



City of Lawrence

SUSTAINABILITY
ADVISORY BOARD

MINUTES

October 10, 2018 – 5:30 pm

MEETING LOCATION: Parks and Recreation Administration Building in South Park, 1141 Massachusetts St, Lawrence, KS 66044

Members Present: Jackie Carrol, Jessi Lee, Karen Lewis, Dale Nimz, Travis Robinett, Michael Steinle

Members Not Present: Sharon Ashworth, Ma'Ko Quah Jones, Rachel Krause, Adam Ritchie

Staff Present: Jasmin Moore

Public present: Several members of the public were present.

- I. CALL MEETING TO ORDER: Determine quorum of members.
- II. Approve September meeting minutes
 - a. Correction to August minutes: change Jayhawk Audubon Society to KU Audubon. Make sure Jackie is listed as in attendance in Sept. Motion to approve minutes with noted corrections by Steinle, second by Lewis. Motion passed.
- III. SAB administrative items
 - a. Introductions. Two members of the Sustainability Commission of Mission, KS were in attendance and expressed interest in collaboration with other sustainability commissions.
 - b. Three members (Lee, Krause, and Robinett) are eligible for reappointment for 2019. All three members have expressed interest in reappointment. Two members (Nimz and Ritchie) are completing their term and are ineligible for reappointment.
 - c. 2019 SAB Leadership nominations will occur at the November meeting.
- IV. Update on Single Use Plastic Committee. Michael

A subcommittee formed in July 2018 to develop a research approach that will:

 1. Investigate the impact of single-use plastics;
 2. Investigate policies to encourage reduction single-use plastics; and
 3. Identify policy recommendations to present to the Sustainability Advisory Board and, ultimately, to the City Commission.

The SAB subcommittee is working with a group of graduate-level students to conduct policy research during the Fall 2018 semester.
SAB recognizes there are many perspectives regarding this topic. The subcommittee plans to engage with groups of stakeholders during the first part of 2019 to gain insight into business, environmental, and social concerns and considerations regarding single-use plastics.
- V. Presentation & Discussion: Landfill Gas Energy & Material Recovery Facility (Charlie Sedlock, Vice President, Hamm Waste Services)

- a. Presentation is included in the minutes, stating on page 4.
- b. Material Recovery Facility Video: Stagler Sorting Plant Hamm
<https://www.youtube.com/watch?v=S4pY-LcCNyU>

VI. Staff Report

- a. The October 5 [Common Ground](#) community garden celebration, recognized the end of the 7th season for the City of Lawrence program launched in 2011 with the City Commission, Food Policy Council, and Sustainability Office. Good turnout, energy among City leadership, community members, and program gardeners. Next will be a strategy session for the program's future. Staff is recruiting at least one representative from 3 related City of Lawrence advisory boards—Sustainability Advisory Board, Parks & Rec Advisory Board, and FPC for a meeting in early November.
- b. Upcoming meetings on Park at LPHQ. Police Headquarters Project is getting off the ground, meetings about design and site location, construction, etc. Plan is to reserve partial area for parkland, a neighborhood park, and Parks Dept. is taking feedback. Jasmin, part of the planning team on the staff side, will update on next public meeting.
- c. A delegation of about 80 people from the Chapel Hill metropolitan area participated in an Inter-City Visit to Lawrence in late September. This visit was organized by the Chapel Hill Carrboro Chamber of Commerce and was intended to learn from the experiences of another community, better understand their own community assets, and build relationships among each other to help them address local challenges. Jasmin Moore gave a presentation on Lawrence's STAR Community Rating.
- d. An innovative initiative to appoint more women to civic boards is now operating in Lawrence. Women interested in serving the public are encouraged to apply to the [Appointments Project](#)[®], a program launched by the Women's Foundation to help increase the diversity of public boards and commissions. A workshop for those interest in learning more will be held on Thursday, November 8, 11:30 am at the Lawrence Public Library.

