

From: [REDACTED]
To: [REDACTED]
Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05
Date: 11 July 2023 14:14:00
Attachments: [image001.png](#)
[image002.jpg](#)
Importance: High

Afternoon [REDACTED]

We've had a review of this incident and have decided that since a cause of death (rodenticides) has been found, we will not now go ahead with the additional tests for PAH or PCBs.

Regards

[REDACTED]

[REDACTED]

Cangen Iechyd Planhigion a Diogelu'r Amgylchedd (CIPDA) | Plant Health and Environmental Protection Branch (PHEPB)

Is-adran Tir, Natur a Choedwigaeth | Land, Nature and Forestry Division

Y Grwp Newid Hinsawdd a Materion Gwledig | Climate Change and Rural Affairs Group

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[REDACTED]

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From: [REDACTED]
Sent: Friday, June 30, 2023 2:25 PM
To: [REDACTED]
Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Hi [REDACTED]

I'm sorry for the delay. Our results were delayed as the analyst with expertise in the area was validating a new method for analysis of samples for a wide range of different PFAS compounds, in addition to the groups of PFAS compounds covered by the guidelines for foodstuffs. From what I can tell – and this is an area I am still learning - the current guidance on levels of PFAS in food stuffs only came out late last year

and guidelines on environmental samples has not yet been set.

I have the results, and have been doing some digging so that instead of just providing you with a list of numbers that likely won't make sense, I can give you some indication of relevance.

Also - [REDACTED] is in occasionally (despite being retired!) and I wanted to discuss best approach for interpretation of results with her before getting back to you. She was in yesterday and we had a long discussion and both agree. I planned in some time weds/thurs next week to get this to you.

I hope this is ok.

[REDACTED]

From: [REDACTED]
Sent: Friday, June 30, 2023 12:43 PM
To: [REDACTED]
Subject: FW: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Afternoon

Sorry to be a pain but have you had a reply re the results for PFA testing?

[REDACTED]

[REDACTED]
[REDACTED]
[Cangen Iechyd Planhigion a Diogelu'r Amgylchedd \(CIPDA\) | Plant Health and Environmental Protection Branch \(PHEPB\)](#)
[Is-adran Tir, Natur a Choedwigaeth | Land, Nature and Forestry Division](#)
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Ceredigion SY23 3UR
[REDACTED]
[REDACTED]
[REDACTED]

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From: [REDACTED]
Sent: Wednesday, June 21, 2023 8:40 AM

To: [REDACTED]

Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Yes please

[REDACTED]

[REDACTED]

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From: [REDACTED]

Sent: Tuesday, June 20, 2023 5:50 PM

To: [REDACTED]

Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

[REDACTED]

There is a good chance the PAH analysis can be done on week beginning 03/07/2023. Do you want me to submit the fox?

[REDACTED]

From: [REDACTED]

Sent: Tuesday, June 20, 2023 12:08 PM

To: [REDACTED]

Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Sorry for not replying sooner. If it's not too late, can you arrange for PAH and PCB testing to go ahead?

Any results for PFAS?

[REDACTED]

[REDACTED]

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From: [REDACTED]

Sent: Friday, June 9, 2023 9:10 AM

To: [REDACTED]

[REDACTED] : FW: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Hi [REDACTED]

Sorry – further update. There is a batch of PAHs due to be done on w/b 20th June. If you want us to proceed please let me know and I'll ensure it's included

I'll let you know when we have something from the PFAS analysis

[REDACTED]

From: [REDACTED]

Sent: Thursday, June 8, 2023 5:09 PM

To: [REDACTED]

Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Hi [REDACTED]

From what I can tell the 1st five compounds on the list are PAHs and we can screen for these

benzoanthracene (referred to as benzo[a]anthracene)

benzofluoranthene (benzo[b]fluoranthene, benzo[k]fluoranthene and benzo[j]fluoranthene)

chrysene

fluoranthene

phenanthrene
pyrene

I been given a quote of £333 per sample. The remaining compounds on the list I am drawing a bit of a blank on though

I have asked what the lead time what be for the PAHs

I have also asked for progress on the PFAS results, but no response yet

Please let me know if you want us to go ahead with the PAHs

[REDACTED]

From: [REDACTED]
Sent: Wednesday, June 7, 2023 3:16 PM
To: [REDACTED]
Subject: FW: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Sorry to be a pain, but have you had a chance to look at my email below?

