City of Bethel

P.O. Box 1388 • Bethel, Alaska 99559-1388
907-543-3150
Fax # 543-3817
Website: www.cityofbethel.org

REGULAR MEETING AGENDA
ENERGY COMMITTEE
Monday, December 1, 2014 – 6:30 p.m.
City Hall Council Chambers, Bethel, AK

Members

Mary Weiss
Chair

Shari Neth
Vice Chair

Zach Fansler
Council Representative

Jeff Sanders

Eddie Stanley

Alternate Members

Ex-Officio Member
Betsy Jumper

I. Call to Order

II. Roll Call

III. People to be Heard

IV. Approval of Agenda
-Agenda December 1, 2014

V. Approval of Meeting Minutes
-Regular Meeting September 8, 2014

VI. Special Order of Business
-Energy Committee City Clerk Training

VII. Unfinished Business

a. Update Alternative Energy Report
b. Municipal Solid Waste Gasification Findings
c. Consideration of becoming a member of Renewable Energy Alaska Project
d. Invite an AVEC Representative to December"s Energy Committee Meeting

VIII. New Business
a. Alternative Energy News & Ideas

IX. Committee Member Comments

X. Adjournment

Agenda Posted November 24, 2014 at USPS, BNC, Corina's Groceries, and City Hall

Hi Shari,

Thanks for getting in touch! Our supporting organization category is fairly informal and really varies in terms of the type of financial support we get from organizations. Many of our supporting organizations are event sponsors, some we have outreach contracts with, others participate in our Tour Green program, and finally, some make a flat $1,000+ donation to support our work.

How much would the Bethel Energy Committee like to be involved in REAP? You may want to consider becoming an organizational member. I'm attaching the membership form. For cities, the annual dues are $300. Since we are in the second half of the year, dues for 2014 would be $150, and then we typically send out dues notices for the next year in Nov/early Dec. Members are eligible to vote, run for the REAP board, etc. Supporting organizations can attend meetings as well.

REAP is currently facing some large cuts from our largest foundation funder, and we are more heavily relying on support from instate organizations, businesses, and individuals. Whatever option you choose, we would welcome your support and involvement. Our Rural Issues committee for example, would be a great place for you to participate. Or, the policy committee, to weigh in on statewide policy issues and initiatives.

Let me know if you need more info or want to talk on the phone with me or our Executive Director Chris Rose.

Thanks!

Courtney

Courtney Munson
REAP Development Director
(907) 929-7770
c.munson@realaska.org
www.REalaska.org

On Sep 29, 2014, at 5:27 PM, Shari Neth <shari.neth@gmail.com> wrote:

> Greetings!
> I am a member of the City of Bethel's Energy Committee. Our committee's role is to inform our city council of pertinent information regarding renewable energy, and to suggest possible options as appropriate.
> At the last committee meeting, I was given the task to find out more about REAP, whether or not cities can become a "supporting organization," and, if so, how we would go about it (with the approval of the City Council, of course). I checked the list of supporting organizations and did not find a single city as one of them.
> Additional information and your insights in regard to this matter would be greatly appreciated.
> Thank you!
> Quyana!
> Shari Neth

REAP | Renewable Energy Alaska Project

REAP Organizational Membership

Renewable Energy Alaska Project (REAP) uses collaboration, education, training, and advocacy to achieve its mission of increasing the development of more renewable energy resources in Alaska. As an Organizational Member of REAP, you join a growing coalition of numerous and diverse entities that are working together to realize that mission. Organizational Members receive the following benefits:

- Discounted booth space at both the annual *Alaska Renewable Energy Fair* and *Business of Clean Energy in Alaska (BCEA) Conference*
- Discounted individual registration fees for your organization's employees at the *BCEA Conference*
- The opportunity to attend four quarterly board meetings, the annual REAP member retreat, and to network with a large group of energy stakeholders in Alaska's only renewable energy coalition
- The opportunity to run for a board seat at the annual meeting
- Your organization's website listed and linked on the REAP website
- Regular electronic correspondence providing the latest energy-related news and events around the state
- Membership in Alaska's leading renewable energy and energy efficiency education and advocacy organization

Organizational Membership Dues

REAP has three Organizational Member categories: Business, Utility, and Non-Profit/Educational Institution/Local Government. Business and Utility members pay annual dues according to the number of full time equivalent employees (FTEs) that they have *based in Alaska*. Non-Profits/Educational Institutions/Local Governments pay a flat rate regardless of the number of employees.

