

**Radioactive Particles on West Cumbrian Beaches  
- the case for the provision of signs to advise the public -**



**A Review by CORE [Cumbrians Opposed to a Radioactive Environment]  
August 2013**

## **The case for the provision of signs on West Cumbrian beaches to advise the public on the presence of radioactive particles and associated health risk.**

**A Review by CORE [Cumbrians Opposed to a Radioactive Environment].**

### **Current Advice for West Cumbrian beach users.**

The current advice from the Health Protection Agency (HPA now Public Health England) in relation to the presence and health risks of radioactive particles on West Cumbrian beaches adjacent to the Sellafield site is that *'based on the currently available information ... the overall health risks to beach users are very low ...'*<sup>1</sup>

Originally provided in 2009, that advice was confirmed by HPA in 2011<sup>2</sup> in a report based on data from the Groundhog Evolution beach monitoring system. The advice was re-confirmed by HPA in a 2012 report<sup>3</sup> in which data from the Groundhog Synergy system was evaluated - with Synergy's increased sensitivity being credited with detecting the increase in radioactive particles now being recorded on West Cumbrian beaches. Whilst the improved detection capability of Synergy is a positive advance, it can neither mask nor diminish the fact that an increase in radioactive particle numbers is being found and, with it, a greater potential for radioactive particles to be encountered by beach users who therefore face an increase in health risk.

This increase in the number of radioactive particles being found not only undermines the statement that *'no special precautionary actions are required at this time to limit access to or use of beaches'*<sup>4</sup> but also raises the inevitable questions about the validity of HPA's advice and the many uncertainties that underscored it when it was confirmed in 2011. These uncertainties include:

- *The monitoring on some of the beaches has been limited both in extent and frequency and so it cannot be ruled out that some relatively high activity objects may be present but have remained undetected*<sup>5</sup>
- *There are inevitably uncertainties associated with the estimation of the likelihood that beach users encounter an object while using the beaches*<sup>6</sup>
- *.... the capabilities of beach monitoring systems for detection of alpha-rich objects may not meet the requirements arising from a consideration of the health effects in the event that ingestion of an object occurs*<sup>7</sup>
- *In some circumstances, uncertainties in the estimate of the number of objects present can be quite large*<sup>8</sup>

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<sup>1</sup> HPA CRCE-018 Health Risks from Radioactive Objects on beaches in the Vicinity of the Sellafield Site, April 2011. Summary, page iii

<sup>2</sup> HPA CRCE-018 Health Risks from Radioactive Objects on beaches in the Vicinity of the Sellafield Site, April 2011.

<sup>3</sup> HPA CRCE-038. Evaluation of the Groundhog Synergy Beach Monitoring System For Detection of Alpha-Rich Objects and Implications for the Health Risks to Beach Users, August 2012.

<sup>4</sup> Sellafield Ltd Beach Monitoring Update to WCSSG Environmental Health Sub Committee. 30/5/13

<sup>5</sup> HPA CRCE-018 Health Risks from Radioactive Objects on beaches in the Vicinity of the Sellafield Site, April 2011, Executive Summary, page iv.

<sup>6</sup> Ibid para 7.1 page 30

<sup>7</sup> Ibid para 7.2 page 31

In reality, HPA's advice on the use of West Cumbrian beaches and the risks associated with encountering a radioactive particle is unlikely to have come to the attention of most members of the general public using West Cumbrian beaches - many arriving for a family holiday from elsewhere in the UK. The latter, in particular, will have little idea that radioactive particles are routinely found on the beaches and even less idea of the potential for encountering particles or the health risks posed by such encounters.

The current absence of signs, which ensures that beach users are kept in the dark about the presence of radioactive particles on West Cumbrian beaches, stems principally from HPA's conclusion that, based on the currently available information and the 'very low' risk, signs are unnecessary. It also stems from a reluctance on the part of local authorities who believe that such signs would act as a deterrent to beach users and thus have an adverse impact on West Cumbria's tourist trade. This belief, which has not been tested and cannot therefore be substantiated, is countered however by the experience of sign usage at Dounreay's Sandside Bay (see section 4 on current use of beach signs).

