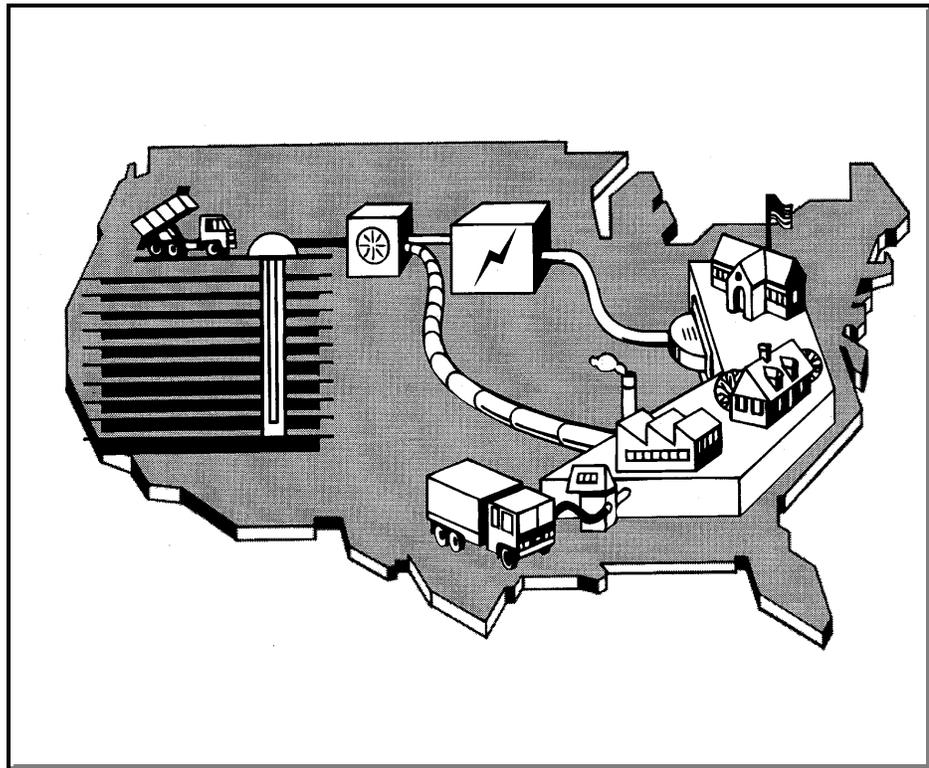




Landfill Gas-to-Energy Project Opportunities

Landfill Profiles for the State of Iowa



EPA Landfill Methane Outreach Program



The EPA Landfill Methane Outreach Program, a key component of the United State's *Climate Change Action Plan*, encourages the use of landfill gas (LFG) as an energy resource. EPA assists utilities, municipal and private landfill owners and operators, tribes, and state agencies in reducing methane emissions from landfills through the development of profitable landfill energy recovery projects. Methane captured from landfills can be transformed into a cost-effective fuel source for electricity, heat, boiler and vehicular fuel, or sale to a pipeline. EPA estimates there are approximately 200 landfill methane recovery projects in the U.S. and that up to 750 landfills could install economically viable landfill energy projects.

The Landfill Methane Outreach Program includes five important components: the State Ally, Energy Ally, Industry Ally, Community Partner, and Endorser programs. EPA establishes separate alliances with state agencies, energy providers (including investor-owned, municipal and other public power utilities and cooperatives), key trade and public sector associations, members of the landfill gas development industry (including developers, engineers, equipment vendors, and others) and local communities, municipalities and landfill owner/operators through a Memorandum of Understanding (MOU). By signing the MOU, each Ally/Partner acknowledges a shared commitment to the promotion of landfill gas-to-energy recovery at solid waste landfills, recognizes that the widespread use of landfill gas will reduce emissions of methane and other gases, and commits to undertake activities to enhance development of this resource. In return, EPA agrees to provide landfill gas-to-energy project assistance and public recognition of the Allies' and Partners' participation in the program.

