

CASE STUDY: FOLLOW-UP ON KEENE, NH LANDFILL GAS-TO-ENERGY PROJECT

January 17 – 19, 2012

15TH ANNUAL LMOP CONFERENCE AND PROJECT EXPO

DAVID E. ADAMS, P.E.



Public-Private Partnership



Climate Showcase Communities
Local Climate and Energy Program



Keene Recycling & Solid Waste Transfer Facility



Proximity to Landfill



Landfill Gas-to-Energy



GCCS Evaluation



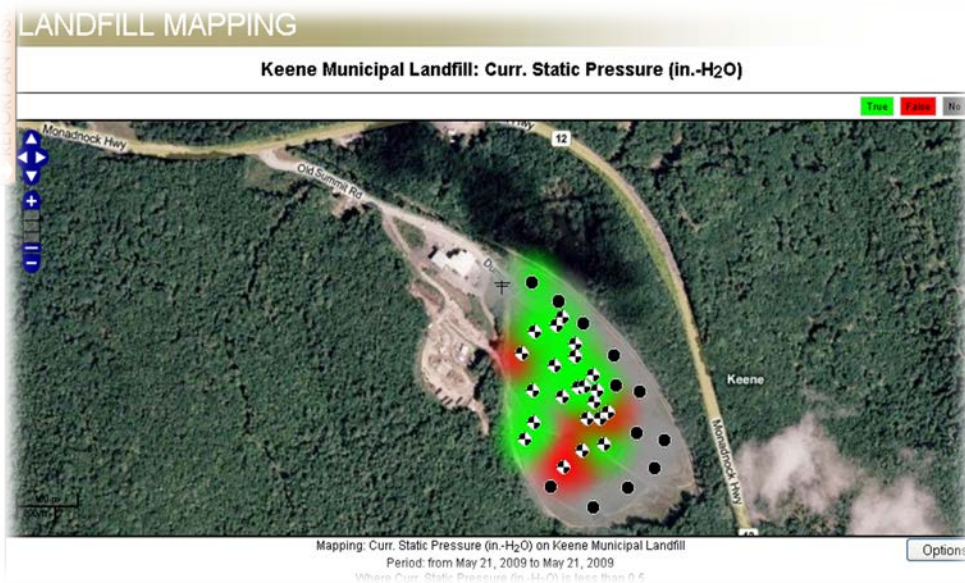
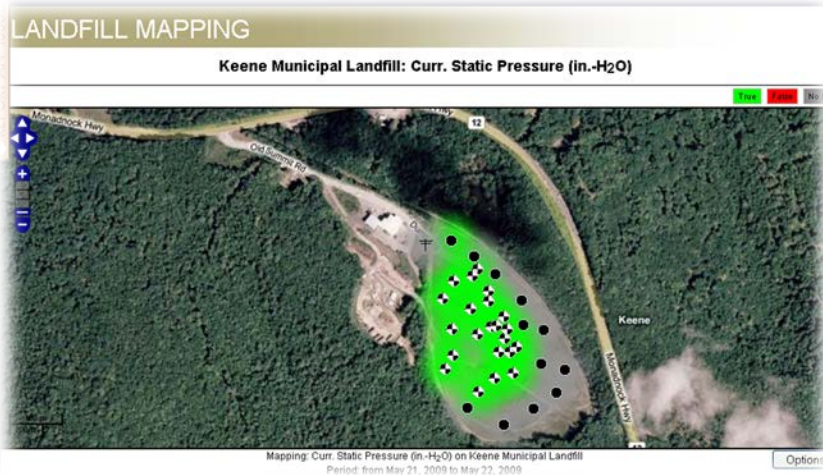
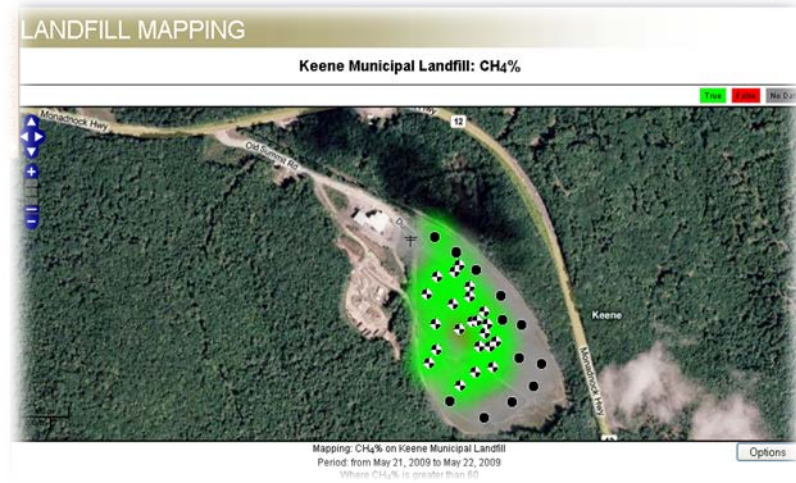
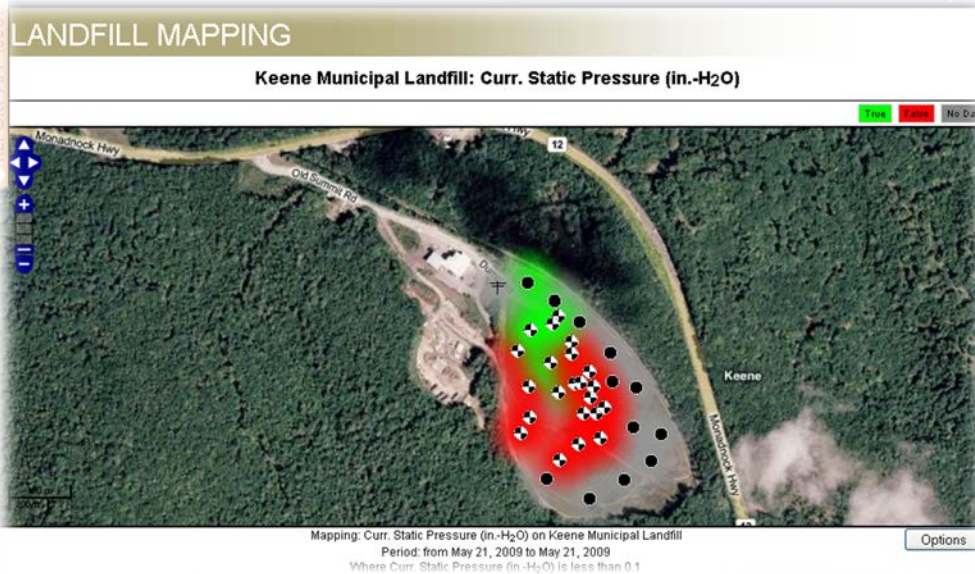
CES-Landtec
GEM 2000



