



## Beach Finds Number & Analysis Summary

### NOTES on Contents:

1. This document gives the initial monitoring and analysis results for the finds from the early trials and continuing programme of beach monitoring. These results have all been reported to the Environment Agency who have requested advice from the Health Protection Agency (HPA) on the implications of the finds. The HPA have given the advice below, which has been routinely reviewed and confirmed:

***On the basis of information provided by the Environment Agency on 6 July 2007 on the finding of radioactive particles on beaches near the BNG Sellafield site, the Health Protection Agency (HPA) considers that no special precautionary actions are necessary at this time regarding access to or use of these beaches. However, HPA will continue to work with relevant authorities to keep the situation under investigation.***

2. The Radioactive Substances Act 1993 authorisation (number BX9838) requires the operator to undertake environmental measurements. The latest specification for these measurements are given in the Compilation of Environment Agency Requirements (CEAR). For Beach monitoring the CEAR reference 1/19/00 paragraph 13, dated 01/04/2008, requires:

***13. The operator shall carry out large area beach monitoring and analysis for radioactive particles as specified below:***

***a) Large area beach monitoring shall be carried out, in accordance with Best Practicable Means, between Mean High Water Spring and Mean Low Water, at locations to be agreed in writing in advance with the Agency.***

***b) The monitoring shall be carried out between April 2008 and March 2009 in accordance with a programme agreed in writing with the Agency. A total accessible beach area of 250 Ha (at 1ms<sup>-1</sup> equivalent), to be surveyed by 31 March 2009.***

***c) The beach monitoring system to have the capability to detect, with a probability of 95%, 1E+05 Bq of Cs-137 at 10cm depth in sand.***

***d) All beach monitoring finds shall be analysed and assessed, in accordance with Best Practicable Means, to an analytical schedule and methodology agreed with the Agency.***

***e) Develop a programme to carry out research and development of large area beach survey monitoring systems and equipment to efficiently detect Am-241, Sr-90 and other relevant radionuclides in discrete radioactive particles by 30 June 2007.***

***f) Provide a report on the identification, evaluation and selection of large area beach survey monitoring systems and equipment to efficiently detect Am-241, Sr-90, and other relevant radionuclides in discrete radioactive particles by 30 September 2008. To subsequently use this report to inform an initial assessment of the Best Practicable Means for the monitoring of beaches and offshore (to include an assessment of, and where appropriate, a programme for R&D for suitable large area beach survey monitoring systems and equipment); the outcome of which shall be provided by 31 December 2008.***

***g) Offshore monitoring shall be carried out, in accordance with Best Practicable Means, at locations and to a programme agreed in writing with the Agency.***

3. Prior to the above requirements the previous CEARs required the operator to undertake trials of the monitoring equipment to test its effectiveness (CEAR reference: 1/9/002, Investigatory monitoring for 2006, dated 01/04/2006) and undertake a programme of monitoring covering 150 hectares (CEAR reference: 1/9/003, Investigatory monitoring for 2007/8, dated 01/04/2007)

4. This document contains the results of the trials plus previous and current campaigns of monitoring undertaken in the following tables:

|                         |  |
|-------------------------|--|
| <b>2008/9 Programme</b> | This contains a summary of the 2008/9 monitoring programme up to the 'latest update' date. It gives the programmed dates for each area, the target coverage and that achieved with a cumulative total. Details of the focus of the monitoring and any considerations are also provided.<br>NOTE: The beach monitoring programme was temporarily suspended in July and has recently restarted. A revised programme will be provided as soon as discussions with Regulators and Stakeholders are complete. |
| <b>Find Totals</b>      | This contains the finds details and a summary of the numbers of each type of find. NOTE: In agreement with the Environment Agency the particle size definition has been changed for less than 10 mm to less than 2 mm. This is a more realistic definition and is also consistent with the Geological classification of sand particles. The stone and pebble categories previously used have also been consolidated into a single stone category.  |
| <b>Find Analysis</b>    | This contains the gamma scan analysis results plus an estimate of the probability of beta content and an age estimate based on Cs134:Cs137 ratios and Pu239:Pu241 ratios.  |

5. The activity values reported represent the best estimate to one significant figure. There is an uncertainty associated with these estimates that includes components from counting statistics, calibration of non-uniform sources, reproducibility of sample geometry and self-absorption within the sample matrix and associated sandy material. The overall uncertainty for any given measurement is estimated to be within a factor of two of the reported value, except for U237(Pu241), Pu238 and Pu239 for which the uncertainty is estimated to be within a factor of ten.

## 2008/09 Beach Monitoring Programme

Note that the programme was suspended in July and restarted on 15th September

A revised programme that will achieve the 250 hectare requirement is currently under discussion with the Regulators and Key Stakeholders

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Last updated: 24/06/2008

# Note that weekly totals are working estimates and may include some overlap, which is removed from the NUVIA cumulative totals.

| W/E    | Beach Monitoring Area | Target Hectares | Totals per Area (ha) | Comments  | Area Completed (ha) #                    | Total Area Completed (ha) # |
|--------|-----------------------|-----------------|----------------------|---|--|-----------------------------|
| 06-Apr | St Bees               | 6.67            | 20                   | Height measurement not critical for this survey. Focus on areas in front of car parks (i.e. 10 ha in front of car park with 10 ha in linear strips over rest of area). Start with Linear strips to avoid holiday season.                                    | 5.24                                     | 20.8                        |
| 13-Apr |                       | 6.67            |                      |   | 7.75                                     |                             |
| 20-Apr |                       | 6.67            |                      |   | 7.81                                     |                             |
| 27-Apr | Seascale              | 6.67            | 20                   | Height measurement not critical for these surveys. Focus on areas in front of car parks (i.e. 10 ha in front of car park with 5 ha at Barn Scar end of zone and 5 ha in linear strips over rest of area). Timed to avoid the summer holiday season.         | 8.46                                     | 21.5                        |
| 04-May |                       | 6.67            |                      |   | 8.49                                     |                             |
| 11-May |                       | 6.67            |                      |   | 4.55                                     |                             |
| 18-May | Drigg                 | 6               | 30                   | Height measurement not critical for this survey. Focus on Barn Scar end of zone (i.e. 10 ha at Barn Scar with 20 ha in linear strips over rest of area).  | 9.52                                     | 32.4                        |
| 25-May |                       | 6               |                      |   | 6.3                                      |                             |
| 01-Jun |                       | 6               |                      |   | 7.7                                      |                             |
| 08-Jun |                       | 6               |                      |   | 10.8                                     |                             |
| 15-Jun | Sellafield            | 6               | 25                   | Height measurement needed so GPS tower needs to be available. Problem recovering Softrak on 8th July caused delay to programme.   | -  | 13.4                        |
| 29-Jun |                       | 5               |                      |   | 5.9                                      |                             |
| 06-Jul |                       | 5               |                      |   | 7.5                                      |                             |
| 13-Jul |                       | 5               |                      |   |  |                             |
| 20-Jul | 5                     |                 |                      |   |  |                             |
| 27-Jul | 5                     |                 |                      |   |  |                             |
| 22-Jun | Braystones            | 6.67            | 20                   | Target and time reflect the conditions expected at this time of the year.   | 5.4                                      | 5.4                         |
| 03-Aug |                       | 6.67            |                      |   |  |                             |
| 10-Aug |                       | 6.67            |                      |   |  |                             |
| 17-Aug | Workington            | 5               | 10                   | A site visit will confirm the exact location (noting that the North beach appears to be most suitable on a map).  |  |                             |
| 24-Aug |                       | 5               |                      |   |  |                             |
| 31-Aug | Buffer Time           | 0               | 0                    | Time allowed to catch up if needed.   |  |                             |
| 07-Sep | Sellafield            | 0               | 25                   | Target and time reflect the conditions expected at this time of the year. Repeat areas from previous survey where possible.   |  |                             |
| 14-Sep |                       | 5               |                      |   |  |                             |
| 21-Sep |                       | 5               |                      |   |  |                             |
| 28-Sep |                       | 5               |                      |   |  |                             |
| 05-Oct | Float                 | 5               | 10                   | Unallocated area(s).  |  |                             |
| 12-Oct |                       | 5               |                      |   |  |                             |
| 19-Oct |                       | 5               |                      |   |  |                             |
| 26-Oct | 5                     |                 |                      |   |  |                             |
| 02-Nov | St Bees               | 6.67            | 20                   | Focus on areas in front of car parks (i.e. 10 ha in front of car park with 10 ha in linear strips over rest of area). Timed to avoid the summer holiday season.   |  |                             |
| 09-Nov |                       | 6.67            |                      |   |  |                             |
| 16-Nov |                       | 6.67            |                      |   |  |                             |
| 23-Nov | Sellafield            | 5               | 25                   | Target and time reflect the conditions expected at this time of the year. Repeat areas from previous survey where possible. One week buffer time allocated after Christmas just in case of overrun.   |  |                             |
| 30-Nov |                       | 5               |                      |   |  |                             |
| 07-Dec |                       | 5               |                      |   |  |                             |
| 14-Dec |                       | 5               |                      |   |  |                             |
| 21-Dec | 5                     |                 |                      |   |  |                             |
| 28-Dec | Christmas Holidays    |                 |                      |   |  |                             |
| 04-Jan | New Year Holidays     |                 |                      |   |  |                             |
| 11-Jan | Buffer Time           | 0               | 0                    | Time allowed to catch up if needed.   |  |                             |
| 18-Jan | Seascale              | 6.67            | 20                   | Focus on areas in front of car parks (i.e. 10 ha in front of car park and consider repeating the 5 ha at Barn Scar end of zone and 5 ha in linear strips over rest of area or using the 10 ha for linear strips). Timed to avoid the summer holiday season. |  |                             |
| 25-Jan |                       | 6.67            |                      |   |  |                             |
| 01-Feb |                       | 6.67            |                      |   |  |                             |
| 08-Feb | Sellafield            | 4.167           | 25                   | Target and time reflect the conditions expected at this time of the year. Repeat areas from previous survey where possible.   |  |                             |
| 15-Feb |                       | 4.167           |                      |   |  |                             |
| 22-Feb |                       | 4.167           |                      |   |  |                             |
| 01-Mar |                       | 4.167           |                      |   |  |                             |
| 08-Mar |                       | 4.167           |                      |   |  |                             |
| 15-Mar | 4.167                 |                 |                      |   |  |                             |
| 22-Mar | Buffer Time           | 0               |                      | Time allowed to catch up if needed.   |  |                             |
| 29-Mar | 0                     |                 |                      |   |  |                             |
|        | <b>Total</b>          | 250.052         | 250                  |   | <b>Cumulative Completed Total (ha) =</b> | 95.42 93.5                  |

## Sequential Beach Finds Description using NUVIA and < 2 mm Particle Definitions

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Note that particle definition changed from < 10mm to < 2 mm on the 7th July 2008

