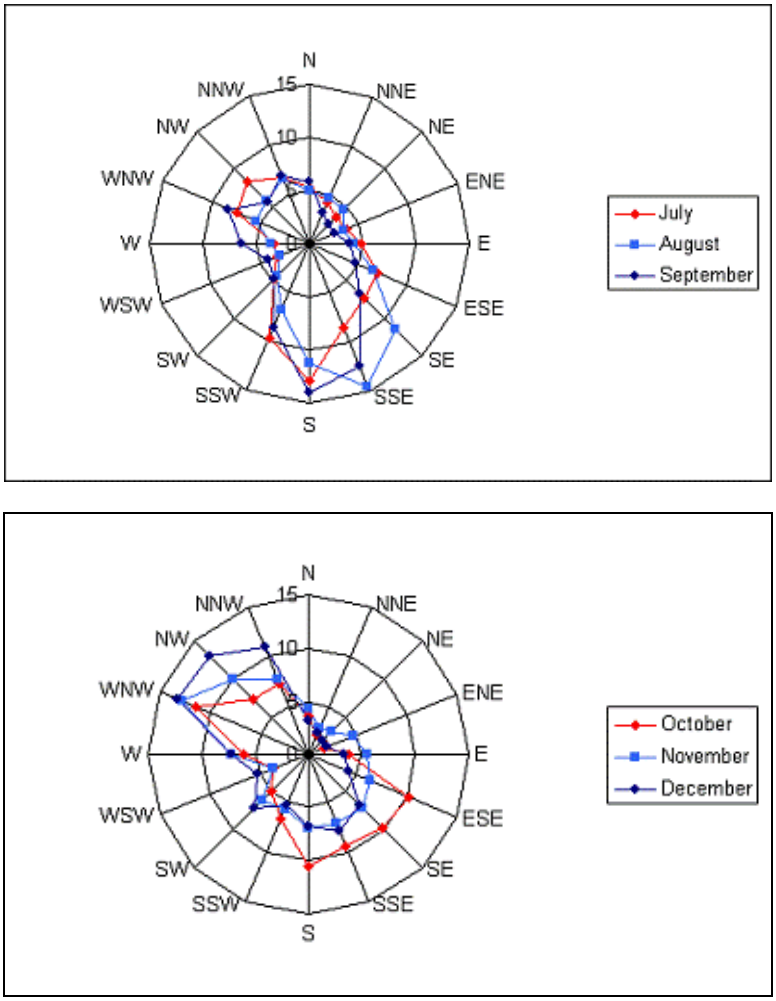


Figure 3-1. Wind Rose Patterns for Alexandria
Source: (UMN, 2004).

3.3.1 NAAQS and Ambient Air Quality

The USEPA Region 5 and the Minnesota Pollution Control Agency (MPCA), regulate air quality in Minnesota. The Clean Air Act (CAA) USC 7401-7671q, as amended, gives USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_x), ozone (O_3), and lead. Short-term standards (1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (annual averages) have been established for pollutants that contribute to chronic health effects. Each state has the authority to adopt standards stricter than those established under the federal program; however, Minnesota accepts the federal standards. Federal regulations designate Air-Quality Control Regions (AQCRs) which are in violation of the NAAQS as nonattainment areas and those in accordance with the NAAQS as attainment areas.

Douglas County (and therefore the PDSWM waste-to-energy facility) is in the Northwest Minnesota Intrastate AQCR (40 CFR 81.244). USEPA has designated Douglas County as in attainment for all criteria pollutants (40 CFR 81.324). Because the project area is in an attainment area, the air conformity regulations do not apply. Although the area is in attainment, and the air conformity regulations do not apply, the project's emissions of criteria pollutants and the applicability thresholds under the general conformity rules were carried forward for more detailed analysis to determine the level of impact under NEPA.

MPCA monitors levels of criteria pollutants at representative sites throughout Minnesota. However, there are no monitoring stations in the Northwest Minnesota Intrastate AQCR. Because the area is in attainment, concentrations of all the criteria pollutants are expected to be below the NAAQS throughout the region.

3.3.2 Permitting and Existing Air Emission Sources

Under MPCA's Part 70 Facility Permit regulations, a Title V Significant Permit Modification is required for municipal waste facilities whose emissions increases exceed 100 tons per year (tpy). Currently, the PDWSM waste to energy facility is a minor source of air emissions and operates under a Part 70 - Synthetic Minor Permit (No. 04100021-002) issued by the MPCA on June 6, 2005. A Significant Permit Modification would be required if it became necessary to establish federally enforceable limitations to reduce potential emissions below the major source thresholds. A minor permit modification would be required if emissions were below the thresholds and a federally enforceable limit was not necessary. Submission of an application for these permit modifications would be required within one year of the first operation of a new emissions source. Based on the size of the emission units and type of pollutants emitted, MPCA sets permit rules and standards for emission sources.

In addition to the permitting requirements to construct and operate new or modified emissions sources, New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) set emissions control standards for categories of new stationary emissions sources of both criteria pollutants and Hazardous Air Pollutants (HAPs). Based on facility size and date of construction, the NSPS program sets uniform emissions limitations for categories of stationary sources that contribute to air pollution that might reasonably be anticipated to endanger public health or welfare. Small Municipal Waste Combustion Units are subject to NSPS. NESHAPs requirements regulate the emissions of HAPs, such as formaldehyde, benzene, xylene, and toluene (40 CFR Part 63). New stationary sources whose potential to emit exceeds either 10 tpy of a single HAP, or 25 tpy of all regulated HAPs, may be subject to Maximum Available Control Technology (MACT) requirements under NESHAP.

3.4 NOISE

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage

hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities essential to a community's *quality of life*, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. "A-weighing", measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. Sounds encountered in daily life and their dBA levels are provided in **Table 3-1.**

Table 3-1.
Common Sounds and Their Levels

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris, 1998.

The dBA noise metric describes steady noise levels, although very few noises are, in fact, constant. Therefore, Day-night Sound Level has been developed. Day-night Sound Level (DNL) is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. In addition, Equivalent Sound Level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB. L_{50} is the level of noise exceeded 50 percent of the time, and L_{10} is the level exceeded 10 percent of the time.

The Noise Control Act of 1972 (PL 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, the USEPA provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. The State of Minnesota has a comprehensive statewide noise regulation which sets noise limitations for adjacent land uses throughout the state (MAR 7030.0040 Noise Standards). Noise limits for differing noise area classifications and land use categories as outlined in the MPCA noise regulation are outlined in **Table 3-2.** Neither Douglas County, nor the City of Alexandria, maintains municipal noise regulation that set specific not-to-exceed levels for noise.

Table 3-2.
Noise Limits in the State of Minnesota Noise Ordinance

Noise Area Classification	General Land Use Category	Daytime		Nighttime	
		L_{50}	L_{10}	L_{50}	L_{10}
1	Residential	60	65	50	55
2	Commercial	65	70	65	70
3	Industrial	75	80	75	80

Source: MAR 7030.0040 - Noise Standards

Existing sources of noise near the PDSWM waste-to-energy facility include local road traffic, aircraft overflights, and natural noises such as leaves rustling and bird vocalizations. Noise in areas surrounding the facility, and noise coming from the facility itself, are comparable to a typical quiet commercial/industrial area and are considered compatible with existing noise receptors. The PDSWM waste-to-energy facility is located 0.5 mile east of the Chandler Field Airport (AXN), a municipal airport with approximately 70 air operations per day. The facility is not adjacent to any major airports, thoroughfares, or rail facilities.

Existing noise levels (L_{eq} and DNL) were estimated for the PDSWM waste-to-energy facility and surrounding areas using the techniques specified in the "American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present" (**Table 3-3**) (ANSI, 2003). Notably, there is a residential neighborhood, the Douglas County Hospital, Alexandria Technical College, and the Jefferson High School, within 0.5 mile of the facility.

Table 3-3.
Estimated Existing Noise Levels at the Facility Site

		L_{eq} (dBA)	
Land Use	**DNL(dBA)**	**Daytime**	**Nighttime**
Quiet Suburban Residential	52	53	47

Source: ANSI, 2003.

3.5 BIOLOGICAL RESOURCES

3.5.1 Vegetation

The PDSWM facility lies within the North Central Hardwood Forests Ecoregion, which is a hardwood transition zone between the prairies to the southwest and the coniferous forest to the northeast. The North Central Hardwood Forests Ecoregion contains numerous hardwood species, including maple and basswood, with numerous flat glacial lakes, outwash plains and moraines (MPCA, 2000).

Presettlement vegetation in the region where the facility is located included maple-basswood forests interspersed with oak savannas, tallgrass prairies, and oak forests.

Irregular topography and presence of numerous lakes and wetlands in the region provided a partial barrier to fire, resulting in woodland or forest rather than prairie vegetation. Specifically, a mosaic of tallgrass prairie, aspen-oak land, and oak openings or savanna was present along the western prairie boundary. Mixed forests of oaks, sugar maple, basswood, and other hardwoods were present in fire protected sites farther east. Tallgrass prairie grew on more level terrain within the region. Currently, much of this region is farmed (DNR, 2006).

Vegetative communities on the PDSWM facility site are limited. The 6-acre site has been cleared and mostly developed; undeveloped land surrounding the paved parking areas and access roads primarily consists of maintained grasses.

3.5.2 Wildlife

Species diversity for wildlife populations occurring at the facility site is limited due to the surrounding developed land use and the small size of the site. However, the facility is located in a species rich ecoregion, where predators, foragers, and migratory birds are all common as a result of the varied types of habitat and prevalence of wetland and water environments. The region is a major migratory corridor for forest birds and waterfowl, and species in the area include trumpeter swans, prairie chickens, sandhill cranes, western grebes, great egrets, great blue herons, Forster's terns, and bald eagles. Other species of interest include creek heelsplitters and least darters (DNR, 2006).

Specifically designated wildlife areas in the region include Tamarac and Hamden Slough National Wildlife Refuges; numerous state Wildlife Management Areas and federal Waterfowl Production Areas; and Lake Carlos, Glendalough, and Maplewood State Parks. The closest of these designated wildlife areas to the facility site is Lake Carlos State Park, which is located approximately 9 miles north of the facility.

3.5.3 Threatened and Endangered Species

There are no federally threatened or endangered species listed in Douglas County (USFWS, 2009). However, there are 26 state listed species of concern in the county, including three bird species that are either state threatened or state endangered: Henslow's Sparrow, Loggerhead Shrike, and Wilson's Phalarope (DNR, 2009).

Both the U.S. Fish and Wildlife Service (USFWS) and the Minnesota DNR have been consulted regarding fish, wildlife and/or ecologically sensitive resources that may exist on or near the facility site. The USFWS indicated there are no federally listed or candidate species in the proposed project area (USFWS, 2007).

The DNR conducted a review of the Minnesota Natural Heritage database to determine if any rare plant or animal species or other significant natural features are known to occur within one mile of the proposed project site. This review indicated that a known occurrence of one species exists, the Least Darter. The Least Darter is a very small fish that lives in heavily vegetated areas of small streams and lakes. The DNR has indicated

that based on the nature and location of the proposed project site, impacts to any known occurrences of the Least Darter are not likely (Wenck, 2009a).