Introduction

Since 1994 the U.S. EPA's Landfill Methane Outreach Program (LMOP) has participated in an ongoing effort to gather information on Municipal Solid Waste landfills (MSW). A key component of the LMOP is to provide MSW landfill owners and operators, project developers, utilities, and other potential project participants with information on MSW landfills that may offer attractive energy development opportunities. This document presents state specific landfill information, hereinafter referred to as the landfill profiles. These profiles are useful to evaluate the potential for developing landfill gas-to-energy projects (LFGTE). EPA assembled this information from state and local sources as well as various national solid waste publications, landfill owners and operators, and project developers.

The EPA has prepared a separate document to describe the methodology used to develop the state-specific landfill profiles and estimate the benefits of using LFGTE as an energy source. The document, *Landfill Gas-to-Energy Project Opportunities, Background Information on Landfill Profiles*, contains background information on gas collection and use, describes the data fields according to the five sections listed on the landfill profiles, and where applicable, illustrates calculations and default values used to derive estimates. EPA strongly recommends that users read the document prior to using the landfill profiles. Users can obtain the document by calling the LMOP hotline at 1-888-STAR-YES.

Data Sources

- EPA-ORD Landfill Gas Utilization-Survey (Thorneloe, 1997)
- Directory and Atlas of Solid Waste Disposal Facilities (SWA, 1994)
- Implementation Guide for Landfill Gas Recovery Projects in the Northeast (SCS, 1994)
- Landfill Gas-to-Energy 1994-1995 Activity Report (SWT, 1994)
- Methane Recovery from Landfill Yearbook (GAA, 1994)
- Project developers, landfill owners, and operators
- State and local records
- Survey of Landfill Gas Generation Potential (EPRI, 1992)
- U.S. Landfill Directory (SWANA, 1992)

Landfill Classification

To facilitate the use of available landfill information, EPA has categorized the landfills into five categories: Current Project,¹ Candidate Project, Shutdown, Other, and Unknown waste-in-place (WIP). These categories are based on the status of the landfill's LFGTE project(s) and WIP. The generation of methane is a function of many factors, the most critical being the amount of waste-in-place and the number of years the waste has been in the landfill. Peak methane generation occurs soon after closure; therefore, the longer the landfill has been closed, the less attractive it becomes for methane recovery. Based on the general timing of peak methane generation, EPA assumes that landfills that ceased accepting waste prior to 1993 have a low probability of generating enough methane to make a gas recovery project economical. Consequently, landfills need to be operating in 1993 to be considered as having a Candidate Project.

Landfill Categorizes

Current Project:

- Landfill with operational LFGTE project or landfill with LFGTE project under construction.

Candidate Project:

- Landfill with a potential or planned LFGTE utilization project; or
- Landfill is currently operating or closed after 1993; and has more than 1,000,000 tons of municipal solid waste-in-place.²

Shutdown:

- Landfill with shutdown LFGTE project.

Other:

- Landfill has less than 1,000,000 tons of municipal solid waste-in-place with no current or planned LFGTE project.

Unknown WIP:

- Landfill with insufficient data to determine the waste-in-place.

State Summary

State-specific landfill profile information is summarized in three exhibits. Exhibit 1 presents a summary of the state-specific potential for LFG utilization energy by landfill category. Exhibit 2 summarizes the emissions avoided by fossil fuel displacement for electricity generation and direct use projects. Exhibit 3 presents an index of the state-specific MSW landfills, referenced by category, landfill name and general characteristics.

¹ Current projects illustrate the wide range of successful project development options.

² By modeling the relationship between WIP and methane generation, a cut-off of 1,000,000 tons of WIP was established; landfills having at least 1,000,000 tons of WIP are considered candidate landfills.