Last updated: 16/09/2008

and NUVIA pebble and stone definitions combined into a single 'stone' allocation

| ID  | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |          | Cumulative Area Totals |                    |
|---|------------|-------|-------------------|-----------|---------|--|---------------------|----------|------------------------|--------------------|
|   |            |       |                   | Range     | Average |  | Stone               | Particle | Stone                  | Particle           |
| <b>Sellafield (Sellafield Beach Trial)</b>                  |            |       |                   |           |         |  |                     |          |                        |                    |
| 2006/11/29/01   | 29/11/2006 | 05:00 | Pebble            | 45 x 22   | 34      | Stone  |                     |          |                        |                    |
| 2006/11/29/02   | 29/11/2006 | 12:25 | Particle          | <1        | 1       | Particle   | 1                   | 1        | 1                      | 1                  |
| 2006/11/30/01   | 30/11/2006 | 09:07 | Stone             | 20 x 12   | 16      | Stone  |                     |          |                        |                    |
| 2006/11/30/02   | 30/11/2006 | 09:56 | Stone             | 30 x 18   | 24      | Stone  |                     |          |                        |                    |
| 2006/11/30/03   | 30/11/2006 | 11:10 | Particle          | 7 x 4     | 6       | Particle   | 2                   | 1        | 3                      | 2                  |
| 2006/12/01/01   | 01/12/2006 | 10:13 | Stone             | 7 x 5     | 6       | Stone  |                     |          |                        |                    |
| 2006/12/01/02   | 01/12/2006 | 13:34 | Particle          | 8 x 4     | 6       | Particle   |                     |          |                        |                    |
| 2006/12/01/03   | 01/12/2006 | 13:48 | Particle          | 3 x 1     | 2       | Particle   |                     |          |                        |                    |
| 2006/12/01/04   | 01/12/2006 | 14:03 | Pebble            | 30 x 20   | 25      | Stone  | 2                   | 2        | 5                      | 4                  |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | 5                   | 4        |                        | <b>QA check OK</b> |
| <b>Braystones (Braystones Beach Trial)</b>                  |            |       |                   |           |         |  |                     |          |                        |                    |
| 2007/01/29/01   | 29/01/2007 | 13:04 | Particle          | <1        | 1       | Particle   | 0                   | 1        | 5                      | 5                  |
| 2007/01/30/01   | 30/01/2007 | 10:36 | Particle          | 1         | 1       | Particle   |                     |          |                        |                    |
| 2007/01/30/02   | 30/01/2007 | 15:51 | Particle          | <1        | 1       | Particle   | 0                   | 2        | 5                      | 7                  |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | 0                   | 3        |                        | <b>QA Check OK</b> |
| <b>St Bees (St Bees South)</b>                              |            |       |                   |           |         |  |                     |          |                        |                    |
| 2007/05/22/01   | 22/05/2007 | 08:16 | Particle          | N/A       |         | Particle   | 0                   | 1        | 5                      | 8                  |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | 0                   | 1        |                        | <b>QA Check OK</b> |
| <b>Sellafield (Ehen Spit plus part of Sellafield North)</b> |            |       |                   |           |         |  |                     |          |                        |                    |
| 2007/05/24/01   | 24/05/2007 | 11:50 | Stone             | 5 x 10    | 7       | Stone  |                     |          |                        |                    |
| 2007/05/24/02   | 24/05/2007 | 12:55 | Pebble            | 40        | 40      | Stone  |                     |          |                        |                    |
| 2007/05/24/03   | 24/05/2007 | 14:55 | Stone             | 20        | 20      | Stone  |                     |          |                        |                    |
| 2007/05/24/04   | 24/05/2007 | 15:40 | Stone             | 3         | 3       | Stone  |                     |          |                        |                    |
| 2007/05/24/05   | 24/05/2007 | 16:15 | Particle          | N/A       |         | Particle   | 4                   | 1        | 9                      | 9                  |
| 2007/05/25/01   | 25/05/2007 | 10:40 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/25/02   | 25/05/2007 | 12:10 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/25/03   | 25/05/2007 | 12:40 | Stone             | < 5       | 5       | Stone  |                     |          |                        |                    |
| 2007/05/25/04   | 25/05/2007 | 13:30 | Pebble            | 50        | 50      | Stone  |                     |          |                        |                    |
| 2007/05/25/05   | 25/05/2007 | 14:15 | Pebble            | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/25/06   | 25/05/2007 | 14:50 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/25/07   | 25/05/2007 | 15:20 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/25/08   | 25/05/2007 | 16:00 | Stone             | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/25/09   | 25/05/2007 | 16:35 | Stone             | 5         | 5       | Stone  |                     |          |                        |                    |
| 2007/05/25/10   | 25/05/2007 | 17:30 | Stone             | ~ 8       | 8       | Stone  | 4                   | 6        | 13                     | 15                 |
| 2007/05/26/01   | 26/05/2007 | 13:47 | Pebble            | 25        | 25      | Stone  |                     |          |                        |                    |
| 2007/05/26/02   | 26/05/2007 | 16:50 | Particle          | N/A       |         | Particle   | 1                   | 1        | 14                     | 16                 |
| 2007/05/27/01   | 27/05/2007 | 12:10 | Stone             | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/05/27/02   | 27/05/2007 | 13:30 | Silt              | 20 x 30   | 25      | Silt   |                     |          |                        |                    |
| 2007/05/27/03   | 27/05/2007 | 16:10 | Stone             | 5         | 5       | Stone  | 1                   | 1        | 15                     | 17                 |
| 2007/05/28/01   | 28/05/2007 | 11:20 | Stone             | 15        | 15      | Stone  |                     |          |                        |                    |
| 2007/05/28/02   | 28/05/2007 | 13:01 | Pebble            | 40        | 40      | Stone  | 2                   | 0        | 17                     | 17                 |
| 2007/05/29/01   | 29/05/2007 | 14:00 | Pebble            | 30        | 30      | Stone  |                     |          |                        |                    |
| 2007/05/29/02   | 29/05/2007 | 17:20 | Silt              | N/A       | N/A     | Silt   | 1                   | 0        | 18                     | 17                 |
| 2007/05/30/01   | 30/05/2007 | 14:01 | Pebble            | 30 x 40   | 35      | Stone  |                     |          |                        |                    |
| 2007/05/30/02   | 30/05/2007 | 19:11 | Particle          | N/A       |         | Particle   | 1                   | 1        | 19                     | 18                 |
| 2007/05/31/01   | 31/05/2007 | 06:18 | Stone             | 15 x 25   | 20      | Stone  |                     |          |                        |                    |
| 2007/05/31/02   | 31/05/2007 | 07:10 | Pebble            | 30 x 40   | 35      | Stone  |                     |          |                        |                    |
| 2007/05/31/03   | 31/05/2007 | 08:30 | Particle          | N/A       |         | Particle   | 2                   | 1        | 21                     | 19                 |
| 2007/06/01/01   | 01/06/2007 | 06:15 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/06/01/02   | 01/06/2007 | 06:50 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/06/01/03   | 01/06/2007 | 07:35 | Pebble            | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/06/01/04   | 01/06/2007 | 08:10 | Pebble            | 10        | 10      | Stone  |                     |          |                        |                    |
| 2007/06/01/05   | 01/06/2007 | 08:45 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2007/06/01/06   | 01/06/2007 | 09:10 | Pebble            | 10        | 10      | Stone  |                     |          |                        |                    |
| 2007/06/01/07   | 01/06/2007 | 09:35 | Pebble            | 10        | 10      | Stone  |                     |          |                        |                    |
| 2007/06/01/08   | 01/06/2007 | 10:55 | Pebble            | 10        | 10      | Stone  |                     |          |                        |                    |
| 2007/06/01/09   | 01/06/2007 | 11:15 | Pebble            | 10        | 10      | Stone  |                     |          |                        |                    |
| 2007/06/01/10   | 01/06/2007 | 11:35 | Pebble            | 2.5       | 2.5     | Stone  | 6                   | 4        | 27                     | 23                 |

| ID                                   | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |          | Cumulative Area Totals |          |
|--------------------------------------|------------|-------|-------------------|-----------|---------|--|---------------------|----------|------------------------|----------|
|                                      |            |       |                   | Range     | Average |  | Stone               | Particle | Stone                  | Particle |
| 2007/06/02/01                        | 02/06/2007 | 07:05 | Pebble            | 10        | 10      | Stone  |                     |          |                        |          |
| 2007/06/02/02                        | 02/06/2007 | 07:25 | Pebble            | 10        | 10      | Stone  |                     |          |                        |          |
| 2007/06/02/03                        | 02/06/2007 | 07:50 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/06/02/04                        | 02/06/2007 | 08:35 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/06/02/05                        | 02/06/2007 | 09:25 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/06/02/06                        | 02/06/2007 | 10:05 | Stone             | 25        | 25      | Stone  |                     |          |                        |          |
| 2007/06/02/07                        | 02/06/2007 | 11:05 | Pebble            | 8         | 8       | Stone  | 4                   | 3        | 31                     | 26       |
| 2007/06/03/01                        | 03/06/2007 | 07:30 | Pebble            | 8         | 8       | Stone  |                     |          |                        |          |
| 2007/06/03/02                        | 03/06/2007 | 08:00 | Pebble            | 2         | 2       | Stone  |                     |          |                        |          |
| 2007/06/03/03                        | 03/06/2007 | 08:45 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/06/03/04                        | 03/06/2007 | 09:20 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/06/03/05                        | 03/06/2007 | 09:45 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/06/03/06                        | 03/06/2007 | 10:25 | Stone             | 20        | 20      | Stone  |                     |          |                        |          |
| 2007/06/03/07                        | 03/06/2007 | 10:45 | Pebble            | 8         | 8       | Stone  |                     |          |                        |          |
| 2007/06/03/08                        | 03/06/2007 | 11:30 | Pebble            | 10        | 10      | Stone  |                     |          |                        |          |
| 2007/06/03/09                        | 03/06/2007 | 11:55 | Stone             | 50        | 50      | Stone  | 6                   | 3        | 37                     | 29       |
| <b>Area Totals =</b>                 |            |       |                   |           |         |  | 32                  | 21       | <b>QA Check OK</b>     |          |
| <b>Seascale (Seascale North)</b>     |            |       |                   |           |         |  |                     |          |                        |          |
| 2007/06/05/01                        | 05/06/2007 | 11:05 | Particle          | N/A       |         | Particle   | 0                   | 1        | 37                     | 30       |
| 2007/06/06/01                        | 06/06/2007 | 10:00 | Particle          | N/A       |         | Particle   | 0                   | 1        | 37                     | 31       |
| 2007/06/07/01                        | 07/06/2007 | 10:20 | Particle          | N/A       |         | Particle   | 0                   | 1        | 37                     | 32       |
| <b>Area Totals =</b>                 |            |       |                   |           |         |  | 0                   | 3        | <b>QA Check OK</b>     |          |
| <b>Sellafield (Sellafield Beach)</b> |            |       |                   |           |         |  |                     |          |                        |          |
| 2007/09/04/01                        | 04/09/2007 | 10:30 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/04/02                        | 04/09/2007 | 12:35 | Pebble            | 5         | 5       | Stone  |                     |          |                        |          |
| 2007/09/04/03                        | 04/09/2007 | 13:30 | Pebble            | 4         | 4       | Stone  |                     |          |                        |          |
| 2007/09/04/04                        | 04/09/2007 | 14:00 | Particle          | N/A       |         | Particle   | 2                   | 2        | 39                     | 34       |
| 2007/09/05/01                        | 05/09/2007 | 11:10 | Pebble            | 20 x 20   | 20      | Stone  |                     |          |                        |          |
| 2007/09/05/02                        | 05/09/2007 | 12:00 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/05/03                        | 05/09/2007 | 13:10 | Stone             | 4 x 4     | 4       | Stone  |                     |          |                        |          |
| 2007/09/05/04                        | 05/09/2007 | 14:17 | Stone             | 10 x 10   | 10      | Stone  | 3                   | 1        | 42                     | 35       |
| 2007/09/06/01                        | 06/09/2007 | 10:50 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/06/02                        | 06/09/2007 | 11:02 | Pebble            | 15 x 15   | 15      | Stone  |                     |          |                        |          |
| 2007/09/06/03                        | 06/09/2007 | 11:22 | Stone             | 5 x 5     | 5       | Stone  |                     |          |                        |          |
| 2007/09/06/04                        | 06/09/2007 | 11:47 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/06/05                        | 06/09/2007 | 12:19 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/09/06/06                        | 06/09/2007 | 12:55 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/06/07                        | 06/09/2007 | 13:17 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/09/06/08                        | 06/09/2007 | 13:49 | Stone             | 5 x 5     | 5       | Stone  |                     |          |                        |          |
| 2007/09/06/09                        | 06/09/2007 | 14:17 | Pebble            | 20 x 20   | 20      | Stone  | 7                   | 2        | 49                     | 37       |
| 2007/09/07/01                        | 07/09/2007 | 11:35 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/07/02                        | 07/09/2007 | 12:02 | Particle          | N/A       |         | Particle   | 0                   | 2        | 49                     | 39       |
| 2007/09/10/01                        | 10/09/2007 | 13:56 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/10/02                        | 10/09/2007 | 16:35 | Stone             | 40 x 40   | 40      | Stone  | 1                   | 1        | 50                     | 40       |
| 2007/09/11/01                        | 11/09/2007 | 06:50 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/11/02                        | 11/09/2007 | 07:12 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/11/03                        | 11/09/2007 | 08:19 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/11/04                        | 11/09/2007 | 09:47 | Particle          | N/A       |         | Particle   | 1                   | 3        | 51                     | 43       |
| 2007/09/12/01                        | 12/09/2007 | 06:47 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/09/12/02                        | 12/09/2007 | 07:15 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/09/12/03                        | 12/09/2007 | 08:12 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/12/04                        | 12/09/2007 | 08:36 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/12/05                        | 12/09/2007 | 08:53 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/12/06                        | 12/09/2007 | 09:28 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/12/07                        | 12/09/2007 | 09:53 | Stone             | 3 x 3     | 3       | Stone  | 4                   | 3        | 55                     | 46       |
| 2007/09/13/01                        | 13/09/2007 | 07:22 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/13/02                        | 13/09/2007 | 07:54 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/09/13/03                        | 13/09/2007 | 08:14 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/13/04                        | 13/09/2007 | 08:33 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/13/05                        | 13/09/2007 | 08:49 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/13/06                        | 13/09/2007 | 09:09 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/09/13/07                        | 13/09/2007 | 09:28 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/13/08                        | 13/09/2007 | 09:50 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/09/13/09                        | 13/09/2007 | 10:20 | Stone             | 4 x 4     | 4       | Stone  |                     |          |                        |          |
| 2007/09/13/10                        | 13/09/2007 | 10:36 | Stone             | 1 x 1     | 1       | Particle   | 3                   | 7        | 58                     | 53       |
| 2007/09/14/01                        | 14/09/2007 | 06:54 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/09/14/02                        | 14/09/2007 | 07:12 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |

