

# NRW have no dump-site licence for LU110 Cardiff Grounds “*dispersal site*”

NRW claim to have no previous documents,

## Wales has a list of designated open/closed marine disposal sites

## NRW assessed the dumping application “on its merits”

We found WG Marine Consents Unit letter 2012:

# asked CEFAS for their view on “EIA not necessary” – CEFAS agreed

WG/CEFAS 2020 desk study monitoring review

# no modern review of the capacity and wildlife effects

## WG is **non-compliant with international law - OSPAR**

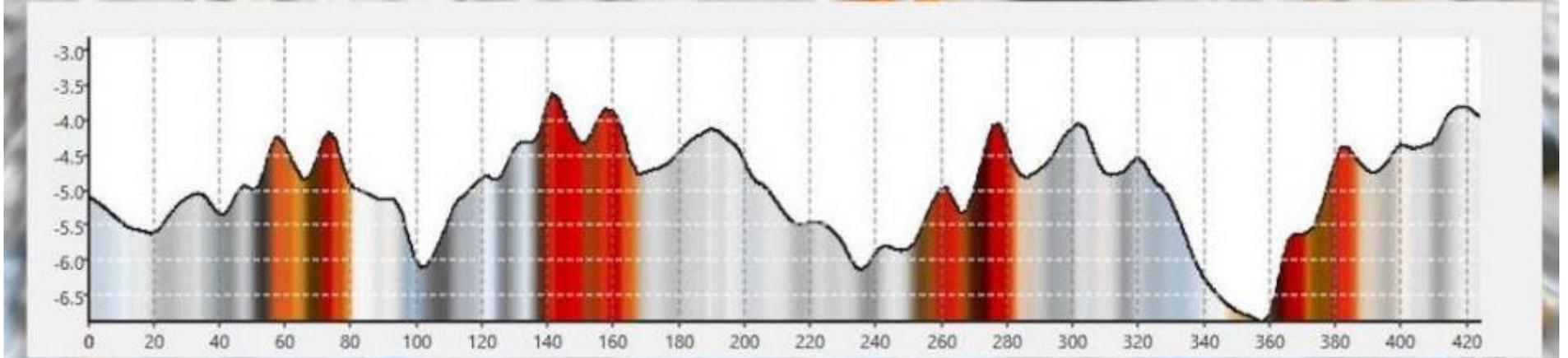
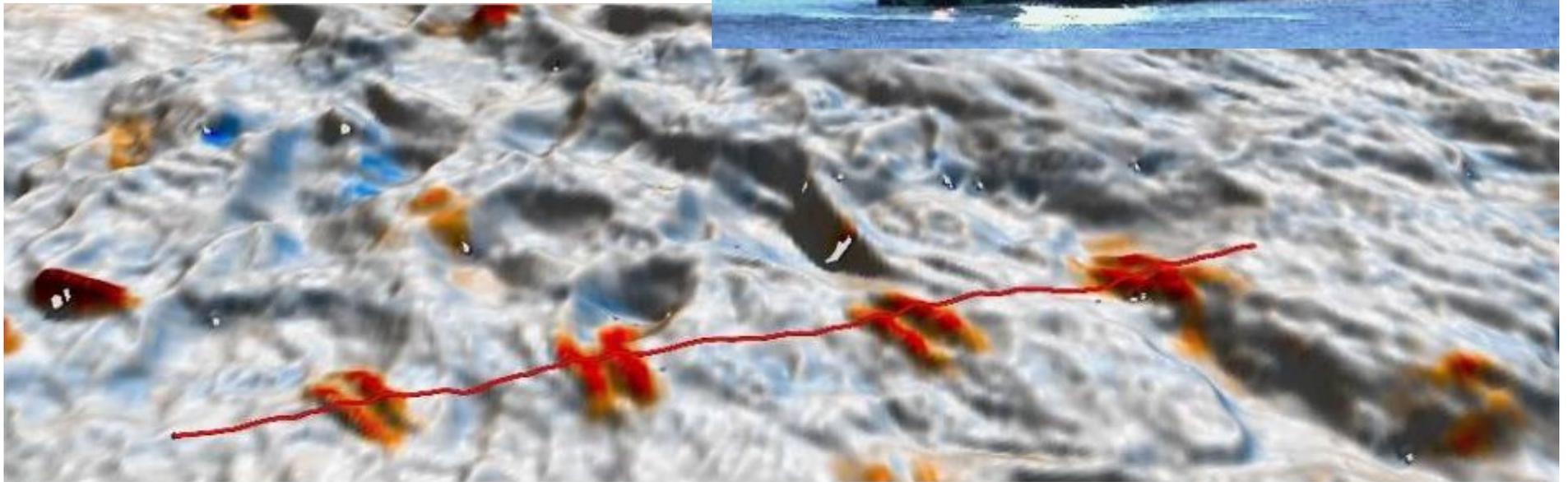
## ***Titan Environmental site survey 2019***

Compared 2017 seabed radar mapping with repeat survey in 2018 after the dumping  
NRW insists the dredgings “disperse”.