Exhibit 1: Iowa MSW Landfill Summary

Category	No. of Landfills	Est. Capacity Potential		Est. CH4 Generation (mmscf/d)	Methane Reduction (tons/yr)		CO2 Equivalent of CH4 Reduction (tons/yr)	
		Electricity (MW)	Gas Capacity (mmBtu/hr)		Potential	Current	Potential	Current
Current	2	19	191	6	35,266	5,396	740,584	113,320
Candidate	12	31	307	10	56,701	0	1,190,729	0
Other	8	11	106	3	19,646	0	412,568	0
Unknown WIP	1							
Total	23	60	603	19	111,613	5,396	2,343,881	113,320

Exhibit 2: Potential Iowa Emissions Avoided by Fossil Fuel Displacement

Category	Electricity Generation Project						Direct Use Project					
	CO2 (tons/yr)			SO2 (tons/yr)			CO2 (tons/yr)			SO2 (tons/yr)		
	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas	Coal	Oil	Natural Gas
Current	150,752	123,730	83,198	953	796	0	106,199	87,163	58,610	966	508	1
Candidate	242,307	198,875	133,726	1,531	1,280	0	170,749	140,143	94,234	1,554	817	1
Other	83,663	68,667	46,173	529	442	0	59,162	48,557	32,650	538	283	0
Unknown WIP												
Total	476,722	391,272	263,097	3,013	2,518	0	336,109	275,863	185,494	3,058	1,608	2

Exhibit 3: Index of Landfills in Iowa

Category	Landfill Name	WIP			Landfill Operating in 1998	LFG Collected	LFG Utilization Project	Status of LFGTE Project
		<2.5 million tons	2.5 to 4 million tons	>4 million tons				
Current	Cedar Rapids Landfill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Operational
Current	Des Moines Metro Park East SLF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Operational
Candidate	Black Hawk County SLF (Area E)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Clinton County SLF (East)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Des Moines County SLF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Potential
Candidate	Dubuque Metropolitan SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Ft. Dodge LF	<input type="checkbox"/>	Planned					
Candidate	Lee County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Marion County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Muscatine County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Northwest Iowa SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Quad Cities	<input type="checkbox"/>	Planned					
Candidate	Sioux City SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Candidate	Winnebago County SLF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Boone County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Linn County SLF (Bluestem #2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Marshall County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Newton SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Ottumwa-Wapello County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Poweshiek County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Scott County SLF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Other	Van Buren County SLF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown
Unknown WIP	Dickinson County SLF	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unknown

A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Black Hawk County Solid Waste Mgmt. Com	Annual Acceptance Rate (tons):	260,260
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1993
Alternative Landfill Name:		Design Capacity (tons):	
City:	Waterloo	Acres Currently Landfilled (acres):	160
County:	Black Hawk	Average Depth (feet):	30
State:	IA	Waste-in-Place (tons):	1,821,820
Year Open:	1990	1998 Waste-in-Place (tons):	2,342,340
Year Closed:	2050		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	1.02
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	3	32
Current Capacity:		
Planned Capacity:		

Utilities in County: Benton County Electric Coop Assn; Buchanan County Rural Elec Coop; Cedar Falls Utilities; Grundy

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>	5,881		0	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	123,491		0	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	25,257	160	17,708	161
<i>Fuel Oil:</i>	20,730	133	14,534	85
<i>Natural Gas:</i>	13,939	0	9,773	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Gary Wilcox	Dave Dobbs
Mailing Address:	P.O. Box 208	1509 East Washburn Road
Phone Number:	319-234-8115	319-296-2524
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	City of Cedar Rapids	Annual Acceptance Rate (tons):	
Landfill Owner Type:		Year Annual Acceptance Rate Reported:	
Alternative Landfill Name:		Design Capacity (tons):	
City:	Cedar Rapids	Acres Currently Landfilled (acres):	
County:	Cedar	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	
Year Open:	1955	1998 Waste-in-Place (tons):	
Year Closed:			

B. LANDFILL GAS COLLECTION*Estimated Methane Generation (mmscf/d):*

LFG Collection System Status:	Operational
Current LFG Collected (mmscf/d):	3.5
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Operational
Utilization System Type:	Medium Btu
Utilization System Start Year:	1995
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity:	Electricity Generation Project (MW)	OR	Direct Use Project (mmBtu/hr)
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Estimated Potential Capacity:

Current Capacity:

Planned Capacity:

73

Utilities in County: Durant Muni Elec Plant; Eastern Iowa Light & Power Coop; IES Industries Inc; Linn County Rural E