Business
Open to for-profit businesses, including independent power producers (IPPs)

$300 *In-state* business with 1-9 FTE in Alaska
$800 Business with 1-49 FTE in Alaska
$1500 Business with 50-124 FTE in Alaska
$3000 Business with 125-199 FTE in Alaska
$5000 Business with 200+ FTE in Alaska

Utility
Open to investor-owned, cooperative, and municipal utilities

$300 Utility with 1-15 FTE in Alaska
$800 Utility with 16-49 FTE in Alaska
$1500 Utility with 50-124 FTE in Alaska
$3000 Utility with 125-199 FTE in Alaska
$5000 Utility with 200+ FTE in Alaska

Non-Profit/Educational Institution/Local Government
Open to non-profit organizations (501(c)(3), 501(c)(4), or 501(c)(6)); colleges, universities and associated programs; school districts; and municipal governments

$300 Flat rate

REAP | Renewable Energy Alaska Project

REAP Organizational Membership Application

Organization **Website**

Address **City** **State** **Zip**

1st Representative **Title**

Address (if different from above) **City** **State** **Zip**

Email **Phone**

2nd Representative* **Title**

Address (if different from above) **City** **State** **Zip**

Email **Phone**

Billing Contact (optional) **Email** **Phone**

My organization is a: ☐ **Business** ☐ **Utility** ☐ **Non-Profit/Educational Institution/Local Government**

Based in Alaska? Select One:

My organization has **full-time equivalent employees** ***based in Alaska***

My organization's REAP Organizational Member dues are **/ year**, based on the following chart:**

Non-Profit/Educational Institution/Local Government	Business	Utility
$300 Flat rate	*$300 In-state* business with 1-9 FTE in Alaska	$300 Utility with 1-15 FTE in Alaska
	$800 Business with 1-49 FTE in Alaska	$800 Utility with 16-49 FTE in Alaska
	$1500 Business with 50-124 FTE in Alaska	$1500 Utility with 50-124 FTE in Alaska
	$3000 Business with 125-199 FTE in Alaska	$3000 Utility with 125-199 FTE in Alaska
	$5000 Business with 200+ FTE in Alaska	$5000 Utility with 200+ FTE in Alaska

Dues Payment: ☐ **check enclosed** ☐ **send invoice** ☐ **call for credit card** (name/phone:)

Please mail completed form to REAP at 308 G Street, Suite 207, Anchorage, AK, 99501 or email to c.munson@realaska.org. Contact REAP Development Director Courtney Munson at 907-929-7770 x13 or c.munson@realaska.org if you have any questions about membership levels or benefits.

**Each member organization needs to specify two representatives. In the event that the primary representative is unable to attend board meetings, there needs to be a second representative that can attend and represent the organization. All REAP correspondence will be sent to both representatives.*

***New members joining in the first 6 months the year (January 1 – June 30) pay 100% of their annual dues. New members joining in the second 6 months of the year (July 1 – December 31) pay 50% of their annual dues.*

City of Bethel, Alaska
Energy Committee

September 8, 2014 Regular Meeting Bethel, Alaska

I. CALL TO ORDER

A regular meeting of the Energy Committee held on September 8, 2014 at 6:30 pm in the City Hall Conference Room, Bethel, Alaska.

Chair, Mary Weiss called the meeting to order at 6:37 pm.

II. ROLL CALL

Compromising a quorum of the Committee, the following members were present for roll call:

Present: Mary Weiss
Shari Neth
Richard Robb
Jeff Sanders

Absent: Eddie Stanley

Ex-Officio members present were the following: Carole Jung

III. PEOPLE TO BE HEARD

None

IV. APPROVAL OF AGENDA

MOVED:	Shari Neth	Motion to accept meeting agenda
SECONDED:	Jeff Sanders	
VOTE ON MAIN MOTION	All in favor	

V. APPROVAL OF THE MEETING MINUTES

MOVED:	Shari Neth	Motion to approve meeting minutes with the correction of Eddie Stanley's name being made
SECONDED:	Rick Robb	
VOTE ON MAIN MOTION	All in favor	

VI. UNFINISHED BUSINESS

A. Update on Alternative/Renewable Energy Report

Tabled until the next meeting 10/6/2014

B. Municipal Solid Waste Gasification

Tabled until the next meeting 10/6/2014

MOVED:	Shari Neth	Recommendation made to request of administration to research the concept of solid waste gasification and the cost associated with it and then report back to the energy committee.
SECONDED:	Rick Robb	
VOTE ON MAIN MOTION	All in favor	

Discussion with John Sargent as he entered the meeting about research he had done in the past and asked him to revisit the concept, research again and present his findings to the committee at the next meeting

C. Consideration of becoming a member of Renewable Energy Alaska Project

Tabled until the next meeting 10/6/2014
Research being done on the cost of membership