| ID  | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |           | Cumulative Area Totals |          |
|---|------------|-------|-------------------|-----------|---------|--|---------------------|-----------|------------------------|----------|
|   |            |       |                   | Range     | Average |  | Stone               | Particle  | Stone                  | Particle |
| 2007/09/14/03                                       | 14/09/2007 | 07:27 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2007/09/14/04                                       | 14/09/2007 | 07:45 | Stone             | 2 x 2     | 2       | Stone  |                     |           |                        |          |
| 2007/09/14/05                                       | 14/09/2007 | 08:12 | Stone             | 30 x 30   | 30      | Stone  |                     |           |                        |          |
| 2007/09/14/06                                       | 14/09/2007 | 08:28 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/09/14/07                                       | 14/09/2007 | 08:53 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2007/09/14/08                                       | 14/09/2007 | 09:06 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2007/09/14/09                                       | 14/09/2007 | 09:21 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2007/09/14/10                                       | 14/09/2007 | 09:36 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2007/09/14/11                                       | 14/09/2007 | 09:49 | Stone             | 2 x 2     | 2       | Stone  |                     |           |                        |          |
| 2007/09/14/12                                       | 14/09/2007 | 10:12 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/09/14/13                                       | 14/09/2007 | 10:27 | Stone             | 2 x 2     | 2       | Stone  |                     |           |                        |          |
| 2007/09/14/14                                       | 14/09/2007 | 10:49 | Particle          | N/A       |         | Particle   | 11                  | 3         | 69                     | 56       |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>32</b>           | <b>24</b> | <b>QA Check OK</b>     |          |
| <b>St Bees (St Bees North)</b>                      |            |       |                   |           |         |  |                     |           |                        |          |
| 2007/09/17/01                                       | 17/09/2007 | 10:28 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 57       |
| 2007/09/24/01                                       | 24/09/2007 | 17:36 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 58       |
| 2007/09/28/01                                       | 28/09/2007 | 09:08 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 59       |
| 2007/10/01/01                                       | 01/10/2007 | 07:37 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/10/01/02                                       | 01/10/2007 | 08:58 | Particle          | N/A       |         | Particle   | 0                   | 2         | 69                     | 61       |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>0</b>            | <b>5</b>  | <b>QA Check OK</b>     |          |
| <b>Seascale (Seascale South)</b>                    |            |       |                   |           |         |  |                     |           |                        |          |
| 2007/10/03/01                                       | 03/10/2007 | 12:40 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 62       |
| 2007/10/04/01                                       | 04/10/2007 | 10:26 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 63       |
| 2007/10/05/01                                       | 05/10/2007 | 13:48 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 64       |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>0</b>            | <b>3</b>  | <b>QA Check OK</b>     |          |
| <b>Drigg (Drigg Point) - No finds found</b>         |            |       |                   |           |         |  |                     |           |                        |          |
| <b>Drigg (Barn Scar)</b>                            |            |       |                   |           |         |  |                     |           |                        |          |
| 2007/10/19/01                                       | 19/10/2007 | 09:36 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 65       |
| 2007/10/22/01                                       | 22/10/2007 | 12:11 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/10/22/02                                       | 22/10/2007 | 12:11 | Particle          | N/A       |         | Particle   | 0                   | 2         | 69                     | 67       |
| (note co-located finds or breakdown of single find) |            |       |                   |           |         |  |                     |           |                        |          |
| 2007/10/23/01                                       | 23/10/2007 | 14:26 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/10/23/02                                       | 23/10/2007 | 16:24 | Particle          | N/A       |         | Particle   | 0                   | 2         | 69                     | 69       |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>0</b>            | <b>5</b>  | <b>QA Check OK</b>     |          |
| <b>Braystones (Braystones North)</b>                |            |       |                   |           |         |  |                     |           |                        |          |
| 2007/11/02/01                                       | 02/11/2007 | 08:04 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 70       |
| 2007/11/05/01                                       | 05/11/2007 | 12:50 | Particle          | N/A       |         | Particle   | 0                   | 1         | 69                     | 71       |
|   |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>0</b>            | <b>2</b>  | <b>QA Check OK</b>     |          |
| <b>Sellafield (Sellafield North)</b>                |            |       |                   |           |         |  |                     |           |                        |          |
| 2007/11/07/01                                       | 07/11/2007 | 13:26 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/07/02                                       | 07/11/2007 | 14:23 | Stone             | 20 x 25   | 22      | Stone  |                     |           |                        |          |
| 2007/11/07/03                                       | 07/11/2007 | 14:56 | Stone             | 20 x 25   | 22      | Stone  |                     |           |                        |          |
| 2007/11/07/04                                       | 07/11/2007 | 15:40 | Stone             | 10 x 10   | 10      | Stone  |                     |           |                        |          |
| 2007/11/07/05                                       | 07/11/2007 | 16:06 | Particle          | N/A       |         | Particle   | 3                   | 2         | 72                     | 73       |
| 2007/11/08/01                                       | 08/11/2007 | 07:00 | Stone             | 5 x 5     | 5       | Stone  |                     |           |                        |          |
| 2007/11/08/02                                       | 08/11/2007 | 07:16 | Gravel            | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/08/03                                       | 08/11/2007 | 07:56 | Gravel            | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/08/04                                       | 08/11/2007 | 08:19 | Stone             | 5 x 5     | 5       | Stone  |                     |           |                        |          |
| 2007/11/08/05                                       | 08/11/2007 | 12:41 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/08/06                                       | 08/11/2007 | 12:58 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/08/07                                       | 08/11/2007 | 13:17 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/08/08                                       | 08/11/2007 | 13:44 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/08/09                                       | 08/11/2007 | 13:58 | Stone             | 10 x 10   | 10      | Stone  | 3                   | 6         | 75                     | 79       |
| 2007/11/09/01                                       | 09/11/2007 | 06:53 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/09/02                                       | 09/11/2007 | 07:38 | Stone             | 30 x 30   | 30      | Stone  |                     |           |                        |          |
| 2007/11/09/03                                       | 09/11/2007 | 08:05 | Stone             | 25 x 25   | 25      | Stone  |                     |           |                        |          |
| 2007/11/09/04                                       | 09/11/2007 | 08:22 | Stone             | 10 x 10   | 10      | Stone  |                     |           |                        |          |
| 2007/11/09/05                                       | 09/11/2007 | 08:38 | Pebble            | 35 x 35   | 35      | Stone  |                     |           |                        |          |
| 2007/11/09/06                                       | 09/11/2007 | 09:07 | Stone             | 3 x 2     | 2       | Stone  | 5                   | 1         | 80                     | 80       |
| 2007/11/12/01                                       | 12/11/2007 | 07:49 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2007/11/12/02                                       | 12/11/2007 | 09:02 | Stone             | 5 x 5     | 5       | Stone  |                     |           |                        |          |