No listed species are currently known to occur on the facility site itself, and the site provides limited suitable habitat for any of these species.

3.6 HUMAN HEALTH AND SAFETY

The combustion of MSW generally produces nitrogen oxides and sulfur dioxide as well as trace amounts of toxic pollutants, such as mercury compounds and dioxins. MSW waste-to-energy facilities also emit carbon dioxide, the primary greenhouse gas, though the biomass-derived portion is considered to be part of the Earth's natural carbon cycle (USEPA, 2009a).

The variation in the composition of MSW affects the emissions impact and the subsequent human health impact. For example, if batteries and tires are burned, toxic materials can be released into the air. The MSW received by the PDSWM facility is manually and mechanically processed at the facility's MRF in order to remove non-combustible material, recyclables, and problem materials prior to combustion. This process aims to exclude toxics from the MSW-fuel and to help control air pollution emissions from the facility.

Historically, dioxin emissions from PDSWM have been very low (Wenck, 2009d). Dioxins are a family of toxic chemicals that share a similar chemical structure and induce harm through a similar mechanism. Dioxins have been characterized by the USEPA as likely human carcinogens (USEPA, 2009a). The most recent stack testing at the PDSWM facility showed maximum emissions of total dioxins were 3.3 nanograms per dry standard cubic meter (ng/dscm). The USEPA dioxin emissions limit which the facility is currently subject to is 125 ng/dscm (Wenck, 2009d).

The PDSWM facility has a worker safety program in place for all staff. The program features monthly MSW Operator Training covering Occupational Safety and Health (OSHA) safety topics (Wenck, 2009a)

3.7 INFRASTRUCTURE

3.7.1 Hazardous Materials and Waste Management

MSW is an unavoidable byproduct of human activities. Recent waste management efforts in the U.S. have focused on waste reduction and recycling of materials as primary techniques to minimize waste generation and landfill capacity needs (USEPA, 2009a). The PDSWM facility operates an upfront recycling center, a household hazardous waste collection program, an MRF and an ash landfill, in addition to its MWC system. The PDSWM facility has been designed to accommodate the handling and storage of MSW as efficiently and effectively as possible.

MSW is currently collected from the residents of Pope and Douglas County and transported to the PDSWM facility for processing. The onsite recycling center allows residents to drop off their sorted recyclables into appropriate storage locations at no charge. Accepted wastes include: aluminum cans, tin food cans, corrugated cardboard, glass jars and bottles, plastic, catalogs and magazines, and newsprint. This program serves to decrease the overall MSW that is disposed of and increase the reuse of available wastes.

The household hazardous waste collection program which the PDSWM group manages is also designed to prevent hazardous materials from entering the waste stream at the combustion facility, and to provide a convenient and proper disposal method for household hazardous materials. The collection program works in conjunction with the local education programs for residents to provide a comprehensive household hazardous waste disposal program. Hazardous waste is picked up from the PDSWM site by a licensed contractor and disposed of at a permitted hazardous waste facility.

The PDSWM group also owns and operates an ash mono-fill in Solem Township within Douglas County. This landfill consists of two cells, which are used for disposal of incinerator ash.

The PDSWM waste-to-energy facility uses and stores hazardous materials such as diesel fuel and oil in quantities necessary to maintain and operate equipment. Boiler treatment chemicals (including amines for steam line treatment and caustics, polymers and oxygen scavengers for boiler water treatment) are also stored on site in 110 gallon, double walled tanks. These materials are properly stored and handled by staff trained in hazardous materials and waste handling and Resource Conservation Recovery Act (RCRA) procedures.

Unprocessable waste received at the facility is transported to a large MSW landfill located in Gwinner, North Dakota. The Gwinner MSW Landfill serves as the bypass landfill for the PDSWM facility in the event of a shutdown or other reason that waste can not be handled. Unprocessable waste at the PDSWM facility include those wastes that cannot be incinerated or recycled, such as tires, mattresses, and other items.

3.7.2 Traffic and Transportation

The City of Alexandria is located on Interstate High 94 (running NW and SE) and Minnesota State Highways 29 and 27. These highways, along with their respective bypass systems, allow for ease of transportation throughout the Alexandria area (AAEDC, 2009). The City is located 130 miles northwest of Minneapolis/St. Paul and 100 miles southeast of Fargo, North Dakota.

The City of Alexandria and Douglas County are net importers of labor from the surrounding region. Approximately 2,802 people (16.3% of all workers in the county) commute from surrounding communities to Douglas County (AAEDC, 2009). The average commute time for workers in the Douglas County area is 13.8 minutes, compared to the U.S. average of 25.5 minutes (AAEDC, 2009).

Traffic volume counts in the immediate vicinity of the PDSWM facility (Jefferson Street and 22nd Avenue) are not available, although volume counts are available for the major thoroughfares in the area. In 2008, the stretch of South Broadway located just west of the facility (from 22nd Ave to Interstate 94) carried an average of 16,600 vehicles per day. Highway 27 carried an average of 8,600 vehicles per day on the stretch east of McKay Avenue, and 6,300 vehicles per day on the stretch west of Highway 29 (AAEDC, 2009).

MSW trucks, employee vehicles, and general operation and maintenance traffic comprise the majority of traffic accessing the PDSWM facility site. The number of MSW delivery trucks which entered the facility during 2006 was 5,700 vehicles or approximately 16 vehicles each day. With respect to idling trucks, the waste haulers schedule their routes so trucks arrive at the facility during different times of the day. The majority of the time, there are no trucks at the facility or a single truck arrives, drives over the scale, dumps their load, and leaves within a few minutes. It takes approximately 2 minutes for a truck to dump their load into the receiving area (Wenck, 2009a).

Ash disposal trucks comprise the second largest traffic segment at the facility. In 2006, 7,321 tons of ashes were hauled to the ash landfill in 622 truck loads (an average of 1.7 truck loads per day). Accounting for each roundtrip of both MSW and ash haulers, the PDSWM facility is responsible for a total of approximately 35 truck trips on area roads each day. Employee, operation, and maintenance vehicles also generate a lesser amount of traffic at the PDSWM facility site each day.

Chandler Field, the Alexandria municipal airport, is located at the intersection of State Highways 29 and 27 in Alexandria, approximately one mile west of the PDSWM facility. Alexandria Aviation, Inc., established in 1976, is the primary full service Fixed Base Operator at Chandler Field.

3.8 SOCIOECONOMICS

Unlike many Minnesota communities, the population of Douglas County and the City of Alexandria continues to grow at a rapid pace, and is projected to continue growing into the future. The County experienced a 10.5% increase in population from 2000 to 2008 (USCB, 2009). The total 2008 population of Douglas County was 36,151 and the population of the City of Alexandria was 12,415 (AAEDC, 2009). Future projections estimate that area population growth will continue at a similar rate. It is projected by the year 2035, that the county population will have grown to 46,970 (a 23% increase from 2008 levels) (AAEDC, 2009).

The economy of the Douglas County/Alexandria Region features manufacturing, healthcare, education, service, retail, and tourism. Due to its central location between the Twin Cities of Minneapolis and St. Paul, Minnesota and Fargo, North Dakota, the region has become a central economic hub for west central Minnesota. The largest employers in Alexandria are the public schools, the Douglas County Hospital, and a few manufacturers (AAEDC, 2009).

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental consequences of implementing the applicant's proposed project compared with those of the No Action alternative. Potential impacts are described in terms of type (beneficial or adverse), severity, geographic extent, and duration. This EA was prepared to determine whether the proposed project could cause significant impacts, which would require the preparation of an Environmental Impact Statement (40 CFR 1508.9), or, whether a Finding of No Significant Impact can be issued for the Proposed Action. **Table 4.1** provides the thresholds used to assess the significance of the potential impacts for each topic and resource evaluated.

Table 4-1: Impact Significance Thresholds

Resource Area	Impact Significance Thresholds An impact would be significant if it EXCEEDS the following conditions
Land use	The proposed project would not contribute to a conversion of large amounts of vicinity land use. Any conflicts with state, regional, or local land use plans are readily resolved with the appropriate agency.
Soil	Any changes in soil stability, permeability, or productivity would be limited in extent. Full recovery would occur in a reasonable time*, considering the size of the project. Mitigation, if needed, would be simple to implement and proven to be effective in previous applications.
Water Resources	Any changes to surface water quality or hydrology would be confined to the immediate project area. Full recovery would occur in a reasonable time*, considering the size of the project and the affected area's natural state; any impacts to wetlands or floodplains would be confined to the immediate project area, would not cause any regional impacts, and would be fully mitigated.
Air Quality	The proposed project would not produce emissions that would exceed applicability thresholds, be *regionally significant* as defined under the general conformity rule, or contribute to a violation of any federal, state, or local air regulation.
Noise	Noise from the proposed project would not create substantial areas of incompatible land use or contribute to a violation of any federal, state, or local noise regulation.
Vegetation	Any changes to native vegetation would be limited to a small area and would not affect the viability of the resources. Full recovery would occur in a reasonable time*, considering the size of the project and the affected resource's natural state. Mitigation, if needed, would be proven to be effective in previous applications.

Resource Area	Impact Significance Thresholds An impact would be significant if it EXCEEDS the following conditions
Wildlife	Any changes to wildlife would be limited to a small portion of the population and would not affect the viability of the resource. Full recovery would occur in a reasonable time*, considering the size of the project and the affected species' natural state.
Threatened or Endangered Species	Any effect to a federally listed species or its critical habitat would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. This negligible effect would equate to a "no effect" determination in USFWS terms.
Human Health and Safety	The proposed project would not cause acute or chronic health effects in any person or group of people which may be debilitating or severely impair quality of life (e.g., neurological damage), or raise incidence of life-threatening diseases (e.g., lung cancer, emphysema).
Hazardous Materials	The proposed project, along with planned mitigation measures, would not cause air, water, or soil to be contaminated with any waste materials that pose a threat to human or ecological health and safety.
Utilities	The proposed project would not noticeably affect or disrupt the normal or routine functions of public institutions, electricity and other public utilities and services in the project area.
Traffic and Transportation	The proposed project would not contribute to an appreciable increase in vehicle trips or miles traveled within the region, or contribute appreciably to the deterioration in the Level of Serve (LOS) of any roadway segment or intersection.
Socioeconomic Resources	Changes to the normal or routine functions of the affected community are short-term or do not alter existing social or economic conditions in a way that is disruptive or costly to the community.

* Recovery in a reasonable time: Constant, sustainable improvement is apparent and measurable when the site is routinely observed, and full recovery is achieved over a period of no more than several years.

4.1 LAND USE AND SOILS

4.1.1 Proposed Project

The proposed project would construct and operate a third MWC immediately south of two existing MWCs, on 0.2 acres of property owned by the project proponent. This area has been previously paved and is generally unused. No previously undeveloped land would be developed. No fill soil or other fill material is expected to be used onsite.