VII. NEW BUSINESS

A. Alternative Energy News & Ideas

1. Recycling – NAC will send empty, sorted, crushed cans for recycling as back haul at no cost
2. Rural Alaska's alternative power solutions: hybridizing, enhancing, supplanting diesel and wood article from Alaska Business Monthly
3. Build a file of articles in Energy Committee binder

B. Invite AVEC Representative to future Energy Committee Meeting

Discussion to ask Steven Gilbert from the Anchorage office to speak at the November 3rd Energy Committee meeting

VIII. COMMITTEE MEMBER'S COMMENTS

Mary Weiss

- Thanked Carole for stepping in and looks forward to next month's meeting

Shari Neth

- Thanked Carole for stepping in tonight

Jeff Sanders

- *could not make out from recording*

Rick Robb

- Will not be here for the October 6th meeting, information about a candidate for City Manager, and upcoming City Council elections

IX. ADJOURNMENT

Motion to adjourn made by Rick Robb, seconded by Jeff Sanders.
Meeting adjourned at 7:33 p.m.
All in favor, none opposed

Next meeting on Monday October 6, 2014

_____
_____, Chairperson

ATTEST:

_____
Recorder

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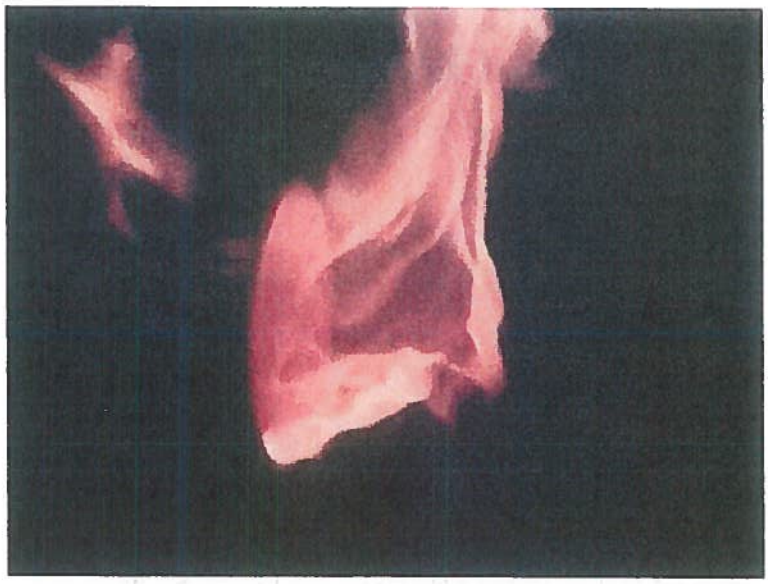
CLOSED LOOP GASIFICATION TECHNOLOGY



Gasification = Fuel = Energy

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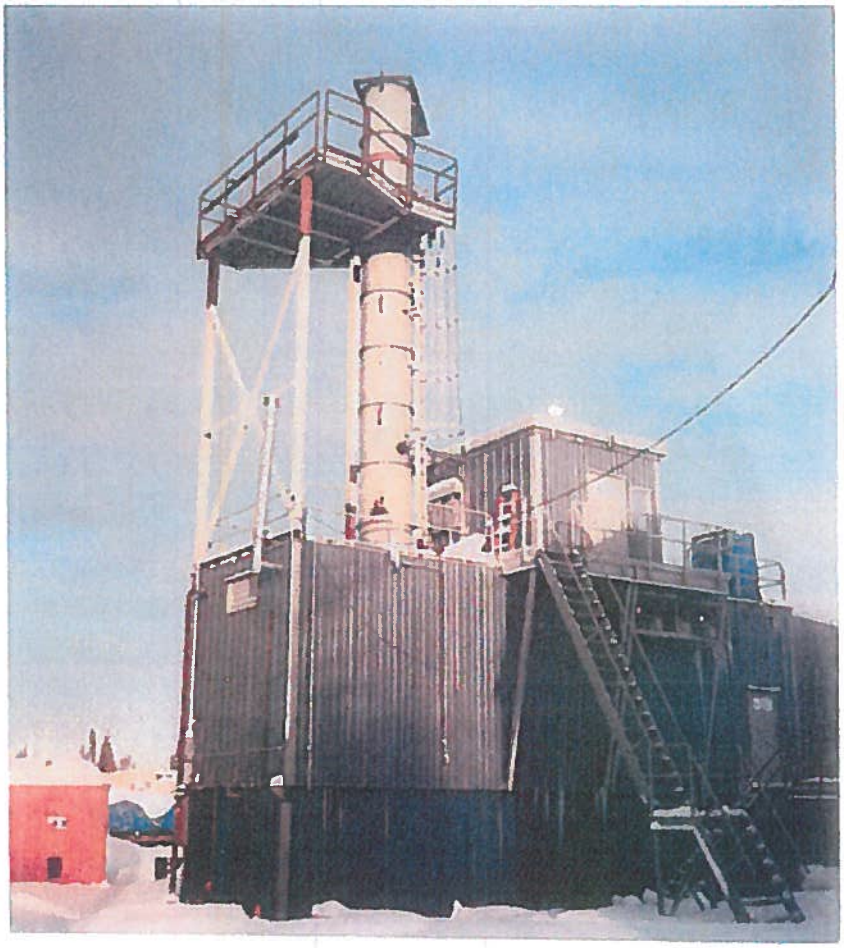
SENREQ Management Team