CEFAS – employed by EDF – re-calculated the Titan data to say just 100 m<sup>3</sup> remains out of the 82 000m<sup>3</sup> dumped.

**Humps on Sea-bed are very visible**





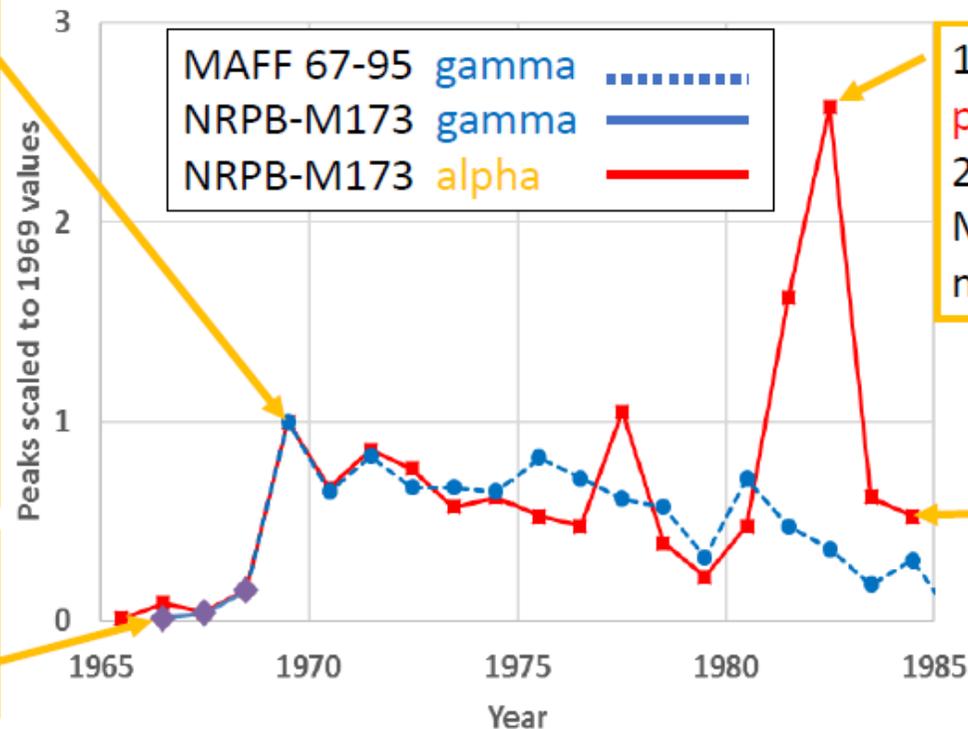
# Prof. Keith Barnham's Detective story: secrecy over 1960s bomb-Plutonium

Hinkley A: Magnox used fuel loaded into cooling ponds, pre Sellafield *sludge* from fragments - especially in 1969 (stop diversion to military)

EA claim: "an incident...led to...fission products" (gamma emitters)  
*In pond in 1969: 1 fission atom  $\approx$  1 plutonium atom  $\approx$  500 uranium atoms*

Such a massive fission product peak that leak doesn't affect amount left in pond & gammas in leak decay exponentially. Not just "an incident"

MAFF 67-95: no gamma data 66-68  
 NRPB: large peak



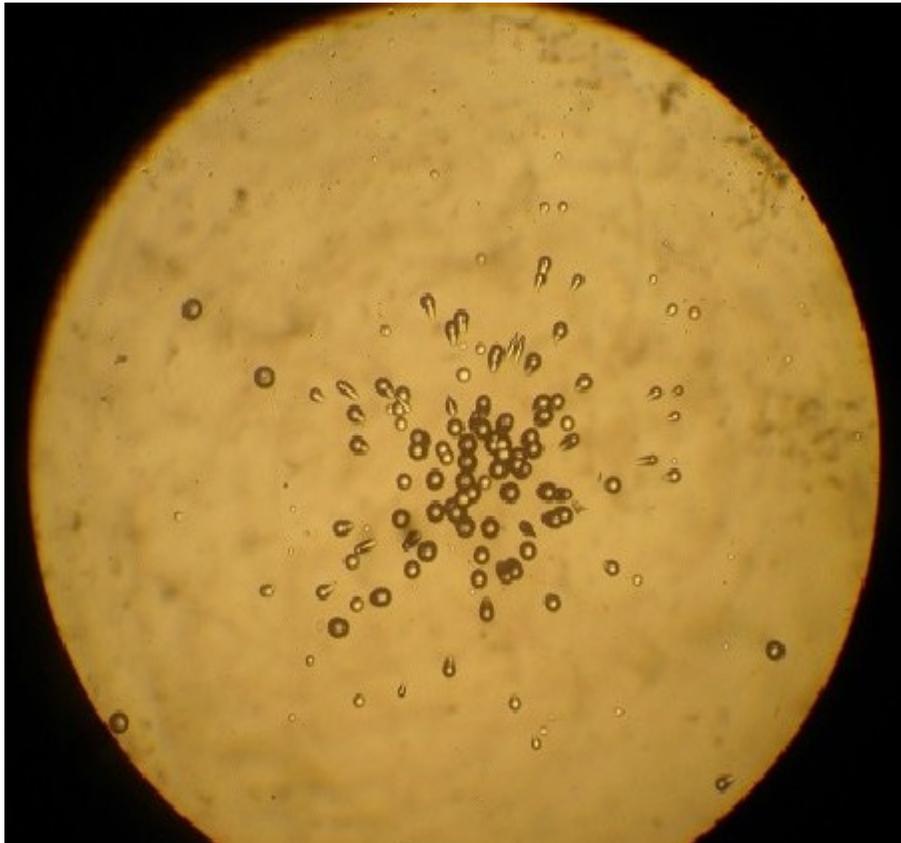
1982, larger plutonium peak but no gamma peak  
 2001, EA prosecuted Magnox for "poor maintenance of...filters"