Elkins
Earthworks



Innovative Approach - LFGMS



2009 GCCS Improvements



2010 GCCS Improvements

Limit air intrusion:

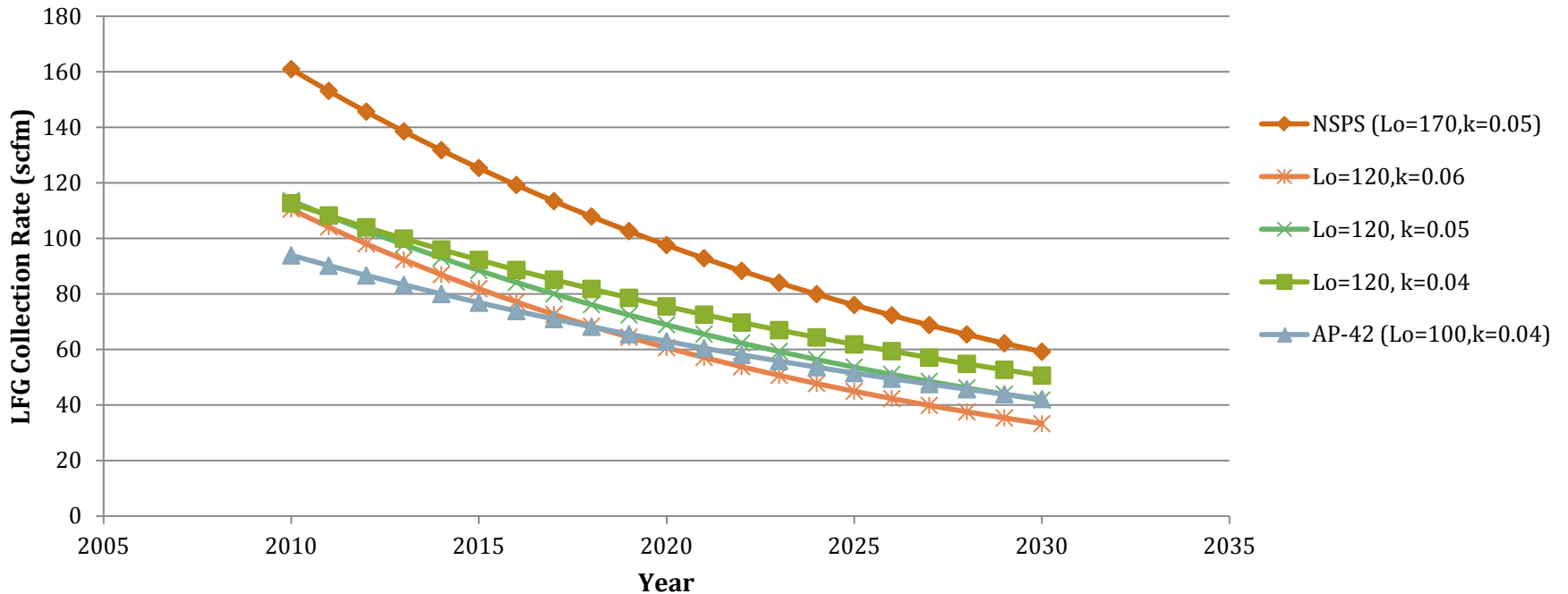
- ◆ Replace quick-connect fittings at each gas well (GW-1 through GW-17)
- ◆ Replace Kanaflex hoses and/or hose clamps
- ◆ Repair boot seals



LFG Collection Rate Projections

Keene Municipal Landfill

Five Sets of Landfill Gas Collection Rate Modeling Results
Assumed Collection Efficiency of 75 Percent