Whilst the Human Rights Act infers that local authorities have a duty to ensure that the public are informed of environmental risks, the West Cumbria authorities clearly do not recognise such a duty. To the contrary, their reluctance to sanction the use of beach signs has not only enabled environmental information on the presence of radioactive particles on beaches to be withheld from beach users, but has also resulted in the deliberate abandonment of official beach monitoring during peak holiday periods<sup>9</sup>.

That Sellafield Ltd, whose decades of authorised and accidental sea discharges from its reprocessing and other operations have been the original source for radioactive particles, unsurprisingly concurs with HPA's view that beach signs are not necessary – even if its concurrence contains an undoubted element of relief in that the use of signs would tarnish its already challenged environmental credentials and damage its corporate image.

In short, HPA's current advice together with local authority reluctance and Sellafield's somewhat self-serving acceptance of HPA advice means that visitors to West Cumbrian beaches remain oblivious to the presence of radioactive particles on those beaches. Without some form of signage (already in use on other UK beaches) beach users are effectively denied the basic human right to choose whether or not to subject themselves and their families to the 'very low' risk cited by HPA - that choice resting on what will be substantially differing levels of concern depending on individual circumstances<sup>10</sup>.

Further, the HPA advice that the risks are 'very low' is an unjustifiably sweeping statement given the range of uncertainties surrounding the potential for beach users to be subjected to higher levels of risk. For example, in a recent addition to the already acknowledged uncertainties, a report commissioned by the Environment Agency, quotes an HPA contributor as confirming that '*there is a possibility that particles with very much higher levels are present in the environment and have not been detected to date*'<sup>11</sup>.

Giving details of the highest activity 'alpha-rich' particle recovered to date (on Sellafield beach), the same report warns that the ingestion of that particle would potentially give rise to a committed effective dose of around 20 mSv *that was twenty times the annual dose limit for a member of the public*<sup>12</sup>. For a 1-year old child and a three month old infant the committed effective dose would be 55 mSv and 300 mSv respectively.

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<sup>8</sup> Ibid para 8.2.2 page 33

<sup>9</sup> See Sellafield Ltd. Particles in the Environment, Annual Report for 2011/12 and Forward Programme, June 2012. Figure 51, page 96

<sup>10</sup> A pregnant mother or family with young children are more likely to have a greater level of concern than a die-hard dog-walking Sellafield worker.

<sup>11</sup> Report for the Environment Agency by Eden Nuclear & Environment. February 2013, Para 2.2.27, page 8

<sup>12</sup> Ibid

CORE's case for the use of beach signs is predicated, in the first instance, on the many acknowledged uncertainties that currently underscore and weaken HPA's advice, and on a pressing requirement to employ a method of disseminating information that fulfils the basic human right of individuals to be provided with such information.

CORE submits that the case for the use of beach signs is further strengthened by taking into account the following issues and events that have emerged since HPA confirmed its 2011 advice:

- The implications of the health risks of offshore radioactive particles
- Sellafield Ltd's beach monitoring programme – increasing finds and reduced monitoring
- Findings of CORE's beach poll conducted in July 2013, and public access to relevant information.
- Current Use of Beach Signs in the UK.

Detailed in the following Sections of this CORE Review, these issues make a compelling case in their own right, either individually or in combination, for the use of beach signs. In addition, they further undermine the validity of HPA's current advice which should be reviewed with urgency.

A review in isolation, however, cannot on its own raise the necessary level of public awareness if its findings are themselves simply to languish in official websites or remain absent from local sources such as public libraries as is the case today (see section 3 Findings of CORE's beach-user survey).

## **1. A report for The Environment Agency on the health risks of 'offshore' radioactive particles.**

In its presentation to the West Cumbria Sites Stakeholder Group (WCSSG) in May 2013, the Environment Agency reported the view of a beach particle working group that: *“the current population size, activity distribution and movement of offshore particles are not sufficiently well known to reassure regulators and other stakeholders that the health risks to seafood consumers and other beach users are ALARP (As Low as Reasonably Practicable) and will remain ALARP in the future”*<sup>13</sup>