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>	<i>Current</i>
<i>Methane Reduction (tons/yr):</i>		
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>	<i>Direct Use Project</i>
	<i>CO2 (tons/yr) SO2 (tons/yr)</i>	<i>CO2 (tons/yr) SO2 (tons/yr)</i>
<i>Coal:</i>		
<i>Fuel Oil:</i>		
<i>Natural Gas:</i>		

E. CONTACT INFORMATION

Landfill Owner

Landfill Operator

Contact Name:	David Hogan, Program Manager	David Hogan, Program Manager
Mailing Address:	2250 8th Street, S.W.	2250 8th Street, S.W.
Phone Number:	319-398-5060	319-398-5060
Fax Number:		



A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Clinton County Area Solid Waste Agency	Annual Acceptance Rate (tons):	72,000
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1992
Alternative Landfill Name:		Design Capacity (tons):	
City:	Clinton	Acres Currently Landfilled (acres):	160
County:	Clinton	Average Depth (feet):	50
State:	IA	Waste-in-Place (tons):	3,697,808
Year Open:	1974	1998 Waste-in-Place (tons):	4,019,358
Year Closed:	2006		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	1.45
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:			
Utilization System Status:	Unknown		
Utilization System Type:	Unknown		
Utilization System Start Year:			
Electric Utility Provider(s):			
Natural Gas Provider(s):			
Energy Purchaser(s):			
Capacity:	Electricity Generation Project (MW)	OR	Direct Use Project (mmBtu/hr)
Estimated Potential Capacity:	5		45
Current Capacity:			
Planned Capacity:			

Utilities in County: Eastern Iowa Light & Power Coop; IES Industries Inc; Interstate Power Co; Iowa Electric Light & Pow

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>	8,360		0	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	175,568		0	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	35,517	225	25,176	229
<i>Fuel Oil:</i>	29,151	188	20,664	120
<i>Natural Gas:</i>	19,602	0	13,895	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Chuck Goddard	Robert Summers
Mailing Address:	P.O. Box 996	1021 11th St.
Phone Number:	319-243-4749	319-659-8148
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Des Moines County Regional Solid Waste C	Annual Acceptance Rate (tons):	52,700
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1994
Alternative Landfill Name:		Design Capacity (tons):	
City:	West Burlington	Acres Currently Landfilled (acres):	360
County:	Des Moines	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	2,597,642
Year Open:	1958	1998 Waste-in-Place (tons):	2,730,858
Year Closed:	2017		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	0.94
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Potential
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	3	29
Current Capacity:		
Planned Capacity:		

Utilities in County: Danville Elec Dept; Eastern Iowa Light & Power Coop; IES Industries Inc; Iowa Southern Utilities Co

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		Current	
<i>Methane Reduction (tons/yr):</i>	5,445		0	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	114,353		0	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	22,889	145	16,398	149
<i>Fuel Oil:</i>	18,786	121	13,459	78
<i>Natural Gas:</i>	12,632	0	9,050	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Harold Morton	Becky Perry
Mailing Address:	1818 West Burlington Avenue	1818 West Burlington Avenue
Phone Number:	319-753-8126	319-753-8126
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Des Moines Metropolitan Area Solid Waste	Annual Acceptance Rate (tons):	429,000
Landfill Owner Type:		Year Annual Acceptance Rate Reported:	
Alternative Landfill Name:		Design Capacity (tons):	
City:	Mitchellville	Acres Currently Landfilled (acres):	400
County:	Polk	Average Depth (feet):	65
State:	IA	1993 Waste-in-Place (tons):	22,213,605
Year Open:	1971	1998 Waste-in-Place (tons):	22,213,605
Year Closed:	2025		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	6.10
LFG Collection System Status:	Operational
Current LFG Collected (mmscf/d):	1.4
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:	
Utilization System Status:	Operational
Utilization System Type:	Gas Turbine
Utilization System Start Year:	1993
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	Midwest Power Systems

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	19	191
Current Capacity:	3.2	29
Planned Capacity:		

Utilities in County: Carlisle Municipal Utils; Eastern Iowa Light & Power Coop; Iowa Electric Light & Power Co; Marsh

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		Current	
<i>Methane Reduction (tons/yr):</i>	35,266		5,396	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	740,584		113,320	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	150,752	953	106,199	966
<i>Fuel Oil:</i>	123,730	796	87,163	508
<i>Natural Gas:</i>	83,198	0	58,610	1

