

Project Objective(s):

To purchase a machine that converts plastic wastes to oil and pilots its use for a small Alaska Village. The project will help the community move forward in increasing participation in the recycling program and reducing the amount of non-biodegradable waste entering their landfill.

Results:

- Demonstrated recycling machine in 9 villages.
- Converted approx. 54 ½ lbs. of recyclable plastics into 33 pints of oil
- Machine runs on average 1kw/hr.
- Process time to convert is 3 ½ to 5 1/2 hrs.

Benefit(s):

Getting plastic out of the waste stream is a common issue of concern for rural communities throughout Alaska because it gets burned and emits toxic fumes into the community. Backhauling plastic is not always cost-effective because it does not generate any revenue and shipping costs are high. Educating the community in why and how to keep plastic out of household trash is also a common challenge. This project links plastics recycling with the production of a valued commodity - fuel - which in villages averages about \$7-10/gallon.

Lessons Learned:

- Plan and budget for spare parts and shipping.
- Be very careful during transport of machine.
- People truly appreciate recycling efforts.
- Need to make recycling program as "user friendly" as possible.
- When temperature drops, recycling participation drops.

For more information:

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Zender project website: <http://zendergroup.org/cedp.html>

Native Village of Gakona



Practicability of Recycling Plastics with a Plastic-to-Oil Machine



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Project Timeline

2012 Community Environmental Demonstration Project Grant

Work done prior to March 2012
 Research on converting recycled plastics into oil.
 Community support gathered for grant proposal.
 Wrote and submitted successful proposal.

Gakona awarded Zender CEDP grant.

Started community outreach and education efforts.

Recycling center receiving plastics from community members.



Recycling efforts continue. Outreach to other communities continues.

Monitored energy use rates for oil machine

Conducted feasible studies for larger model oil machine.

Presented Project at Annual AFE in Anchorage



Set up recycling program to collect plastics

Demonstrated newly arrived oil machine during Gakona Clean-up day.

1st traveling demonstration occurred in Tazlina.

Traveled to Chikaloon to demonstrate oil machine.



Ordered oil machine. Machine costs: \$15,500.00



Developed project presentation. Began to close-out grant.