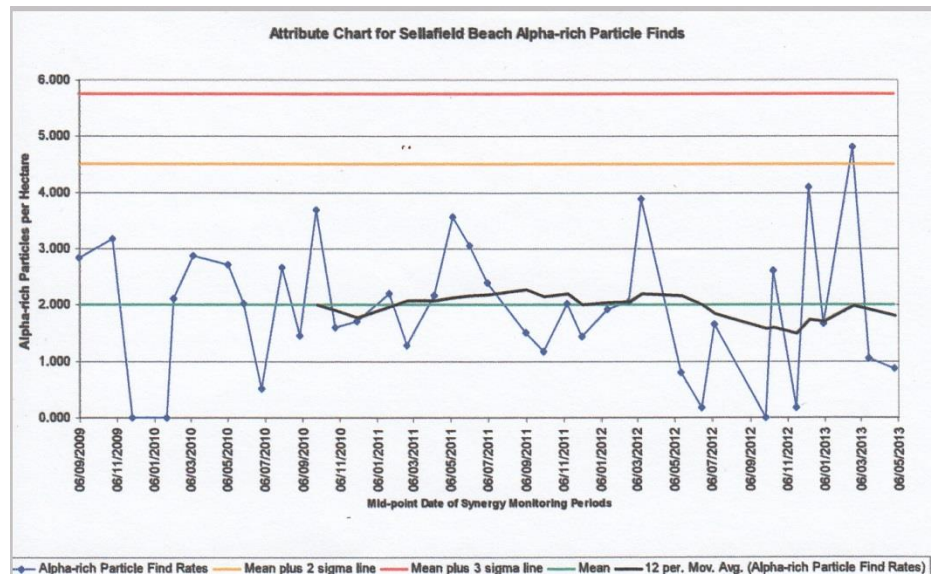
That insufficient is known about the health risks posed by offshore particles serves only to elevate concerns on the level of risk faced by the general public who use West Cumbrian beaches. That regulators themselves cannot be reassured that the health risks posed by offshore particles are ALARP and will remain ALARP in the future wholly undermines HPA's current advice to beach users on health risks to a point that makes the advice at best hard to justify and at worst unsafe.

The well documented cache of offshore particles, deposited by decades of Sellafield's authorised and accidental discharges from reprocessing and other operations, provides a continuous 'feedstock' for the particles transferring to West Cumbrian beaches.

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<sup>13</sup> Environment Agency Quarterly Report to West Cumbria Sites Stakeholder Group, 1<sup>st</sup> January to 31<sup>st</sup> March 2013. Para 3.4, page 9

The transfer from sea to land is caused by a combination of mechanisms including tide and storm action, and is most recently evident in the unusually large increase in radioactive particle finds (alpha and beta rich particles and beta rich stones) on Sellafield and Seascale beaches in early 2013 as shown in the Sellafield Ltd graph<sup>14</sup> below. The ‘probable’ cause of the increase is cited by Sellafield Ltd as the movement of sediment during a storm event in February.



Whilst the currently attributed cause remains a probability rather than a certainty – any ‘reassurance’ from subsequent monitoring will carry little weight until the exact cause is established. To the general public, such an uncertainty is merely exacerbated by a number of other ‘unknowns’ relating to the source, extent and behaviour of offshore particles. These are raised in a 2013 workshop report for the Environment Agency<sup>15</sup> which admits that the work is based on the perception of workshop attendees of an overall low risk with the caveat that this is subject to considerable uncertainty.

The uncertainties in the report include the admissions that:

- *whether or not radioactive particles in the marine environment offshore from Sellafield constitute a current or future risk to the population such that a regulatory enforcement action is required*<sup>16</sup>
- *the inherent uncertainty in particle activity distribution and likelihood of encounter is not known*<sup>17</sup>
- *uncertainty regarding future risks from seabed particles cannot currently be resolved*<sup>18</sup>
- *whether or not radioactive particles continue to be released through the Sellafield sea discharge pipeline*<sup>19</sup>
- *whether or not the source of particles was from historical decommissioning, surface run-off, site sewage outfall or erosion from site tips*<sup>20</sup>

<sup>14</sup> Sellafield Ltd Beach Monitoring Update to WCSSG Environment & Health Sub Committee, 30th May 2013

<sup>15</sup> Report for the Environment Agency by Eden Nuclear & Environment February 2013. Particles in the Offshore Environment from Sellafield. Report (Data Quality Objectives Workshop 11/112/12)

<sup>16</sup> Ibid para 1.2.10, page 6

<sup>17</sup> Ibid para 2.2.29, page 9

<sup>18</sup> Ibid para 3.2.2.47, page 18

<sup>19</sup> Ibid para 4.1.56, page 20

<sup>20</sup> Ibid

Further to these admissions of the lack of understanding on offshore particles is the prospect of increasingly severe weather events widely forecast to be brought about by climate change. The local implication of such an increase in unpredictable meteorological events, is that the episode of the sharp increase in particle finds observed in February this year and attributed to local storms is likely to be repeated with greater frequency and become the ‘norm’ rather than the exception.