2011 Landfill Gas Pump Test



2011 Landfill Gas Pump Test

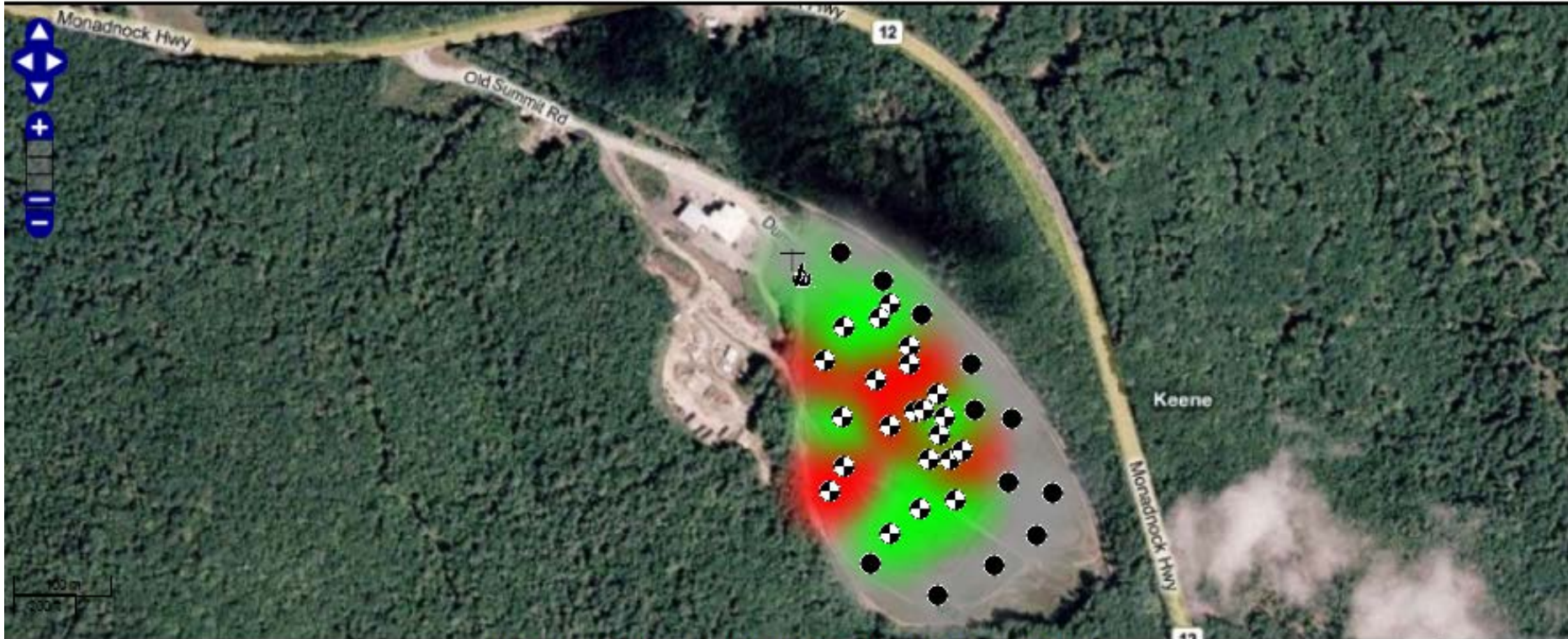


2011 Landfill Gas Pump Test

LANDFILL MAPPING

Keene Municipal Landfill: Energy Extraction (MMBtu/Day)

True False No Data



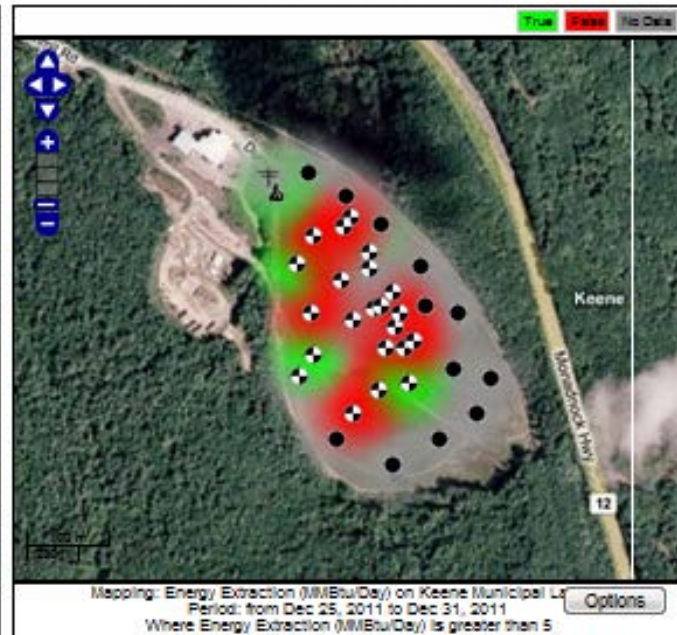
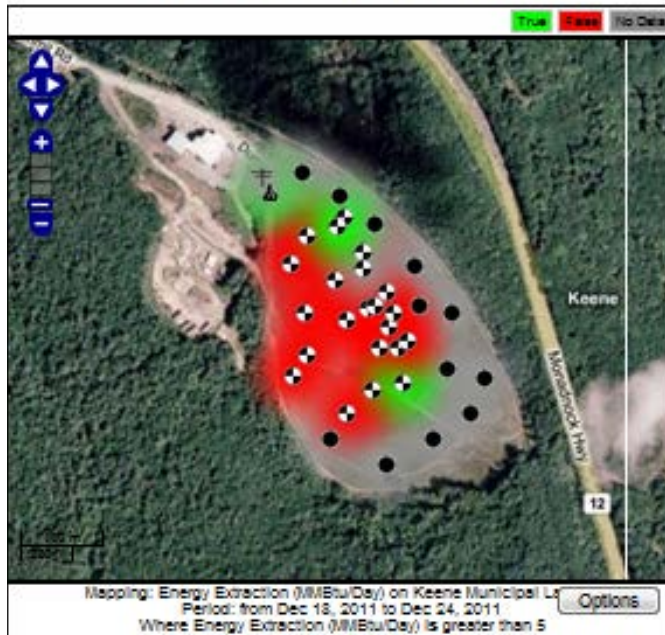
Mapping: Energy Extraction (MMBtu/Day) on Keene Municipal Landfill