Westminster stopped plutonium testing?

- 1969 in pond large gamma peak meant large plutonium peak
- 2018 low gamma signal does NOT mean low plutonium in mud

# Detective story (2)

**Magnox plants emit U particles to air** UNSCEAR 2000 1990-1997 figures  
**Traces in Hinkley soils and sediments** Am-241 from Pu-241, high U-235, Eu-145  
**EDF/CEFAS sampling of deep sediments** - 5 cores in 2009 - U, Ra higher at depth  
**CRIIRAD sampling mud from River Parrett tidal estuary** – sensitive Am-241  
**Vehicle Air-Filter** - car used only in Hinkley Point area  
=> **nuclear contamination spreads outside the Nuclear Power Station**



***Thin layer of dirt***

***smeared on CR-39 sheet***

**Exposed few days, then etched**

**Plutonium and Uranium atoms**

**# many billions in a micro-particle**

**# emit alphas from almost a point**

**# CEFAS spectrometry cannot see this pattern.**

**Davidson's 'experts' dismissed us**

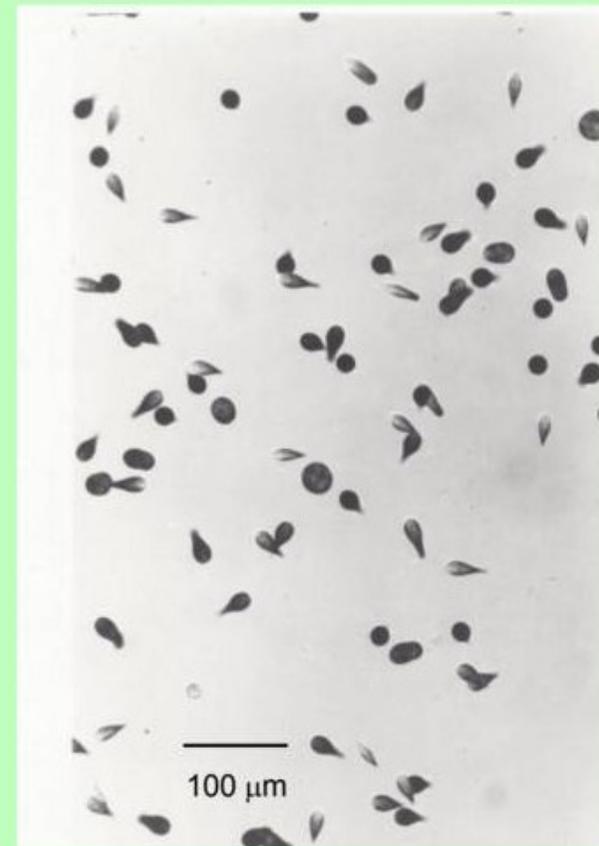
**- their "hot" particles 100X bigger**

# Alpha detection of microparticles - CR-39 technique

*Children with Cancer* + Prof Henshaw Bristol Uni informed NRW  
EDF/CEFAS refused – said “*alpha-spectrometry*”

## Photomicrograph of $\alpha$ -particle tracks in TASTRAK\*

- In practice  $\alpha$ -particles enter the plastic at a variety of dip angles and degree of penetration.
- In all cases the track structure can be simulated from the measured relationship between track etch rate and residual range/energy in the plastic shown in the previous slide.



\*Typical etch conditions:  
1 h in 6.25 M NaOH at 98°C  
Solution s.g. 1.181

# Conclude

**1. CEFAS = advisors to Welsh Govt and NRW**

**Pro-nuclear**

**Pro marine dumping**

**2. Cover-up over *nuclear microparticles***

**## not the “hot” particles of Dounreay, Sellafield**

***.....beaches, under fingernails, skin cancer***

**## inhaled micro-particles ..... *lung cancer***

***Smallest into the bloodstream, then organs***

**100 X smaller    10,000 X more numerous**