That implication gains further credibility with the view that *‘if the cumulative mechanism for transport is dominated by storm events, a single storm could be more significant than any long-term slow transport mechanism in terms of potentially bringing a large cache of particles to the beach’*<sup>21</sup>.

Should the frequency of such extreme weather events occur as globally predicted, West Cumbrian beaches can expect a greater inundation of particles from the offshore cache in the future - with an accompanying increase in both the potential of encountering, inhaling or ingesting a radioactive particle and level of health risk.

The fundamental objective of the particle monitoring programme is stated as reducing uncertainties in the current risk assessments which conclude that the estimated risks to beach users are acceptable. Given that the programme has operated since 2006, the range of uncertainties that still exist and remain unresolved together with the clear lack of understanding on offshore particles and their transfer to local West Cumbrian beaches, raises the question as to why the precautionary principle has not already been invoked and intervention measures put in place to publicly advise (and thereby protect) beach users through signs or notices.

## **2. Sellafield Ltd’s beach monitoring programme – increasing ‘finds’ and reduced monitoring.**

In early 2013 CORE commissioned an independent assessment of data resulting from Sellafield Ltd’s annual beach monitoring programmes and annual reports – specifically the number of particles found on West Cumbrian beaches and the beach area covered.

The assessment<sup>22</sup> by Research Analyst Peter Morgan in the form of a series of data sheets is at **Appendix 1**. It shows that despite the number of particle finds being on the increase, there has been a significant reduction in recent years in the total beach areas monitored. The latter may well be due to Nuclear Decommissioning Authority budget restraints, but the fact remains that less monitoring is taking place with the result that, however ‘focussed’ the current programme may be, some beach areas in public use are no longer being monitored.

The findings of the independent assessment show that whilst the overall number of radioactive particle finds annually recorded on West Cumbrian beaches has risen from 7 in 2006/07 to 100 in 2008/09 and to 254 in 2011/12<sup>23</sup>. Whilst the finds per hectare has almost doubled since 2008 from 0.69 to 1.25 in 2011/12<sup>24</sup>, the area of beaches monitored in the same period has been slashed by 60% - from 352 to 213 hectares<sup>25</sup>.

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<sup>21</sup> Ibid para 3.2.3.52, page 19

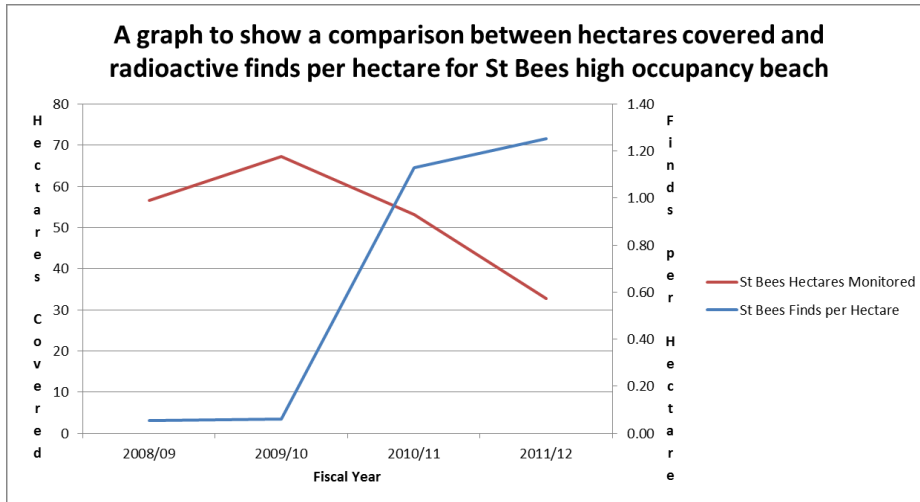
<sup>22</sup> Appendix 1. Peter Morgan, Research Analyst. May 2013 Analysis of West Cumbrian Beach Monitoring for Radioactive Particles and Stones between April 2006 to March 2012.