VII. Action Items. What are the key takeaways to share with the Commission? What are key topics for next month's agenda?

VIII. Future Agenda Items

- a. Collaboration opportunities with Transportation Commission
- b. Greenhouse Gas Emissions Inventory update
- c. 2019 SAB leadership- November
- d. SAB bylaws review
- e. 90/90 report update from Land Use, Energy, Water committees

IX. Member Updates

- a. Jackie will miss SAB meetings November 2018 – January 2019.
- b. Karen Lewis will be doing an internship in Paraguay in 2019 and will be stepping down from SAB at the end of 2018.

X. Public Comment

- a. City of Mission is open to partnership with SAB on initiatives. They issued an open invitation to attend City of Mission Sustainability, 1st Monday of the month, 6:30 p.m.
- b. A member of the public shared multiple products acquired on a recent trip to California, which were all designed to decrease plastic and paper waste.

XI. Adjourn 7:00 p.m.

Next regular SAB meeting:

November 14, 2018 at 5:30 p.m.

Venue: Parks and Recreation Administration Building in South Park, 1141

Massachusetts St, Lawrence, KS 66044



Converting Waste into Energy

Lawrence SAB
11 October 2018
Charlie Sedlock

Hamm Operations

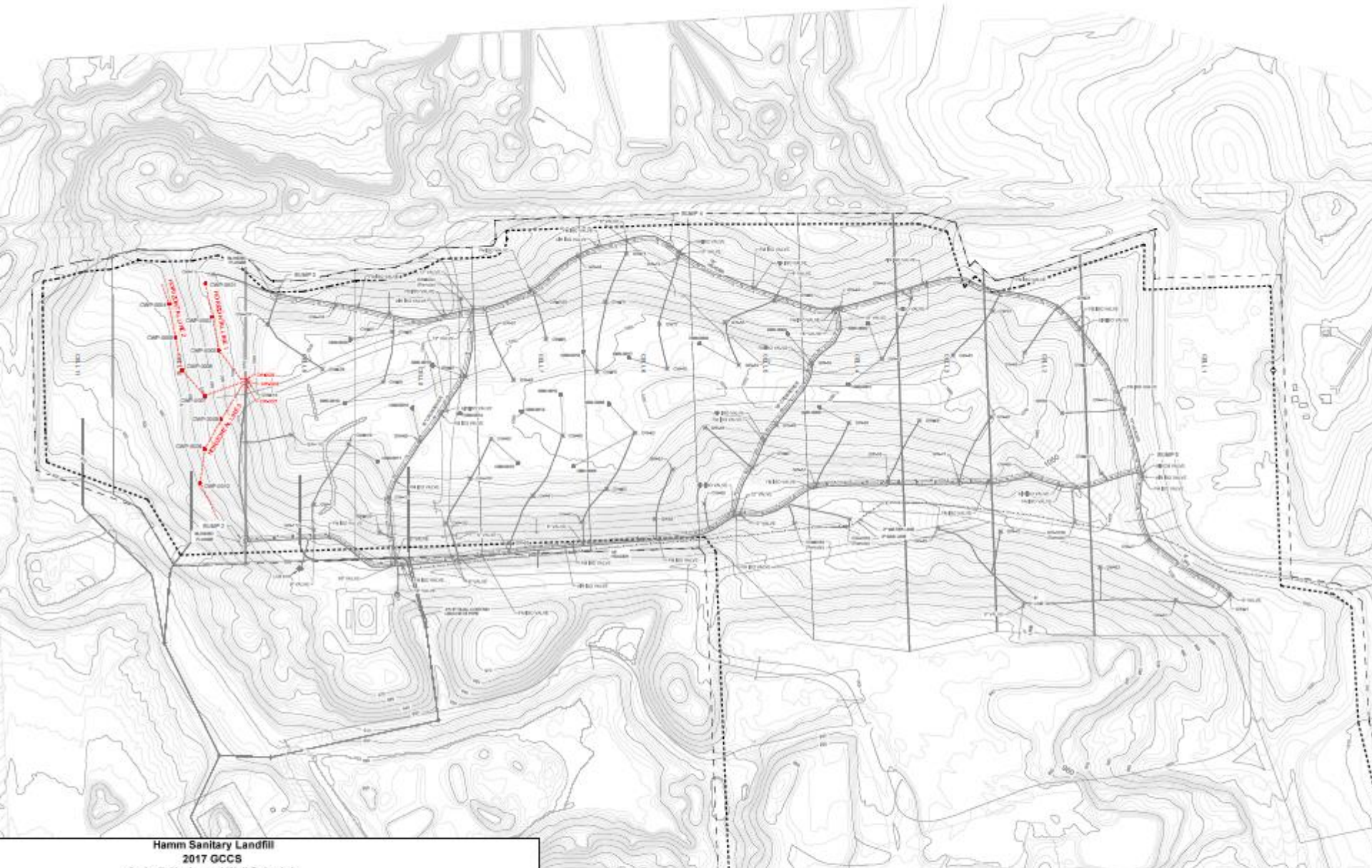


Landfill Gas Overview

- As trash decomposes, it produces landfill gas (“LFG”) which is primarily methane (i.e. the same basic compound in natural gas)
- Environmental concerns – gas migration; explosion hazard, groundwater impact
- However, unlike natural gas which is almost pure methane, landfill gas is generally comprised of only 50% methane;
 - Medium Btu Content: 400-500Btu

LFG can be converted to High Btu Gas: 900+ Btu

Landfill Gas Collection



HSL: Landfill Gas Field



HAMM

HSL: Landfill Gas Field



HAMM

Gas Collection System Construction

- Construction of GCCS commenced in October 2016 and was completed in January 2017
- Over 150 collection points
- Combination of vertical and horizontal wells



