



Biothermica

**LANDFILL GAS COLLECTION AND DESTRUCTION
SAMPLE PROJECTS**

Saint-Tite des Caps

Location	Saint-Tite des Caps (Québec)
Country	Canada
Description of Contract/	<u>Recommissioning</u> and <u>operation</u> of landfill gas collection and flaring system
Waste quantity that has been accepted	Unknown
Role in project:	
<ul style="list-style-type: none"> • Recommissioning of landfill gas collection system • Operation of landfill gas collection and flaring system 	
Total number of wells: 45 LFG extraction wells Blower/flare station capacity: 200 cfm	
Date of contract commencement	2012
Date of contract termination	Ongoing

Saint-Tite-des-Caps Project



Beauport

Location	Beauport (Québec)
Country	Canada
Description of Contract/	<u>Design, supervision of construction and operation of</u> landfill gas collection and flaring systems
Waste quantity that has been accepted	Unknown
Role in project:	
<ul style="list-style-type: none">• Detailed engineering of modifications to landfill gas collection system and landfill gas flaring system• System modifications• Operation of landfill gas collection and flaring systems	
Total number of wells: 12 LFG extraction wells Blower/flare station capacity: 200 cfm	
Date of contract commencement	2012
Date of contract termination	Ongoing

Pierrefonds

Location	Pierrefonds
Country	Canada
Description of Contract/	<u>Design and supervision of construction and operation of</u> landfill gas collection and flaring systems
Waste quantity that has been accepted (2008)	3.5 million tons (Dry material)

Role in project:

- Detailed design of landfill gas collection system and landfill gas flaring system
- Construction of extraction wells and collectors
- Construction of blower/flare station
- Commissioning of landfill gas collection and flaring systems
- Expansion of collection system
- Environmental monitoring of landfill gas
- Operation of collection system

Total number of wells: 12 LFG extraction wells

Blower/flare station capacity: 200 cfm

Date of contract commencement	2007
Date of contract termination	Ongoing

Pierrefonds project



Nejapa

Location	Nejapa (San Salvador)
Country	El Salvador
Description of Contract/	<u>Design, construction</u> of landfill gas collection and flaring systems, <u>operation</u> of landfill gas collection and flaring systems
Waste quantity that has been accepted (2008)	5 million tons (MSW)
Role in project:	
<ul style="list-style-type: none"> • Detailed design of landfill gas collection system and landfill gas flaring system • Preparation of the administrative and technical specifications for construction • Construction of extraction wells and horizontal collectors • Construction of blower/flare station • Commissioning of landfill gas collection and flaring systems • Operation of landfill gas collection and flaring systems • Full CDM project cycle: validation, CER sales, and selling of the project 	
Total number of wells: 40 LFG extraction wells Blower/flare station capacity: 2500 cfm	
Date of contract commencement	2006
Date of contract termination	2008

Nejapa project



Cook

Location	Gatineau
Country	Canada
Description of Contract/	<u>Design and supervision of construction of landfill gas collection and flaring systems</u>
Waste quantity that has been accepted (2008)	1.2 million tons (MSW), closed landfill

Role in project:

- Calibration and optimization of existing LFG collection system
- Detailed design for extension of LFG collection system
- Detailed design for modification of LFG flaring system
- Preparation of technical specifications for construction
- Supervision of construction of new LFG collection wells (10) and modification of the blower/flare station
- Commissioning
- Subsurface landfill gas monitoring of fugitive emissions
- Carbon credits sales to Canadian Government (2005-2007)

- LFG utilization project scheduled as soon as Canadian off-set system up and running

Total number of wells: 22 LFG extraction wells

Blower/flare station capacity: 1200 cfm

Date of contract commencement	1999
Date of contract termination	2007

Cook project



Sainte-Sophie

Location	Sainte-Sophie
Country	Canada
Description of Contract/	<u>Design and supervision of construction</u> of landfill gas collection system
Waste quantity that has been accepted (2008)	5 million tons (MSW)
Role in project	
<ul style="list-style-type: none"> • Calibration and optimization of existing LFG collection system • Detailed design for extension of LFG collection system • Preparation of technical specifications for construction • Supervision of construction of new LFG collection wells (43) • Start-up and calibration of LFG collection system • Environmental monitoring 	
Total number of wells: 71 LFG extraction wells Blower/flare station capacity: 2600 cfm	
Date of contract commencement	1999
Date of contract termination	2001

Lachenaie

Location	Lachenaie
Country	Canada
Description of Contract/	<u>Design and supervision of construction</u> of landfill gas collection system
Waste quantity that has been accepted (2008)	13 million tons (MSW)

Date of contract commencement	1995
Date of contract termination	2000

Lachenaie project



Mediouuna

Location	Mediouuna (Casablanca)
Country	Morocco
Description of Contract/	<u>Preliminary design</u> of landfill gas collection system and power plant
Waste quantity that has been accepted (2008)	9 million tons (MSW)
Role in project:	
<ul style="list-style-type: none">• Assessment of LFG generation and collection potential• Preliminary design of landfill gas collection system• Review of utilization technologies• Preliminary design of power plant• Dynamic pumping tests	
Date of contract commencement	1996
Date of contract termination	1998

Mediouuna project