<sup>23</sup> Ibid Figure 1-1.

<sup>24</sup> Ibid Figure 1-3.

<sup>25</sup> Ibid Figure 1-2

This gulf between particle find numbers and area monitored is amply demonstrated in a graph<sup>26</sup> (copied below) produced in the independent assessment which shows the significant increase in particle finds at St Bees beach from 3 in 2008/9 to 41 in 2011/12, the finds per hectare increase from 0.05 to 1.25, and the hectares covered at St Bees reduced from 56.5 in 2008/9 to 32.69 in 2011/12.



The assessment finds similar disparities to those evident at St Bees at other West Cumbrian beaches and concludes that the increase in find numbers in one year does not lead to increased monitoring in subsequent years. The increase in particle numbers have no bearing whatsoever on the number of hectares subsequently scheduled for monitoring in future years.

### 3. Findings of CORE’s beach-user survey.

On Sunday 7<sup>th</sup> July 2013 CORE carried out a beach-user survey on the ‘high occupancy’ St Bees beach. Through the use of a ‘tick-box’ questionnaire, beach-users were asked the following questions:

1. Are you local to West Cumbria (local) or from elsewhere (non-local) ?
2. Are you aware that radioactive particles from Sellafield are present on this beach ?
3. Do you think you have the right to be told that radioactive particles are present on this beach and think that such information should be displayed on notice boards ?

A total of 92 adults were questioned, 70 of whom were accompanied by a total of 44 children of whom 24 were local to St Bees. Responses to the survey are as follows:

<b>1. Are you local to West Cumbria (local) or from elsewhere (non-local) ?</b>	
<b>Local (40%)</b>	<b>Non Local (60%)</b>
<b>2. Are you aware that radioactive particles are present on this beach ?</b>	
<b>Yes (29%)</b>	<b>No (71%)</b>
<b>3. Do you think you have the right to be told that radioactive particles are present and that such information should be displayed on notice boards ?</b>	
<b>Yes (97%)</b>	
<b>No</b>	

<sup>26</sup> Ibid Figure 2-3

Whilst surveys carried out at other times of the year – such as during off-peak periods where a majority of beach- users might reasonably be expected to be local, surveys undertaken during peak periods (school summer holidays, bank holidays and weekends) are likely to show a greater proportion of non-locals using West Cumbrian beaches, particularly the beach at St Bees which is known as a tourist destination.

The results of the survey carried out by CORE on Sunday 7<sup>th</sup> July 2013 – a warm and sunny weekend – reflect the higher ratio of non-locals to locals. This, together with the relatively high level of ‘unawareness’ of the presence of radioactive particles on St Bees beach (including 24% of locals surveyed) is not surprising given the lack of ‘on-site’ information being available to the public.

What is most notable is the high percentage (97%) of those who considered they did have a right to know about the presence of radioactive particles and considered the use of beach signs as an acceptable means of providing such information. Of similar note is that of the 3% surveyed who said ‘No’ to question 3, all were local – 2 with direct connections with Sellafield.

The results of CORE’s ‘snapshot’ survey leave little doubt that signs advising of the presence of radioactive particles would be approved by ‘locals’ and ‘non-locals’ alike.

Whilst other public beaches such as Seascale, Nethertown and Braystones are similarly inflicted with radioactive particles, St Bees beach was selected for CORE’s survey as being a prime example of a high-occupancy beach on which, as radioactive particle numbers have increased, the area monitored has reduced. Though some beaches to the south of St Bees, particularly Sellafield beach, have recorded a higher number of particle finds and a greater beach area monitored than St Bees – as shown in the most recent beach monitoring report<sup>27</sup>, none attract anywhere near the same visitor numbers, nor offer the same ease of public access as St Bees which also benefits from a significantly wider advertising coverage.

A further incentive for the use of St Bees beach for CORE’s survey was its routine use by the village’s primary and other schools and a number of events that specifically involve children. These include Beach Art and Beach Fun Days which are held annually and designed to attract youngsters of all ages.