- Myron L. Brick.....Chief Executive Officer
- George H. Olsen.....Chief Operating Officer
- G. Michael Pope...Chief Technology Officer
- Jerry L. Green.....Director of Engineering

Over 20 Combined Years of Alaska Experience

SENREQ LLC

Anchorage Facility



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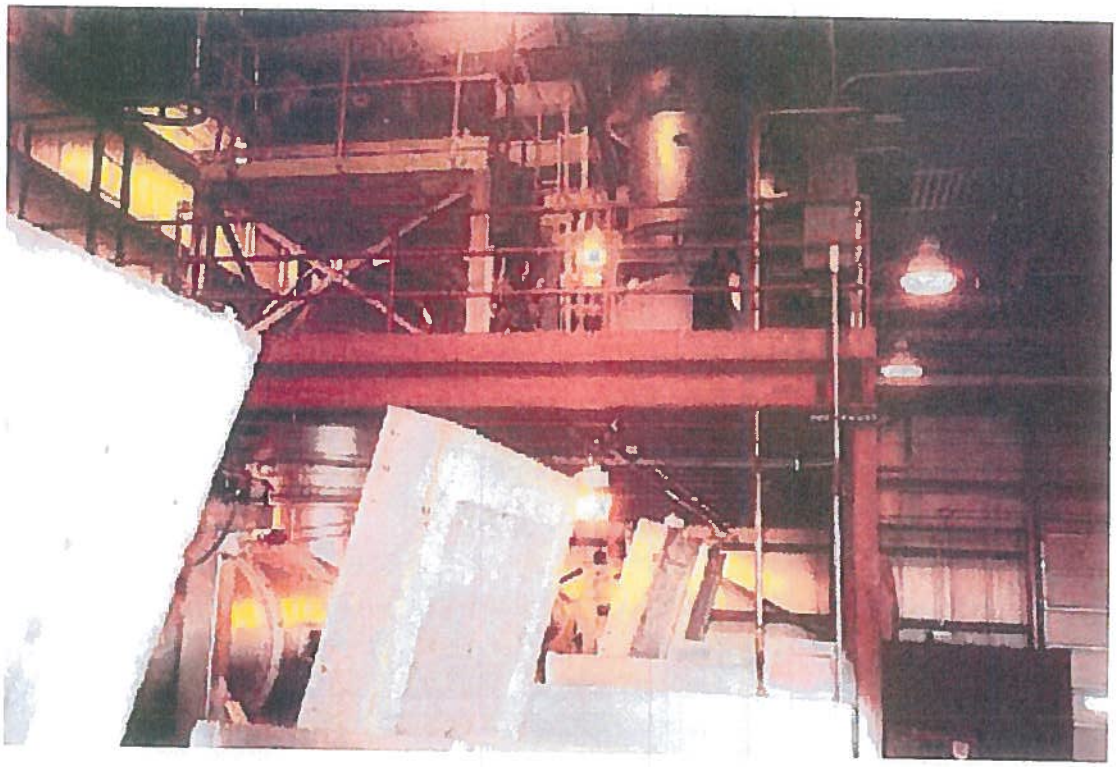
Barrow Installation



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The Primary Process

- **Gasification** is the conversion of dissimilar, carbon-based solids, liquids, and sludges into a combustible gas through controlled temperature and oxygen utilization.

- No sorting or pre-handling of the fuel source is required.

- The process works in accordance with the principals of elementary physics.

- The process works as it does in the self cleaning oven in your home.

- This clean fuel is then combusted on-site and recovered as thermal energy.