| ID  | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |          | Cumulative Area Totals |          |
|---|------------|-------|-------------------|-----------|---------|--|---------------------|----------|------------------------|----------|
|   |            |       |                   | Range     | Average |  | Stone               | Particle | Stone                  | Particle |
| 2007/11/12/03                                     | 12/11/2007 | 09:19 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/12/04                                     | 12/11/2007 | 10:10 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/11/12/05                                     | 12/11/2007 | 10:40 | Pebble            | 30 x 40   | 35      | Stone  |                     |          |                        |          |
| 2007/11/12/06                                     | 12/11/2007 | 10:56 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/11/12/07                                     | 12/11/2007 | 11:19 | Stone             | 5 x 10    | 7       | Stone  |                     |          |                        |          |
| 2007/11/12/08                                     | 12/11/2007 | 11:51 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/12/09                                     | 12/11/2007 | 12:53 | Stone             | 30 x 40   | 35      | Stone  |                     |          |                        |          |
| 2007/11/12/10                                     | 12/11/2007 | 13:08 | Stone             | 30 x 50   | 40      | Stone  |                     |          |                        |          |
| 2007/11/12/11                                     | 12/11/2007 | 13:27 | Stone             | 20 x 30   | 25      | Stone  |                     |          |                        |          |
| 2007/11/12/12                                     | 12/11/2007 | 13:47 | Stone             | 40 x 50   | 45      | Stone  |                     |          |                        |          |
| 2007/11/12/13                                     | 12/11/2007 | 14:35 | Stone             | 30 x 35   | 32      | Stone  | 10                  | 3        | 90                     | 83       |
| 2007/11/13/01                                     | 13/11/2007 | 07:23 | Stone             | 30 x 35   | 32      | Stone  |                     |          |                        |          |
| 2007/11/13/02                                     | 13/11/2007 | 07:40 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/13/03                                     | 13/11/2007 | 07:59 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/11/13/04                                     | 13/11/2007 | 08:12 | Stone             | 2 x 3     | 2       | Stone  |                     |          |                        |          |
| 2007/11/13/05                                     | 13/11/2007 | 08:29 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/13/06                                     | 13/11/2007 | 09:01 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/11/13/07                                     | 13/11/2007 | 09:36 | Stone             | 2 x 4     | 3       | Stone  |                     |          |                        |          |
| 2007/11/13/08                                     | 13/11/2007 | 09:55 | Stone             | 2 x 3     | 2       | Stone  |                     |          |                        |          |
| 2007/11/13/09                                     | 13/11/2007 | 10:12 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/11/13/10                                     | 13/11/2007 | 10:51 | Stone             | 20 x 30   | 25      | Stone  |                     |          |                        |          |
| 2007/11/13/11                                     | 13/11/2007 | 11:13 | Stone             | 30 x 35   | 32      | Stone  |                     |          |                        |          |
| 2007/11/13/12                                     | 13/11/2007 | 11:29 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/13/13                                     | 13/11/2007 | 11:56 | Stone             | 20 x 20   | 20      | Stone  |                     |          |                        |          |
| 2007/11/13/14                                     | 13/11/2007 | 12:17 | Stone             | 35 x 50   | 32      | Stone  |                     |          |                        |          |
| 2007/11/13/15                                     | 13/11/2007 | 13:17 | Stone             | 35 x 50   | 32      | Stone  |                     |          |                        |          |
| 2007/11/13/16                                     | 13/11/2007 | 13:33 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/11/13/17                                     | 13/11/2007 | 14:17 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/13/18                                     | 13/11/2007 | 14:39 | Particle          | N/A       |         | Particle   | 11                  | 7        | 101                    | 90       |
| 2007/11/14/01                                     | 14/11/2007 | 07:01 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/14/02                                     | 14/11/2007 | 07:16 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/14/03                                     | 14/11/2007 | 07:28 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/14/04                                     | 14/11/2007 | 07:41 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/11/14/05                                     | 14/11/2007 | 07:52 | Stone             | 3 x 3     | 2       | Stone  |                     |          |                        |          |
| 2007/11/14/06                                     | 14/11/2007 | 08:08 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |
| 2007/11/14/07                                     | 14/11/2007 | 08:21 | Stone             | 2 x 3     | 2       | Stone  |                     |          |                        |          |
| 2007/11/14/08                                     | 14/11/2007 | 08:34 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/14/09                                     | 14/11/2007 | 09:17 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/14/10                                     | 14/11/2007 | 10:48 | Stone             | 10 x 10   | 10      | Stone  |                     |          |                        |          |
| 2007/11/14/11                                     | 14/11/2007 | 11:08 | Stone             | 6 x 6     | 6       | Stone  | 5                   | 6        | 106                    | 96       |
| 2007/11/15/01                                     | 15/11/2007 | 07:51 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/15/02                                     | 15/11/2007 | 08:06 | Stone             | 30 x 35   | 32      | Stone  |                     |          |                        |          |
| 2007/11/15/03                                     | 15/11/2007 | 08:28 | Stone             | 6 x 12    | 9       | Stone  |                     |          |                        |          |
| 2007/11/15/04                                     | 15/11/2007 | 08:53 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/11/15/05                                     | 15/11/2007 | 09:30 | Stone             | 40 x 40   | 40      | Stone  |                     |          |                        |          |
| 2007/11/15/06                                     | 15/11/2007 | 09:50 | Stone             | 10 x 10   | 10      | Stone  |                     |          |                        |          |
| 2007/11/15/07                                     | 15/11/2007 | 10:18 | Stone             | 40 x 65   | 52      | Stone  |                     |          |                        |          |
| 2007/11/15/08                                     | 15/11/2007 | 10:35 | Stone             | 50 x 70   | 60      | Stone  |                     |          |                        |          |
| 2007/11/15/09                                     | 15/11/2007 | 11:10 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/15/10                                     | 15/11/2007 | 11:25 | Particle          | N/A       |         | Particle   | 7                   | 3        | 113                    | 99       |
| 2007/11/19/01                                     | 19/11/2007 | 09:35 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/19/02                                     | 19/11/2007 | 10:07 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/19/03                                     | 19/11/2007 | 10:48 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/19/04                                     | 19/11/2007 | 14:12 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/19/05                                     | 19/11/2007 | 14:50 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/19/06                                     | 19/11/2007 | 15:34 | Particle          | N/A       |         | Particle   | 0                   | 6        | 113                    | 105      |
| 2007/11/20/01                                     | 20/11/2007 | 10:14 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/20/02                                     | 20/11/2007 | 13:43 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/20/03                                     | 20/11/2007 | 14:56 | Stone             | 10 x 20   | 15      | Stone  |                     |          |                        |          |
| 2007/11/20/04                                     | 20/11/2007 | 15:24 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/20/05                                     | 20/11/2007 | 15:45 | Stone             | 2 x 5     | 3       | Stone  | 2                   | 3        | 115                    | 108      |
|   |            |       |                   |           |         | <b>First Half of Area Totals =</b>                     | 46                  | 37       | <b>QA Check OK</b>     |          |
| <b>Sellafield (Sellafield Beach - half Speed)</b> |            |       |                   |           |         |  |                     |          |                        |          |
| 2007/11/22/01                                     | 22/11/2007 | 10:59 | Stone             | 4 x 4     | 4       | Stone  |                     |          |                        |          |
| 2007/11/22/02                                     | 22/11/2007 | 11:17 | Particle          | N/A       |         | Particle   | 1                   | 1        | 116                    | 109      |
| 2007/11/23/01                                     | 23/11/2007 | 07:03 | Stone             | 30 x 50   | 40      | Stone  | 1                   | 0        | 117                    | 109      |
| 2007/11/26/01                                     | 26/11/2007 | 07:00 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/26/02                                     | 26/11/2007 | 07:48 | Stone             | 20 x 30   | 25      | Stone  |                     |          |                        |          |
| 2007/11/26/03                                     | 26/11/2007 | 08:05 | Stone             | 20 x 25   | 22      | Stone  |                     |          |                        |          |
| 2007/11/26/04                                     | 26/11/2007 | 08:40 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/26/05                                     | 26/11/2007 | 09:04 | Stone             | 2 x 5     | 3       | Stone  |                     |          |                        |          |
| 2007/11/26/06                                     | 26/11/2007 | 09:22 | Particle          | N/A       |         | Particle   | 3                   | 3        | 120                    | 112      |

| ID   | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |          | Cumulative Area Totals |          |
|--|------------|-------|-------------------|-----------|---------|--|---------------------|----------|------------------------|----------|
|  |            |       |                   | Range     | Average |  | Stone               | Particle | Stone                  | Particle |
| 2007/11/28/01                              | 28/11/2007 | 09:56 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/11/28/02                              | 28/11/2007 | 10:22 | Stone             | 10 x 10   | 10      | Stone  |                     |          |                        |          |
| 2007/11/28/03                              | 28/11/2007 | 10:55 | Stone             | 20 x 20   | 20      | Stone  | 3                   | 0        | 123                    | 112      |
| 2007/11/29/01                              | 29/11/2007 | 07:00 | Stone             | 6 x 8     | 7       | Stone  |                     |          |                        |          |
| 2007/11/29/02                              | 29/11/2007 | 07:12 | Stone             | 10 x 35   | 22      | Stone  |                     |          |                        |          |
| 2007/11/29/03                              | 29/11/2007 | 07:50 | Stone             | 3 x 5     | 4       | Stone  |                     |          |                        |          |
| 2007/11/29/04                              | 29/11/2007 | 08:16 | Stone             | 4 x 8     | 6       | Stone  |                     |          |                        |          |
| 2007/11/29/05                              | 29/11/2007 | 08:33 | Stone             | 30 x 40   | 35      | Stone  |                     |          |                        |          |
| 2007/11/29/06                              | 29/11/2007 | 09:03 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/11/29/07                              | 29/11/2007 | 11:10 | Stone             | 30 x 40   | 35      | Stone  | 6                   | 1        | 129                    | 113      |
| 2007/11/30/01                              | 30/11/2007 | 07:20 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/11/30/02                              | 30/11/2007 | 07:39 | Stone             | 7 x 3     | 5       | Stone  |                     |          |                        |          |
| 2007/11/30/03                              | 30/11/2007 | 07:54 | Stone             | 4 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/11/30/04                              | 30/11/2007 | 08:39 | Stone             | 20 x 20   | 20      | Stone  |                     |          |                        |          |
| 2007/11/30/05                              | 30/11/2007 | 09:05 | Stone             | 30 x 25   | 27      | Stone  |                     |          |                        |          |
| 2007/11/30/06                              | 30/11/2007 | 09:24 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2007/11/30/07                              | 30/11/2007 | 09:42 | Stone             | 9 x 9     | 9       | Stone  |                     |          |                        |          |
| 2007/11/30/08                              | 30/11/2007 | 09:58 | Stone             | 300 x 90  | 200     | Stone  |                     |          |                        |          |
| 2007/11/30/09                              | 30/11/2007 | 10:33 | Stone             | 25 x 20   | 22      | Stone  |                     |          |                        |          |
| 2007/11/30/10                              | 30/11/2007 | 11:03 | Stone             | 2 x 2     | 2       | Stone  | 10                  | 0        | 139                    | 113      |
| 2007/12/03/01                              | 03/12/2007 | 07:48 | Stone             | 15 x 8    | 11      | Stone  |                     |          |                        |          |
| 2007/12/03/02                              | 03/12/2007 | 08:21 | Stone             | 12 x 8    | 10      | Stone  |                     |          |                        |          |
| 2007/12/03/03                              | 03/12/2007 | 09:00 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/12/03/04                              | 03/12/2007 | 09:20 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/12/03/05                              | 03/12/2007 | 09:44 | Stone             | 15 x 15   | 15      | Stone  |                     |          |                        |          |
| 2007/12/03/06                              | 03/12/2007 | 10:03 | Stone             | 4 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/12/03/07                              | 03/12/2007 | 10:16 | Stone             | 3 x 3     | 3       | Stone  |                     |          |                        |          |
| 2007/12/03/08                              | 03/12/2007 | 10:40 | Stone             | 10 x 5    | 7       | Stone  |                     |          |                        |          |
| 2007/12/03/09                              | 03/12/2007 | 11:09 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2007/12/03/10                              | 03/12/2007 | 12:40 | Stone             | 25 x 25   | 25      | Stone  |                     |          |                        |          |
| 2007/12/03/11                              | 03/12/2007 | 13:08 | Stone             | 5 x 3     | 4       | Stone  |                     |          |                        |          |
| 2007/12/03/12                              | 03/12/2007 | 13:54 | Stone             | 15 x 12   | 13      | Stone  | 9                   | 3        | 148                    | 116      |
| 2007/12/04/01                              | 01/12/2007 | 13:21 | Stone             | 8 x 4     | 6       | Stone  |                     |          |                        |          |
| 2007/12/04/02                              | 01/12/2007 | 13:47 | Stone             | 5 x 5     | 5       | Stone  |                     |          |                        |          |
| 2007/12/04/03                              | 01/12/2007 | 14:13 | Particle          | N/A       |         | Particle   | 2                   | 1        | 150                    | 117      |
|  |            |       |                   |           |         | <b>Second half of Area Totals =</b>                    | <b>35</b>           | <b>9</b> | <b>QA Check OK</b>     |          |
| <b>Seascale (Seascale to Barn Scar)</b>    |            |       |                   |           |         |  |                     |          |                        |          |
| 2007/12/05/01                              | 05/12/2007 | 11:44 | Particle          | N/A       |         | Particle   | 0                   | 1        | 150                    | 118      |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>0</b>            | <b>1</b> | <b>QA Check OK</b>     |          |
| <b>Goat Well Bay - no finds found</b>      |            |       |                   |           |         |  |                     |          |                        |          |
| <b>Southernness Point - no finds found</b> |            |       |                   |           |         |  |                     |          |                        |          |
| <b>Sellafield (Sellafield North)</b>       |            |       |                   |           |         |  |                     |          |                        |          |
| 2008/01/04/01                              | 04/01/2008 | 10:29 | Stone             | 3 x 2     | 2       | Stone  |                     |          |                        |          |
| 2008/01/04/02                              | 04/01/2008 | 11:06 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2008/01/04/03                              | 04/01/2008 | 11:25 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2008/01/04/04                              | 04/01/2008 | 11:45 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |          |
| 2008/01/04/05                              | 04/01/2008 | 12:01 | Stone             | 7 x 5     | 6       | Stone  |                     |          |                        |          |
| 2008/01/04/06                              | 04/01/2008 | 12:20 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2008/01/04/07                              | 04/01/2008 | 12:40 | Stone             | 4 x 2     | 3       | Stone  | 5                   | 2        | 155                    | 120      |
| 2008/01/07/01                              | 07/01/2008 | 12:16 | Stone             | 30 x 30   | 30      | Stone  |                     |          |                        |          |
| 2008/01/07/02                              | 07/01/2008 | 12:37 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2008/01/07/03                              | 07/01/2008 | 14:17 | Stone             | 9 x 5     | 7       | Stone  |                     |          |                        |          |
| 2008/01/07/04                              | 07/01/2008 | 14:33 | Stone             | 40 x 20   | 30      | Stone  |                     |          |                        |          |
| 2008/01/07/05                              | 07/01/2008 | 15:01 | Stone             | 10 x 5    | 7       | Stone  | 4                   | 1        | 159                    | 121      |
| 2008/01/08/01                              | 08/01/2008 | 07:55 | Stone             | 5 x 5     | 5       | Stone  |                     |          |                        |          |
| 2008/01/08/02                              | 08/01/2008 | 08:32 | Particle          | N/A       |         | Particle   | 1                   | 1        | 160                    | 122      |
| 2008/01/09/01                              | 09/01/2008 | 08:08 | Stone             | 10 x 10   | 10      | Stone  | 1                   | 0        | 161                    | 122      |
| 2008/01/10/01                              | 10/01/2008 | 07:35 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2008/01/10/02                              | 10/01/2008 | 08:17 | Particle          | N/A       |         | Particle   |                     |          |                        |          |
| 2008/01/10/03                              | 10/01/2008 | 08:39 | Stone             | 15 x 15   | 15      | Stone  | 1                   | 2        | 162                    | 124      |
| 2008/01/11/01                              | 11/01/2008 | 07:37 | Stone             | 70 x 40   | 55      | Stone  |                     |          |                        |          |
| 2008/01/11/02                              | 11/01/2008 | 08:06 | Stone             | 1 x 1     | 1       | Particle   |                     |          |                        |          |

