

# Environmental inspections in the framework of the EU Industrial Emissions Directive and the role of laboratories

Case Study – Mossmorran - Regulation and  
Field Chemistry

- **Mossmorran – petrochemical complex**
  - The Mossmorran petrochemical complex receives natural gas liquids from the North Sea.
  - Shell separate the incoming liquids into propane, ethane, butane and natural gasoline.
  - Ethane is sent to the adjacent ExxonMobil plant where it is cracked into ethylene.



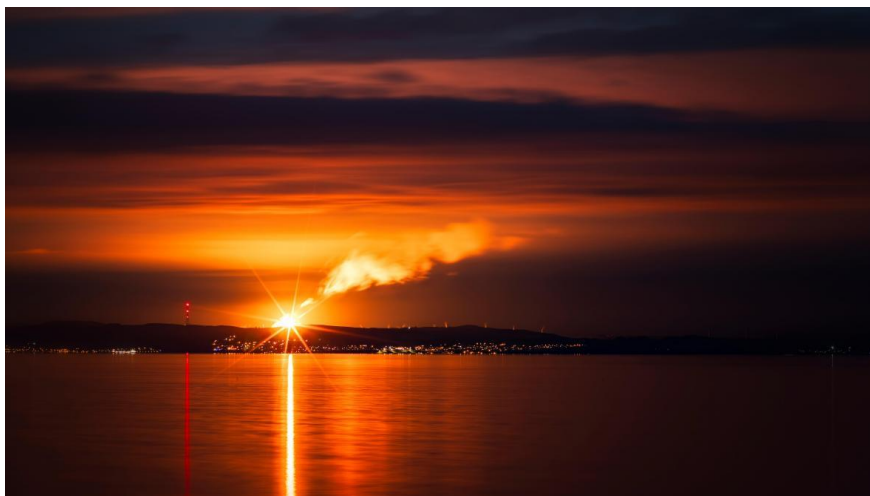


## Case Study – Mossmorran - Regulation and Field Chemistry

## • Flaring events

- A series of flaring events led to significant numbers of complaints, parliamentary questions and public meetings.

Date	Duration (days)	Quantity of hydrocarbons flared (tes)
June 2017	1.5	2,321
June 2017	5.5	9,803
October 2017	3.5	6,089
March 2018	3	5,448
May 2018	4	4,233
April 2019	5.5	14,435
August 2019	2.5	5,859
August 2020	2	3,200
October 2020	2.5	4,600



Flaring was visible from Edinburgh – picture courtesy of The Times



Flaring was sometimes smoky – picture courtesy of The Courier

- **Complaints and concerns**
  - During 2019-2020 we received over 3000 complaints from the public about the site.
  - Typically, complaints about flaring were about:
    - Noise and vibration
    - Light
    - Health concerns (air quality, loss of sleep etc.)