A visit by the local St Bees School in July 2013 saw 165 pupils spending the day on the beach and its surrounds. Whilst the event received local media coverage<sup>28</sup> because of a number of severe sunburn cases, CORE notes that the school’s head-teacher confirmed that a full risk assessment for the trip was carried out and a range of measures was put in place to protect the children from the hot weather.

Whether or not the school’s risk assessment included the potential for pupils or staff to encounter radioactive particles on the beach, it begs the question as to how many of the pupils’ parents would have agreed to such a visit had they known about the particles and the risks they posed to their children.

It is ironic that the last physical monitoring of St Bees beach – prior to the approach of the school summer holiday and the visit of 165 pupils – was scheduled for the week of 16<sup>th</sup> July, with the next monitoring not scheduled until the week of 10<sup>th</sup> September<sup>29</sup>.

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<sup>27</sup> Sellafield Ltd. Particles in the Environment. Annual Report for 2011/12 and Forward Programme. June 2012, Tables 3 & 4

<sup>28</sup> Whitehaven News 26<sup>th</sup> July 2013

<sup>29</sup> Ibid 18, Fig 51, page 96.



This abandonment of the monitoring programme, by local authority request, means that for the duration of peak school and visitor activity on St Bees and other West Cumbrian beaches, information on the number of radioactive particles present during the period, their activity levels and health risks are not monitored or quantified and therefore unavailable for either official or public scrutiny and the taking of any preventative action that might be necessary in the unexpected event of a major influx of radioactive particles or other radioactive materials.

Given this 8-week absence of monitoring data, HPA's advice that health risks are very low can at best be little more than 'a guess in the dark'. At worst, should an unexpected and violent weather event occur during this period – such as the storms blamed for the major increase in particle finds in February this year – HPA's advice could be rendered useless and the general public exposed to significant radiation risk.

In tandem with the questions raised on the validity of HPA's advice are those asking where, in the absence of beach signs, information on radioactive particles on West Cumbrian beaches could be accessed - a query raised by several of those surveyed by CORE at St Bees. Currently, public access to relevant information is restricted to internet searches of official websites including those of Sellafield Ltd, HPA and The Environment Agency.

Accessing beach monitoring data from some of these sources requires a level of determination and 'know how' in navigating sites that often prove to be less than user-friendly. The outcome, for those who eventually succeed in gaining access, is a plethora of science-based reports couched in technical terminology which, to the layperson, is largely meaningless. The prospect that potential visitors to West Cumbrian beaches, unaware of the presence of radioactive particles in the first place, should think of trawling internet sites in advance of visiting West Cumbria is unlikely in the extreme – why should they ?

As a more obvious source of information, it might reasonably be expected that details of Sellafield's beach monitoring programme were held in local outlets such as public libraries up and down the West Cumbria coast – for the use at least of locals if no-one else. However, a review carried out by CORE by telephone in the days after the St Bees beach survey revealed that the libraries at St Bees, Seascale, Gosforth, Maryport, Millom, Whitehaven, Whitehaven Archive & Local Studies Centre and Workington held no such information. This is a startling omission for localities which, with the exception of Millom and Gosforth have first- hand experience of Sellafield Ltd's beach monitoring and radioactive particles being found on their respective beaches.

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The absence of relevant information in public libraries puts local and non-local members of the public at a considerable disadvantage in terms of getting the facts 'in situ' in West Cumbria and making choices accordingly. Whilst the omission of information in public libraries needs to be rectified urgently, it will not in itself ensure that potential beach-users are armed with the necessary information and cannot therefore be treated as a substitute for the more immediate imperative of providing West Cumbrian beach users with advice on the presence of radioactive particles through the use of suitably worded signs or notices.

#### 4. Current use of Beach Signs

The use of beach signs or public notices on or adjacent to West Cumbrian beaches advising the presence of radioactive particles would not be setting a national precedent as such signs are already in use, as an intervention measure, at Dounreay and Dalgety Bay in Scotland.