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Teree Caldwell Johnson, Director	Fred Thies, P.E., Professional Engineer
Mailing Address:	521 East Locust Street	521 East Locust Street
Phone Number:	515-244-0021	515-244-0021
Fax Number:		



A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Dubuque Metro Area Solid Waste Agency	Annual Acceptance Rate (tons):	107,978
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1992
Alternative Landfill Name:		Design Capacity (tons):	
City:	Dubuque	Acres Currently Landfilled (acres):	26
County:	Dubuque	Average Depth (feet):	70
State:	IA	Waste-in-Place (tons):	2,267,546
Year Open:	1976	1998 Waste-in-Place (tons):	2,483,494
Year Closed:	2017		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	1.05
LFG Collection System Status:	Planned
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	3	33
Current Capacity:		
Planned Capacity:		

Utilities in County: Cascade Muni Elec Dept; Interstate Power Co; Iowa Electric Light & Power Co; Maquoketa Valley R

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>	6,089		0	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	127,873		0	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	26,046	165	18,337	167
<i>Fuel Oil:</i>	21,378	138	15,050	88
<i>Natural Gas:</i>	14,375	0	10,120	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Don Vogt, Solid Waste Administrator	Tom Driscoll
Mailing Address:	925 Kerper Boulevard	9395 Middle Road
Phone Number:	319-589-4250	319-557-1838
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	City of Ft. Dodge	Annual Acceptance Rate (tons):	
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1998
Alternative Landfill Name:		Design Capacity (tons):	
City:	Ft. Dodge	Acres Currently Landfilled (acres):	
County:		Average Depth (feet):	
State:	IA	1998 Waste-in-Place (tons):	
Year Open:		1998 Waste-in-Place (tons):	
Year Closed:			

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):
 LFG Collection System Status:
 Current LFG Collected (mmscf/d):
 Collection and Treatment System Required Under NSPS/EG: No

C. LANDFILL GAS UTILIZATION

Current Utilization:
 Utilization System Status: Planned
 Utilization System Type: Unknown
 Utilization System Start Year:
 Electric Utility Provider(s):
 Natural Gas Provider(s):
 Energy Purchaser(s): Mid American Energy

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:
 Current Capacity:
 Planned Capacity:

Utilities in County:

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>	<i>Current</i>
<i>Methane Reduction (tons/yr):</i> <i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>	<i>Direct Use Project</i>
	<i>CO2 (tons/yr) SO2 (tons/yr)</i>	<i>CO2 (tons/yr) SO2 (tons/yr)</i>
<i>Coal:</i>		
<i>Fuel Oil:</i>		
<i>Natural Gas:</i>		

E. CONTACT INFORMATION

Landfill Owner

Landfill Operator

Contact Name:
 Mailing Address:
 Phone Number:
 Fax Number:

* *Italicized indicates values estimated by EPA.*

A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Lee County Solid Waste Management Comm	Annual Acceptance Rate (tons):	67,000
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1992
Alternative Landfill Name:		Design Capacity (tons):	
City:	Fort Madison	Acres Currently Landfilled (acres):	127
County:	Lee	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	1,099,900
Year Open:	1980	1998 Waste-in-Place (tons):	1,229,300
Year Closed:	2007		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	0.73
LFG Collection System Status:	Planned
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	2	23
Current Capacity:		
Planned Capacity:		

Utilities in County: SE Iowa Coop Elec Assn; Union Electric Company; West Point Utility System

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>		4,235		0
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		88,925		0
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	18,153	115	12,752	116
<i>Fuel Oil:</i>	14,899	96	10,466	61
<i>Natural Gas:</i>	10,019	0	7,038	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Randy Hartmann, Director	Randy Hartman
Mailing Address:	2092 303rd Avenue	2092 303rd Avenue
Phone Number:	319-372-6140	319-372-6140
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	South Central Iowa Solid Waste Agency	Annual Acceptance Rate (tons):	42,000
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1994
Alternative Landfill Name:	South Central Iowa Solid Waste Agency LF	Design Capacity (tons):	
City:	Tracy	Acres Currently Landfilled (acres):	
County:	Marion	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	1,127,560
Year Open:	1977	1998 Waste-in-Place (tons):	1,240,316
Year Closed:	2092		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	0.74
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	2	23
Current Capacity:		
Planned Capacity:		