[REDACTED]

[REDACTED]

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From: [REDACTED]
Sent: Tuesday, May 23, 2023 3:14 PM
To: [REDACTED]
Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Thanks [REDACTED] for getting this done and providing a list of chemicals that can be tested for. I'm afraid it's all double dutch to me! Basically, can you tell me if any of the long list of chemicals that have been found on the site (see the last email below) are included in this list?

[REDACTED]

[REDACTED]

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From: [REDACTED]
Sent: Tuesday, May 23, 2023 12:39 PM
To: [REDACTED]
Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Hi [REDACTED]

I have contacted the department that do PCB analysis and they can analyse for PCBs at a cost of £576, with a potential for additional PBDEs if you think these are needed. As this is only 1 sample they would need to include it among the next batch of samples, so it won't be quick – minimum lead time of 6 weeks. I haven't had results from PFAS analysis yet, I will chase this up

Dioxin & PCBs - Analytes included in the dioxin & PCB analysis including possible additional analyte options

Standard analysis (£576 per sample)				Optional extra (+£112)	
All 17 2,3,7,8-chloro substituted PCDD/Fs	Dioxin Like PCBs	ICES-VI (Indicator) PCBs	Other PCBs	PBDEs	
2,3,7,8-TCDD	PCB 77	PCB 28	PCB 18	BDE-17	
1,2,3,7,8-PeCDD	PCB 81	PCB 52	PCB 31	BDE-28/33 ^a	
1,2,3,4,7,8-HxCDD	PCB 126	PCB 101	PCB 47	BDE-47	
1,2,3,6,7,8-HxCDD	PCB 169	PCB 138	PCB 49	BDE-49	
1,2,3,7,8,9-HxCDD	PCB 105	PCB 153	PCB 51	BDE-66	
1,2,3,4,6,7,8-HpCDD	PCB 114	PCB 180	PCB 99	BDE-71	
1,2,3,4,6,7,8,9-OCDD	PCB 118		PCB 128	BDE-77	
2,3,7,8-TCDF	PCB 123			BDE-85	
1,2,3,7,8-PeCDF	PCB 156			BDE-99	
2,3,4,7,8-PeCDF	PCB 157			BDE-100	
1,2,3,4,7,8-HxCDF	PCB 167			BDE-119	
1,2,3,6,7,8-HxCDF	PCB 189			BDE-126	
1,2,3,7,8,9-HxCDF				BDE-153	
2,3,4,6,7,8-HxCDF				BDE-138	
1,2,3,4,6,7,8-HpCDF				BDE-154	
1,2,3,4,7,8,9-HpCDF				BDE-183	
1,2,3,4,6,7,8,9-OCDF				BDE-209 ^c	

Please let me know if you want us to go ahead with this.

From: [REDACTED]

Sent: Tuesday, May 16, 2023 1:11 PM

To: [REDACTED]

Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Afternoon both

Following on from the emails I've received re this fox and the fact that it was found in an area where there have been recent problems with contaminated fluid leaking from a quarry where Monsanto dumped PCBs and other chemicals in the 60s and 70s, is it possible to test for PCBs? Is this something that FERA can do? And if so, how much would it cost?

Regards

[REDACTED]

[REDACTED]
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From: [REDACTED]

Sent: 09 May 2023 14:43

To: [REDACTED]

Cc: [REDACTED]

Subject: RE: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

Hi [REDACTED]

Wow that is quite a list of chemicals! I will pass on, and discuss with others - but I doubt many of these will be included?

The main reason for including this fox (particularly as we already have a cause of death) is as a "real sample" method check for the osprey (samples are spiked as well, but good to have a potentially positive sample too). From other work we have done for England, we know that foxes are often contaminated with PFAS, so this is a good species to use and one from a potentially contaminated site even better?!

Cheers,

[REDACTED]

From: [REDACTED]

Sent: 09 May 2023 14:23

To: [REDACTED]

Cc: [REDACTED]

Subject: FW: Dead fox found at Ty Llwyd Quarry, Ynysddu - W/23/05

[REDACTED]

Thank you for carrying out the extra testing on the fox. I sent the initial toxicology results to the finders and received the reply below. Will the additional tests pick up any of the chemicals listed?