| ID   | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |           | Cumulative Area Totals |          |
|--|------------|-------|-------------------|-----------|---------|--|---------------------|-----------|------------------------|----------|
|  |            |       |                   | Range     | Average |  | Stone               | Particle  | Stone                  | Particle |
| 2008/01/11/03  | 11/01/2008 | 08:54 | Stone             | 10 x 15   | 12      | Stone  |                     |           |                        |          |
| 2008/01/11/04  | 11/01/2008 | 09:52 | Stone             | 1 x 1     | 1       | Particle   |                     |           |                        |          |
| 2008/01/11/05  | 11/01/2008 | 10:23 | Stone             | 5 x 4     | 4       | Stone  | 3                   | 2         | 165                    | 126      |
| 2008/01/16/01  | 16/01/2008 | 10:06 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/16/02  | 16/01/2008 | 12:04 | Particle          | N/A       |         | Particle   | 0                   | 2         | 165                    | 128      |
| 2008/01/22/01  | 22/01/2008 | 09:07 | Stone             | 1 x 1     | 1       | Particle   |                     |           |                        |          |
| 2008/01/22/02  | 22/01/2008 | 12:34 | Stone             | 25 x 20   | 22      | Stone  |                     |           |                        |          |
| 2008/01/22/03  | 22/01/2008 | 13:40 | Stone             | 10 x 3    | 6       | Stone  |                     |           |                        |          |
| 2008/01/22/04  | 22/01/2008 | 14:53 | Stone             | 10 x 5    | 7       | Stone  | 3                   | 1         | 168                    | 129      |
| 2008/01/23/01  | 23/01/2008 | 08:30 | Stone             | 40 x 30   | 35      | Stone  |                     |           |                        |          |
| 2008/01/23/02  | 23/01/2008 | 09:25 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/23/03  | 23/01/2008 | 09:59 | Stone             | 10 x 7    | 8       | Stone  | 2                   | 1         | 170                    | 130      |
| 2008/01/24/01  | 24/01/2008 | 07:53 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/24/02  | 24/01/2008 | 10:21 | Particle          | N/A       |         | Particle   | 0                   | 2         | 170                    | 132      |
| 2008/01/25/01  | 25/01/2008 | 08:26 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/25/02  | 25/01/2008 | 09:00 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/25/03  | 25/01/2008 | 10:29 | Stone             | 3 x 3     | 3       | Stone  | 1                   | 2         | 171                    | 134      |
| 2008/01/29/01  | 29/01/2008 | 09:27 | Particle          | N/A       |         | Particle   | 0                   | 1         | 171                    | 135      |
| 2008/01/30/01  | 30/01/2008 | 11:53 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/30/02  | 30/01/2008 | 12:20 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/30/03  | 30/01/2008 | 13:01 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/01/30/04  | 30/01/2008 | 13:33 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2008/01/30/05  | 30/01/2008 | 14:22 | Stone             | 1 x 1     | 1       | Particle   | 1                   | 4         | 172                    | 139      |
| 2008/01/31/01  | 31/01/2008 | 07:51 | Stone             | 40 x 30   | 35      | Stone  |                     |           |                        |          |
| 2008/01/31/02  | 31/01/2008 | 08:37 | Stone             | 35 x 20   | 27      | Stone  |                     |           |                        |          |
| 2008/01/31/03  | 31/01/2008 | 10:21 | Stone             | 2 x 2     | 2       | Stone  |                     |           |                        |          |
| 2008/01/31/04  | 31/01/2008 | 10:49 | Stone             | 30 x 30   | 30      | Stone  |                     |           |                        |          |
| 2008/01/31/05  | 31/01/2008 | 11:04 | Stone             | 8 x 6     | 7       | Stone  |                     |           |                        |          |
| 2008/01/31/06  | 31/01/2008 | 11:32 | Stone             | 3 x 3     | 3       | Stone  | 6                   | 0         | 178                    | 139      |
| 2008/02/05/01  | 05/02/2008 | 14:34 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/05/02  | 05/02/2008 | 14:52 | Particle          | N/A       |         | Particle   | 0                   | 2         | 178                    | 141      |
| 2008/02/06/01  | 06/02/2008 | 12:56 | Stone             | 30 x 20   | 25      | Stone  |                     |           |                        |          |
| 2008/02/06/02  | 06/02/2008 | 13:15 | Stone             | 30 x 30   | 30      | Stone  |                     |           |                        |          |
| 2008/02/06/03  | 06/02/2008 | 16:29 | Stone             | 6 x 5     | 5       | Stone  | 3                   | 0         | 181                    | 141      |
| 2008/02/07/01  | 07/02/2008 | 07:08 | Stone             | 3 x 3     | 3       | Stone  |                     |           |                        |          |
| 2008/02/07/02  | 07/02/2008 | 07:27 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/07/03  | 07/02/2008 | 07:56 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/07/04  | 07/02/2008 | 08:10 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/07/05  | 07/02/2008 | 08:25 | Stone             | 70 x 50   | 60      | Stone  |                     |           |                        |          |
| 2008/02/07/06  | 07/02/2008 | 15:35 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/07/07  | 07/02/2008 | 16:12 | Stone             | 3 x 2     | 2       | Stone  |                     |           |                        |          |
| 2008/02/07/08  | 07/02/2008 | 16:12 | Particle          | N/A       |         | Particle   | 3                   | 5         | 184                    | 146      |
| 2008/02/08/01  | 08/02/2008 | 08:21 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/08/02  | 08/02/2008 | 08:47 | Stone             | 40 x 25   | 32      | Stone  |                     |           |                        |          |
| 2008/02/08/03  | 08/02/2008 | 09:07 | Stone             | 10 x 5    | 7       | Stone  | 2                   | 1         | 186                    | 147      |
| 2008/02/11/01  | 11/02/2008 | 10:43 | Stone             | 1 x 1     | 1       | Particle   |                     |           |                        |          |
| 2008/02/11/02  | 11/02/2008 | 11:07 | Stone             | 25 x 20   | 22      | Stone  |                     |           |                        |          |
| 2008/02/11/03  | 11/02/2008 | 16:42 | Particle          | N/A       |         | Particle   | 1                   | 2         | 187                    | 149      |
| 2008/02/12/01  | 12/02/2008 | 09:58 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/12/02  | 12/02/2008 | 10:46 | Stone             | 4 x 4     | 4       | Stone  | 1                   | 1         | 188                    | 150      |
| 2008/02/13/01  | 13/02/2008 | 07:35 | Stone             | 15 x 10   | 12      | Stone  |                     |           |                        |          |
| 2008/02/13/02  | 13/02/2008 | 08:48 | Stone             | 90 x 60   | 75      | Stone  |                     |           |                        |          |
| 2008/02/13/03  | 13/02/2008 | 09:16 | Particle          | N/A       |         | Particle   |                     |           |                        |          |
| 2008/02/13/04  | 13/02/2008 | 10:03 | Stone             | 50 x 40   | 45      | Stone  |                     |           |                        |          |
| 2008/02/13/05  | 13/02/2008 | 10:26 | Stone             | 12 x 12   | 12      | Stone  |                     |           |                        |          |
| 2008/02/13/06  | 13/02/2008 | 10:48 | Stone             | 20 x 20   | 20      | Stone  |                     |           |                        |          |
| 2008/02/13/07  | 13/02/2008 | 11:07 | Stone             | 10 x 8    | 9       | Stone  | 6                   | 1         | 194                    | 151      |
| 2008/02/14/01  | 14/02/2008 | 09:45 | Stone             | 10 x 8    | 9       | Stone  |                     |           |                        |          |
| 2008/02/14/02  | 14/02/2008 | 10:04 | Stone             | 15 x 10   | 12      | Stone  |                     |           |                        |          |
| 2008/02/14/03  | 14/02/2008 | 10:35 | Particle          | N/A       |         | Particle   | 2                   | 1         | 196                    | 152      |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | <b>46</b>           | <b>34</b> | <b>QA Check OK</b>     |          |
| <b>Seascale (Seascale to Barn Scar) (18 to 22 Feb 2008) - No finds found</b> |            |       |                   |           |         |  |                     |           |                        |          |