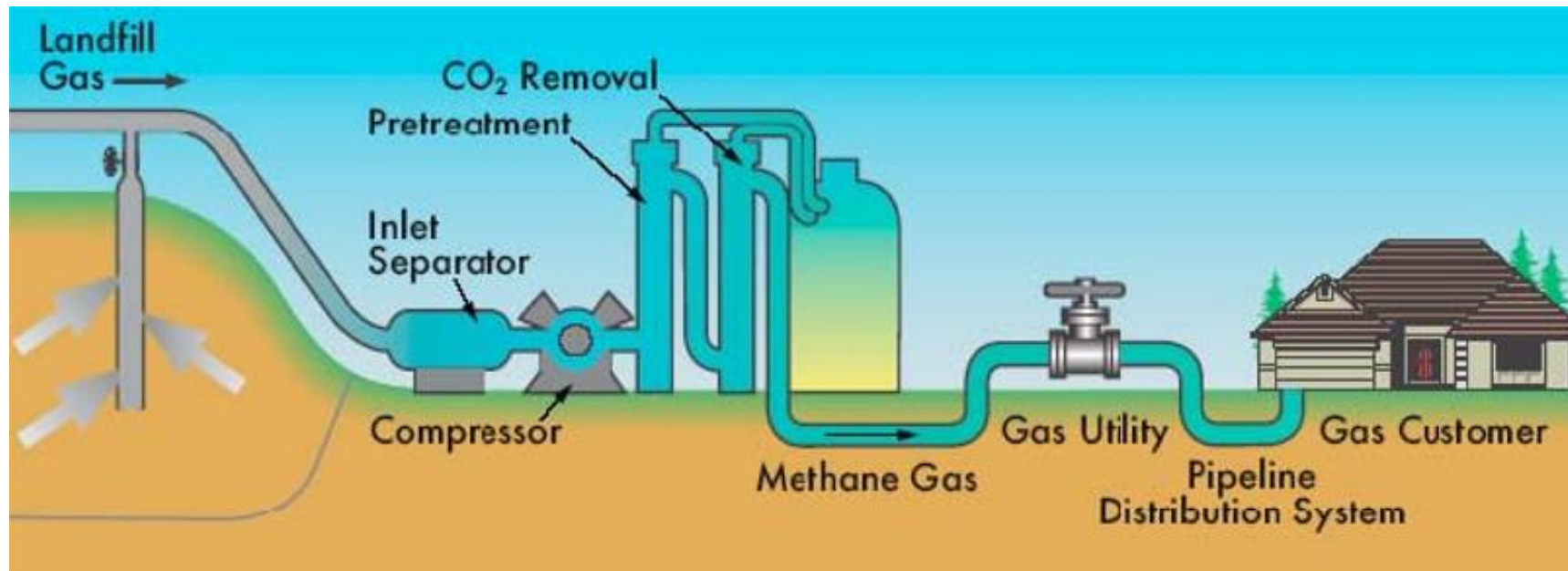
HAMM



HAMM

Landfill Gas to High Btu Gas

- The landfill gas treatment process removes CO₂, O₂, N₂, H₂S, moisture and other contaminants so that the resulting gas meets/exceeds natural gas parameters
- Once the process has been completed, gas is then brought up to a high