Whilst beaches at both Scottish sites are found to host radioactive materials of different isotopes and construction (radium, fuel fragments etc) to those currently found on West Cumbrian beaches, the use, wording and positioning of the signs and public notices has been agreed after deliberation by all major participants (including the Scottish Government, Local Authorities, the Scottish Environment Protection Agency (SEPA) and Ministry of Defence etc) with the principal aim of advising/informing the general public about the presence of radioactive materials rather than warning visitors in an alarmist fashion. The wording of signs at both sites has been modified periodically to take account of changes in beach monitoring practice and/or the increase or decrease in find numbers or types, but have consistently provided official contact details from where further information could be obtained.

At Dounreay for example, a 2008 Radiological Habits Survey<sup>30</sup> reports that ***‘there was an official public information sign at Sandside beach stating that radioactive particles had been found on the shore and advising the public not to remove objects or materials from the beach. There was also a notice board that gave information about the DSRL beach monitoring programme for the detection of fuel fragments’*** (emphasis added by CORE)<sup>31</sup>.

At Dalgety Bay, SEPA advises anyone visiting the beach ***‘to take reasonable precautions to prevent them coming into contact with radioactive items by complying with the advice given on notices around the beach and complying with any restrictions on access to areas that might be marked’*** (emphasis added by CORE)<sup>32</sup>.

Clearly the provision of such information on signs or notices provides a valuable information tool and more importantly affords members of the general public the most basic human right to choose whether or not they use the beach. The specific text used on the signs at Dounreay and Dalgety Bay may well not apply to the West Cumbrian situation, but the charge of ‘scaremongering’ against those who campaign for the use of beach signs in West Cumbria is spurious, if not misplaced, when viewed against what could be an agreed and appropriately sensitive use of text on such signs. Indeed, the 2008 Dounreay Survey also notes ***‘that the habits of people using the beach did not appear to be affected by the provision of this information’***<sup>33</sup> at Dounreay.

There can be no good reason why the ‘advise/inform aim of the signs in use at Scottish beaches cannot logically be transposed to West Cumbrian beaches with an appropriate text on beach signs and/or public information notices.

On some West Cumbrian beaches, information signs have been officially erected by Copeland Borough Council and are located prominently at the approach to the beach, in car parks or on the external walls of public toilets. The signs carry a range of information, warnings and advice but omit any information on the presence of radioactive particles.

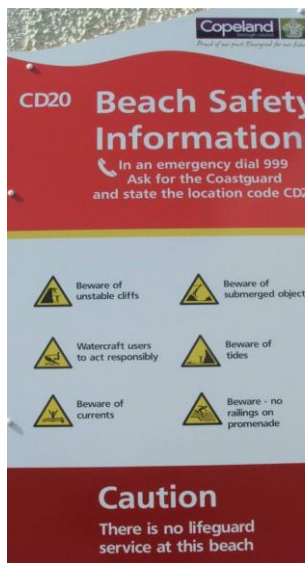
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<sup>30</sup> Natural Scotland and SEPA. Radiological Habit Survey, Dounreay 2008. Report RL 03/11, para 4.1, page 24

<sup>31</sup> Ibid

<sup>32</sup> SEPA Question & Answers Paper 13<sup>th</sup> October 2011

<sup>33</sup> Natural Scotland and SEPA. Radiological Habit Survey, Dounreay 2008. Report RL 03/11 page 24.

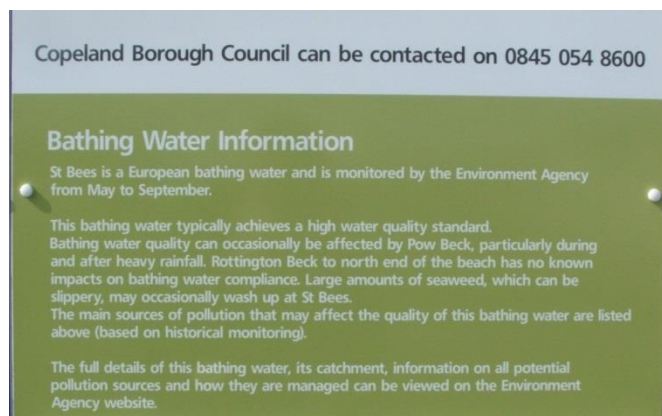


The signs on the left are displayed on the wall of the public toilets at one end of the beach car park at St Bees. Similar signs are located at other West Cumbrian beaches.