| ID   | Date       | Time  | NUVIA Description | Size (mm) |         | Description using definition based on Particles < 2 mm | Daily & Area Totals |          | Cumulative Area Totals |                    |
|--|------------|-------|-------------------|-----------|---------|--|---------------------|----------|------------------------|--------------------|
|  |            |       |                   | Range     | Average |  | Stone               | Particle | Stone                  | Particle           |
| <b>Sellafield (Sellafield Beach - resurvey of previously surveyed areas)</b> |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/03/03/01  | 03/03/2008 | 13:21 | Stone             | 25 x 25   | 25      | Stone  |                     |          |                        |                    |
| 2008/03/03/02  | 03/03/2008 | 13:49 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2008/03/03/03  | 03/03/2008 | 14:19 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |                    |
| 2008/03/03/04  | 03/03/2008 | 15:12 | Stone             | 25 x 20   | 22      | Stone  |                     |          |                        |                    |
| 2008/03/03/05  | 03/03/2008 | 15:40 | Stone             | 5 x 4     | 4       | Stone  | 4                   | 1        | 200                    | 153                |
| 2008/03/04/01  | 04/03/2008 | 13:10 | Stone             | 40 x 25   | 32      | Stone  |                     |          |                        |                    |
| 2008/03/04/02  | 04/03/2008 | 13:44 | Stone             | 8 x 6     | 7       | Stone  | 2                   | 0        | 202                    | 153                |
| 2008/03/06/01  | 06/03/2008 | 14:51 | Stone             | 6 x 4     | 5       | Stone  |                     |          |                        |                    |
| 2008/03/06/02  | 06/03/2008 | 15:33 | Stone             | 2 x 2     | 2       | Stone  |                     |          |                        |                    |
| 2008/03/06/03  | 06/03/2008 | 16:43 | Stone             | 30 x 30   | 30      | Stone  |                     |          |                        |                    |
| 2008/03/06/04  | 06/03/2008 | 18:14 | Stone             | 120 x 90  | 105     | Stone  | 4                   | 0        | 206                    | 153                |
| 2008/03/07/01  | 07/03/2008 | 07:21 | Particle          | N/A       |         | Particle   | 0                   | 1        | 206                    | 154                |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | 10                  | 2        |                        | <b>QA Check OK</b> |
| <b>Sellafield (Sellafield North - resurvey of previously surveyed areas)</b> |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/03/11/01  | 11/03/2008 | 10:27 | Stone             | 2 x 2     | 2       | Stone  | 1                   | 0        | 207                    | 154                |
| 2008/03/13/01  | 13/03/2008 | 07:48 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2008/03/13/02  | 13/03/2008 | 08:55 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2008/03/13/03  | 13/03/2008 | 09:22 | Stone             | 20 x 12   | 16      | Stone  |                     |          |                        |                    |
| 2008/03/13/04  | 13/03/2008 | 10:16 | Stone             | 8 x 4     | 6       | Stone  | 2                   | 2        | 209                    | 156                |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | 3                   | 2        |                        | <b>QA Check OK</b> |
| <b>St Bees (1st April until 20th April 2008)</b>                             |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/04/01/01  | 01/04/2008 | 15:35 | Particle          | N/A       |         | Particle   | 0                   | 1        | 209                    | 157                |
| 2008/04/11/01  | 01/04/2008 | 10:43 | Particle          | N/A       |         | Particle   | 0                   | 1        | 209                    | 158                |
| 2008/04/16/01  | 01/04/2008 | 13:36 | Particle          | N/A       |         | Particle   | 0                   | 1        | 209                    | 159                |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | 0                   | 3        |                        | <b>QA Check OK</b> |
| <b>Seascale (21 April to 11th May 2008)</b>                                  |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/04/21/01  | 21/04/2008 | 16:37 | Particle          | N/A       |         | Particle   | 0                   | 1        | 209                    | 160                |
| 2008/04/23/01  | 23/04/2008 | 11:03 | Particle          | N/A       |         | Particle   | 0                   | 1        | 209                    | 161                |
| 2008/05/09/01  | 09/05/2008 | 08:17 | Pebble            | 8 x 6     | 7       | Stone  | 1                   | 0        | 210                    | 161                |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | 1                   | 2        |                        | <b>QA Check OK</b> |
| <b>Drigg (12th May to 15th June 2008)</b>                                    |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/05/27/01  | 27/05/2008 | 09:37 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2008/05/27/02  | 27/05/2008 | 12:47 | Particle          | N/A       |         | Particle   | 0                   | 2        | 210                    | 163                |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | 0                   | 2        |                        | <b>QA Check OK</b> |
| <b>Braystones (16th to 20th June 2008)</b>                                   |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/06/17/01  | 17/06/2008 | 17:11 | Particle          | N/A       |         | Particle   | 0                   | 1        | 210                    | 164                |
| 2008/06/18/01  | 18/06/2008 | 19:02 | Particle          | N/A       |         | Particle   | 0                   | 1        | 210                    | 165                |
|  |            |       |                   |           |         | <b>Area Totals =</b>                                   | 0                   | 2        |                        | <b>QA Check OK</b> |
| <b>Sellafield (23rd June to 27th July 2008)</b>                              |            |       |                   |           |         |  |                     |          |                        |                    |
| 2008/06/23/01  | 23/06/2008 | 07:01 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2008/06/23/02  | 23/06/2008 | 08:39 | Stone             | 25 x 15   | 20      | Stone  |                     |          |                        |                    |
| 2008/06/23/03  | 23/06/2008 | 09:13 | Stone             | 8 x 5     | 6       | Stone  |                     |          |                        |                    |
| 2008/06/23/04  | 23/06/2008 | 09:39 | Pebble            | 18 x 15   | 16      | Stone  |                     |          |                        |                    |
| 2008/06/23/05  | 23/06/2008 | 10:12 | Particle          | N/A       |         | Particle   | 3                   | 2        | 213                    | 167                |
| 2008/06/24/01  | 24/06/2008 | 08:19 | Stone             | 10 x 15   | 12      | Stone  |                     |          |                        |                    |
| 2008/06/24/02  | 24/06/2008 | 09:06 | Stone             | 25 x 25   | 25      | Stone  |                     |          |                        |                    |
| 2008/06/24/03  | 24/06/2008 | 10:02 | Stone             | 10 x 5    | 7       | Stone  |                     |          |                        |                    |
| 2008/06/24/04  | 24/06/2008 | 11:15 | Stone             | 42 x 40   | 41      | Stone  |                     |          |                        |                    |
| 2008/06/24/05  | 24/06/2008 | 12:19 | Stone             | 8 x 4     | 6       | Stone  |                     |          |                        |                    |
| 2008/06/24/06  | 24/06/2008 | 13:04 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |
| 2008/06/24/07  | 24/06/2008 | 14:20 | Stone             | 8 x 5     | 6       | Stone  | 6                   | 1        | 219                    | 168                |
| 2008/06/25/01  | 25/06/2008 | 10:17 | Particle          | N/A       |         | Particle   |                     |          |                        |                    |

| ID   | Date       | Time  | NUVIA Description               | Size (mm)    |                 | Description using definition based on Particles < 2 mm           | Daily & Area Totals |                    | Cumulative Area Totals |          |
|--|------------|-------|---------------------------------|--------------|-----------------|--|---------------------|--------------------|------------------------|----------|
|  |            |       |                                 | Range        | Average         |  | Stone               | Particle           | Stone                  | Particle |
| 2008/06/25/02  | 25/06/2008 | 12:19 | Stone                           | 2 x 1        | 1               | Particle   |                     |                    |                        |          |
| 2008/06/25/03  | 25/06/2008 | 12:57 | Stone                           | 16 x 12      | 14              | Stone  |                     |                    |                        |          |
| 2008/06/25/04  | 25/06/2008 | 14:02 | Stone                           | 2 x 2        | 2               | Stone  | 2                   | 2                  | 221                    | 170      |
| 2008/06/26/01  | 26/06/2008 | 07:50 | Stone                           | 3 x 3        | 3               | Stone  |                     |                    |                        |          |
| 2008/06/26/02  | 26/06/2008 | 08:06 | Stone                           | 2 x 2        | 2               | Stone  |                     |                    |                        |          |
| 2008/06/26/03  | 26/06/2008 | 08:49 | Stone                           | 15 x 10      | 12              | Stone  |                     |                    |                        |          |
| 2008/06/26/04  | 26/06/2008 | 14:08 | Particle                        | N/A          |                 | Particle   |                     |                    |                        |          |
| 2008/06/26/05  | 26/06/2008 | 14:49 | Stone                           | 12 x 12      | 12              | Stone  | 4                   | 1                  | 225                    | 171      |
| 2008/06/30/01  | 30/06/2008 | 14:34 | Stone                           | 15 x 15      | 15              | Stone  |                     |                    |                        |          |
| 2008/06/30/02  | 30/06/2008 | 14:51 | Particle                        | N/A          |                 | Particle   |                     |                    |                        |          |
| 2008/06/30/03  | 30/06/2008 | 15:31 | Stone                           | 28 x 20      | 24              | Stone  | 2                   | 1                  | 227                    | 172      |
| 2008/07/01/01  | 01/07/2008 | 15:14 | Stone                           | 2 x 2        | 2               | Stone  |                     |                    |                        |          |
| 2008/07/01/02  | 01/07/2008 | 15:52 | Particle                        | N/A          |                 | Particle   |                     |                    |                        |          |
| 2008/07/01/03  | 01/07/2008 | 16:28 | Particle                        | N/A          |                 | Particle   |                     |                    |                        |          |
| 2008/07/01/04  | 01/07/2008 | 17:46 | Stone                           | 60 x 45      | 52              | Stone  |                     |                    |                        |          |
| 2008/07/01/05  | 01/07/2008 | 18:09 | Stone                           | 55 x 55      | 55              | Stone  | 3                   | 2                  | 230                    | 174      |
| 2008/07/02/01  | 02/07/2008 | 13:03 | Stone                           | 5 x 3        | 4               | Stone  |                     |                    |                        |          |
| 2008/07/02/02  | 02/07/2008 | 13:27 | Stone                           | 20 x 20      | 20              | Stone  |                     |                    |                        |          |
| 2008/07/02/03  | 02/07/2008 | 13:54 | Stone                           | 35 x 23      | 29              | Stone  | 3                   | 0                  | 233                    | 174      |
| 2008/07/03/01  | 03/07/2008 | 14:57 | Stone                           | 20 x 16      | 18              | Stone  |                     |                    |                        |          |
| 2008/07/03/02  | 03/07/2008 | 15:24 | Stone                           | 15 x 12      | 13              | Stone  |                     |                    |                        |          |
| 2008/07/03/03  | 03/07/2008 | 15:42 | Stone                           | 7 x 7        | 7               | Stone  |                     |                    |                        |          |
| 2008/07/03/04  | 03/07/2008 | 17:02 | Particle                        | N/A          |                 | Particle   |                     |                    |                        |          |
| 2008/07/03/05  | 03/07/2008 | 18:10 | Stone                           | 5 x 5        | 5               | Stone  |                     |                    |                        |          |
| 2008/07/03/06  | 03/07/2008 | 18:27 | Particle                        | N/A          |                 | Particle   | 4                   | 2                  | 237                    | 176      |
| 2008/07/04/01  | 04/07/2008 | 06:10 | Stone                           | 32 x 30      | 31              | Stone  |                     |                    |                        |          |
| 2008/07/04/02  | 04/07/2008 | 06:45 | Stone                           | 3 x 3        | 3               | Stone  |                     |                    |                        |          |
| 2008/07/04/03  | 04/07/2008 | 08:00 | Stone                           | 5 x 5        | 5               | Stone  |                     |                    |                        |          |
| 2008/07/04/04  | 04/07/2008 | 08:22 | Stone                           | 10 x 10      | 10              | Stone  | 4                   | 0                  | 241                    | 176      |
| 2008/07/07/01  | 07/07/2008 | 09:08 | Stone                           | 80 x 55      | 67              | Stone  |                     |                    |                        |          |
| 2008/07/07/02  | 07/07/2008 | 11:04 | Stone                           | 40 x 35      | 37              | Stone  |                     |                    |                        |          |
| 2008/07/07/03  | 07/07/2008 | 12:15 | Particle                        | N/A          |                 | Particle   | 2                   | 1                  | 243                    | 177      |
| 2008/07/08/01  | 08/07/2008 | 08:58 | Stone                           | 5 x 5        | 5               | Stone  |                     |                    |                        |          |
| 2008/07/08/02  | 08/07/2008 | 09:18 | Particle                        | N/A          |                 | Particle   | 1                   | 1                  | 244                    | 178      |
|  |            |       |                                 |              |                 | <b>Area Totals =</b>   | <b>34</b>           | <b>13</b>          | <b>QA Check OK</b>     |          |
| <b>Sellafield (15th September to ?? September 2008)</b>  |            |       |                                 |              |                 |  |                     |                    |                        |          |
| 2008/09/15/01  | 15/09/2008 | 17:48 | Particle                        | N/A          |                 | Particle   | 0                   | 1                  | 244                    | 179      |
|  |            |       |                                 |              |                 | <b>Area Totals =</b>   | <b>0</b>            | <b>1</b>           | <b>QA Check OK</b>     |          |
|  |            |       |                                 |              |                 | <b>Totals number of each type of find for NUKEM monitoring =</b> | <b>244</b>          | <b>179</b>         |                        |          |
|  |            |       |                                 |              |                 | <b>Total number of stones and particles =</b>                    |                     | <b>423</b>         |                        |          |
|  |            |       |                                 |              |                 | <b>QA check: Total number of entry rows above =</b>              |                     | <b>425</b>         |                        |          |
|  |            |       |                                 |              |                 | <b>QA check: (rows - two silts = finds)</b>                      |                     | <b>QA Check OK</b> |                        |          |
|  |            |       | <b>Area Totals</b>              |              |                 |  |                     |                    |                        |          |
|  |            |       | <b>New Monitoring Area Name</b> |              |                 | <b>Area Cumulative Totals to Date</b>                            |                     |                    |                        |          |
|  |            |       |                                 | <b>Stone</b> | <b>Particle</b> | <b>Total</b>   |                     |                    |                        |          |
|  |            |       | St Bees                         | 0            | 9               | 9  |                     |                    |                        |          |
|  |            |       | Nethertown                      | 0            | 0               | 0  |                     |                    |                        |          |
|  |            |       | Braystones                      | 0            | 7               | 7  |                     |                    |                        |          |
|  |            |       | Sellafield                      | 243          | 147             | 390  |                     |                    |                        |          |
|  |            |       | Seascale                        | 1            | 9               | 10   |                     |                    |                        |          |
|  |            |       | Drigg                           | 0            | 7               | 7  |                     |                    |                        |          |
|  |            |       | Workington                      | 0            | 0               | 0  |                     |                    |                        |          |
|  |            |       | Total for all areas             | 244          | 179             | 423  |                     |                    |                        |          |
|  |            |       | QA Check against above total    | <b>OK</b>    | <b>OK</b>       | <b>OK</b>  |                     |                    |                        |          |
| <b>Notes:</b>  |            |       |                                 |              |                 |  |                     |                    |                        |          |
| 1. If NUKEM size is N/A for pebble or stone leave average blank to force description to particle |            |       |                                 |              |                 |  |                     |                    |                        |          |
| 2. New area names back fitted to historic surveys with old names given in brackets               |            |       |                                 |              |                 |  |                     |                    |                        |          |

