Artificial Intelligence – How Can it be Used?

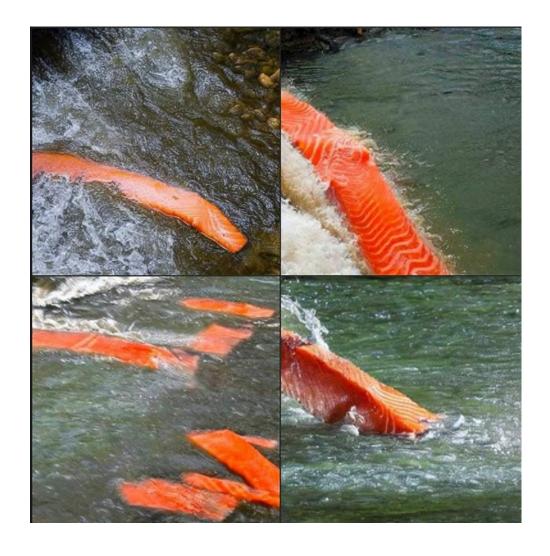


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ION. PARTNERSHIP

Al Generated

• "Salmon swimming in a river"





Artificial Intelligence (AI)

- Currently we define the rules to achieve Objective.
 - IF [Data Set > 5], [Do Something], [Otherwise Do Something Else]

- Now AI defines the rules and we define the objective.
 - "Provide a summary of the [Data Set] for data > 5 in tabular format"
 - "Develop a formula in Excel that..."



How do you feel about Al?

- Empowered
- Enthused
- Overwhelmed
- Concerned
- Other?



Build Plant Specific Al Knowledge Center

- What is my permitted emission limit on my Boiler?
 - Where does it come from?
 - How is it enforced?
 - Have we ever exceeded it before?
 - What were the reasons and corrective actions for that event?
- What do I need to complete after I replace a H₂S analyzer on the Flare?
 - Where did that information come from?
- I failed a Cylinder Gas Audit (CGA) on an SO₂ CEMS. What should I check?
 - Maintenance records





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Build Plant Specific Al Knowledge Center

- Permits
- QAQC Plans
- Monitoring Plans
- Legacy Knowledge
- Personnel Logs
- Facility SOP
- Regulatory
 Database
- Rule Applicability

Al Application Plant Al Assistant

What is my permitted emission limit on my Boiler?

Plant Al Assistant

The permitted emission limits for Boiler No. 1 are as follows:

1. During Normal Operation:

• 3.0 lbs NOx/hr (1-hour clock average), excluding the periods of startup and shutdown.

2. During Startup and Shutdown:

36.0 lbs NOx/hr (1-hour clock average).

3.Including Startup, Shutdown, and Malfunction:

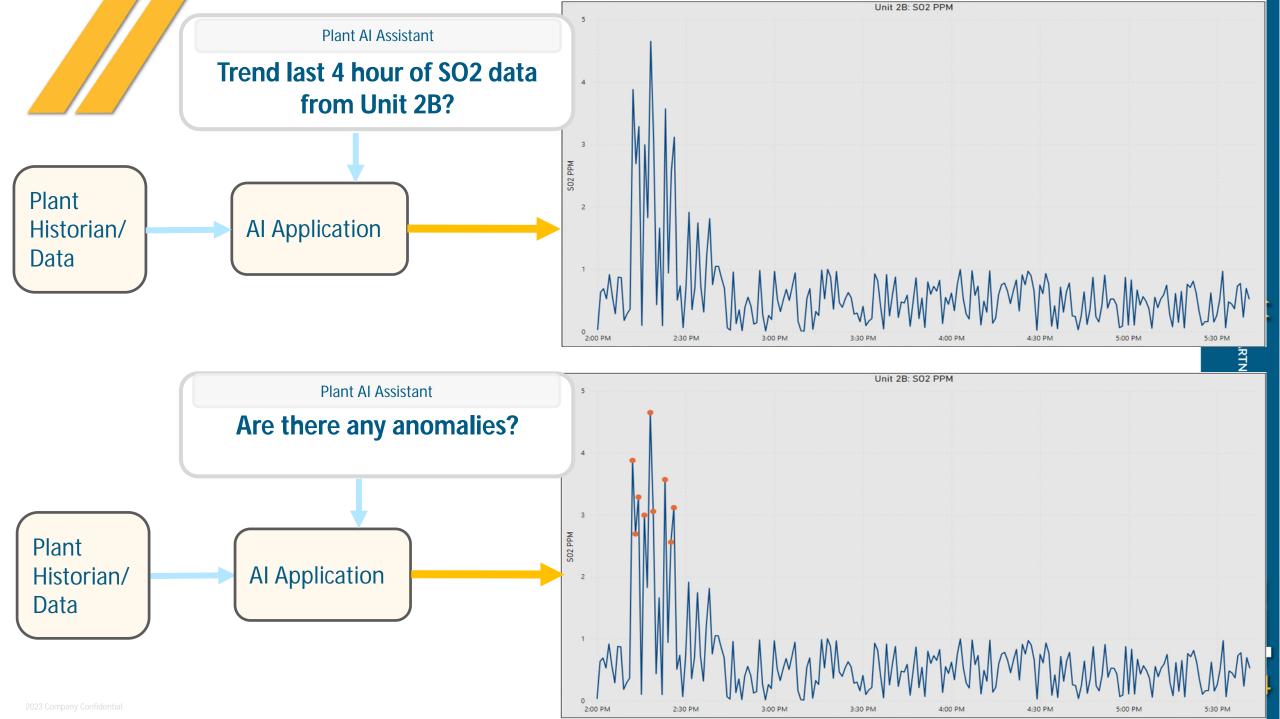
0.10 lbs NOx/MMBtu (30 operating day rolling average).

4. Annual Limit:

• 12.0 tons NOx over a 12 consecutive month period (12-month rolling sum).

Do note that compliance with these limits is monitored using various instruments and methods, including a NOx and O2 CEMS, a fuel flow meter, and a gas chromatograph for determining the site-specific f-factor.





PARTNERSHIP WITH A PURPOSE

Understand Your Emissions

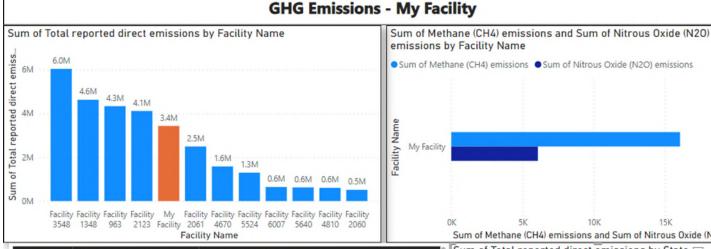
Plant Emissions

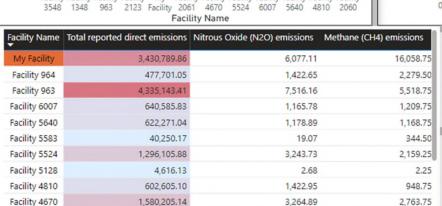
ΑI **Application** Al Assistant

How does my facility's CO2 emissions compare with the industry?



- **Public Database**
- Public ESG & Sustainability Reports





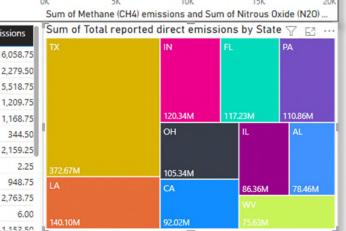
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Opportunities and Risks

Opportunities

- Competitive advantage
- Increase productivity
- Become proactive
- Leverage legacy knowledge
- Enhance business performance

Be Creative!!

Al is a tool. The choice about how it gets deployed is ours.

- Oren Etzioni

Risks

- Competitive <u>dis</u>advantage
- Data security and confidentiality
- User behavior
 - Proprietary data leaks
- Increased scrutiny from agency and public



Develop 'Mindfulness' Around Al

- Skip the hype and focus on your business case
- Al is here to assist, not to displace.
- Develop Al user policy & engage stakeholders
- Audit your data | High quality data = Better results
- Train staff and users on Al and data security
- Engage SME to verify AI
- Watch product price points to evaluate value



Questions?



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