Period: from Nov 20, 2011 to Nov 26, 2011

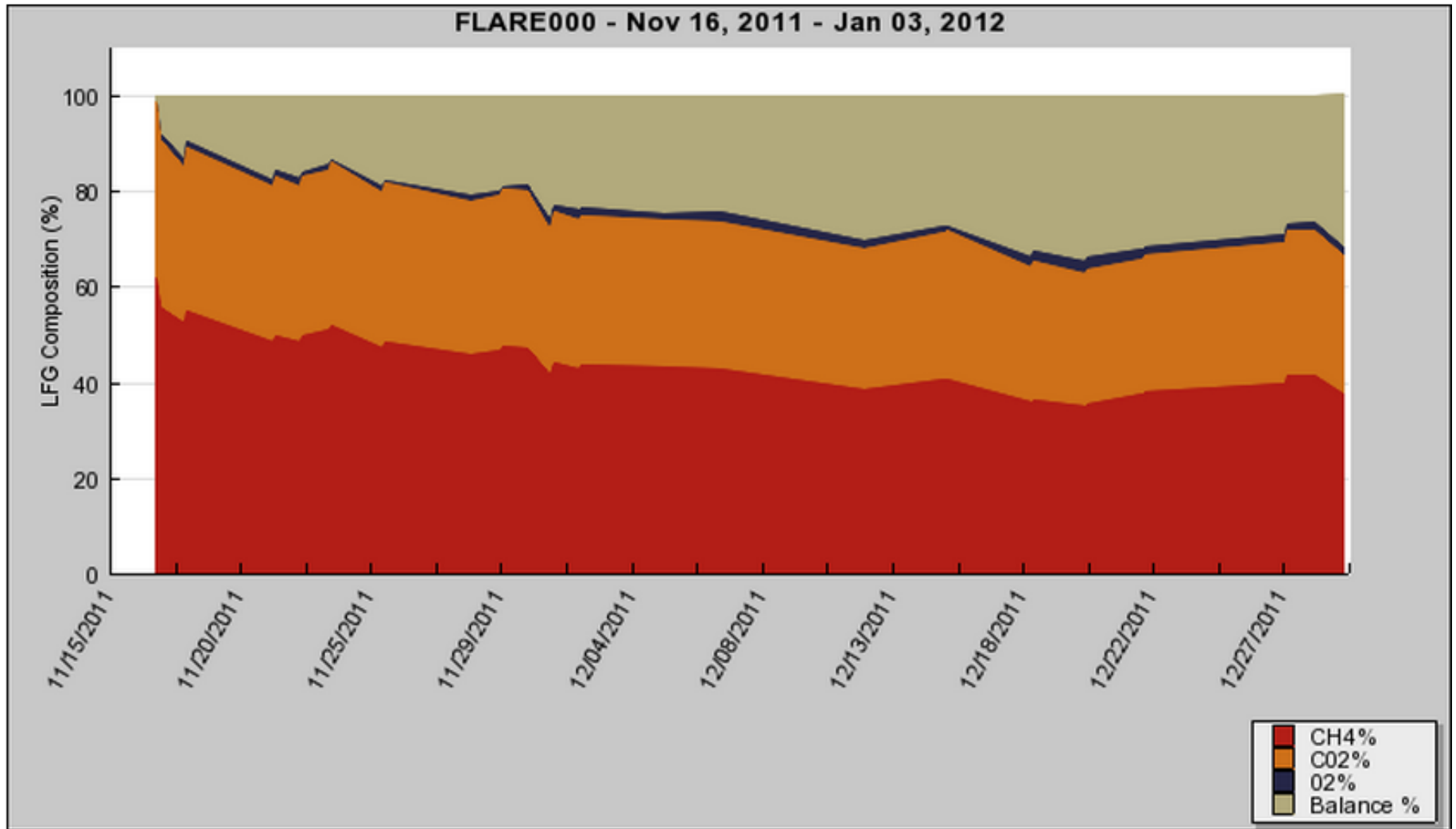
Where Energy Extraction (MMBtu/Day) is greater than 5