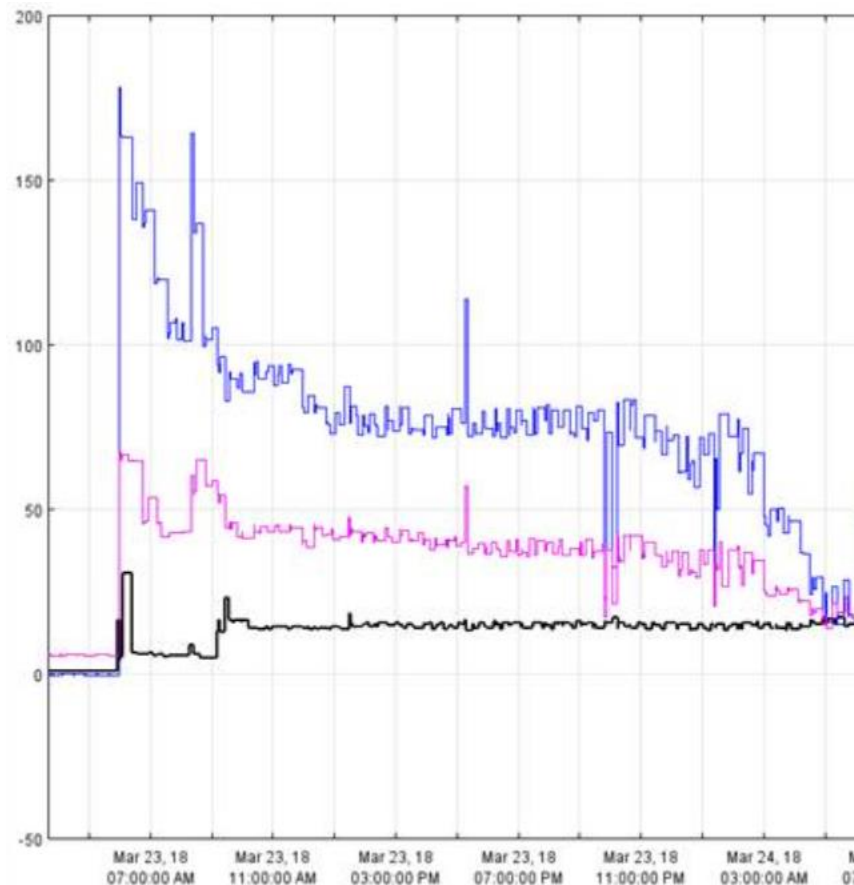
## • Initial Approach

- Following a complaint, we would send out staff (regulatory or field chemistry) to observe and record any impacts experienced.

<b>Date</b>		<b>Time arrived</b>	
		<b>Time left</b>	
<b>Location</b>			
<b>Noise (subjective)</b>			
<b>Vibration</b>			
<b>Odour (FIDOL)</b>			
<b>Black smoke (Ringelmann)</b>			
<b>General observations</b>			

## • Issues

- staff aren't always available in the local area.
- as flaring rates peak quickly and then reduce over a few hours, we would often miss the worst impacts.



## • Approach

### • Regulatory

- Requirements to upgrade the plant
- Formal investigation of serious incidents
- Increased point source monitoring and/or auditing
- A requirement for the Operator to provide an assessment of compliance for noise impacts following a flaring event

### • Increase evidence gathering capability

- Permanent noise monitoring

### • Informing the community

- Leaflet drops – to let them know what we were doing
- Community workshops – to understand what they required
- Website Hub and Air Quality network – to provide the information the community wanted



- **Field Chemistry – our eyes and ears on the ground 24/7**
  - Noise Monitoring
  - AQ Monitoring
  
- Allows us to provide better response to complaints
- Allows us to capture better evidence

## Noise monitoring

- Two 'permanent' remote noise monitors installed
- Real time data, provide assessments when needed, public reassurance.
- Allows quick assessment of the sound levels through an event, and a public statement issued, where appropriate



## • Air Quality network

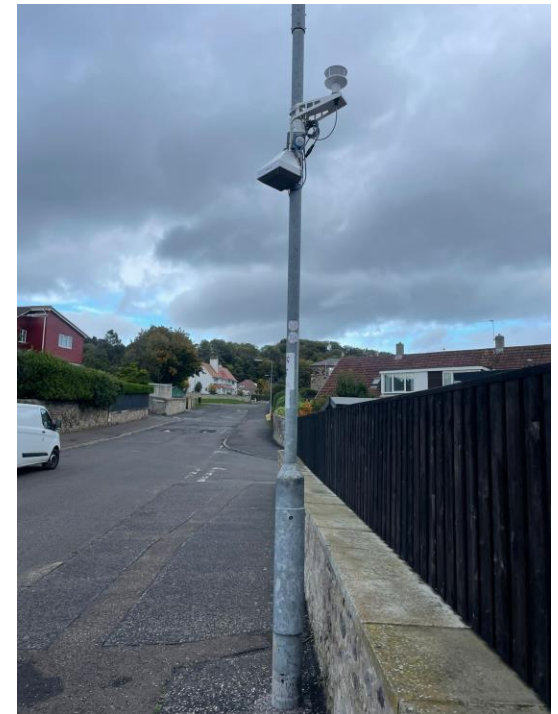
- providing the Community with the information they want to understand the air quality in their community.
- whilst our monitoring has shown no breaches of the air quality objectives, the community asked for:
  - Permanent monitoring of air quality in the communities around Mossmorran.
  - Simple, easy to understand and timely data, with the ability to get more detail if required.