[REDACTED]

[REDACTED]

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From: [REDACTED]

Sent: 09 May 2023 14:12

To: [REDACTED]

Cc: [REDACTED]

Subject: Re: Dead fox found at Ty Llwyd Quarry, Ynysddu

Dear [REDACTED]

Thanks for this helpful update. Please find attached a list of chemicals officially found this year in the vicinity of the flow the fox was found near, which our team would be grateful if you would test for:

benzoanthracene ("should be handled as a carcinogen and mutagen - with extreme caution")

benzofluoranthene ("reasonably anticipated to be a human carcinogen" eg IARC)

chrysene ("the primary hazard is the threat to the environment. Immediate steps should be taken to limit spread")

fluoranthene ("List of Substances of Very High Concern due to its very persistent, very bioaccumulative and toxic")

phenanthrene ("very toxic to aquatic life with longlasting effects")

pyrene ("pyrene is toxic to liver and kidneys.....affects several living functions in fish")

16/2/23:

1,2,4 trichlorobenzene ("affects the liver and kidney, and is possibly a teratogen")

1,4 dichlorobenzene ("may reasonably be anticipated to be a carcinogen")

2,4,5 trichlorophenol ("very toxic to aquatic life with longlasting effects")

2,4 dimethylphenol ("toxic to aquatic life with longlasting effects")

2 methylphenol 4.93 micrograms/l ("carcinogenic" "toxic to aquatic life with longlasting effects")

4 chloroaniline 148 ("very toxic to aquatic life with longlasting effects")

azobenzene ("genotoxic" "carcinogen" "very toxic to aquatic life with longlasting effects")

diethyl phthalate 53.2 ("in animals...caused skeletal malformations")

pentachlorophenol 15.9 ("long-term exposure to low levels...can cause damage to the liver, kidneys, blood and nervous systemexposure to PCP is also associated with carcinogenic, renal and neurological effects. ... banned")

nitrobenzene ("highly toxic... may cause serious damage to the central nervous system.....likely human carcinogen")

isophorone 9.5 ("this chemical is on the Special Health Hazardous Substance List because it is a carcinogen")

4 nitroaniline ("nitroaniline is particularly harmful to all aquatic organisms and can cause long-term damage to the environment")

Please test for PCBs rather than PFAS. The PFAS problem is more in RAF hangar surround soil and the like from flame retardant use rather than in the Monsanto toxic sites.

Any acute acting toxin regarding the fox is more likely to be VOCs rather than PCB, so I'd test for the full range of those. My lungs were so bad on visiting both Maendy Quarry and Ty Llwyd that I thought I was going to pass out. My vision was also affected for over an hour.

The PCBs are already in the river Sirhowy and have been for over twenty five years. Predictably given the sensitivity, more recent testing appears not to have been done. As said previously, if anyone approaches you suggesting anything unusual or untoward, including security services, please make a careful note for possible later court oversight. Thanks.

I attach a copy of the factsheet which also pictures the setting and flow. Please feel free to contact [REDACTED] at Exter University Greenpeace Lab for informal discussion about his additional findings, reported last week by the Press Association.

Best wishes,
[REDACTED]

On Tue, 9 May 2023 at 13:41, [REDACTED] wrote:

Good afternoon [REDACTED]

I've now received both the post mortem and the toxicology results on the dead fox that was found at Ty Llwyd Quarry, Ynysddu.

Post mortem examination found the fox to be a female in good body condition but had not eaten well prior to death. She tested negative for avian influenza. The most significant finding on post-mortem examination was the large volume of red fluid in the thoracic cavity. Although there were no significant blood clots present, the fluid was dark red and appeared consistent with a haemothorax. However, there was no visible

signs of trauma in this fox. The stomach contained dark brown liquid, the small intestine contained orange-brown liquid and the large intestine contained scant brown-green content.

Tissues were sent to the analytical laboratory where tests for range of likely pesticides were undertaken on the submitted samples. These tests have detected and confirmed residues of the rodenticides brodifacoum and bromadiolone in the liver of this fox. Tests for metaldehyde, carbamates, organophosphates and organochlorines tested negative.

There were haemorrhagic signs reported on post mortem with no visible traumatic cause and together with the amount of brodifacoum found (0.68mg/kg) it is likely that this exposure contributed to the death of this fox. However, the bromadiolone residue (0.011mg/kg) is consistent with exposure levels only. The source of the brodifacoum is unknown but is likely to be from rodent control treatments in the area.

Due to the background history of the quarry, further testing for PFAS will be carried out on tissues from the fox. I will get back in touch once I've received the results of these extra tests.

Regards

[Redacted]

[Redacted]

Cangen Iechyd Planhigion a Diogelu'r Amgylchedd (CIPDA) | Plant Health and Environmental Protection Branch (PHEPB)