Options

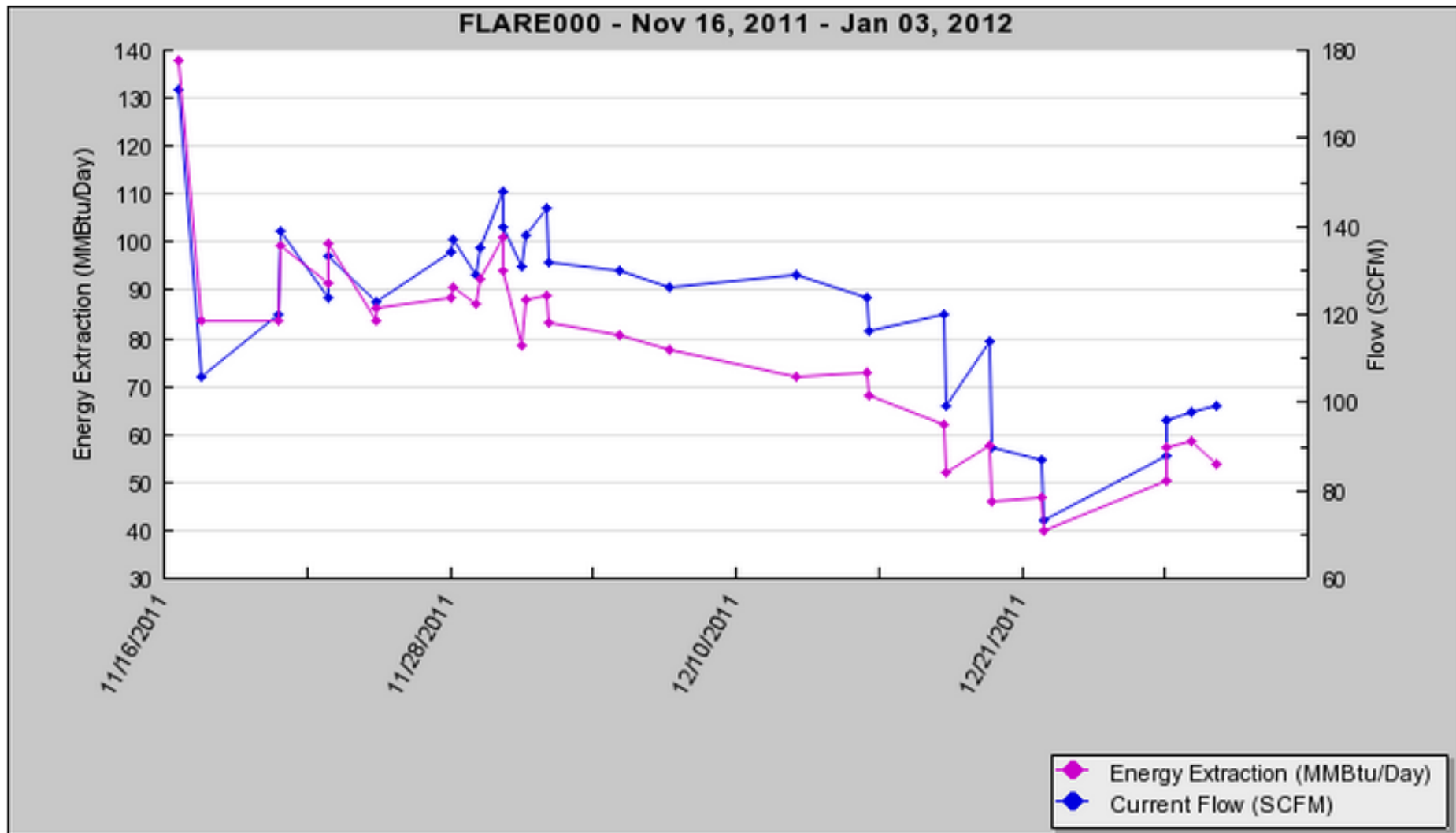
2011 Landfill Gas Pump Test



2011 Landfill Gas Pump Test

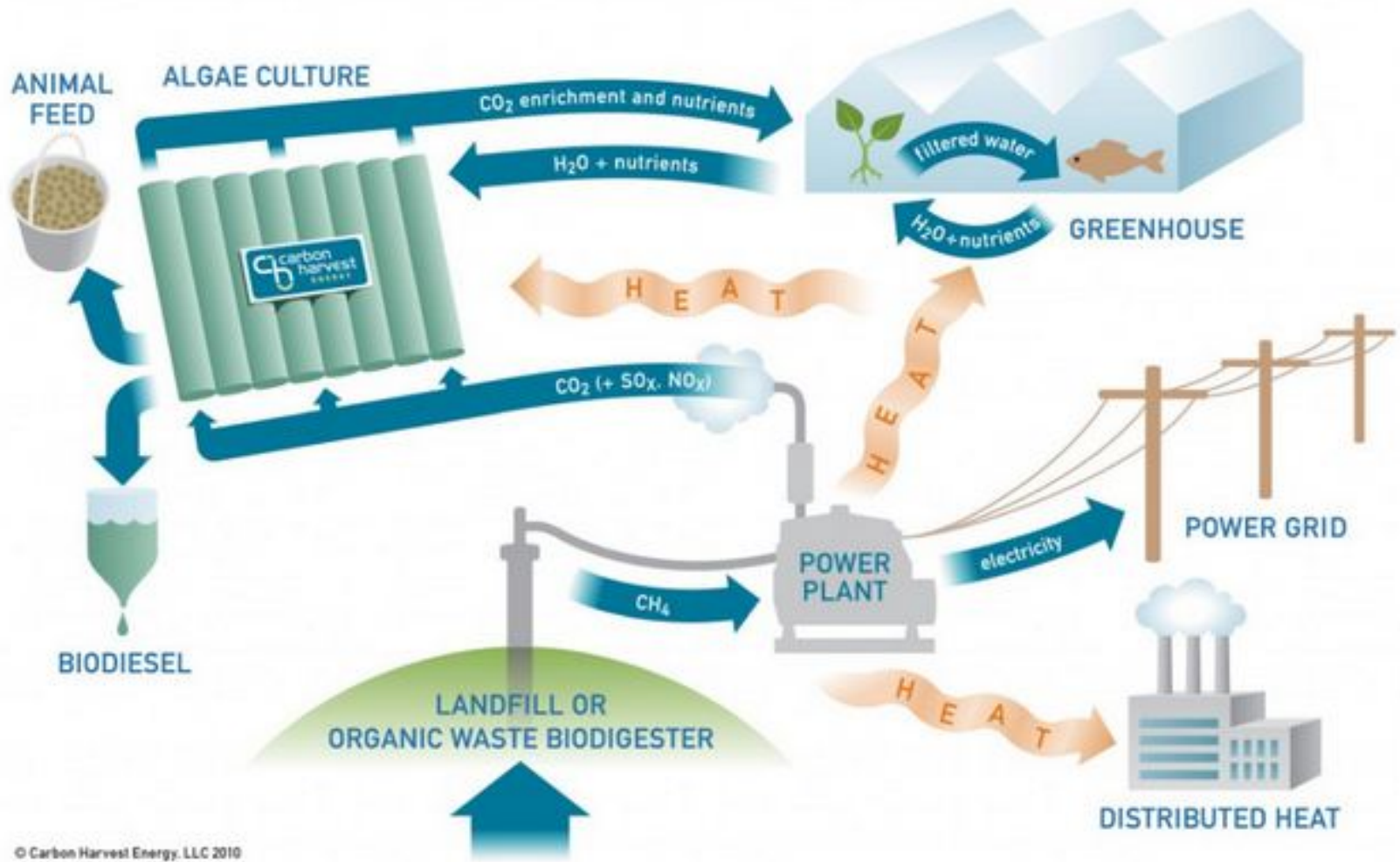


2011 Landfill Gas Pump Test



CHe Energy and Nutrient Flow Diagram

Yesterday's Wastes
Today's Innovations
Tomorrow's Solutions



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