The proposed project is compatible with local plans, land use regulations, and zoning, including the current City of Alexandria Comprehensive Plan, which was adopted in June 2007 (Wenck, 2009a). Potential conflicts between the project and the surrounding land uses are not anticipated. No potential environmental hazards due to past or current land uses have been identified or are expected to exist. The proposed expansion of this facility would require a building permit issued by the City of Alexandria, which includes site development plan review as part of the building permit process.

The area proposed for development is relatively small and is adjacent to several other buildings, including the two existing MWCs. The area is contained completely within the existing PDSWM facility boundaries. No onsite land use changes would result from implementation of the proposed project. Additionally, no changes to vicinity land use or land use designations would occur. A very limited amount of soils, however, could be disturbed during the construction/development phase of the proposed project. The site these soils underlay has likely been previously disturbed during construction of the existing facility, and any of the soil or fill disturbed during the construction phase may not be native to the original site.

Construction equipment used during the third unit construction and installation activities would include heavy haul trucks, large tractors, cranes, and fabrication equipment. As with almost any construction project involving the use of heavy equipment, there is some risk of an accidental fuel or chemical spill, and the potential contamination of site soils. Fuel products (petroleum, oils, lubricant) would be needed to operate and fuel equipment. To reduce the potential for soil contamination, fuels would be stored and maintained in a designated equipment staging area. A person(s) designated as being responsible for equipment fueling would closely monitor the fueling operation, and an emergency spill kit containing absorption pads, absorbent material, a shovel or rake, and other cleanup items, would readily be available on site in the event of an accidental spill. Following these precautions, the potential for an accidental chemical or fuel spill to occur and result in adverse impacts on soils would be negligible.

The use of heavy equipment would result in soil compaction in unpaved areas adjacent to the area of construction. Compaction reduces the porosity and conductivity of the soil, and is likely to slightly increase the amount of surface runoff in the immediate area. Stabilization of the soils will be required to prevent sediment runoff impacts to the onsite stormwater sewer system, which could possibly degrade vicinity water quality. Protection of water resources from potential surface runoff is discussed in detail in the Water Resources section, **Section 4.2.1**, below. Soils tracked from the construction site by motor vehicles and equipment will be cleaned from paved surfaces throughout the duration of construction.

The Waukon soils which underlay the area of proposed development are relatively flat and characterized by good drainage and moderate rates of surface runoff. Soils with higher rates of runoff than the subject soils would be more likely to be displaced and result in sediment erosion and transport into surface waters. The impacts to land use and soils at the proposed project area from both construction and operation activities are

expected to be negligible. Overall impacts to both land use and soils from implementation of the proposed project would be below the level of significance.

4.1.2 No Action

Under the No Action Alternative, the third MWC would not be constructed, and waste designated for processing at the expanded PDSWM facility would have to be managed elsewhere. The additional waste would be processed either in an alternative waste-to-energy facility or would be landfilled. However, since the ultimate fate of the waste is unknown, the exact impacts to land use and soils are largely unknown.

The federal criteria for MSW landfills (40 CFR Part 258, Subtitle D) require that all modern landfills be lined, in part to decrease the likelihood of subsurface migration of gases and leachate into soils and groundwater. Liners are generally constructed of compacted clay or synthetics, such as high density polyethylene, to provide an impermeable barrier between the waste and underlying soil. The risks of contaminated runoff or erosion occurring at modern landfills are considered low. Because any waste-to-energy facilities or landfills in the position to accept the additional waste would be state and federally permitted and licensed facilities, it can be assumed that any land use and soil impacts would be minimized below the level of significance.

4.2 WATER RESOURCES

4.2.1 Proposed Project

Construction

The proposed project would construct and operate a third MWC on what is currently a mostly impervious bituminous surface. It is unlikely that construction impacts associated with the proposed project would generate a measurable increase of stormwater runoff from the site. However, if site soils are disturbed and compacted during construction activities, some additional stormwater could be generated which could carry sediment and contamination loads into the site sediment basin during times of precipitation. Additionally, contamination from construction activities could affect water resources by infiltrating area soils and percolating down into the groundwater. Typically, sediment erosion rates from construction sites are 10 to 20 times greater than those from agricultural lands due to removal of vegetation. The first flush of rains after a long dry period carries silt from exposed soils, and pollutants deposited on pavement, into surface waterbodies, posing a risk of contaminating water and harming aquatic life.

The NPDES program regulates stormwater discharge from construction activities. Generally, construction sites of less than one acre do not need NPDES permit approval from MPCA in order to proceed. The proposed project is not anticipated to warrant any special water quality considerations, and thus, the project would not require coverage under an NPDES construction permit.

Standard construction erosion and sediment controls, including vegetative stabilization practices, structural practices, stormwater management, and other controls as necessary, would be employed and maintained throughout the construction phase of the project. Vigorous use of appropriate Best Management Practices (BMPs) would minimize erosion at the construction site and sediment runoff to all water resources in the region of the proposed construction area.

No project development activities under this alternative are proposed in the vicinity of floodplains or wetlands, or, are anticipated to directly impact surface waterbodies. Indirect impacts, from erosion and siltation, would be mitigated from impacting vicinity surface waterbodies as a result of incorporating and maintaining erosion and sediment control BMPs during the construction phase of the project. Because there is no lake or river adjacent to the project area, shoreland zoning district regulations do not apply to this project (Wenck, 2009a).

Implementation of this alternative would not result in any increase of impervious surface area onsite as the third combustor unit would displace previously paved surface. This alternative is not likely to have more than a negligible impact on water quality due to the small area of construction activity. The implementation and adherence to BMPs is expected to minimize any impacts to water quality, and subsequently to aquatic species. Overall impacts to water quality and water resources from site construction activities are anticipated to be negligible.

Operation

Once development of the third combustor is complete, runoff from the facility site would continue to be managed through the existing stormwater collection system. Runoff from the rooftop of the third combustor unit building would be directed to the existing system. There would be no net increase in stormwater runoff, as no new impervious surfaces would be added to the project site. Because there would be no increase in runoff, no changes in permitting or maintenance requirements for the existing collection system would be applicable.

Consistent with existing operations at the facility, all raw materials, waste products, and hazardous substances or chemicals associated with the third combustor and its auxiliaries would be located within enclosed buildings and protected from direct exposure to stormwater. The third combustor would continue to be under the jurisdiction of the City of Alexandria's NPDES permit for a Municipal Separate Storm Sewer System (MS4). It can be assumed that the expanded facility would be in full compliance with the City's MS4 permit, thus limiting impacts to surface water from runoff throughout the life of the project.

During operation, the expanded facility would require additional water for domestic, ash quenching, and boiler make-up purposes. The water would be delivered by and purchased from the City of Alexandria's existing water system. Current average annual usages are 4,354,000 gallons for domestic use and ash quenching purposes, and 4,026,000 gallons for boiler make-up feed water (Wenck, 2009a). Total water usage at the PDSWM facility is anticipated to increase from a current total of 8,380,000 gallons

annually to 12,520,000 gallons annually with the addition of the third combustor (an increase of 4,140,000 gallons per year) (Wenck, 2009a). Both the capacity of the City's water supply and the existing water distribution infrastructure are considered adequate to support the increased water consumption of the facility (Wenck, 2009a).

Additionally, an increased amount of process and domestic wastewater would be discharged from the expanded PDSWM facility to the Alexandria Lakes Area Sanitary Sewer District. The facility currently produces approximately 10,000 gallons per day (gpd) of wastewater. It is expected that for this proposed project, the volumes of process wastewater associated with the boilers would increase by 50% and the domestic wastewater would increase by 25%. Therefore, the proposed wastewater flows from the expanded plant would be approximately 14,500 gpd (Wenck, 2009a).

The Alexandria wastewater treatment plant currently discharges at a rate of 2.6 million gpd to Lake Winona, and is in the process of increasing its capacity by at least one million gpd. The wastewater flow generated from the expanded PDSWM facility would represent less than 1% of the total wastewater processed at the treatment plant. Based on their current capacity and anticipated future capacity, the treatment plant is expected to have an adequate capacity to handle and treat the additional wastewater discharges from the proposed facility expansion, and therefore, no additional improvements to the treatment plant are necessary (Wenck, 2009a).

Lake Winona is listed as impaired on the 2010 CWA Section 303(d) list of impaired waterbodies, due to elevated concentrations of nutrients resulting in eutrophication. The PDSWM facility does not utilize any phosphorous containing compounds in its boiler system and consequently, the wastewater from the facility is not anticipated to have any measurable indirect impacts on water quality impairments at the wastewater treatment plant discharge in Lake Winona.

No additional impacts to groundwater, wetlands, or floodplains, are expected during the operations of the expanded PDSWM facility. Operational impacts to water resources from the implementation of the proposed project can be expected to be negligible. Overall impacts to water resources from implementation of the proposed project would be below the level of significance.

4.2.2 No Action

Under the No Action Alternative, the PDSWM facility would not be expanded. Water consumption and discharge quantities at the facility would remain the same. No additional impacts to surface water, groundwater, wetlands, or floodplains would occur.

The additional solid waste designated for processing in the expanded PDSWM facility would be processed either in an alternative waste-to-energy facility or would be landfilled. Because any waste-to-energy facility or landfill in the position to accept the additional waste would be a state and federally permitted and licensed facility, it can be assumed that water resource impacts from this alternative would be minimized below the level of significance.

4.3 AIR QUALITY

4.3.1 Proposed Project

The proposed project would construct and operate a third MWC that would have both short-term minor and long-term moderate adverse effects to air quality. Effects would be due to air emissions during construction, and introducing new stationary sources of air emissions, primarily the proposed combustion unit. Increases in emissions would not exceed applicability thresholds, be *regionally significant*, or contribute to a violation of any federal, state, or local air regulation.

Estimated Emissions and General Conformity. The general conformity rules require federal agencies to determine whether their action(s) would increase emissions of criteria pollutants above preset threshold levels (40 CFR 93.153(b)). These *de minimis* (of minimal importance) rates vary depending on the severity of the nonattainment and geographic location. Because the region is in attainment, the air conformity regulations do not apply. However, all direct and indirect emissions of criteria pollutants were estimated and compared to applicability threshold levels of 100 tons per year (tpy) to determine whether implementation of the proposed project would be significant under NEPA. The total direct and indirect emissions associated with the following activities were accounted for:

- Construction of the new facilities
- Personal operating vehicles for construction workers
- Painting
- Paving
- Personal operating vehicles for employees
- Operation of the new combustion unit

The total direct and indirect emissions associated with the proposed project would not exceed applicability threshold levels (**Table 4-2**). Because the region is an attainment area, there is no existing emission budget. However, due to the limited size and scope of the proposed project, it is not anticipated that the estimated emissions would make up 10 percent or more of regional emissions for any criteria pollutant and would not be regionally significant. Operational emissions shown are the gross emissions from the proposed combustion unit. Detailed breakdown of construction emissions are located in **Appendix A**.