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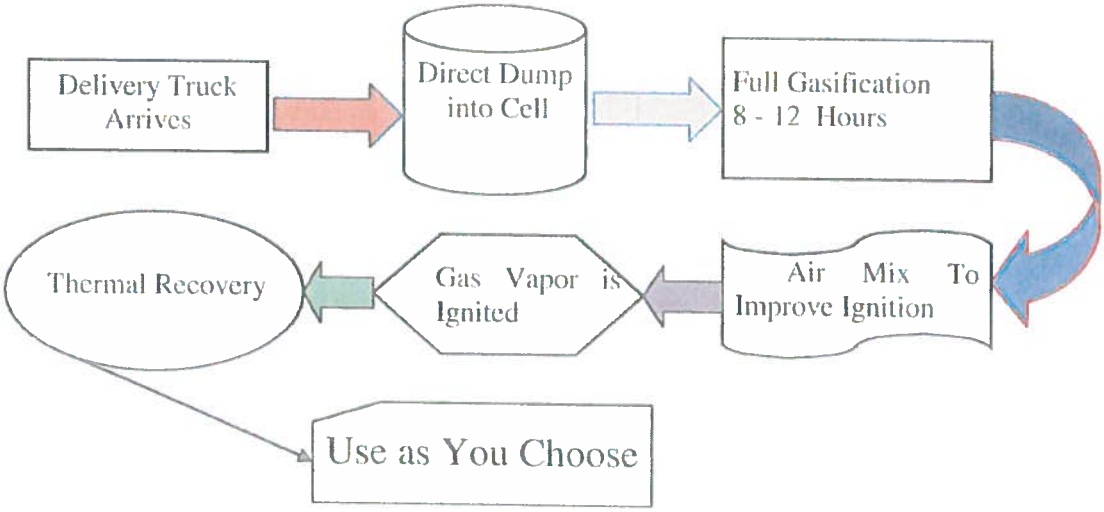
Process Flow



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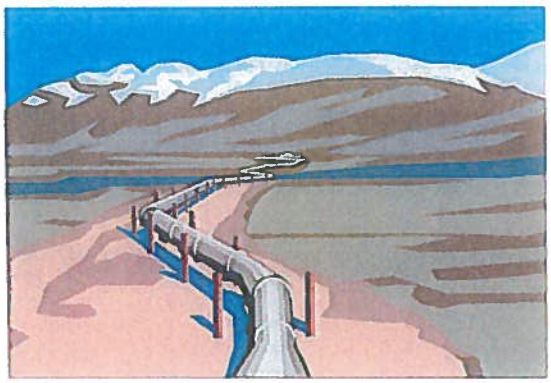
MSW = Fuel = Energy



One ton of MSW = 60 gallons of oil

Enough energy to heat over 11,000 gallons of water from 30° to 120° F. (100% efficiency)

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TOS Performance - Barrow

Process capacity: 10 to 12 tons per primary

Process rate: 8 to 12 hours per primary

Supplemental fuel consumption: 500 to 800 ccf per cycle

Volume reduction: 96%

Weight reduction: 86%

Dioxin/Furan: 0.1 ng/dscm (acceptable limit 1 to 10 ng/dscm)

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Results of Barrow source tests as compared to the EPA Standards of Performance for Municipal Waste Combustion Units (from 40 CFR Part 60 Subpart AAAA for Small Systems, 35 to 250 tons per day, effective June 6, 2001). [1]

Air Pollutant	Emission Limitation	Barrow Test 1	Barrow Test 2
		December 2002	August 2003
Carbon monoxide	150 ppm [2]	3 ppm [2]	0.6 ppm [2]
Opacity	10 percent	0 percent	0 percent
Oxides of nitrogen	150 ppm [2] 180 ppm [2] first year	146 ppm [2]	132 ppm [2]
Particulate matter	0.08 gr/dscf [3]	0.033 gr/dscf [3]	0.029 gr/dscf [3]
Sulfur dioxide	30 ppm [2]	18 ppm [2]	47 ppm [2]

[1] Results corrected to 7% oxygen basis
[2] Dry volume basis
[3] 0.01 gr/dscf is the new standard. Barrow is regulated under the standard in effect at the time of its construction, 0.08 gr/dscf.