pressure and injected into a natural gas pipeline for sale to the associated end user



High Btu Gas Plant



HAMM

High Btu Gas Plant



High BTU System Layout



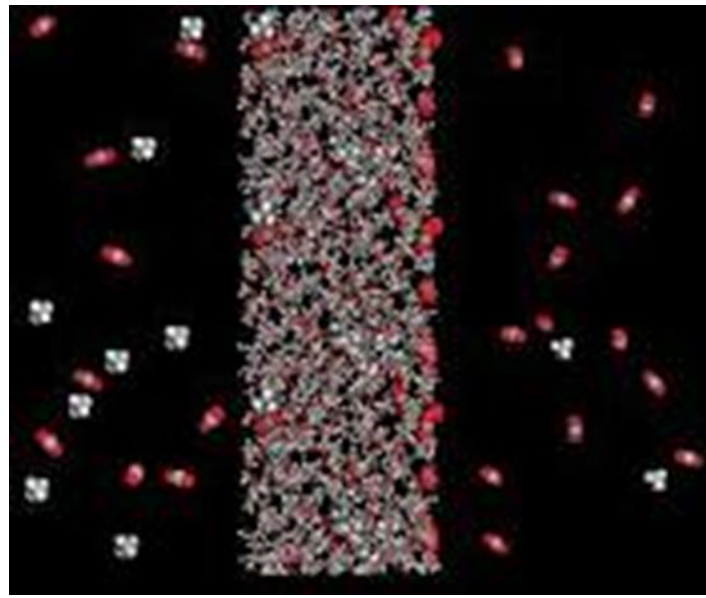
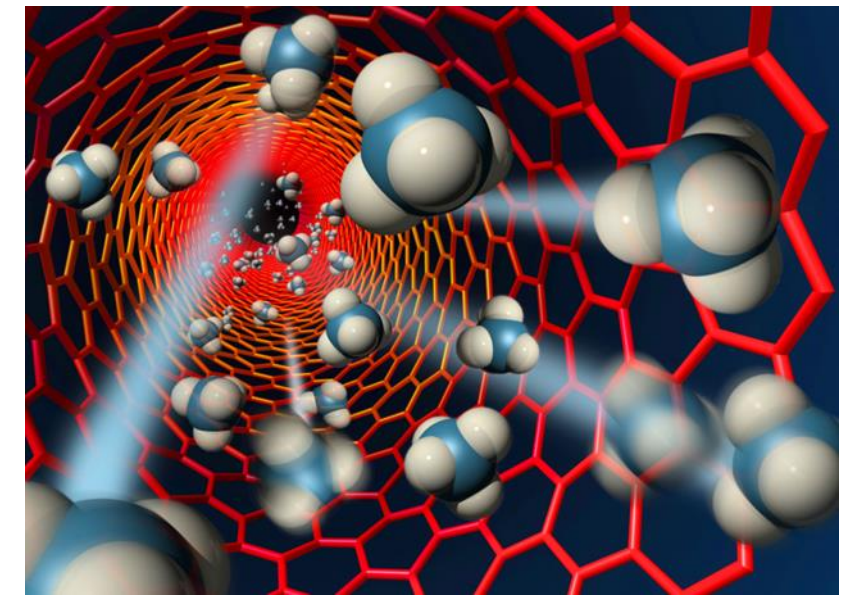
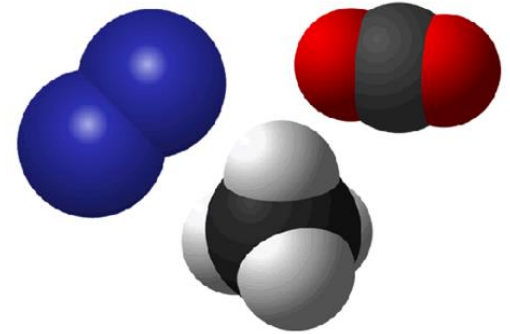
High BTU System Layout