Regulatory Review. The CAA, as amended in 1990, mandates that state agencies adopt State Implementation Plans (SIPs) that target the elimination or reduction of the severity and number of violations of the NAAQS. SIPs set forth policies to expeditiously achieve and maintain attainment of the NAAQS. Since 1990, Minnesota developed a core of air quality regulations that have been approved by USEPA. These approvals signified the development of the general requirements of the SIP. The Minnesota program for regulation of air emissions affects industrial sources, commercial facilities, and residential development activities. Regulation occurs primarily through a process of reviewing engineering documents and other technical information, applying emission

standards and regulations in the issuance of permits, performing field inspections, and assisting industries in determining their compliance status with applicable requirements.

Table 4-2.
Project Air Emissions Compared to Applicability Thresholds

Activity	Estimated Annual Emissions (tpy)						*De minimis* threshold (tpy)	Would emissions exceed applicability thresholds? [Yes/No]
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$		
Construction	10.9	8.1	1.7	< 0.1	0.5	0.4	100	No
Operational[a]	25.2	95.0	2.8	17.2	28.3	15.1		

[a] *Source: Wenck, 2009c*.

As part of these requirements, the MPCA oversees programs for permitting the construction and operation of new or modified stationary source air emissions in Minnesota. MPCA air permitting is required for many industries and facilities that emit regulated pollutants. These requirements include, but are not limited to Title V permitting of major sources, New Source Review, Prevention of Significant Deterioration, New Source Performance Standards for selected categories of industrial sources, and the National Emission Standards for Hazardous Air Pollutants. **Table 4-3** outlines these regulations and generally describes how they would apply to the proposed stationary sources of air emissions. A more detailed review and specific requirements are outlined below.

Table 4-3.
Air Quality Regulatory Review

Regulation	Project Status
Non-attainment New Source Review (NNSR)	The facility is in an attainment area. Therefore, NNSR would not apply.
Prevention of Significant Deterioration (PSD)	The facility would become a major source under the PSD program. However, potential emissions would not exceed the 100-tpy PSD threshold, and the project would not be subject to PSD review.
Title V Permitting Requirements	The facility's potential to emit would be above the Title V major source threshold and would require a Title V permit.
National Emission Standards for Hazardous Air Pollutants (NESHAP)	Municipal Waste incinerators are not listed as a NESHAP category. Therefore, NESHAP would not apply.
New Source Performance Standards (NSPS)	The proposed combustion unit would be subject to NSPS Subpart AAAA for New Small Municipal Waste Combustion Units.

Air Permitting Requirements. The air quality permitting process begins with the application for a construction permit. The facility expansion would require permits to construct in one form or another. There are two types of construction permits available through the MPCA for the construction and temporary operation of new emissions sources in attainment areas: Prevention of Significant Deterioration (PSD) permits in Attainment Areas; and New Source Review (NSR) Construction Permits.

The PSD program is part of the MPCA Major NSR program and protects the air quality in attainment areas. PSD regulations impose limits on the amount of pollutants that major sources may emit, with the goal of maintaining attainment status in applicable regions. The PSD process would apply to all pollutants for which the region is in attainment (i.e. all criteria pollutants). Thresholds that determine the type of construction permit that might be required depend on both the quantity and type of emissions. PSD review and permitting is required for sources with the Potential to Emit (PTE) 100 tpy of any regulated pollutant for any of 26 named PSD source categories, one of which is municipal waste incinerators (40 CFR §52.21). This threshold applies to the PDSWM waste-to-energy facility proposed expansion. The PSD permitting process typically takes 18–24 months to complete. Sources subject to PSD are typically required to complete a Best Available Control Technology (BACT) review for criteria pollutants, predictive modeling of emissions from proposed and existing sources, and a public involvement process.

A "Minor New", "Modified", or "Major" Source Construction Permit would be required to construct, respectively, minor new sources, minor modifications of existing sources, and major sources not subject to PSD permit requirements. The Minor NSR permitting process typically takes 4–5 months to complete. Sources subject to Minor NSR could be required to complete a BACT review for criteria pollutants, maximum available control technology (MACT) review for regulated HAPs and designated categories, predictive air dispersion modeling, and establish procedures for measuring and recording emissions and process rates.

Table 4-4 outlines the PTE at the PDSWM waste-to-energy facility, before and after expansion with a third combustor. The Proposed project would require a *Major Amendment* to the facility's operating permit. However, the project will not trigger PSD review, because the emissions from the facility would be less than PSD major source thresholds. Federally enforceable permit limitations would be accepted to restrict the NO_x and MSW acid gases (hydrogen chloride + SO_2) to ensure emissions would be less than PSD major source thresholds (40 CFR §52.21). The proposed waste combustor would also be subject to Federal Standard of Performance for Small Municipal Waste Combustion Units (40 CFR 60, Subpart AAAA).

Table 4-4.
Potential to Emit Air Pollutants at the PDSWM Facility

	Total Facility Potential to Emit (PTE) (tpy)		
Pollutant	**Before Unit 3 Modification**	**After Unit 3 Modification**	**Difference**
CO	26.46	51.66	25.2
NO_x*	**96.5**	**191.5**	**95.0**
VOC	2.76	5.44	2.68
SO_2	44.45	61.71	17.3
PM_{10}	15.50	30.89	15.39
$PM_{2.5}$	15.29	30.47	15.18
Lead	0.346	0.389	0.043
Acid Gases	95.0	120.49	25.49
Sulfuric Acid Mist	5.50	11.0	5.50
Hydrogen Chloride	81.8	89.99	8.19
Mercury	0.0129	0.00605	(0.00685)
Cadmium	0.0216	0.0259	0.0043

Source: Wenck, 2009c.
Bolded text indicates federally enforceable permit limitation

Downwind Concentrations of Air Pollutants. Air dispersion modeling for criteria pollutants was completed by Wenck Associates in the spring and summer of 2009 for the PDSWM facility (Wenck, 2009b). Estimated ambient air concentrations of criteria pollutants surrounding the facility are shown in **Table 4-5** below in comparison to the NAAQS. The facility modeling demonstrates compliance with all NAAQS during operation of the proposed third combustor unit. The modeled concentrations are below the levels USEPA and MPCA have determined are acceptable to protect human health.

Emission Controls. The proposed combustion unit emissions would be controlled by dry sorbent injection, powdered activated carbon injection, flue gas recirculation, and a fabric filter bag house. Emissions from each combustor would be continuously monitored for NO_x, CO, SO_2, opacity, oxygen, and stack gas flow rate. Additional operating parameters, including carbon additive, fabric filter inlet temperature and steam flow, would also be monitored continuously. These controls are consistent with operation of the existing units. Overall impacts to air quality from implementation of the proposed project would be below the level of significance.

Table 4-5.
Predicted Concentrations of Criteria Pollutants

Averaging Period	Concentration ($\mu g/m^3$)			
	Attributable to Facility Operation Following Addition of Unit 3	**Background**	**Total**	**NAAQS**
PM_{10}				
24-Hour Average [a]	79.1	26	105.1	150
Annual Average [b]	8.3	12	20.3	50
$PM_{2.5}$				
24-Hour Average [c]	9.25	21	30.25	35
Annual Average [d]	1.5	7	8.5	15
SO_2				
1-Hour Average [e]	76.8	21	97.8	---
3-Hour Average [e]	69.3	10	79.3	1,300
24-Hour Average [e]	39.9	4	43.5	365
Annual Average [d]	3.8	2	5.8	80
NO_x				
Annual Average [b]	9.8	6	15.8	100
CO				
1-Hour Average [e]	60.4	4,400	4,464.4	40,000
8-Hour Average [e]	42.8	2,300	2,342.8	10,000
Lead (Pb)				
3-Month Average	0.035	0.01	0.045	0.15

Source: Wenck, 2009b.
a High sixth high concentration over the modeled period
b High annual average concentration
c 98th percentile concentration
d High 3-year average concentration
e High second high concentration for an individual year
f These Minnesota Ambient Air Quality Standards has not yet been updated with the revisions to the national standards.

4.3.2 No Action

Under the No Action Alternative, no construction would be undertaken, and no expanded facility operations would occur. Ambient air-quality conditions at the PDSWM facility would remain as described in **Section 3.3**. However, under this scenario, the waste otherwise processed by the proposed PDSWM facility expansion would continue to be diverted to an alternative MWC facility or a landfill for management.

If the waste was processed at a different MCW facility, combustion emissions and subsequent air quality impacts would be similar to those outlined under the proposed project. In addition, there would likely be increased emissions from MSW haulers transporting waste to the alternative disposal site.

If the waste was landfilled, LFG would be generated and emitted. As with combustion, surface emissions of LFG include greenhouse gases (i.e. methane and carbon dioxide), VOCs, and HAPs, as well as, increased emissions from MSW haulers (USEPA, 2006; ATSDR, 2001).

Carbon dioxide equivalent (CO_2E) is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential. The USEPA's Waste Reduction Model (WARM) Version 7, was used to estimate the CO_2E for waste landfilled versus combusted. The CO_2E would be 126,169 tpy if the waste were landfilled, while the CO_2E would be 54,810 tpy if the waste were combusted in the proposed third unit (Wenck, 2009a). Although the calculated results show that landfilling the waste would release a greater amount of greenhouse gas than combusting the waste would, it should be cautioned that WARM assumes a worst-case scenario of uncontrolled LFG release.

The federal criteria for MSW landfills require that all modern landfills cover disposed materials at the end of each operating day to help minimize the amount of surface emissions of LFG. In addition, most modern landfills operate an LFG collection system of some type, in which the release of LFG is controlled to some degree. However, when considering the impacts of transporting the MSW to an alternate processing location, and the risk of LFG release if the waste were to be landfilled, the No Action alternative would likely result in long-term minor adverse effects to air quality.

4.4 NOISE

4.4.1 Proposed Project

The proposed project would construct and operate a third MWC that would have both short-term and long-term minor adverse effects on the noise environment. Minor increases in noise would primarily be due to the use of heavy equipment during construction and the addition of noise generating equipment associated with operation of the proposed third combustor unit.

Construction

The proposed project would require the construction and installation of a third combustor unit to the PDSWM facility. Individual pieces of heavy equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (**Table 4-6**). With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. The residences, school, and the hospital nearest to the PDSWM facility are all located further than 1,000 feet from the proposed construction site. Although construction noise would likely be audible at these locations, these areas would not experience nuisance levels of construction noise. Given the

temporary nature of proposed construction activities, and the distance to the nearby sensitive receptors, this impact would be minor.

Table 4-6.
Noise Levels Associated with Construction

Construction Phase	dBA L_{eq} at 50 feet from Source
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89

Source: USEPA, 1971.

Although construction-related noise impacts would be minor, the following BMPs would be performed to reduce further any realized noise impacts, and to insure compliance with the State of Minnesota's noise ordinance (Minnesota Administrative Rule, Chapter 7030: Noise Pollution Control):

- Construction would primarily occur during normal weekday business hours, and
- Construction equipment mufflers would be properly maintained and in good working order.