# Reference Monitoring Station

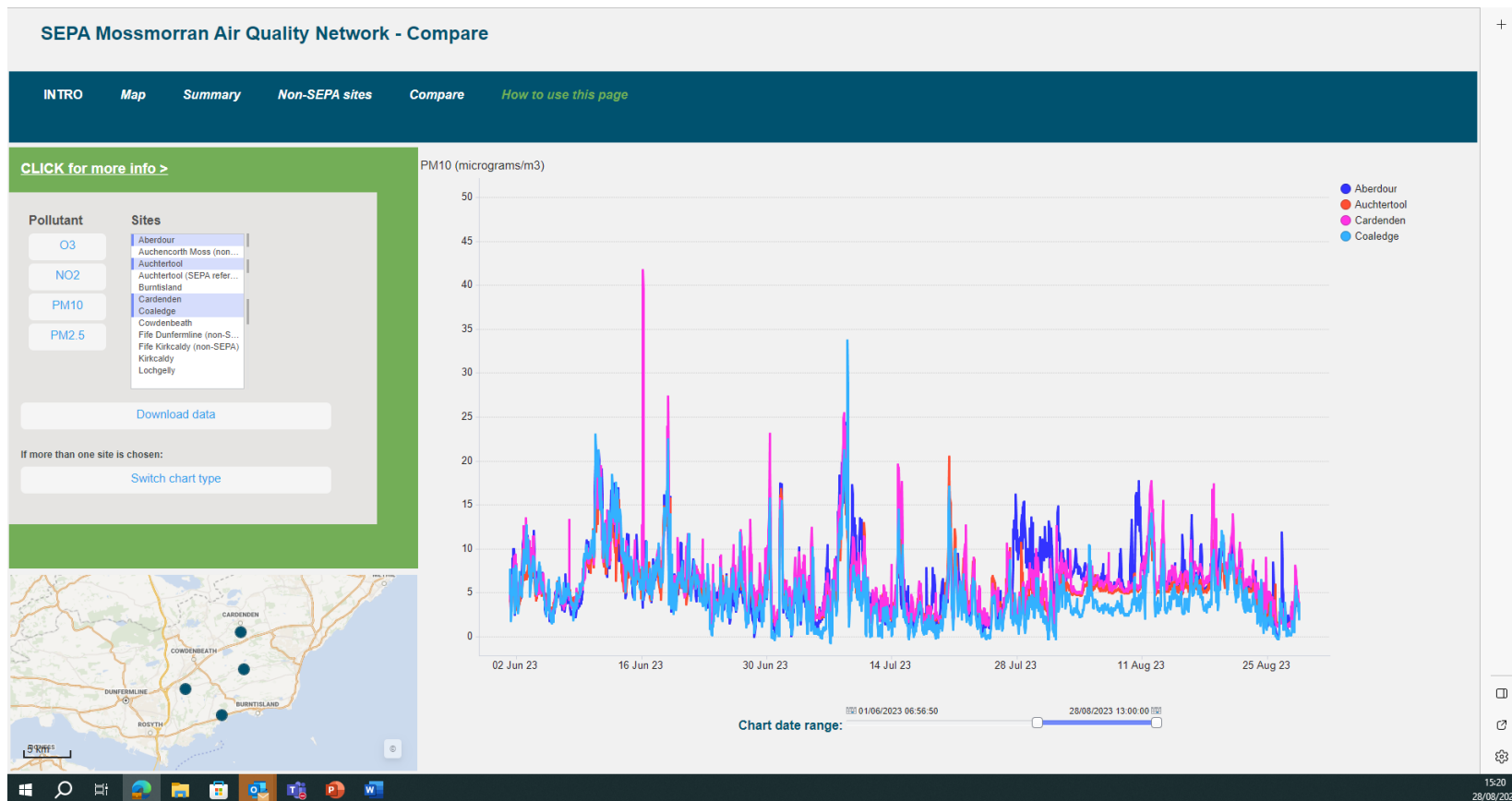


# Lamp Post Mounted Sensors



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- Air Quality network



## • Outcome

- Reduced flaring events
- New Ground flare – when flaring did happen no community complaints and no distinct change in noise or air quality readings in the community.

**ExxonMobil**

NEWS RELEASE: 29.06.23

Enclosed Ground Flare brought online at FEP



## • Outcome

- Community are more informed
  - More information on how we regulate
  - More information on our response to complaints and events
  - More information on air quality in their area
- We have more information
  - Being used to inform the approach to regulating other sites
  - Being used to inform better deployment of resources/staff



# Thank you

## Contact details

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