# Summary of Beach Finds Analysis Data

Last updated: 16/09/2008

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| ID   | Lab's Serial Number | Size (mm) |         | Triggered Alarms  | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu\text{Sv/hr}$ |          |                                  | Radionuclide Activity |               | Estimated Age in Years for Magnox Type Material |                            |
|--|---------------------|-----------|---------|-------------------|-------------|-----------------|------------|-------------------------------------|----------|----------------------------------|-----------------------|---------------|---|----------------------------|
|  |                     | Range     | Average |                   |             |                 |            | $\beta/\gamma$                      | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide          | Activity (Bq) | Based on Cs134-Cs137 ratio                      | Based on Pu239-Pu241 ratio |
| <b>Sellafield Beach</b>                        |                     |           |         |                   |             |                 |            |                                     |          |                                  |                       |               |   |                            |
| 2006/11/29/01                                  | 1081030             | 45 x 22   | 34      |                   | Pebble      | E301605 N503300 | 2.5        | 5                                   | 3        | 1.67                             | <sup>60</sup> Co      | 5.E+02        | 10  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 1.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | 7.E+01        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | 9.E+01        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 7.E+03        |   |                            |
| 2006/11/29/02                                  | 1081031             | <1        | 1       |                   | Particle    | E301575 N503340 | 15         | 60                                  | 3        | 20.00                            | <sup>60</sup> Co      | < 5.E+00      | > 22  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 6.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 2.E+04        |   |                            |
| 2006/11/30/01                                  | 1081032             | 12 x 20   | 16      |                   | Stone       | E301841 N503349 | 9          | 40                                  | 7        | 5.71                             | <sup>60</sup> Co      | < 6.E+00      | > 24  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 9.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 8.E+04        |   |                            |
| 2006/11/30/02                                  | 1081033             | 18 x 30   | 24      |                   | Stone       | E301813 N503501 | 0          | 40                                  | 5        | 8.00                             | <sup>60</sup> Co      | < 4.E+00      | > 25  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 8.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 9.E+04        |   |                            |
| 2006/11/30/03                                  | 1081036             | 7 x 4     | 6       |                   | Particle    | E301772 N503354 | 9          | 14                                  | 4        | 3.50                             | <sup>60</sup> Co      | < 5.E+00      | > 24  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 7.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 5.E+04        |   |                            |
| 2006/12/01/01                                  | 1081041             | 7 x 5     | 6       |                   | Particle    | E301843 N503484 | 5          | 42                                  | 5        | 8.40                             | <sup>60</sup> Co      | < 6.E+00      | > 24  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 8.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 5.E+04        |   |                            |
| 2006/12/01/02                                  | 1081043             | 8 x 4     | 6       |                   | Particle    | E301556 N503325 | 12         | 10                                  | 2        | 5.00                             | <sup>60</sup> Co      | < 4.E+00      | > 20  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 4.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 9.E+03        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>154</sup> Eu     | 2.E+01        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | 5.E+02        |   |                            |
| 2006/12/01/03                                  | 1081044             | 3 x 1     | 2       |                   | Particle    | E301562 N503331 | 10         | 40                                  | 5        | 8.00                             | <sup>60</sup> Co      | < 5.E+00      | > 21  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 6.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 2.E+04        |   |                            |
| 2006/12/01/04                                  | 1081045             | 30 x 20   | 25      |                   | Pebble      | E301583 N503308 | -          | 10                                  | 2        | 5.00                             | <sup>60</sup> Co      | < 5.E+00      | > 19  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 6.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 1.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | 1.E+02        |   |                            |
| <b>Braystones Beach</b>                        |                     |           |         |                   |             |                 |            |                                     |          |                                  |                       |               |   |                            |
| 2007/01/29/01                                  | 1083006             | <1        | 1       | Cs137             | Particle    | E299910 N505941 | 10         | 34                                  | 2        | 17.00                            | <sup>60</sup> Co      | < 1.E+01      | > 18  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 9.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 9.E+03        |   |                            |
| 2007/01/30/01                                  | 1083113             | 1         | 1       | Cs137             | Particle    | E300063 N505951 | 10         | 18                                  | 2        | 9.00                             | <sup>60</sup> Co      | < 5.E+00      | > 21  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 8.E+00      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 2.E+04        |   |                            |
| 2007/01/30/02                                  | 1083114             | <1        | 1       | Background        | Particle    | E299787 N505824 | 15         | <1                                  | <1       |                                  | <sup>60</sup> Co      | 9.E-02        | N/A   | 28                         |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 5.E-01        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | 6.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>238</sup> Pu     | 2.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>239</sup> Pu     | 2.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>237</sup> U      | 1.E+01        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Pu     | 4.E+05        |   |                            |
| <b>St Bees South</b>                           |                     |           |         |                   |             |                 |            |                                     |          |                                  |                       |               |   |                            |
| 2007/05/24/01                                  | 1101226             | N/A       | N/A     | Co60 & Background | Particle    | E296677 N510804 | 2.5        | 1                                   | 0        |                                  | <sup>60</sup> Co      | < 1.E+01      | N/A   | 27                         |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 1.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | < 4.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | 4.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>238</sup> Pu     | 2.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>239</sup> Pu     | 1.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>237</sup> U      | 8.E+00        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Pu     | 3.E+05        |   |                            |
| <b>Ehen Spit plus part of Sellafield North</b> |                     |           |         |                   |             |                 |            |                                     |          |                                  |                       |               |   |                            |
| 2007/05/24/01                                  | 1101729             | 5 x 10    | 7       | Cs137             | Particle    | E301649 N503257 | 5          | 20                                  | 2        | 10.00                            | <sup>60</sup> Co      | < 2.E+01      | > 19  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 6.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | < 4.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 3.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | < 3.E+02      |   |                            |
| 2007/05/24/02                                  | 1101730             | 40        | 40      | Cs137             | Pebble      | E301675 N503274 | 15         | 40                                  | 3        | 13.33                            | <sup>60</sup> Co      | < 2.E+01      | > 21  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 9.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | < 5.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 7.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | < 4.E+02      |   |                            |
| 2007/05/24/03                                  | 1101731             | 20        | 20      | Cs137             | Stone       | E301750 N503272 | 10         | 55                                  | 1.5      | 36.67                            | <sup>60</sup> Co      | < 9.E+00      | > 19  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 6.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | < 4.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 3.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | < 3.E+02      |   |                            |
| 2007/05/24/04                                  | 1101732             | 3         | 3       | Cs137             | Particle    | E301972 N503145 | 10         | 10                                  | 1        | 10.00                            | <sup>60</sup> Co      | < 1.E+01      | > 17  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 3.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | < 2.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 1.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | < 1.E+02      |   |                            |
| 2007/05/24/05                                  | 1101733             | N/A       | N/A     | Cs137             | Particle    | E302029 N503115 | 5          | 10                                  | 0        |                                  | <sup>60</sup> Co      | < 2.E+01      | > 16  |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>106</sup> Ru     | < 3.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>125</sup> Sb     | < 2.E+02      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>134</sup> Cs     | < 2.E+01      |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>137</sup> Cs     | 1.E+04        |   |                            |
|  |                     |           |         |                   |             |                 |            |                                     |          |                                  | <sup>241</sup> Am     | < 2.E+02      |   |                            |

| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                      | Radionuclide Activity      |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------|----------------------------|---------------|---|----------------------------|
|               |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ ratio | Radionuclide               | Activity (Bq) | Based on Cs134-Cs137 ratio                      | Based on Pu239-Pu241 ratio |
|               |                     |           |         |                  |             |                 |            |                               |          |                      |                            |               | <   | >                          |
| 2007/05/25/01 | 1101809             | N/A       | N/A     | Background       | Particle    | E302046 N503073 | 1.5        | 5                             | 1.5      | 3.33                 | <sup>60</sup> Co < 2.E+01  |               | N/A   | 33                         |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 4.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 1.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 4.E+05 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>238</sup> Pu < 9.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>239</sup> Pu < 6.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>237</sup> U < 3.E+01  |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Pu < 1.E+06 |               |   |                            |
| 2007/05/25/02 | 1101810             | N/A       | N/A     | Cs137            | Particle    | E301582 N503360 | 5          | 10                            | 0.5      | 20.00                | <sup>60</sup> Co < 2.E+01  | >             | 14  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 5.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/05/25/03 | 1101811             | < 5       | 5       | Cs137            | Particle    | E301583 N503359 | 10         | 5                             | 0        |                      | <sup>60</sup> Co < 1.E+01  | >             | 14  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 7.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/05/25/04 | 1101812             | 50        | 50      | Cs137            | Pebble      | E301614 N503317 | 20         | 120                           | 5        | 24.00                | <sup>60</sup> Co < 1.E+01  | >             | 22  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 1.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 7.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 3.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+05 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 5.E+02 |               |   |                            |
| 2007/05/25/05 | 1102365             | N/A       |         | Cs137            | Particle    | E301590 N503316 | 7.5        | 4.5                           | 0        |                      | <sup>60</sup> Co < 1.E+01  | >             | 17  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/05/25/06 | 1102165             | N/A       | N/A     | Cs137            | Particle    | E301588 N503334 | 2          | 10                            | 1        | 10.00                | <sup>60</sup> Co < 2.E+01  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 1.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/05/25/07 | 1102166             | N/A       | N/A     | Cs137            | Particle    | E301599 N503340 | 2          | 1                             | 0.5      | 2.00                 | <sup>60</sup> Co < 1.E+01  |               | N/A   | 63                         |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 4.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+05 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>238</sup> Pu < 8.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>239</sup> Pu < 8.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>237</sup> U < 1.E+01  |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Pu < 4.E+05 |               |   |                            |
| 2007/05/25/08 | 1102167             | N/A       |         | Cs137            | Particle    | E301716 N503413 | 8          | 12                            | 0.3      | 40.00                | <sup>60</sup> Co < 1.E+01  | >             | 18  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/05/25/09 | 1102168             | 5         | 5       | Cs137            | Particle    | E301728 N503425 | 17         | 15                            | 1.5      | 10.00                | <sup>60</sup> Co < 1.E+01  | >             | 19  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 5.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 3.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/05/25/10 | 1102169             | ~ 8       | 8       | Cs137            | Particle    | E301758 N503436 | 17         | 40                            | 2        | 20.00                | <sup>60</sup> Co < 8.E+00  | >             | 21  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 1.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 5.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 3.E+02 |               |   |                            |
| 2007/05/26/01 | 1102163             | 25        | 25      | Cs137            | Pebble      | E302106 N503043 | 10         | 30                            | 1        | 30.00                | <sup>60</sup> Co < 1.E+01  | >             | 19  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 5.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 3.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/05/26/02 | 1102164             | N/A       | N/A     | Cs137            | Particle    | E302146 N502985 | <1.5       | 25                            | 0        |                      | <sup>60</sup> Co < 9.E+00  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/05/27/01 | 1102170             | N/A       |         | Cs137            | Particle    | E302246 N502870 | <2.5       | 20                            | 0.5      | 40.00                | <sup>60</sup> Co < 2.E+01  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/05/27/02 | 1102171             | 20 x 30   | N/A     | Cs137            | Silt        | E302240 N502839 | 13         | 0                             | 0        |                      | <sup>60</sup> Co < 4.E+00  | >             | 7   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 4.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 5.E+00 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+03 |               |   |                            |
| 2007/05/27/03 | 1102172             | 5         | 5       | Cs137            | Particle    | E302276 N502859 | <1.5       | 20                            | 0        |                      | <sup>60</sup> Co < 2.E+01  | >             | 17  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/05/28/01 | 1102173             | 15        | 15      | Cs137            | Stone       | E302163 N502987 | 3-4        | 40                            | 1        | 40.00                | <sup>60</sup> Co < 1.E+01  | >             | 17  |                            |