Construction noise would dominate the soundscape for all on-site personnel. Construction personnel, and particularly equipment operators, would use adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Operation

Noise generated during operation of the proposed third combustor unit is not expected to generate disruptive noise outside the PDSWM facility. In the final design stage, equipment and facility components would be selected to ensure compliance with both federal standards and the MPCA statewide noise regulation. Truck traffic is expected to increase as a result of the proposed project, but is not expected to increase the overall noise level along the typical truck haul routes. Overall impacts to noise from implementation of the proposed project would be below the level of significance.

4.4.2 No Action

Selecting the No Action Alternative would result in no impact to the ambient noise environment. No construction or changes in facility operations would be expected. Ambient noise conditions would remain as described in **Section 3.4**.

4.5 BIOLOGICAL RESOURCES

4.5.1 Proposed Project

The proposed project would construct and operate a third MWC immediately south of the existing MWCs, on property that was previously paved and is generally unused. No previously undeveloped land would be developed. No shrubs, trees, or other vegetation are anticipated to be removed from the site. Any disturbed areas that are not developed would be reseeded with grasses and maintained according to the protocol of the PDSWM facility. Impacts to vegetation from the proposed project would be negligible.

Most wildlife species that may currently be found within the project area have adapted to living in suburban areas and co-existing with human activity. Many of these same species are also mobile generalist species that use a variety of interspersed and fragmented habitats and range over wide areas for food and cover. Such species include small mammals and migratory birds. Therefore, it is anticipated that wildlife species would be able to avoid the disturbance by relocating to adjacent minimally disturbed areas. Impacts to wildlife from the proposed project are anticipated to be negligible.

Consultations with state and federal natural resource agencies were conducted to ensure that any possible impacts that the proposed project may have on ecologically sensitive species would be identified and properly mitigated. As there are no known state or federal threatened or endangered species that exist at the proposed facility site, it can be assumed that the proposed project would not have more than a negligible impact on threatened and endangered species. Overall impacts to biological resources from implementation of the proposed project are anticipated to be below the level of significance.

4.5.2 No Action

The No Action Alternative will not result in any impacts to wildlife or vegetation, as no construction activities or PDSWM facility expansion would occur. Additionally, the No Action Alternative is not anticipated to result in any impacts to threatened or endangered species which may be found in the vicinity of the area. If the additional waste to be processed for this proposed project were to be landfilled under this alternative, impacts to biological resources could occur as a result of utilizing land for waste disposal purposes. However, these impacts are anticipated to be less than significant.

4.6 HUMAN HEALTH AND SAFETY

4.6.1 Proposed Project

The proposed project would construct and operate a third MWC. The contractors responsible for the third combustor development and construction activities would be responsible for compliance with the applicable OSHA regulations and all PDSWM site-specific safety measures that concern occupational hazards and specifying appropriate

protective measures for all employees and site visitors. The statistical risk of death of or injury to construction workers under the implementation of the proposed project is negligible.

As part of the Environmental Review required by the MPCA for expanding the facility, a Human Health Risk Assessment (HRA) was completed by Wenck Associates and Titan Engineering in September 2009 which evaluated possible health impacts associated with addition of the third MWC (Wenck, 2009d). The HRA was based on the assumption that concurrent operation of all three MWC units would occur over 30 years. The HRA was performed following the USEPA's Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities and relevant MPCA requirements that either supersede or supplement this document (Wenck, 2009d).

The HRA evaluated the following exposure scenarios: (1) acute inhalation hazard, (2) resident and resident child, (3) farmer and farmer child, and (4) fisher and fisher child. Mercury hazard through fish consumption was evaluated using the Minnesota Mercury Risk Estimation Method (MMREM). HRA results included acute inhalation hazard quotients and hazard indices for the four acute scenario locations evaluated, and incremental lifetime cancer risk estimates and hazard quotients and indices for the resident, farmer, and fisher scenario locations evaluated. The acute hazards are representative for both adults and children. Impacts to both adults and children were estimated separately for the resident, farmer, and fisher scenarios. The MDH/MPCA risk limit is 1E-05 (1 cancer in 100,000 people).

As part of the exposure scenario evaluations, air dispersion modeling analysis was required to be conducted as per USEPA and MPCA guidelines. The MPCA has indicated that wind directions or wind rose patterns are most important in selecting representative meteorological data for air dispersion analysis. The HRA evaluations used meteorological surface data collected from National Weather Service (NWS) Station No. 14910, located at Chandler Field (the Alexandria municipal airport). USEPA's current criteria for identifying surface parameters (including the use of US EPA's AERSURFACE software) were then followed. Given the combination of wind rose patterns and nearby land features considered in the qualitative analysis, and the surface roughness quantitative analysis, meteorological data from the International Falls, MN NWS Station was determined to best represent the upper air at the Pope/Douglas site, and this data in combination with the Alexandria airport data was used in the air dispersion and HRA analysis (Wenck, 2009d).

The acute inhalation hazards indicate no adverse impacts would be associated with short-term exposure to emissions from the future permitted facility. Findings in the HRA also indicate that most potential exposures are due to NO_2, a criteria pollutant, rather than a toxic air pollutant. Several resident scenario locations were evaluated, including those where people currently reside, an implausible worst-case future location, and a more plausible worst-case future location. The results indicated that current locations would not be adversely impacted, and the results for the worst-case locations also indicated that risks and hazards would not be unacceptable (Wenck, 2009d).

The farmer scenario was evaluated for a current farm southeast of the PDSWM facility and a worst-case location represented by a parcel of land zoned agricultural that is not currently farmed, and for which all pathways were evaluated. In addition, the land zoned agricultural is in an area of Alexandria for which housing and general development is planned. The results show that risks presented for the cattle farm are under the MPCA guideline of 1E-05. Risks at the worst-case location would be slightly above the MPCA guideline; however, they are considered irrelevant given the hypothetical nature of the scenario (Wenck, 2009d).

Subsistence and recreational fisher scenarios were evaluated for Lake Burgen and Lake Victoria. The results showed that potential impacts associated with fishing were slightly higher for fish taken from Lake Burgen. The MMREM analysis for potential mercury ingestion from the fish pathway resulted in hazard quotient values less than 1 for the future permitted facility (Wenck, 2009d). A hazard quotient value less than 1 is a USEPA derived ratio of the potential exposure to the substance and the level at which no adverse effects are expected (USEPA, 2009b).

The overall HRA results indicated that the operation of the expanded PDSWM facility would present a negligible health impact to residents and workers in Alexandria, MN. All currently populated locations would not be adversely affected. With one exception, all worst-case theoretical locations would not be impacted either. The results for the worst-case farmer, based on ingestion of several types of homegrown meats and dairy products, presented risks slightly above the MPCA guideline of a risk of 1E-05; however, these risks are considered irrelevant in the HRA given the hypothetical nature of the scenario. In addition, this parcel of land is in an area of Alexandria for which mixed housing and general development is planned (Wenck, 2009d).

The PDSWM facility would expand its worker safety program to include the third combustor unit. Impacts to workers and facility staff are not anticipated to increase once the third unit is operational. Overall impacts to human health and safety from the proposed project would not have more than a negligible long-term impact. These impacts would be less than significant.

4.6.2 No Action

Under the No Action Alternative, no construction activities or expanded facility operations would occur. The waste otherwise processed by the proposed PDSWM facility expansion would continue to be diverted to an alternative MWC facility or a landfill for management.

If the waste were landfilled, LFG would be generated and emitted. The health and safety impacts associated with uncontrolled emissions of LFG fall into three categories: 1.) explosion hazard risk due to subsurface migration; 2.) direct release of methane and carbon dioxide gases (both greenhouse gases), VOCs (which can contribute to ground-level ozone formation), and HAPS (which can cause a variety of human health problems)

into the ambient air from surface emissions; and, 3.) odor nuisance from primarily the sulfur compounds present in LFG which may be offensive to landfill workers or area visitors, reduce local property values, and which can be a source of adverse effects on human health, such as triggering nausea and headaches (USEPA, 2006b; ATSDR, 2001).

The quantity of LFG released from the landfilling of the waste is unknown, but is considered to be relatively small based on the limited amount of waste, and the LFG controls present at modern landfills. As a result, the No Action alternative is considered to contribute negligible adverse impacts on human health and safety.

4.7 INFRASTRUCTURE

4.7.1 Proposed Project

The proposed project would construct and operate a third MWC.

Hazardous Materials and Waste Management

The construction and operation activities associated with the proposed project would generate debris and waste, which would require proper management at the PDSWM facility. Recycling and/or reuse of all discarded materials would occur whenever possible. Unprocessable waste received at the facility would continue to be transported to the MSW landfill located in Gwinner, North Dakota, while hazardous waste would continue to be picked up from the PDSWM site by a licensed contractor and disposed of at a permitted hazardous waste facility.

In 2006, 7,321 tons of ash was generated by the existing MWCs at the PDSWM facility. Because the amount of MSW to be processed at the expanded facility would double under this alternative, it is anticipated that the amount of ash generated would also double to a total of approximately 14,642 tons per year. A new ash handling system would be needed to accommodate ash production for the new MWC. Additionally, the increase in ash would impact the longevity of the PDSWM owned and operated ash monofill that is currently used for the ash disposal.

A capacity evaluation of the ash monofill in Solem Township for the MPCA Annual Report, dated January 2007, determined that the current remaining operating life of Cell 1A and Cell 1B was approximately 14 years. The total remaining designed life of the landfill at the current rate is 140 years. This was based on the current ash disposal rates that average 5,950 cubic yards per year and a remaining capacity of the two cells of 83,900 cubic yards, and remaining ultimate design capacity of 935,000 cubic yards. If ash byproduct doubles as a result of the proposed project, the life of the ash monofill would be reduced by half, which would require the PDSWM group to apply for a permit to expand the monofill into 1 of 3 remaining undeveloped designed cells sooner than would be anticipated at the current rates of ash disposal (Wenck, 2009a). The impacts of expanding the ash monofill are anticipated to be negligible.

The PDSWM waste-to-energy facility uses and stores hazardous materials such as diesel fuel and oil in quantities necessary to maintain and operate equipment. Boiler treatment chemicals are also stored onsite in 110 gallon, double walled tanks. Volumes of these materials would be expected to increase in proportion to the operating and maintenance needs of the expanded facility. The amount of hazardous wastes currently generated by the facility, including used oils, spent solvents, and degreasers, would be expected to double for this proposed project. These materials are properly stored and handled by appropriately trained employees. No new storage tanks are proposed as part of the proposed project.

Provided all personnel follow applicable guidelines, impacts from storage or handling of waste materials would be negligible. The overall impact of implementing the proposed project on hazardous materials and waste management would be below the threshold of significance.

Traffic and Transportation

Implementation of the proposed project would slightly increase the volume of traffic in the project area in the short term due to on-road use by construction equipment, construction workforce vehicles, and vehicles delivering construction materials. Construction and worker vehicles are expected to have sufficient parking space, which would help avoid disturbance to main roads. Although no significant impacts to traffic are expected during the construction phase, minor short-term delays could occur during delivery of larger construction equipment and materials.