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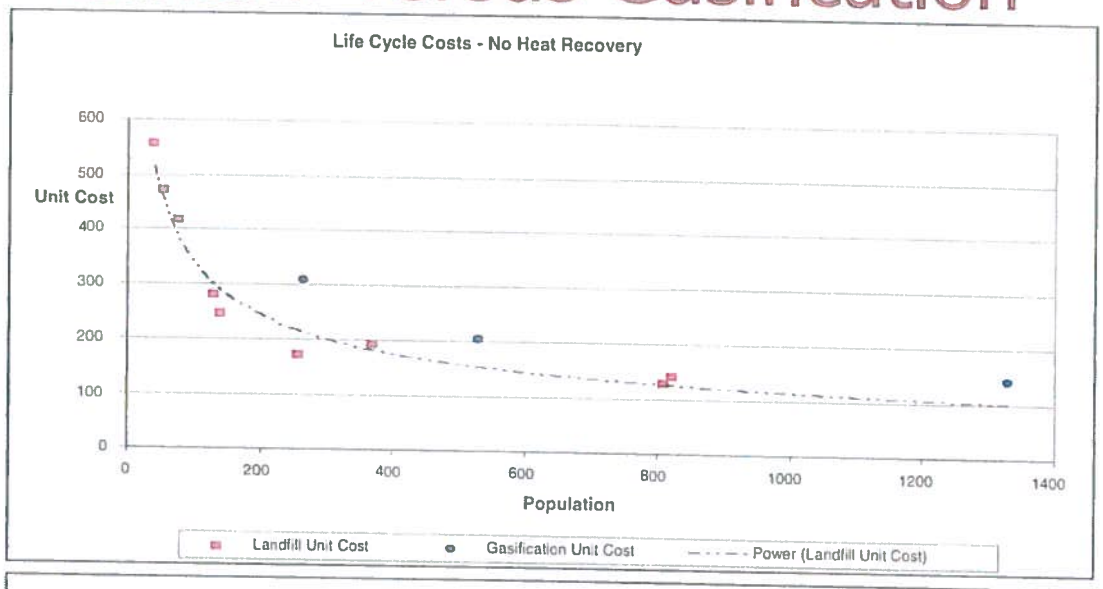
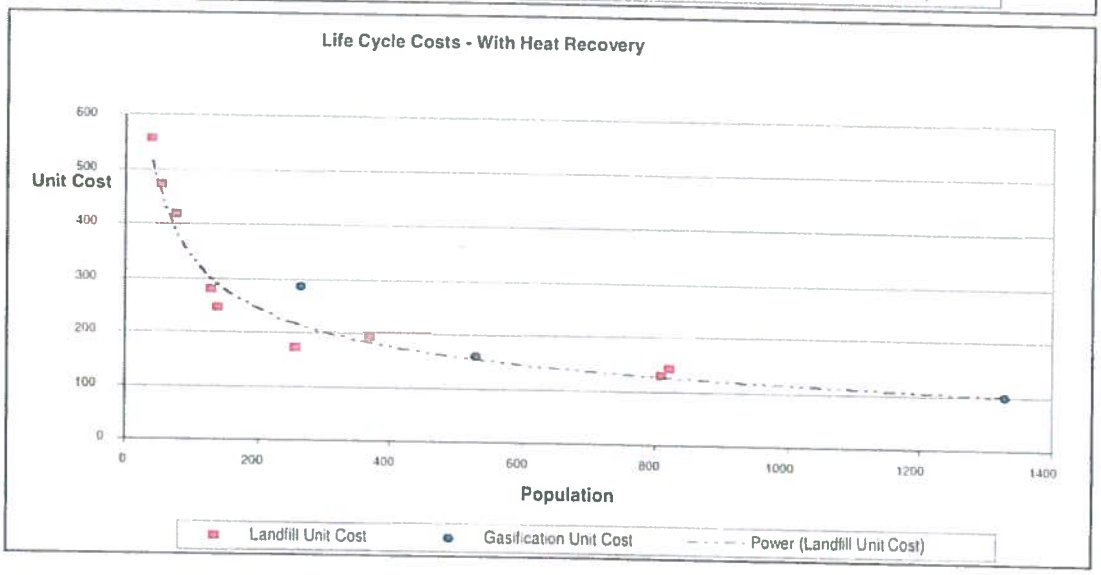
Life Cycle Costs – 20 years Landfill versus Gasification





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SenreQ Unit

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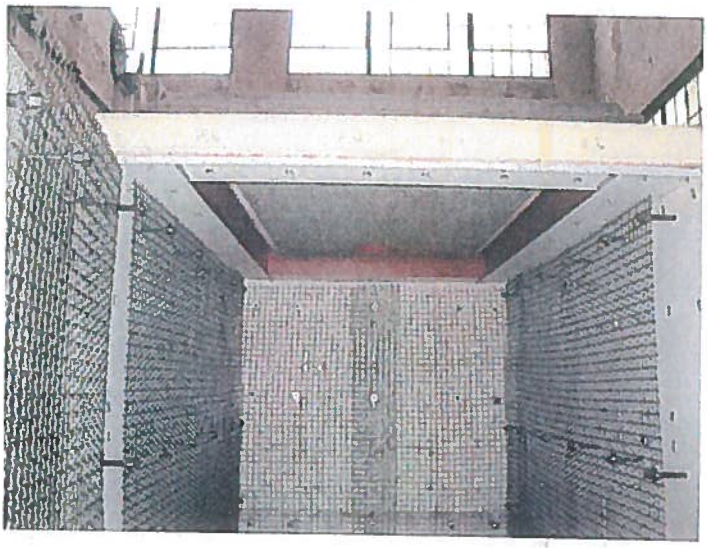