Utilities in County: Chariton Valley Elec Coop; Iowa Southern Utilities Co; Midwest Power Systems; Pella Coop Elec As

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>		4,251		0
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		89,267		0
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	18,153	115	12,801	117
<i>Fuel Oil:</i>	14,899	96	10,506	61
<i>Natural Gas:</i>	10,019	0	7,065	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Pete Duffy	Ms. Abie Davis
Mailing Address:	Marion County Courthouse	1736 Highway T17
Phone Number:	515-828-8545	515-828-8545
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Muscatine County Solid Waste Management	Annual Acceptance Rate (tons):	75,790
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1992
Alternative Landfill Name:		Design Capacity (tons):	
City:		Acres Currently Landfilled (acres):	
County:	Muscatine	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	1,212,640
Year Open:	1980	1998 Waste-in-Place (tons):	1,212,640
Year Closed:	1995		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	0.73
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:			
Utilization System Status:	Unknown		
Utilization System Type:	Unknown		
Utilization System Start Year:			
Electric Utility Provider(s):			
Natural Gas Provider(s):			
Energy Purchaser(s):			
Capacity:	Electricity Generation Project (MW)	OR	Direct Use Project (mmBtu/hr)
Estimated Potential Capacity:	2		23
Current Capacity:			
Planned Capacity:			

Utilities in County: Eastern Iowa Light & Power Coop; Iowa Electric Light & Power Co; Iowa-Illinois Gas & Elec Co; M

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>	4,210		0	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	88,408		0	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	18,153	115	12,678	115
<i>Fuel Oil:</i>	14,899	96	10,405	61
<i>Natural Gas:</i>	10,019	0	6,997	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	A.J. Johnson, City Administrator	Harold Johnson
Mailing Address:	City Hall 215 Sycamore Street	City Hall 215 Sycamore Street
Phone Number:	319-264-1550	319-264-5215
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Northwest Iowa Solid Waste Agency	Annual Acceptance Rate (tons):	50,000
Landfill Owner Type:	Public	Year Annual Acceptance Rate Reported:	1992
Alternative Landfill Name:		Design Capacity (tons):	
City:	Shelden	Acres Currently Landfilled (acres):	160
County:	Sioux	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	1,092,500
Year Open:	1974	1998 Waste-in-Place (tons):	1,187,500
Year Closed:	2012		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	0.72
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	2	23
Current Capacity:		
Planned Capacity:		

Utilities in County: Alton Electric Dept; Hawarden Electric Dept; Lyon Rural Elec Coop; Midwest Power Systems; O'Bri

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>		4,173		0
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		87,627		0
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	18,153	115	12,566	114
<i>Fuel Oil:</i>	14,899	96	10,313	60
<i>Natural Gas:</i>	10,019	0	6,935	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	Rochelle Buchman	Dave Honkomp, Manager
Mailing Address:	4540 360th Street P.O. Box 174A	Route 1 PO Box 23A
Phone Number:	712-324-4026	712-324-4026
Fax Number:		



A. GENERAL LANDFILL INFORMATION

Landfill Owner:		Annual Acceptance Rate (tons):	
Landfill Owner Type:		Year Annual Acceptance Rate Reported:	1998
Alternative Landfill Name:		Design Capacity (tons):	
City:	Davenport	Acres Currently Landfilled (acres):	
County:		Average Depth (feet):	
State:	IA	1998 Waste-in-Place (tons):	
Year Open:		1998 Waste-in-Place (tons):	
Year Closed:			

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):

LFG Collection System Status:

Current LFG Collected (mmscf/d):

Collection and Treatment System Required Under NSPS/EG: No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status: Planned

Utilization System Type: Reciprocating Engine

Utilization System Start Year: 1998

Electric Utility Provider(s):

Natural Gas Provider(s):

Energy Purchaser(s):

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

<i>Estimated Potential Capacity:</i>		
Current Capacity:		
Planned Capacity:		

