

CGA Annual Technical Conference 2022

Find Your Energy

Lethbridge Biogas RNG- Helping Decarbonize The Gas Grid in Alberta

Anthony Cao



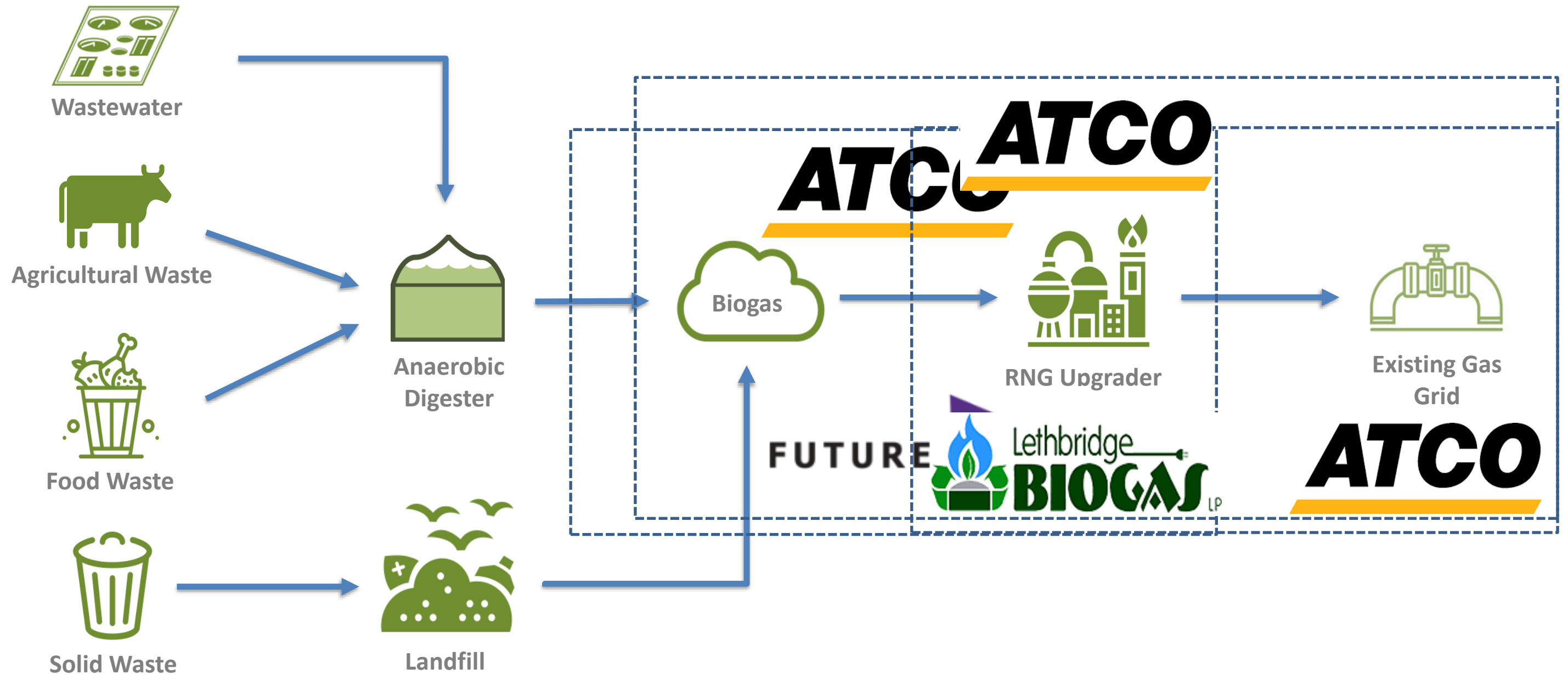
June 6th – June 9th, 2022 | Toronto, ON | #CGATEchnicalConference #FindYourEnergy



**Lethbridge
Renewable
Natural Gas**



RENEWABLE NATURAL GAS (RNG)



Early
Mover

Ample
Supply

OPPORTUNITY

ECONOMICS

Drop-in

Ready
now

Carbon
negative

By-
products

ENVIRONMENT

REGULATED STRATEGY

AUC Tariff

- Recover Capital and O&M costs plus a regulated rate of return
- Received in December, 2020

Contracts

- Backstop Agreement
- Producer Service Agreement

Management of Change

- Engaged 19 different stakeholder groups
- Identified 27 risks with 93 action items
- 4 major deliverables (work procedure, RNG Specification, Monitoring and Verification Program, Producer Guide)