High BTU System Layout



Molecular Membrane System



Landfill Gas Treatment

- Inbound Landfill Gas
- H₂O - Chilling Removes Water
- H₂S - Sulfa Trap - Sacrificial media
- Siloxane - Silica Gel - Regenerated media
- CO₂ - Pressure Swing Adsorption - Alumina - Xebec system
- O₂ - Palladium Catalytic Converter
- Final Dehydration
- Outbound CH₄ Methane

HSL: Serpentine SEM Route



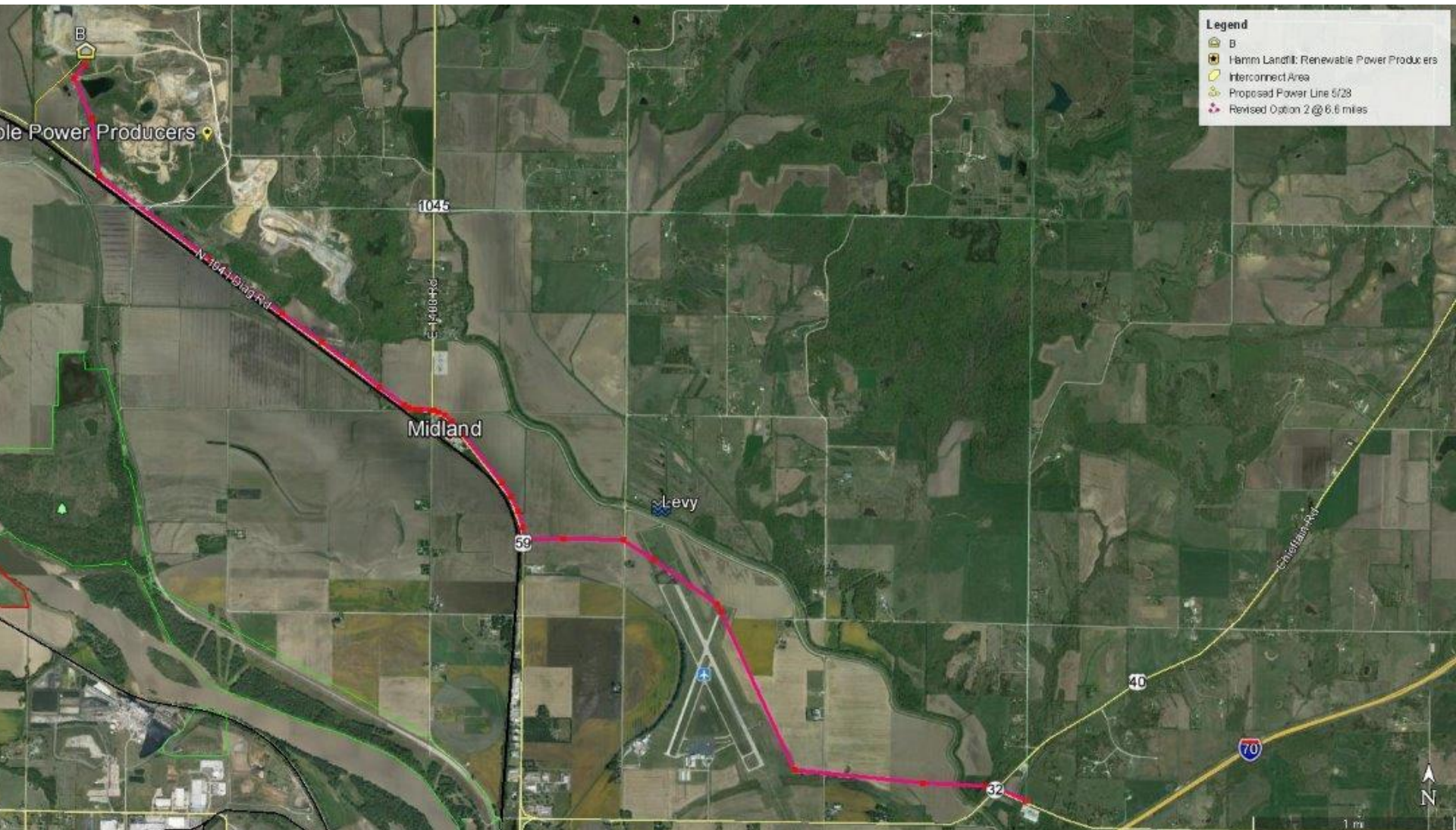
GCCS: WHC and ET Cap



Sharp-shinned Hawk
(*Accipiter striatus*)
Hamm Sanitary Landfill 2018



HSL: Pipeline Connection

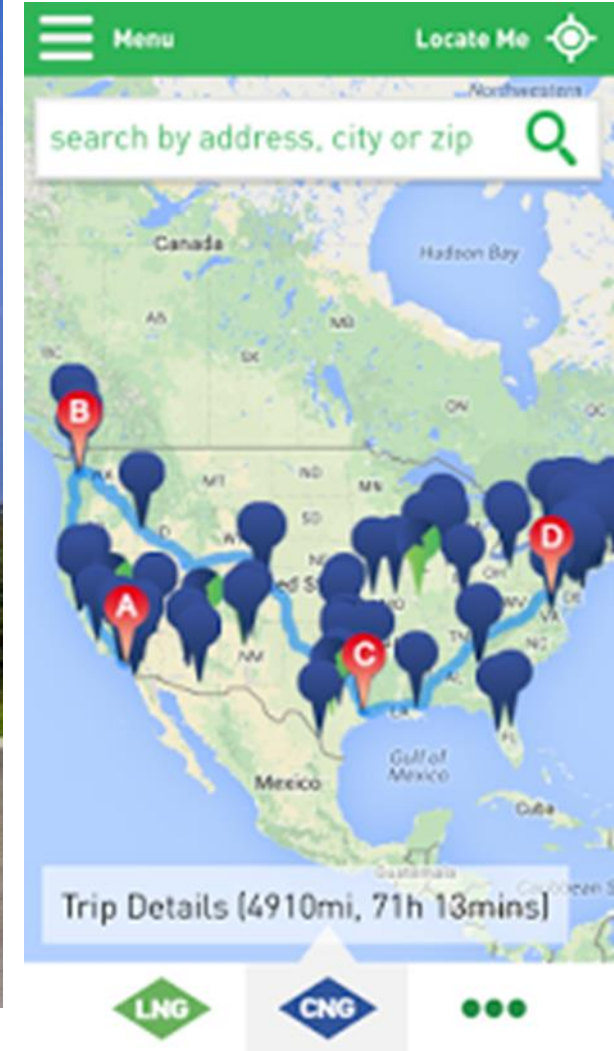


Pipeline

- Construction of pipeline commenced in November 2016 and was completed in February 2017
- 7.2 Miles from plant outlet to pipeline natural gas transmission tap
- 11 Private Easements
- 2 Levee Crossings
- 1 Airport Crossing
- 4-1/2" High Pressure Steel line



LNG and CNG Options



Landfill Recovery/Fuel Conversion Benefits

GHG Reduction from Landfill GCCS:

185,000 US Tons CO₂e/year

CNG Replacing Diesel Gallons = 2,400,000 gallon equivalents/year



Metric Tons of CO₂e Reduction @ CNG Pump = 22,000 US Tons compared to diesel

CNG Replacing Gasoline Gallons = 2,700,000 gallon equivalents/year



Metric Tons of CO₂e Reduction @ CNG Pump = 20,000 US Tons compared to gasoline

Project and Community Benefits

- Constructed Plant and Infrastructure Using Many Local Contractors
- High tech employment
- Community Involvement and Education
- Zero Tax Abatements requested
- Zero Public Financing requested
- No Rate Increase To Our Customers

Questions

- Questions??

High Btu Gas Process Flow