They warn against a range of dangers including tides, currents, submerged objects and unstable cliffs, and advise on sun safety, use of litter bins, keeping dogs on leads and the location of public telephones etc.

Whilst such warnings and advice are both sensible and necessary, it can be argued that they cover a range of potentially ‘immediate’ dangers – such a slipping on seaweed - whose risks are no greater in terms of long-term health and safety than the risk of coming into contact with, inhaling or ingesting radioactive particles.

The notice on the right appears beneath the warning/advice signs and relates to Bathing Water Information. Listing the main sources of pollution that may affect bathing water quality, the notice advises accessing the Environment Agency’s website for information on all potential pollution sources.



Whilst human nature suggests that the ‘average’ reader of this notice will have neither the wherewithal nor the inclination to visit the Environment Agency or any other website, it cannot be argued that the acknowledged transfer of radioactive particles from the Irish Sea/seabed to local beaches such as St Bees does not legitimately qualify as a potential (and indeed already present) pollution source that warrants an ‘up front’ acknowledgement on existing West Cumbrian signs.

Given the likelihood that most beach users will be either unwilling or unable to grapple with the intricacies of radiological science, simple advice on the presence of radioactive particles – with details of where further information can be obtained – is all that is necessary and there appears to be no reason why such basic advice should not feature on these signs or on other public notices located on or adjacent to West Cumbrian beaches.

## **Conclusions and Recommendations**

CORE's case for the use of beach signs is based on the acknowledged uncertainties that underscore and inevitably weaken HPA's current advice; on the added unknowns of offshore particles and on the current absence of a platform for disseminating information that fulfils the basic human right of individuals to be advised on environmental risks. The current infringement of that right is exacerbated by the relative difficulty in accessing information on official websites and its absence from local public libraries. CORE's review concluded the following:

- **HPA advice on the health risks posed by the presence of radioactive particles on West Cumbrian beaches, already weakened by acknowledged uncertainties, is further undermined by recent events and findings which present a major challenge to the current validity of that advice.**
- **That advice, enacted by other official bodies, has resulted in a rejection of the use of beach signs advising the general public about the presence of radioactive particles - thus denying the beach-using general public the basic human right to be informed of the presence of radioactive particles and the health risks involved should such particles be encountered and thereby denying the right of beach-users to make a choice.**
- **The official lack of understanding on the behaviour of offshore particles and their subsequent transfer to local beaches under various mechanisms which include tide and storm action adds a major level of uncertainty to HPA advice.**
- **Whilst the number of radioactive particles discovered on local West Cumbrian beaches has increased since monitoring commenced in 2006, the area of beaches monitored (in hectares) has been cut back – leaving some areas of high occupancy beaches unmonitored. The deliberate abandonment of the beach monitoring programme, at the express wish of West Cumbrian local authorities, has resulted in high occupancy beaches not being monitored for 8 weeks during the height of the summer holiday period when visitor numbers and beach events (schools and fun days) are at their peak.**
- **A snapshot survey of beach users at St Bees high occupancy beach this summer showed a majority (71%) of those surveyed to be unaware of the presence of radioactive particles on the beach and an overwhelming number (97%) in favour of being advised of the presence of radioactive particles and such information being displayed on beach notices.**
- **Signs advising on the presence on beaches of radioactive material are used in Scotland at Dounreay and Dalgety Bay. Signs in use on West Cumbrian beaches, advising on a range of other risks and dangers, carry no such information but could be adapted to include appropriately worded advice on the presence of radioactive particles – or such advice posted on other notice boards.**

**CORE recommends that:**

- **The validity of its current advice on the presence and risks of radioactive particles on West Cumbrian beaches should be reviewed with urgency by HPA. The Review should take account of the acknowledged uncertainties underscoring its advice and the greater uncertainties now being identified in relation to the behaviour of the cache of offshore particles.**

- **That public access to information relating to the presence of radioactive particles on West Cumbrian beaches should be simplified and made available in local libraries**
- **That the precautionary principle should be adopted in the form of advice being provided on the presence of radioactive particles on West Cumbrian beaches as a basic human right to enable individual choices to be made.**
- **That advice provided on the basis of the right to know should be publicly displayed on signs or notices on or adjacent to West Cumbrian beaches, and that such signage should be employed without delay.**

**August 2013.**

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