

Isotopic ratio of Urine sample supplied by Mr Ray Fox
formerly of 337 Wokingham Rd Earley, Reading, and its
significance.

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I have been involved in the case of Mr Ray Fox, formerly of 337 Wokingham Rd, Earley, Reading, since the late 1990s, when Mr Fox complained that he had been exposed to radioactive contamination whilst clearing out a landwater drain on the property which had an illegal connection to the former Shell Depot which had existed on the site behind his property. In 2003, I was asked by the BBC to investigate the levels of radioactivity in this drain at the end of the garden of 337 Wokingham Rd and did so on 17th June 2003. This was further to some earlier evidence from uranium and plutonium soil measurements which I had examined and on which I had reported. I had stated that the level of plutonium-239 in the soil, and the isotopic ratios of U238 and U-235 suggested that there had been contamination of the garden and house at this address by isotopes from a nuclear reactor or bomb. In connection with this, there had been evidence brought forward that the site to the north of the property, previously owned by Shell, had been the location of an underground nuclear reactor and experimental nuclear laboratory which had suffered some accident in the 1980s and had been abandoned.

I also made a brief gamma spectrometric survey of radioactivity in the vicinity of the property on behalf of the BBC to see if there was any other evidence for the existence of this reactor. Results were inconclusive; the drain had been power-cleaned by Shell operatives shortly after Mr Fox's original complaint and although the isotopic composition of the samples I took were unusual, they did not show the uranium or plutonium levels that had been found in the earlier samples that had been analysed. There were parts of a road adjacent to the ex-Shell depot which were significantly radioactive, but no samples from the road were taken and nothing further was done. Following this, complaints were made to the European Commission Mr Fox. The EC attempted to investigate the matter on the basis that the uranium isotope measurements suggested highly enriched uranium in the soil at 337 Wokingham Rd, but the UK government were uncooperative and the affair is apparently continuing.

Throughout this, Mr Fox has been ill and has blamed his ill health on his initial exposure to the tarry substance that he cleaned out of the drain. He has been treated, since the initial exposure by Dr Joseph Kees in Germany who conducted various analyses of serum and urine samples taken from Mr Fox. Fox believes, and I agree, that exposure to the black tarry substance he cleared from the drain was (a) the cause of his illness and was (b) some radioactive material discharged from the alleged underground nuclear reactor at the Shell site. If this is so, then the reactor is still there, underneath a new housing estate, 'Amber Close'. In this whole affair, one interesting aspect is the tissue and urine levels of Uranium in Mr Fox reported by Dr Joseph Kees. Kees had various analyses carried out on Mr Fox's samples. The reported results and the dates of the analyses are given in Table 1 below.

The sensitivity limits shown by the Kees results suggest that the method employed was not very sensitive, nevertheless, the concentrations found after 2001 are astonishingly high and would imply that there has been heavy uranium contamination, easily enough to account for the ill health experienced by Mr Fox. For comparison we may employ the measurements of uranium made in urine tests on the 400 or so Gulf War 1 veterans, or indeed on the normative study carried out in connection with that exercise (DUOB 2005). These showed about 3 to 5 ng of uranium with an isotopic ratio, U238/B235 of 137.88 with a standard deviation for the ratio of less than 1.0. Levels of

total uranium in the veterans and the UK population rarely exceed 20ng/l, yet Mr Fox is reported to have in excess of 1000ng/l in 2001.

Table 1. Total uranium in samples from Ray Fox according to Reports of Dr Joseph Kees

Sample	Date	Uranium concentration
urine	23/10/97	<200ng/l
Blood	22/12/97	<100ng/l
urine	31/10/97	200ng/l
Blood	22/01/98	400ng/l
urine	09/01/98	<200ng/l
Urine	2001	*1600ng/l
Urine	2007	*400ng/l

To attempt to shed light on this unusual situation and investigate the origin of the uranium I asked Mr Fox to supply a urine sample in December 2007 for high resolution uranium isotope testing, using one of the two labs that carried out uranium isotope tests on the Gulf veterans for the DUOB. A 50ml urine spot sample was supplied in a special uranium free container and this was frozen and sent to the Harwell laboratory for high resolution ICPMS. The result is given in Table 2.

Table 2. Uranium concentration and uranium isotope ratio found in urine of Ray Fox, supplied December 2007.

Sample	U concentration	U238/U235 ratio
Ray Fox	1.77+-0.09	134.24+-2.84
QC 20.00 standard	20.00+-1.00	137.90+-1.52

The Harwell Scientifics laboratory concluded "the isotope ratio of this sample is slightly lower than the natural value (137.90, circa 136.74 to 139.02). This may indicate slight presence of enriched Uranium."

In agreement. This result shows two things. First, it is difficult to square this total uranium concentration with the very high levels reported by Kees. Second, Mr Fox has been contaminated at some time in the past with enriched uranium.

With regard to the first point, the method employed by Kees laboratory is clearly relatively insensitive, and if the measurements reported result from some contamination in 1996 it is hard to see how the levels increased after 2001 relative to those found in 1997/98. Nevertheless, this matter is not satisfactory and more samples should be analysed.

More important however is the clear finding of enriched uranium in Mr Fox's urine. The method is extremely sensitive and has been used to examine the Gulf War veterans: the ratio of 134.24 shows the existence of enriched uranium in Mr Fox's body. Since this is now 10 years after the initial exposures, I can roughly calculate the levels of

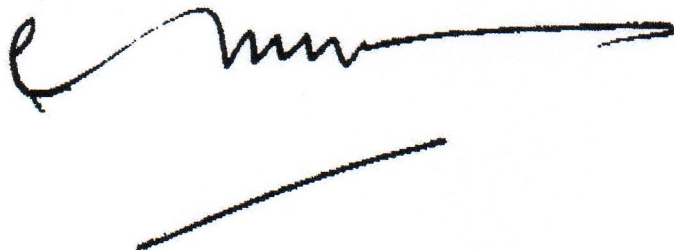
contamination that initially occurred using the biokinetic equations employed by the Royal Society and the DUOB for Gulf War exposures. This supports the belief that the material in the drain and in Mr Fox's garden contained enriched uranium, and that it was exposure to this material that was the principal cause of Mr Fox's ill health. And this also is further evidence for the existence of the source, the reactor underneath Amber Close.

Conclusions and recommendations

The measurements of uranium in a urine sample from Mr Ray Fox carried out by Harwell Scientifics for Green Audit in February 2008 show the presence of slightly enriched uranium. Since this is still there and being excreted some 12 years after his exposure suggests that that was significant. It is not possible to calculate the original exposure without knowing the proportion of the material that is due to normal everyday ingestion. However, its clear existence supports the belief that Mr Fox was exposed to radioactive waste material from the nuclear reactor or some nuclear research facility upstream of the drain being cleared by Mr Fox in 1996. The evidence is that there may have been, and therefore may still remain, an underground nuclear facility or reactor at the former Shell site at Earley.

I recommend that funding is made available for further independent examination of urine samples from Mr Fox, and that the area of the former Shell depot, now a housing estate 'Amber Close', be subjected to magnetometer or other appropriate investigation to locate the reactor, and that the reactor and associated radioactivity be removed as a matter of public health safety.

Chris Busby
Feb 20 2008

A handwritten signature in black ink, appearing to read 'Chris Busby', with a long horizontal stroke extending to the right. Below the signature is a single horizontal line.