Once the expanded PDSWM facility is operational, the majority of vehicles accessing the facility site would be MSW trucks and ash haulers. Accounting for each roundtrip of both MSW and ash haulers, the PDSWM facility is currently responsible for a total of approximately 35 truck trips on area roads each day. Because the amount of MSW to be processed at the expanded facility, and the subsequent amount of ash generated, would double under the proposed project, it is anticipated that a total of approximately 70 truck trips on area roads each day would result.

Traffic volume counts in 2008 for the thoroughfares in the area indicate South Broadway (from 22nd Ave to Interstate 94) had an average of 16,600 vehicles per day, and Highway 27 had an average between 6,300 and 8,600 vehicles per day at various locations (AAEDC, 2009). The truck trips associated with the proposed project would not have a substantial impact on traffic on the larger thoroughfares, but would likely have a long-term, adverse and minor impact on smaller roads close to the PDSWM facility.

Employee, operation, and maintenance vehicles would also increase at the PDSWM facility site each day, however, the impacts from this small increase is anticipated to be negligible.

The necessary infrastructure to accommodate the access and movement of haul trucks as well as employee vehicles is already in place at the PDSWM facility. Additional

infrastructure (e.g., roads, scale house, staging areas, parking areas) is not anticipated to be needed for the proposed project (Wenck, 2009a).

Under Federal Aviation Regulations Part 77.15, the Federal Aviation Administration (FAA) requires submission and approval of a 7640 Form when building any structure over 20 feet in height near an airport which could cause an aviation hazard. The third combustor unit would have an exhaust stack which would be approximately 110 feet tall, while the existing tall point at the PDSWM facility is 70 feet.

Because the runway at Chandler Field, the Alexandria municipal airport, is located approximately one mile west of the PDSWM facility, submission of the FAA 7640 Form is required for this project. Form 7460-1 was completed and submitted to the FAA in regards to this project in early 2009, and no hazard determinations were received from the FAA for the third MWC unit building and stack on February 5 and 26, 2009, respectively (see **Appendix B**).

Overall impacts from implementation of the proposed project on traffic and transportation systems in the region would be long-term, but would be less than significant.

4.7.2 No Action

Under the No Action Alternative, the PDSWM facility would not be expanded. The additional MWC to be processed in the facility (43,800 tons of waste per year) would instead be transported to either another waste-to-energy facility or to a landfill.

If the waste is landfilled, the waste would take up physical space in perpetuity as it degrades. Additionally, the benefits of material recovery from the MRF process and the benefits of renewable energy generation would be lost. These impacts would be long-term, adverse, and moderate. No additional impacts would occur at the PDSWM facility itself.

4.8 SOCIOECONOMICS

4.8.1 Proposed Project

The proposed project would construct and operate a third MWC. Construction and installation activities related to the proposed third combustor expansion project are anticipated to take 13 to 16 months, and would employ a peak of approximately 90 construction workers. Between 25 and 55 construction workers are anticipated to be onsite at any given time. During the construction phase, the number of jobs created would represent approximately 0.45% of the total jobs in Douglas County (based on 2008 employment rates). Though this increase in jobs is very minor, it would nonetheless represent a short-term positive impact in an area experiencing rapid population growth. Since the temporary construction workers would generally be recruited from the local areas (within daily commuting distance of the manufacturing plant), there should not be an influx of people for these jobs. Consequently, no impacts to housing and community services are expected. The increase in job numbers, even temporarily, would likely

stimulate economic activity from increased demand of goods and services, resulting in short-term, beneficial, and minor positive impacts overall.

Once operational, an additional 10 new permanent staff positions would be added for operation of the third combustor unit. This increase in employees at the PDSWM facility would also represent short-term, beneficial, and minor positive impacts. The overall impact of implementing the proposed project on the socioeconomics of the Douglas County and City of Alexandria region would be below the threshold of significance.

4.8.2 No Action

Under the No Action alternative, both the current PDSWM steam customers would have to purchase energy elsewhere to support their expanded operations, and no additional steam customers could be serviced. The additional energy needed would most likely be purchased from Alexandria Light and Power. The temporary employment and spending associated with the construction phase of the proposed project would not occur. This is likely to result in long-term, adverse, and negligible to minor impacts to the PDSWM facility, its steam customers, and to the region.

4.9 CUMULATIVE IMPACTS

CEQ regulations (40 CFR 1508.7) require an analysis of the cumulative impacts resulting from the incremental impact of a proposed project when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes these other actions. Cumulative impacts can result from individually minor, but collectively significant, actions. This cumulative impacts section of the EA addresses only the cumulative effects arising from considering the proposed project in combination with other ongoing actions in the vicinity of the PDSWM facility in Alexandria.

Regionally, the area surrounding the PDSWM facility and the greater City of Alexandria area are experiencing substantial growth and are becoming more developed. Any future PDSWM facility expansion would contribute cumulatively beneficial impacts to the area's economy and waste management practices. Facility expansion would also, however, contribute minor cumulative impacts to adverse regional traffic impacts.

On an airshed level, the State of Minnesota takes into account the effects of all past, present, and reasonably foreseeable emissions during the development of the SIP. The state accounts for all significant stationary, area, and mobile emission sources in the development of this plan. Estimated emissions generated by the proposed project would be *de minimis* and would not be regionally significant. Therefore, the proposed project would not contribute significantly to adverse cumulative effects to air quality.

The cumulative benefits of the proposed project could also include preserving MSW landfill capacity and increasing the longevity of landfills. Overall, the cumulative impacts of the proposed PDSWM facility expansion, when considered with other ongoing actions in the vicinity of the facility, would not have a significant impact on the environment.

5.0 COORDINATION AND PUBLIC REVIEW

5.1 COORDINATION

Federal, state, and local agencies were consulted during the project evaluation process by Wenck Associates, Inc., between 2007 and 2009. Agencies were contacted by letter, electronic mail or by telephone during the course of the evaluation. The agencies and people contacted are listed below.

Federal Agencies:

U.S. Fish and Wildlife Service, Twin Cities Field Office
Federal Aviation Administration

State and Local Agencies:

Minnesota Department of Natural Resources
Minnesota Pollution Control Agency
Minnesota State Historic Preservation Office
Minnesota Office of State Archaeologist
Alexandria Airport Zoning Administration
City of Alexandria, Building Permit and Zoning Division

5.2 PUBLIC REVIEW

A public notice describing the proposed project and providing notification of the availability of the Draft EA was published in two local newspapers; the *Minneapolis-St. Paul Star Tribune* and the *Alexandria Echo Press* for 3 consecutive days on Thursday, March 11; Friday, March 12; and Saturday, March 13, 2010. Comments were invited on the Draft EA for this project for a period of 30 days following publication of the notice. Copies of the Draft EA were made available to the public through the DOE NETL website, the Douglas County Public Library System, and at the Pope/Douglas Waste-to-Energy facility in Alexandria. Additionally, the Draft EA was distributed to various agencies with jurisdiction or special expertise. The complete Draft EA distribution list is included in **Appendix C**.

By the close of the comment period on April 14, 2010, a total of 3 comments on this project were received. The comments came from the Minnesota Pollution Control Agency (MPCA), the Minnesota Department of Natural Resources (DNR) Division of Ecological Resources, and the Minnesota Historical Society, respectively. Each of these comment letters has been included in **Appendix B**. The MPCA asked for clarification and additional information on a few specific items related to wastewater, stormwater, and waste management associated with the proposed project. These items have been clarified and addressed in this Final EA. DNR had no further comment on this project. Finally, the Minnesota Historical Society concluded that no properties listed on or eligible for listing on the National Register of Historic Places would be affected by the proposed project.

6.0 REFERENCES CITED

(AAEDC, 2009). Alexandria Area Economic Development Commission. Lakes Area Fact Book; A Demographic Profile of the Alexandria/Douglas County Area. July 2009. Accessed at: http://alexmn.org/pdf/2009_Alexandria_Area_Fact_Book.pdf

(ANSI, 2003). American National Standards Institute. 2003. American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3: Short-term measurements with an observer present.

(ATSDR, 2001). Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation. Landfill Gas Primer; an Overview for Environmental Health Professionals. November 2001. Accessed at: http://www.atsdr.cdc.gov/HAC/landfill/html/toc.html

(CARB, 2007a). California Air Resources Board. 2007. *EMFAC 2007 (v2.3) Emission Factors (On-Road).* California Air Resources Board, Sacramento, CA.

(CARB, 2007b). California Air Resources Board. 2007. *EMFAC 2007 (v2.3) Emission Factors (Off-Road).* California Air Resources Board, Sacramento, CA.

(Davis and Cornwell, 1998). Davis, Mackenzie and Cornwell, David. 1998. Introduction to Environmental Engineering, Third Edition. Boston, MA; McGraw Hill Companies, Inc.

(DNR, 2009). Minnesota Department of Natural Resources. 2009. Rare Species Guide; Douglas County. Accessed at: http://www.dnr.state.mn.us/rsg/filter_search.html

(DNR, 2006). Minnesota Department of Natural Resources. 2006. Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife, Comprehensive Wildlife Conservation Strategy. Hardwood Hills; Subsection Profile. Accessed at: http://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/cwcs/profiles/hardwood_hills.pdf

(DOE, 2009a). U.S. Department of Energy, Energy Information Administration. Renewable Energy Consumption and Electricity Preliminary Statistics 2008. Data released July 2009. Accessed November 2009 at: http://www.eia.doe.gov/cneaf/alternate/page/renew_energy_consump/rea_prereport.html

(DOE, 2009b). U.S. Department of Energy, Energy Information Administration. Official Energy Statistics from the U.S. Government: Renewable Energy and Municipal Solid Waste. Data released April 2009. Accessed November 2009 at: http://www.eia.doe.gov/cneaf/solar.renewables/page/trends/table1_12.pdf

(DOE, 2007a). United States Department of Energy, Federal Energy Management Program. Energy Efficiency and Renewable Energy. Biomass Program. Program page last updated August 1, 2007. Accessed October 2009 at: http://www1.eere.energy.gov/biomass/biomass_benefits.html

(DOE, 2007b). United States Department of Energy, Energy Information Administration. Methodology for Allocating Municipal Solid Waste to Biogenic/Non-Biogenic Energy. May, 2007. Accessed November 2009 at: http://www.eia.doe.gov/cneaf/solar.renewables/page/mswaste/msw_report.html

(Harris, 1998). Harris, Cecil M. 1998. Handbook of Acoustical Measurement and Noise Control.

(Hellerman, 2009). Hellerman, Brooke. Pope/Douglas Solid Waste Management, Office Manager Assistant. Email Communication Regarding PDSWM Waste-to-Energy Facility. October 29, 2009.