New Infrastructure

- Receipt Station
- Connected to the distribution system

LETHBRIDGE BIOGAS SITE

-  - ATCO RNG Receipt Station
-  - Lethbridge RNG Upgrader



LETHBRIDGE BIOGAS SITE

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Google map satellite view

LETHBRIDGE RNG RECEIPT STATION

Design Constrains and Considerations

- Gas quality monitoring
- Automation
- Tight timeline
- Space limitation

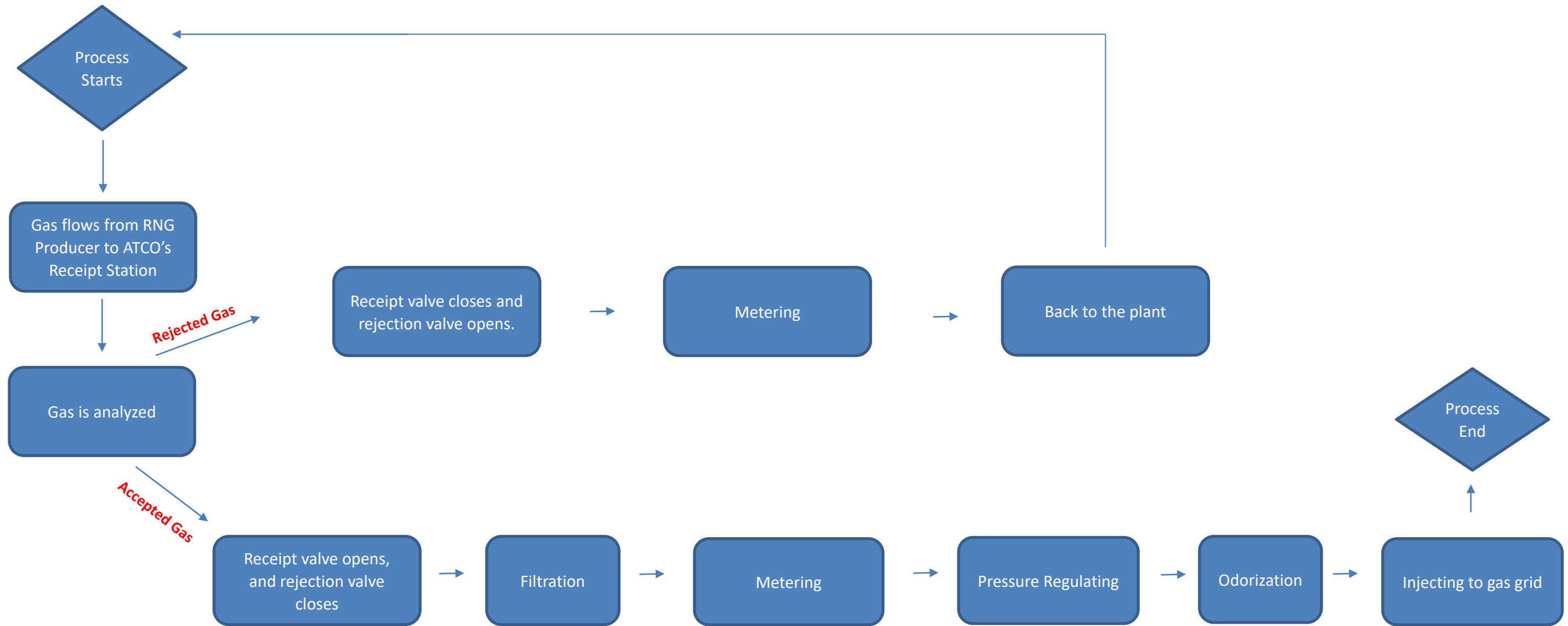
LETHBRIDGE RNG RECEIPT STATION



LETHBRIDGE RNG RECEIPT STATION



RNG RECEIPT STATION PROCESS



INNOVATIONS

New Piping Layout



Receipt Run



Rejection Run



INNOVATIONS

Electronic Self-actuated Valves

RTS Actuators

Receipt Valve

Rejection Valve



INNOVATIONS

Dosaodor Odorant Injection System

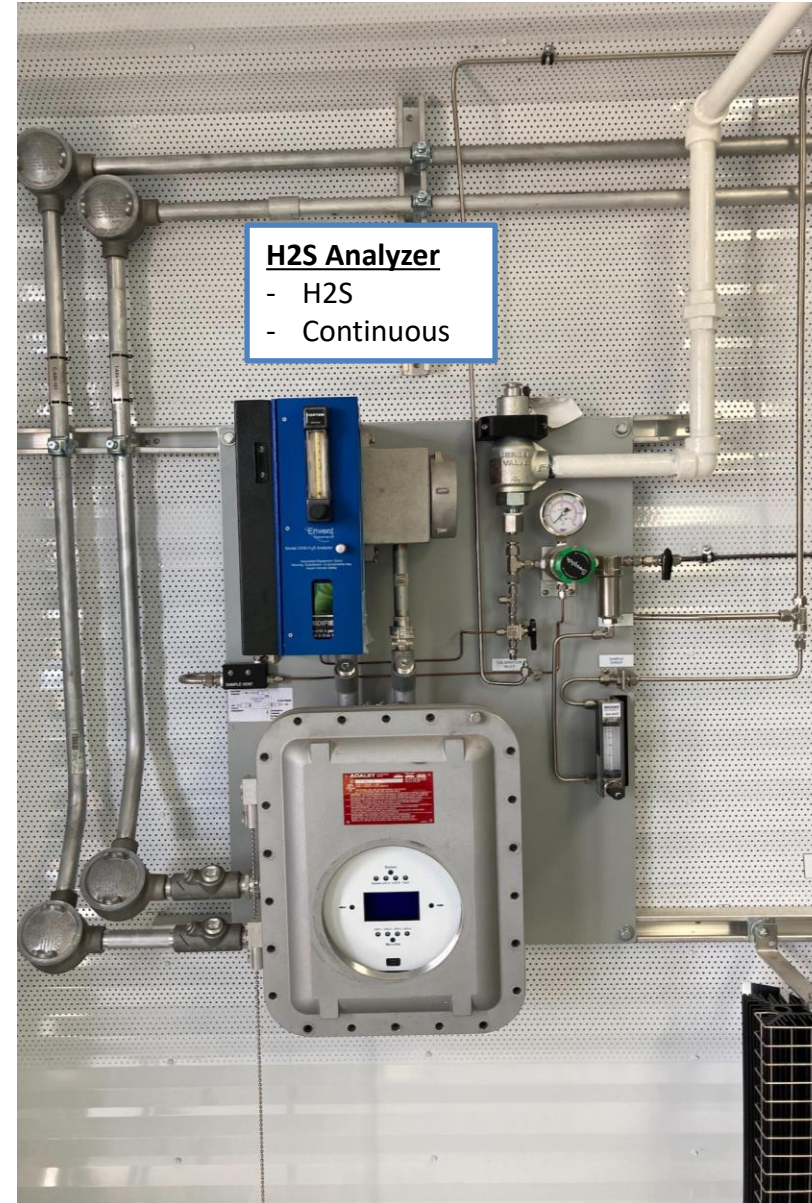
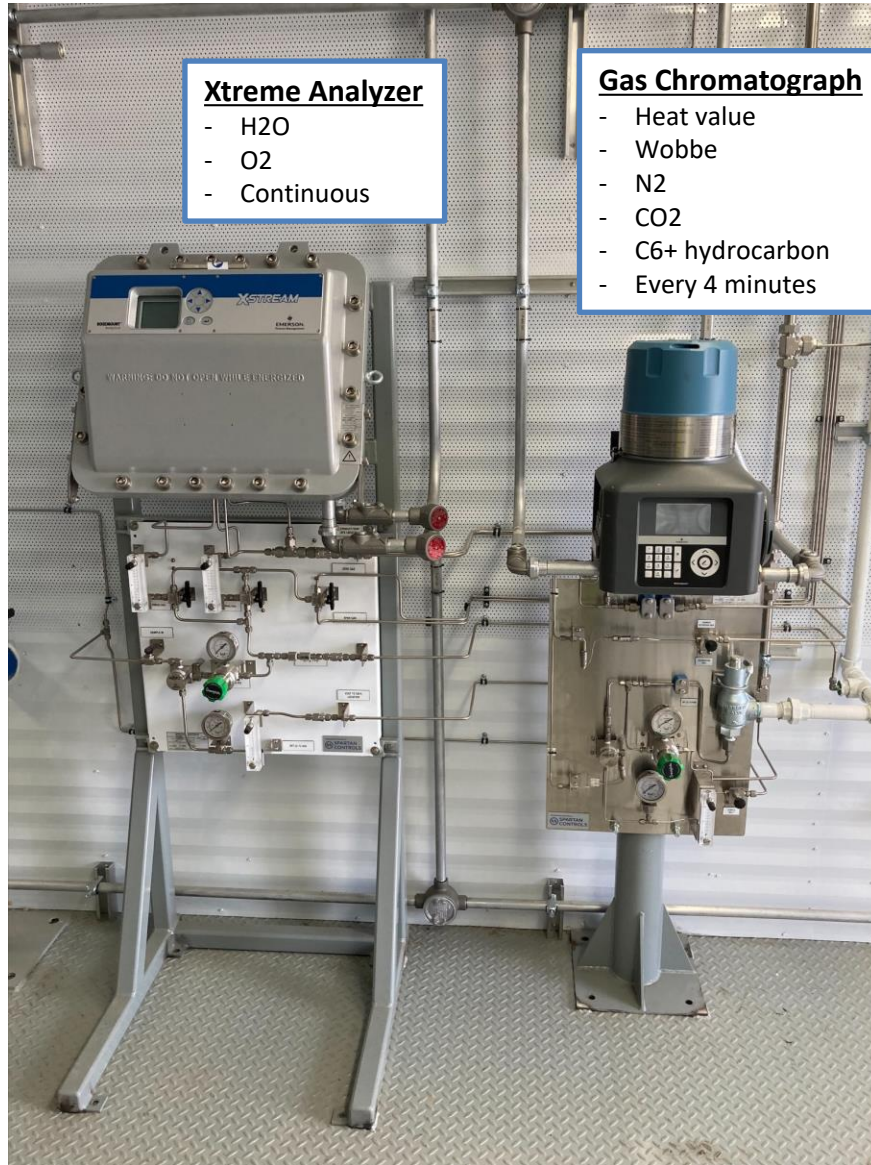