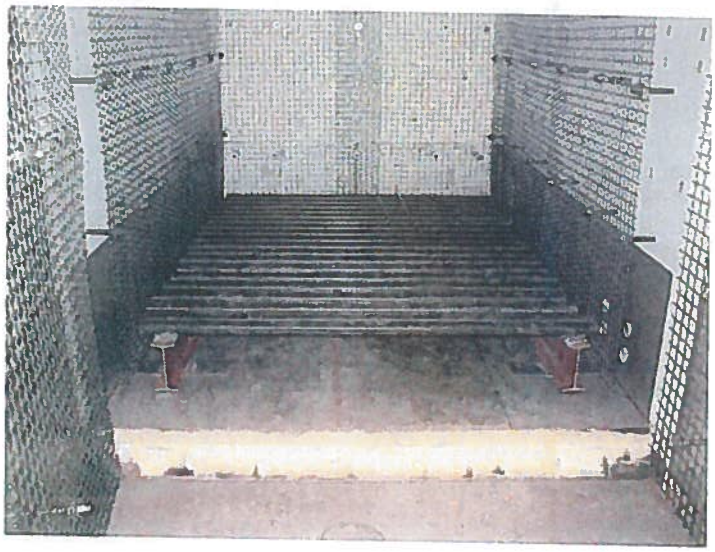

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SenreQ Unit

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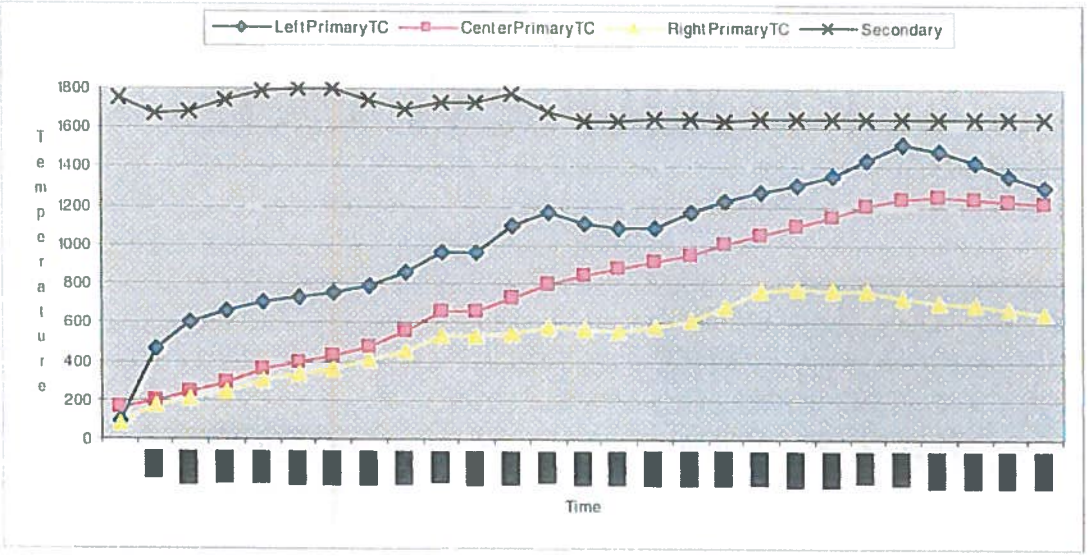
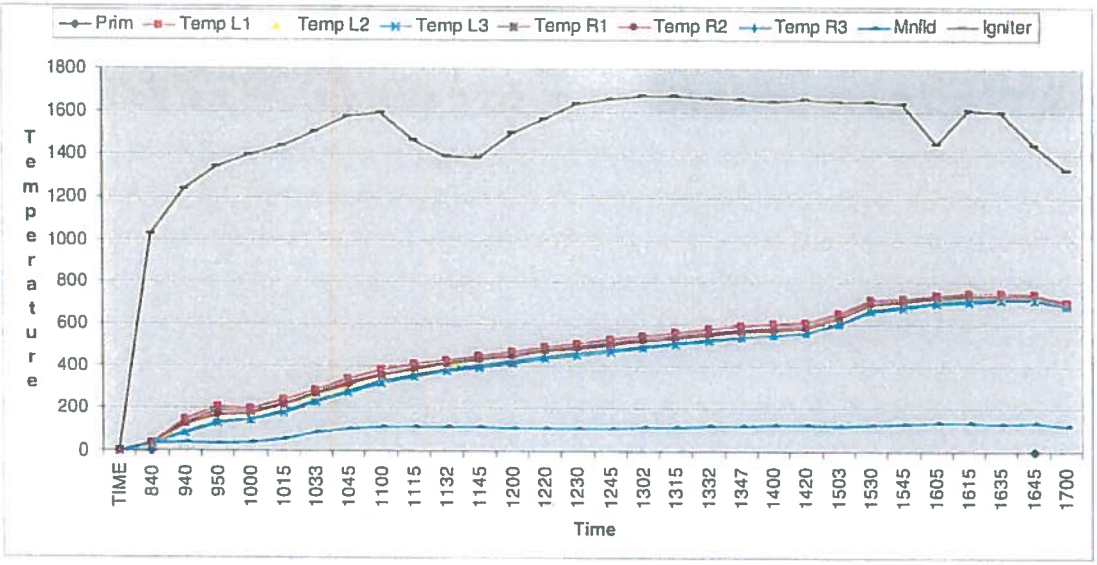
Barrow Temperature Profile