(MNHS, 2007). Minnesota Historical Society. National Register of Historic Places; Douglas County Listings. 2007. Accessed at: http://nrhp.mnhs.org/search_location.cfm

(MNORS, 2009). Minnesota Office of the Revisor of Stautes. 2009 Minnesota Statutes: 116C.779 Funding for Renewable Energy. Minnesota Renewable Energy Objective. 2009.

(MPCA, 2000). Minnesota Pollution Control Agency, Northern District. Upper Mississippi River Basin Information Document. 2000. Accessed September 2009 at: http://www.pca.state.mn.us/water/basins/uppermiss/bid-uppermiss.pdf

(MRCC, 2005). Midwestern Regional Climate Center. Historical Climate Data for Station 210112 Alexandria FAA Airport, MN. 2005. Accessed January 2010 at: http://mcc.sws.uiuc.edu/climate_midwest/historical/temp/mn/210112_tsum.html

(NWI, 2009). United States Fish and Wildlife Service, National Wetlands Inventory. Geospatial Wetlands Data. 2009. Accessed at: http://www.fws.gov/wetlands/Data/Mapper.html

(SCAQMD, 1993). South Coast Air Quality Management District. 1993. CEQA Air Quality Handbook. South Coast Air Quality Management District, Diamond Bar, CA.

(UMN, 2004). University of Minnesota, Minnesota Climatology Working Group. Wind Roses for Alexandria (KAXN). October 5, 2004. Accessed at: http://climate.umn.edu/wind/kaxn.htm

(USCB, 2009). United States Census Bureau. Minnesota and Douglas County QuickFacts. November 2009. Accessed at: http://quickfacts.census.gov/qfd/states/27000.html

(USDA, 2005). United States Department of Agriculture, Natural Resources Conservation Service. March, 2005. Official Soil Series Description: Waukon Series. Accessed at: http://www2.ftw.nrcs.usda.gov/osd/dat/W/WAUKON.html

(USEPA, 2009a). United States Environmental Protection Agency. Municipal Solid Waste. March 30, 2009. Accessed at: http://www.epa.gov/RDEE/energy-and-you/affect/municipal-sw.html

(USEPA, 2009b). United States Environmental Protection Agency.Technology Transfer Network. Glossary of Key Terms. November 17, 2009. Accessed at: http://www.epa.gov/ttn/atw/natamain/gloss1.html

(USEPA, 2008). United States Environmental Protection Agency, Landfill Methane Outreach Program. Frequently Asked Questions About Landfill Gas and How It Affects Public Health, Safety, and the Environment. June 2008. Accessed September 2009 at: http://www.epa.gov/lmop/faq-3.htm

(USEPA, 2005). United States Environmental Protection Agency. 2005. Methodology to Estimate the Transportable Fraction (TF) of Fugitive Dust Emissions for Regional and Urban Scale Air Quality Analyses. Washington, D.C.

(USEPA, 2003). United States Environmental Protection Agency. User's Guide to MOBILE6.2: Mobile Source Emission Factor Model. EPA420-R-02-028. August 2003.

(USEPA, 1995). United States Environmental Protection Agency. 1995. Compilation of Air Pollutant Emission Factors, AP-42, 5th edition, Vol. I: Stationary Point and Area Sources.

(USEPA, 1971). United States Environmental Protection Agency. 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. Publication NTID300.1. Washington, D.C.

(USFWS, 2009). United States Fish and Wildlife Service, Midwest Region. Endangered, Threatened, Proposed, and Candidate Species in Minnesota; Douglas County. July 28, 2009. Accessed at: http://www.fws.gov/midwest/endangered/lists/minnesot-cty.html

(USFWS, 2007). United States Fish and Wildlife Service. Email Communication between Laurie Fairchild, USFWS Twin Cities Field Office Biologist, and Amy Denz, Wenck Associates Environmental Planner. May 10, 2007.

(Wenck, 2009a). Wenck Associates, Inc. Pope/Douglas Solid Waste Management Facility, Alexandria, Minnesota. Environmental Assessment Worksheet. Wenck File #1221-07 Phase 22. August 17, 2007; Revised August 2009.

(Wenck, 2009b). Wenck Associates, Inc. Updated Criteria Pollutant Ambient Air Dispersion Modeling Unit 3 Project - Pope/Douglas Solid Waste Management Facility. 2009.

(Wenck, 2009c). Wenck Associates, Inc. Pope/Douglas Solid Waste Management. Technical Support Document for Draft/Proposed Air Emission Permit No. 04100021-00. August, 2009.

(Wenck, 2009d). Wenck Associates, Inc. Municipal Waste Combustor Health Risk Assessment – Unit 3 Expansion Project. Prepared by Wenck Associates and Titan Engineering Inc. September, 2009.

7.0 DOCUMENT PREPARERS

The contractor responsible for preparing this EA:

Mangi Environmental Group
7927 Jones Branch Drive, Suite 150
McLean, VA 22102
703-760-4801

The following Mangi Environmental Group personnel were principal contributors to this EA:

Name and Document Contribution	**Associated Professional Expertise**
Anna Lundin, **MS Environmental Engineering** Project Management, Water, Soils, Infrastructure, HHS, Biological Resources, Socioeconomics	11 years experience: Watershed analyses, Phase I/II environmental site assessments, Environmental Baseline Surveys, EAs/EISs
Mark Blevins, MS Geography Mapping, GIS-based data & analysis	8 years experience: GIS specialist: ArcGIS 8.3 - 9.1, ArcVIEW 3.2, GPS: Trimble GeoExplorer, Garmin GPS III – V Plus, Pathfinder Office software
Jim Mangi, Ph.D., Ecology Project Oversight	30 years experience: recognized as a NEPA expert; has assisted the U.S. Army and five other Federal and State agencies in the development of their NEPA regulations and guidance.
Timothy Lavallee, P.E. **LPES, Inc. Engineering and Planning** Air Quality, Noise	17 years of experience M.S., Environmental Health, Tufts University, Medford, Massachusetts. B.S., Mechanical Engineering, Northeastern University, Boston, Massachusetts.

APPENDIX A

AIR EMISSIONS CALCULATIONS

Construction Emissions

Table A-1 Construction Equipment Use

Equipment Type	Number of Units	Days on Site	Hours Per Day	Operating Hours
Excavators Composite	1	230	4	920
Rollers Composite	1	173	8	1384
Rubber Tired Dozers Composite	1	230	8	1840
Plate Compactors Composite	1	115	4	460
Trenchers Composite	1	58	8	464
Air Compressors	1	115	4	460
Cement & Mortar Mixers	2	115	6	1380
Cranes	1	230	7	1610
Generator Sets	1	115	4	460
Tractors/Loaders/Backhoes	1	230	7	1610
Pavers Composite	1	58	8	464
Paving Equipment	1	58	8	464

Table A-2 Construction Equipment Emission Factors (lbs/hour)

Equipment	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Excavators Composite	0.5828	1.3249	0.1695	0.0013	0.0727	0.0727
Rollers Composite	0.4341	0.8607	0.1328	0.0008	0.0601	0.0601
Rubber Tired Dozers Composite	1.5961	3.2672	0.3644	0.0025	0.1409	0.1409
Plate Compactors Composite	0.0263	0.0328	0.0052	0.0001	0.0021	0.0021
Trenchers Composite	0.5080	0.8237	0.1851	0.0007	0.0688	0.0688
Air Compressors	0.3782	0.7980	0.1232	0.0007	0.0563	0.0563
Cement and Mortar Mixers	0.0447	0.0658	0.0113	0.0001	0.0044	0.0044
Cranes	0.6011	1.6100	0.1778	0.0014	0.0715	0.0715
Generator Sets	0.3461	0.6980	0.1075	0.0007	0.0430	0.0430
Tractors/Loaders/Backhoes	0.4063	0.7746	0.1204	0.0008	0.0599	0.0599
Pavers Composite	0.5874	1.0796	0.1963	0.0009	0.0769	0.0769
Paving Equipment	0.0532	0.1061	0.0166	0.0002	0.0063	0.0063

Source: CARB 2007

Table A-3 Construction Equipment Emissions (tons)

Equipment	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$
Excavators Composite	0.2681	0.6095	0.0780	0.0006	0.0335	0.0335
Rollers Composite	0.3004	0.5956	0.0919	0.0005	0.0416	0.0416
Rubber Tired Dozers Composite	1.4684	3.0058	0.3353	0.0023	0.1296	0.1296
Plate Compactors Composite	0.0061	0.0076	0.0012	0.0000	0.0005	0.0005
Trenchers Composite	0.1179	0.1911	0.0429	0.0002	0.0160	0.0160
Air Compressors	0.0870	0.1835	0.0283	0.0002	0.0130	0.0130
Cement and Mortar Mixers	0.0309	0.0454	0.0078	0.0001	0.0031	0.0031
Cranes	0.4839	1.2961	0.1432	0.0011	0.0576	0.0576
Generator Sets	0.0796	0.1605	0.0247	0.0002	0.0099	0.0099
Tractors/Loaders/Backhoes	0.3271	0.6235	0.0969	0.0006	0.0482	0.0482
Pavers Composite	0.1363	0.2505	0.0455	0.0002	0.0178	0.0178
Paving Equipment	0.0123	0.0246	0.0038	0.0000	0.0015	0.0015
Total	**3.32**	**6.99**	**0.90**	**0.0059**	**0.37**	**0.37**

***Table A-4* Heavy Truck Emissions**

Delivery of Concrete							
Volume of Concrete (cubic yards)	167						
Number of Concrete Trucks	***17***						
Delivery of Equipment and Supplies							
Number of Deliveries Per Site Per Day	2						
Days of Construction	230						
Total Number of Deliveries	***460***						
Grand Total Number of Trucks	**477**						
Number of Trips	2						
Miles Per Trip Within AQCR	30						
Total Miles	28600						
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007	2.7
Total Emissions (lbs)	627.75	678.18	85.59	0.73	24.48	21.14	77775.81
Total Emissions (tons)	**0.31**	**0.34**	**0.04**	**0.0004**	**0.01**	**0.01**	**38.89**

Source: USEPA 2003

Table A-5 Surface Disturbance

TSP Emissions	80	lb/acre				
PM10/TSP	0.45					
PM2.5/PM10	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	**Area [acres]**	**TSP[lbs]**	**PM_{10}[lbs]**	**PM_{10}[tons]**	**$PM_{2.5}$[lbs]**	**$PM_{2.5}$[tons]**
All Facilities	0.2	373	168	0.08	13	0.01
Total	**0.2**	**373**	**168**	**0.08**	**13**	**0.01**

Sources: USEPA, 1995; USEPA 2005.