100 US Gallon Tank with Secondary Containment



INNOVATIONS

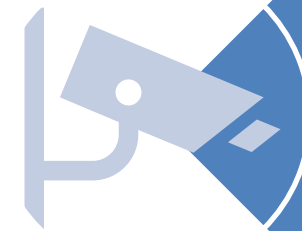
Monitors and Analyzers



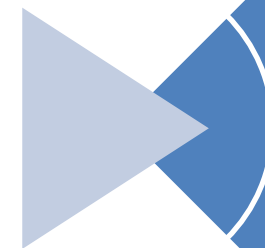
LESSONS LEARNED – GAS QUALITY AND MONITORING



Defining Gas
Specs



Developing a
Monitoring Plan

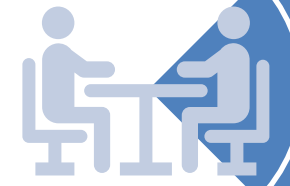
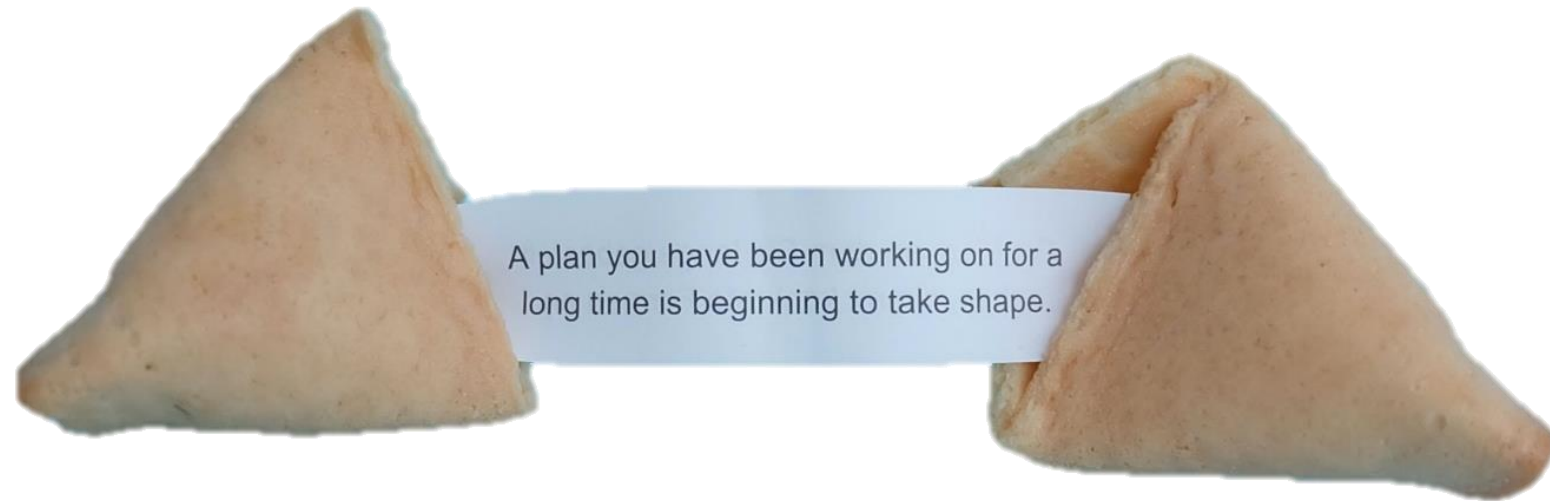


Start-up Fine-
Tuning

LESSONS LEARNED – COMMISSIONING



LESSONS LEARNED – PRODUCER EXPECTATIONS



Pressure &
Flow



Explicit
Agreement



Future
Locations

CALL TO ACTION





QUESTIONS





ATCO

THANK YOU