SenreQ Temperature Profile



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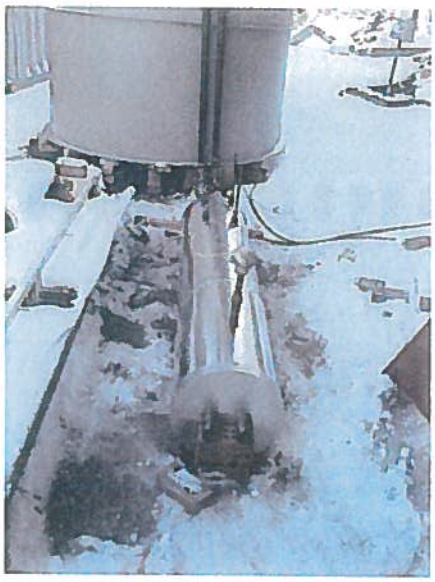
Secondary Igniter Produced Gas



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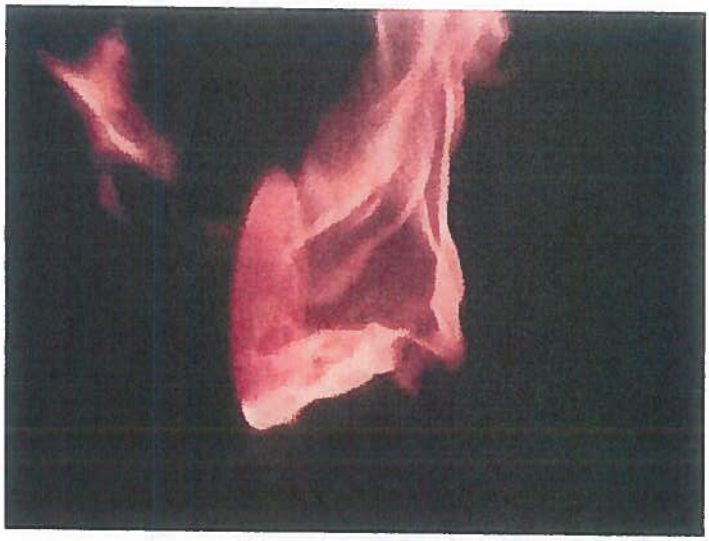
Combustion of Produced Gas



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Alaska Benefits

Fully portable

- Can be transported by truck, barge, or herc.
- Dedicated units can respond to environmental cleanups.
- Can service seasonal camps or tourist facilities.
- Can be built, operated, and maintained with existing work force.

SENREQ LLC

Ancillary Benefits

To the Environment:

- No Vermin - Mitigates any possibility of animal or insect transmitted disease
- No Leachate - Mitigates any possibility of ground water contamination
- No Odors - Compatible with rural and/or urban environments

On the Operating Side:

- Flexible staffing requirements
- Negligible supplemental fuel costs
- Competitive construction costs

SENREQ LLC

Environmental Quality

Air Emission Quality

- Over 200 Fully Monitored Air Emission Tests According to USEPA Protocols
- All Passed Particulate - CO, NOx. SO_2, Heavy Metal, CO_2, HFL, HCL, Total Organics, and Dioxins/Furans - Most Restrictive Limits
- New Design is Cleaner Than Existing EPA Standards.
- SENREQ's Closed-Loop Gasification Technology nears the Zero-Emission Threshold.

Ash Quality

- Residual Ash Has Tested non-hazardous According to the US EPA's TCLP
- The European Union (France) Passed the Ash on Carbon Content Restriction of <5%
- SENREQ Recommends Utilizing Ash as a Cement Component to Make Recycled Products In-house (Curb Blocks – CMU)

Testing Laboratories:

Western Research Institute, Laramie, WY - York Environmental Laboratories, San Diego, CA - AmTest Laboratories, Anchorage,AK AmTest Laboratories, Seattle, WA - CORE Labs, Kuala Lumpur, Malaysia - CRE Laboratories, Stoke Orchard, UK - CORE Labs, Houston Texas - French National Research Institute, Paris France

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