Table A-6 Worker Commutes

Number of Workers	100					
Number of Trips	2					
Miles Per Trip	30					
Days of Construction	230					
Total Miles	1380000					
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001
Total Emissions (lbs)	14556.84	1521.98	1489.29	14.83	117.38	73.04
Total Emissions (tons)	**7.28**	**0.76**	**0.74**	**0.0074**	**0.06**	**0.04**

Source:CARB 2007

Table A-7 Total Construction Emissions (tons)

Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment	3.32	6.99	0.90	0.0059	0.37	0.37
Delivery of Equipment and Supplies	0.31	0.34	0.04	0.0004	0.01	0.01
Paving Off Gasses	0.00	0.00	0.00	0.0000	0.00	0.00
Surface Disturbance	0.00	0.00	0.00	0.0000	0.08	0.01
Worker Commutes	7.28	0.76	0.74	0.0074	0.06	0.04
Total Construction Emissions	**10.9**	**8.1**	**1.7**	**0.0**	**0.5**	**0.4**

APPENDIX B

AGENCY CORRESPONDENCE

Federal Aviation Administration
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-0520

Aeronautical Study No.
2009-AGL-274-OE

Issued Date: 02/05/2009

Pete Olmscheid
Pope/Douglas Solid Waste Management Board
2115 South Jefferson
Alexandria, MN 56308

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building Unit 3 Building
Location:	Alexandria, MN
Latitude:	45-52-06.06N NAD 83
Longitude:	95-22-21.18W
Heights:	58 feet above ground level (AGL) 1473 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 08/05/2010 unless:

(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

Page 1 of 2

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (847) 294-7458. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2009-AGL-274-OE.

Signature Control No: 615223-108108440 (DNE)
Fred Souchet
Specialist

Page 2 of 2

Federal Aviation Administration
Air Traffic Airspace Branch, ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-0520

Aeronautical Study No.
2009-AGL-275-OE

Issued Date: 02/26/2009

Pete Olmscheid
Pope/Douglas Solid Waste Management Board
2115 South Jefferson
Alexandria, MN 56308

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Stack Unit 3 Stack
Location:	Alexandria, MN
Latitude:	45-52-06.49N NAD 83
Longitude:	95-22-21.00W
Heights:	120 feet above ground level (AGL) 1535 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 08/26/2010 unless:

(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

Page 1 of 2

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (847) 294-7458. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2009-AGL-275-OE.

Signature Control No: 615224-108441796 (DNE)
Fred Souchet
Specialist

Page 2 of 2

From: Cinadr, Thomas [thomas.cinadr@mnhs.org]
Sent: Thursday, May 17, 2007 8:06 AM
To: Amy J. Denz
Subject: RE: Pope/Douglas Solid Waste Management Capacity Expansion

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

For further information contact Kelly Gragg-Johnson by phone at 651-259-3455 or email at kelly.gragg-johnson@mnhs.org.

No archaeological sites or historic structures were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

With regard to Environmental Assessment Worksheets (EAW), a negative known site/structure response from the SHPO databases is not necessarily appropriate information on which to base a "No" response to EAW Question 25a. It is the Responsible Governmental Unit's (RGU) obligation to verify the accuracy of the information contained within the EAW. A "No" response to Question 25a without written justification should be carefully considered.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. Please contact the SHPO by phone at 651-259-3450 or by email at mnshpo@mnhs.org for current lists of professional consultants in these fields.

The Minnesota SHPO Survey Manuals and Database Metadata can be found at http://www.mnhs.org/shpo/survey/inventories.htm

Tom Cinadr
Survey and Information Management Coordinator
Minnesota State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. West

Minnesota Department of Natural Resources

Natural Heritage and Nongame Research Program, Box 25
500 Lafayette Road
St. Paul, Minnesota 55155-40__

Phone: (651) 259-5109 Fax: (651) 296-1811 E-mail: lisa.joyal@dnr.state.mn.us

June 13, 2007

Ms. Amy Denz
Wenck Associates, Inc.
P.O. Box 249
Maple Plain, MN 55359

Re: Request for Natural Heritage information for vicinity of proposed Pope/Douglas Solid Waste Management Capacity Expansion, T128N R37W Section 30, Douglas County
NHNRP Contact #: ERDB 20070809

Dear Ms. Denz,

The Minnesota Natural Heritage database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the area indicated on the map enclosed with your information request. Based on this review, there is 1 known occurrence of a rare species or native plant community in the area searched (for details, please see the enclosed database printouts and the explanation of selected fields). However, based on the nature and location of the proposed project I do not believe it will affect any known occurrences of rare features.

The Natural Heritage database is maintained by the Natural Heritage and Nongame Research Program, a unit within the Division of Ecological Services, Department of Natural Resources. It is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. Its purpose is to foster better understanding and protection of these features.

Because our information is not based on a comprehensive inventory, there may be rare or otherwise significant natural features in the state that are not represented in the database. A county-by-county survey of rare natural features is now underway, and has been completed for Douglas County. Our information about native plant communities is, therefore, quite thorough for that county. However, because survey work for rare plants and animals is less exhaustive, and because there has not been an on-site survey of all areas of the county, ecologically significant features for which we have no records may exist on the project area.

The enclosed results of the database search are provided in two formats: short record report and long record report. To control the release of locational information, which might result in the damage or destruction of a rare element, both printout formats are copyrighted.

The short record report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an Environmental Assessment Worksheet, municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the short record report for any other purpose, please contact me to request written permission. **The long record report includes more detailed locational information, and is for your personal use only. If you wish to reprint the long record report for any purpose, please contact me to request written permission.**

Please be aware that review by the Natural Heritage and Nongame Research Program focuses only on *rare natural features*. It does not constitute review or approval by the Department of Natural Resources as a whole. If you require further information on the environmental review process for other natural resource-related issues, you may contact your Regional Environmental Assessment Ecologist, Paul Stolen, at (218) 755-4068.

Page 1 of 2

An invoice in the amount of $66.33 will be mailed to you under separate cover within two weeks of the date of this letter. You are being billed for map and database search and staff scientist review. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Lisa A. Joyal
Endangered Species Environmental Review Coordinator

encl: Database search results
Rare Feature Database Print-Outs: An Explanation of Fields

>>> "Haapala, William (MPCA)" <William.Haapala@state.mn.us> 3/12/2010 10:37 AM >>>

Mark-thanks for the copy of the draft EA for the 3rd Combustor Expansion Project and opportunity to comment.

Regarding water resources/water quality, the draft describes current and future volumes of wastewater generated and states that ALASD has adequate treatment capacity for the expansion's increased wastewater flow. The draft does not, however, provide data from the existing wastewater discharge for wastewater pollutant concentrations and loads to indicate whether the discharge meets the requirements of the sewer use ordinance. Also, the ALASD facility discharges to Lake Winona, so the wastewater characterization would be helpful to determine if any pollutants of concern might contribute to existing and pending (2010 impaired waters list) water quality impairments. Because this is an expansion of an existing facility, this data may exist or be relatively easy to obtain to provide a level of assessment similar to the air quality assessment.

Regarding storm water, under Construction (4-5), the report states "this alternative would not result in any increase in impervious surface area onsite." Under Operation (4-5) this is not stated, however, it states runoff from the 3rd rooftop will be directed to the storm water system. The statement from page 2-5 that the 3rd combustor rooftop is displacing previously paved surface would add clarity here as well. Also, in "assuming that the expanded facility would be in full compliance with this (storm water) permit," (page 4-5) is the draft referring to the building permit (page 3-2)? Will the expansion building permit require any changes to storm water requirements, or has it been verified that the project does not meet a threshold requiring an industrial storm water permit? And, will the expansion have any impact on maintenance requirements for the storm water sedimentation pond?

Regarding hazardous waste generated by the facility, it would be helpful if data on current and projected quantity and type were provided, similar to the level of detail provided for the air quality assessment. Also, identifying the waste disposal site(s) for household hazardous waste and PDSWM generated waste, similar to how the site for un-processed waste is provided, would be helpful.
It's likely that this information exists and would be relatively easy to obtain. Thanks.

Will Haapala
MPCA
NW Regional Manager
218-846-8100

>>> "Kestner, Nathan (DNR)" <Nathan.Kestner@state.mn.us> 3/26/2010 2:27 PM >>>

Mr. Lust-

This project was previously reviewed by the MnDNR as part of a state Environmental Assessment Work (EAW). The following link provides the Findings of Fact, Conclusions of Law, and Order for Negative Declaration on the need for an EIS as approved by the Minnesota Pollution Control Agency.

http://www.pca.state.mn.us/news/eaw/pope-douglas-sd.pdf

The MnDNR appreciates the opportunity to review the draft EA you have prepared, however; we have no further comments. Thank you.

Nathan Kestner
Regional Environmental Assessment Ecologist - Reg 1
MN DNR Division of Ecological Resources, NW Region
2115 Birchmont Beach Rd NE, Bemidji, MN 56601
218-308-2672, 218-755-4066 (fax)
nathan.kestner@state.mn.us

Minnesota Historical Society

STATE HISTORIC PRESERVATION OFFICE

April 6, 2010

Mr. Mark W. Lusk
Office of Project Facilitation & Compliance
US Dept. of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
PO Box 880, MS B07
Morgantown, WV 26507-0880

RE: Draft Pope/Douglas EA Comments
Construction of a Third Municipal Waste Combustor at the Pope/Douglas Solid Waste Management Waste-to-Energy Facility
Alexandria, Pope/Douglas Counties
SHPO Number: 2010-2005

Dear Mr. Lusk:

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the Advisory Council on Historic Preservation (36CFR800).

Based on available information, we conclude that **no properties** listed on or eligible for listing on the National Register of Historic Places will be affected by this project

Please contact our Compliance Section at (651) 259-3455 if you have any questions regarding our review of this project.

Sincerely,

Britta L. Bloomberg
Deputy State Historic Preservation Officer

Minnesota Historical Society, 345 Kellogg Boulevard West, Saint Paul, Minnesota 55102
651-259-3000 • 888-727-8386 • www.mnhs.org

APPENDIX C

DISTRIBUTION LIST

Pope/Douglas Third Combustor Expansion, Alexandria, MN
EA Distribution List

Federal Agency:

Jennifer Szymanski
Regional ESA Section 7 Coordinator
U.S. Fish and Wildlife Service
Ecological Services
1 Federal Drive
Fort Snelling, MN 55111-4056

Tony Sullins
Field Supervisor
U.S. Fish and Wildlife Service
Twin Cities Minnesota Field Office
4101 American Boulevard East
Bloomington, MN 55425-1665

State Agencies:

Paul Stolen
Environmental Assessment Ecologist
MN DNR, Northwest Region
2115 Birchmont Beach Road NE
Bemidji, MN 56601

Will Haapala
Regional Manager
MPCA Detroit Lakes Office
714 Lake Ave., Suite 220
Detroit Lakes, MN 56501

Kelly Gragg-Johnson
Review and Compliance
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1903

Gregg Downing
Director of Environmental Review
Environmental Quality Board
658 Cedar St., Suite 300
St. Paul, MN 55155

Governor Tim Pawlenty
Office of the Governor
130 State Capitol
75 Rev. Dr. Martin Luther King Jr. Blvd.
St. Paul, MN 55155

Regional/Local Contacts:

Dave Rush
Land and Resource Director
Douglas County
305 8th Ave W
Alexandria MN 56308

H. Dan Ness
Mayor
City of Alexandria
704 Broadway
Alexandria, MN 56308