Utilities in County:

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>	Current
<i>Methane Reduction (tons/yr):</i>		
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>	<i>Direct Use Project</i>
	<i>CO2 (tons/yr) SO2 (tons/yr)</i>	<i>CO2 (tons/yr) SO2 (tons/yr)</i>
<i>Coal:</i>		
<i>Fuel Oil:</i>		
<i>Natural Gas:</i>		

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:		
Mailing Address:		
Phone Number:		
Fax Number:		

* *Italicized indicates values estimated by EPA.*

A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Siouxland Environmental Services, Inc.	Annual Acceptance Rate (tons):	71,500
Landfill Owner Type:	Private	Year Annual Acceptance Rate Reported:	
Alternative Landfill Name:	Woodbury County SLF	Design Capacity (tons):	
City:	Sioux City	Acres Currently Landfilled (acres):	
County:	Woodbury	Average Depth (feet):	
State:	IA	Waste-in-Place (tons):	1,144,000
Year Open:	1981	1998 Waste-in-Place (tons):	1,144,000
Year Closed:	2007		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	0.71
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	2	22
Current Capacity:		
Planned Capacity:		

Utilities in County: Anthon Muni Elec Light Plant; Ida County Rural Elec Coop; Midwest Power Systems; Monona Coun

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		<i>Current</i>	
<i>Methane Reduction (tons/yr):</i>		4,108		0
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>		86,276		0
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	17,364	110	12,372	113
<i>Fuel Oil:</i>	14,252	92	10,154	59
<i>Natural Gas:</i>	9,583	0	6,828	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	John Green	Roger Dibble
Mailing Address:	1701 Terminal Dr.	P.O. Box 1349
Phone Number:	712-279-6293	712-255-8866
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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A. GENERAL LANDFILL INFORMATION

Landfill Owner:	Waste Systems Corp.	Annual Acceptance Rate (tons):	283,000
Landfill Owner Type:	Private	Year Annual Acceptance Rate Reported:	1989
Alternative Landfill Name:		Design Capacity (tons):	
City:		Acres Currently Landfilled (acres):	
County:	Winnebago	Average Depth (feet):	30
State:	IA	Waste-in-Place (tons):	4,528,000
Year Open:	1981	1998 Waste-in-Place (tons):	5,094,000
Year Closed:	2054		

B. LANDFILL GAS COLLECTION

Estimated Methane Generation (mmscf/d):	1.72
LFG Collection System Status:	
Current LFG Collected (mmscf/d):	
Collection and Treatment System Required Under NSPS/EG:	No

C. LANDFILL GAS UTILIZATION

Current Utilization:

Utilization System Status:	Unknown
Utilization System Type:	Unknown
Utilization System Start Year:	
Electric Utility Provider(s):	
Natural Gas Provider(s):	
Energy Purchaser(s):	

Capacity: Electricity Generation Project (MW) OR Direct Use Project (mmBtu/hr)

Estimated Potential Capacity:	5	54
Current Capacity:		
Planned Capacity:		

Utilities in County: Forest City Light & Power; Hancock County Rural Electric Coop; Interstate Power Co; Lake Mills M

D. ENVIRONMENTAL BENEFITS OF UTILIZATION

	<i>Potential</i>		Current	
<i>Methane Reduction (tons/yr):</i>	9,950		0	
<i>CO2 Equivalent of CH4 Reduction (tons/yr):</i>	208,942		0	
<i>Emissions Avoided by Fossil Fuel Displacement:</i>	<i>Electricity Generation Project</i>		<i>Direct Use Project</i>	
	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>	<i>CO2 (tons/yr)</i>	<i>SO2 (tons/yr)</i>
<i>Coal:</i>	42,621	269	29,962	273
<i>Fuel Oil:</i>	34,981	225	24,591	143
<i>Natural Gas:</i>	23,522	0	16,536	0

E. CONTACT INFORMATION

	Landfill Owner	Landfill Operator
Contact Name:	David Bergen	Ned Wright
Mailing Address:		Route 2
Phone Number:		515-592-9182
Fax Number:		

* *Italicized indicates values estimated by EPA.*

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