| ID  | Lab's Serial Number | Size (mm) |         | Triggered Alarms   | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity   |               |                   | Estimated Age in Years for Magnox Type Material |   |
|---|---------------------|-----------|---------|--------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|---|---------------|-------------------|---|---|
|   |                     | Range     | Average |                    |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide  | Activity (Bq) | Cs134:Cs137 ratio | Pu239:Pu241 ratio                               |   |
|   |                     |           |         |                    |             |                 |            |                               |          |                                  |   |               |                   |   | < |
| 2007/06/03/07   | 1103102             | 8         | 8       | Cs137 & Background | Particle    | E301695 N503620 | 23         | 60                            | 7        | 8.57                             | <sup>137</sup> Cs < 7.E+04<br><sup>241</sup> Am < 4.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 7.E+02<br><sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 1.E+05<br><sup>241</sup> Am < 4.E+02 | <             | >                 | 22  |   |
| 2007/06/03/08   | 1103104             | 10        | 10      | Cs137              | Pebble      | E301716 N503630 |            | 25                            | 2        | 12.50                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >                 | 21  |   |
| 2007/06/03/09   | 1103105             | 50        | 50      | Cs137              | Stone       | E301725 N503651 | 0          | 90                            | 15       | 6.00                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 9.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+04<br><sup>241</sup> Am < 4.E+02   | <             | >                 | 21  |   |
| <b>Seascale North</b>   |                     |           |         |                    |             |                 |            |                               |          |                                  |   |               |                   |   |   |
| 2007/06/05/01   | 1103514             | N/A       | N/A     | Cs137 & Co60       | Particle    | E303014 N501739 | < 1        | 125                           | 1        | 125.00                           | <sup>60</sup> Co < 6.E+03<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 1.E+02<br><sup>137</sup> Cs < 8.E+01<br><sup>241</sup> Am < 1.E+02   | <             | >                 | N/A   |   |
| 2007/06/06/01   | 1103943             | N/A       | N/A     | Cs137              | Particle    | E302423 N502028 | 5 - 8      | 80                            | 0        | ? Beta                           | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 2.E+02   | <             | >                 | 14  |   |
| 2007/06/07/01   | 1104080             | N/A       | N/A     | Cs137              | Particle    | E303012 N501244 | < 1        | 110                           | 0.5      | 220.00                           | <sup>60</sup> Co < 5.E+00<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02   | <             | >                 | 18  |   |
| <b>Sellafield Beach (First part of half speed monitoring)</b> |                     |           |         |                    |             |                 |            |                               |          |                                  |   |               |                   |   |   |
| 2007/09/04/01   | 1121563             | N/A       | 0       | Cs137 & Co60       | Particle    | E301660 N503252 | 1          | 100                           | 4        | 25.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 1.E+02   | <             | >                 | 14  |   |
| 2007/09/04/02   | 1121564             | 5         | 5       | Cs137 & Co60       | Stone       | E301724 N503244 | 15         | 50                            | 5        | 10.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >                 | 21  |   |
| 2007/09/04/03   | 1121565             | 4         | 4       | Cs137              | Stone       | E301780 N503276 | 12         | 40                            | 3        | 13.33                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02   | <             | >                 | 18  |   |
| 2007/09/04/04   | 1121566             | N/A       | 0       | Cs137 & Co60       | Particle    | E301925 N503312 | 0          | 140                           | 3        | 46.67                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 5.E+03<br><sup>241</sup> Am < 1.E+02   | <             | >                 | 14  |   |
| 2007/09/05/01   | 1121668             | 20 x 20   | 20      | Cs137              | Stone       | E301607 N503308 | 2          | 6                             | 2        | 3.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+03<br><sup>241</sup> Am < 9.E+01   | <             | >                 | 12  |   |
| 2007/09/05/02   | 1121669             | N/A       | 0       | Cs137              | Particle    | E301604 N503360 | 5          | 15                            | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 1.E+02   | <             | >                 | 14  |   |
| 2007/09/05/03   | 1121670             | 4 x 4     | 4       | Cs137              | Stone       | E301699 N503418 | 0          | 5                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 1.E+02   | <             | >                 | 15  |   |
| 2007/09/05/04   | 1121671             | 10 x 10   | 10      | Cs137 & Countrate  | Stone       | E301725 N503405 | 9          | 20                            | 2        | 10.00                            | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 4.E+02   | <             | >                 | 17  |   |
| 2007/09/06/01   | 1121803             | 2 x 2     | 2       | Cs137              | Stone       | E301720 N503464 | 3          | 35                            | 1        | 35.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02   | <             | >                 | 16  |   |

| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                      | Radionuclide Activity      |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------|----------------------------|---------------|---|----------------------------|
|               |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ ratio | Radionuclide               | Activity (Bq) | Based on Cs134:Cs137 ratio                      | Based on Pu239:Pu241 ratio |
|               |                     |           |         |                  |             |                 |            |                               |          |                      |                            |               | <   | >                          |
| 2007/09/06/02 | 1121804             | 15 x 15   | 15      | Cs137            | Stone       | E301720 N503468 | 7          | 6                             | 2        | 3.00                 | <sup>60</sup> Co < 7.E+00  | >             | 17  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/09/06/03 | 1121805             | 5 x 5     | 5       | Cs137            | Stone       | E301735 N503406 | 7          | 6                             | 0        |                      | <sup>60</sup> Co < 1.E+01  | >             | 11  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 3.E+02 |               |   |                            |
| 2007/09/06/04 | 1121806             | 2 x 2     | 2       | Cs137            | Stone       | E301726 N503444 | 4          | 8                             | 1        | 8.00                 | <sup>60</sup> Co < 1.E+01  | >             | 12  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 9.E+01 |               |   |                            |
| 2007/09/06/05 | 1121807             | 1 x 1     | 1       | Cs137            | Particle    | E301731 N503423 | 4          | 5                             | 1        | 5.00                 | <sup>60</sup> Co < 2.E+01  | >             | 13  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 4.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 5.E+02 |               |   |                            |
| 2007/09/06/06 | 1121808             | N/A       | 0       | Cs137            | Particle    | E301679 N503504 | 5          | 15                            | 1        | 15.00                | <sup>60</sup> Co < 9.E+00  | >             | 12  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 1.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 7.E+01 |               |   |                            |
| 2007/09/06/07 | 1121809             | 3 x 3     | 3       | Cs137            | Stone       | E301682 N503502 | 6          | 25                            | 2        | 12.50                | <sup>60</sup> Co < 2.E+01  | >             | 15  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 8.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/09/06/08 | 1121810             | 5 x 5     | 5       | Cs137            | Stone       | E301738 N503426 | 3          | 12                            | 1        | 12.00                | <sup>60</sup> Co < 1.E+01  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 1.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 7.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/09/06/09 | 1121811             | 20 x 20   | 20      | Cs137            | Stone       | E301730 N503450 | 2          | 20                            | 2        | 10.00                | <sup>60</sup> Co < 1.E+01  | >             | 15  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 7.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/09/07/01 | 1121835             | N/A       | 0       | Cs137            | Particle    | E301784 N503487 | 5          | 100                           | 0        | ? Beta               | <sup>60</sup> Co < 2.E+01  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/09/07/02 | 1121836             | N/A       | 0       | Background       | Particle    | E301809 N503491 | 8          | 10                            | 4        | 2.50                 | <sup>60</sup> Co < 1.E+01  |               | N/A   | 40                         |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 4.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 6.E+05 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>238</sup> Pu < 8.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>239</sup> Pu < 3.E+05 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>237</sup> U < 1.E+02  |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Pu < 5.E+06 |               |   |                            |
| 2007/09/10/01 | 1122193             | N/A       | 0       | Cs137            | Particle    | E301915 N503310 | 5          | 150                           | 2        | 75.00                | <sup>60</sup> Co < 2.E+02  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 3.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 2.E+02 |               |   |                            |
| 2007/09/10/02 | 1122194             | 40 x 40   | 40      | Cs137            | Stone       | E301662 N503352 | 10         | 6                             | 1        | 6.00                 | <sup>60</sup> Co < 1.E+01  | >             | 13  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 4.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 3.E+02 |               |   |                            |
| 2007/09/11/01 | 1122256             | N/A       | 0       | Cs137            | Particle    | E301492 N503445 | 5          | 280                           | 6        | 46.67                | <sup>60</sup> Co < 9.E+00  | >             | 16  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 3.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 1.E+04 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/09/11/02 | 1122257             | 2 x 2     | 2       | Cs137            | Stone       | E301521 N503408 | 6          | 8                             | 0        |                      | <sup>60</sup> Co < 1.E+01  | >             | 10  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 1.E+02 |               |   |                            |
| 2007/09/11/03 | 1122258             | N/A       | 0       | Cs137            | Particle    | E301512 N503436 | 3          | 10                            | 1        | 10.00                | <sup>60</sup> Co < 1.E+01  | >             | 12  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 2.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 1.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 2.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 2.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 3.E+03 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>241</sup> Am < 8.E+01 |               |   |                            |
| 2007/09/11/04 | 1122259             | N/A       | 0       | Cs137            | Particle    | E301703 N503558 | 28         | 80                            | 2        | 40.00                | <sup>60</sup> Co < 1.E+01  | >             | 20  |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>106</sup> Ru < 5.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>125</sup> Sb < 4.E+02 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>134</sup> Cs < 1.E+01 |               |   |                            |
|               |                     |           |         |                  |             |                 |            |                               |          |                      | <sup>137</sup> Cs < 3.E+04 |               |   |                            |

| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity  |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|--|---------------|---|----------------------------|
|               |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide   | Activity (Bq) | Based on Cs134-Cs137 ratio                      | Based on Pu239-Pu241 ratio |
|               |                     |           |         |                  |             |                 |            |                               |          |                                  |  |               |   |                            |
| 2007/09/12/01 | 1122424             | 1 x 1     | 1       | Cs137            | Particle    | E301525 N503414 | 12         | 15                            | 1        | 15.00                            | <sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 13  |                            |
| 2007/09/12/02 | 1122425             | 1 x 1     | 1       | Cs137            | Particle    | E301517 N503436 | 13         | 15                            | 1        | 15.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 15  |                            |
| 2007/09/12/03 | 1122426             | 2 x 2     | 2       | Cs137            | Stone       | E301536 N503428 | 9          | 20                            | 1        | 20.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 8.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 16  |                            |
| 2007/09/12/04 | 1122427             | 2 x 2     | 2       | Cs137            | Stone       | E301543 N503419 | 8          | 14                            | 1        | 14.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+03<br><sup>241</sup> Am < 8.E+01  | >             | 11  |                            |
| 2007/09/12/05 | 1122428             | 2 x 2     | 2       | Cs137            | Stone       | E301540 N503426 | 6          | 6                             | 1        | 6.00                             | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 12  |                            |
| 2007/09/12/06 | 1122429             | N/A       | 0       | Background       | Particle    | E301677 N503497 | 6          | 2                             | 1        | 2.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am 7.E+04<br><sup>238</sup> Pu 9.E+03<br><sup>239</sup> Pu 3.E+04<br><sup>237</sup> U 1.E+01<br><sup>241</sup> Pu 5.E+05 | N/A           |   | 40                         |
| 2007/09/12/07 | 1122430             | 3 x 3     | 3       | Cs137            | Stone       | E301726 N503577 | 5          | 15                            | 1        | 15.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 8.E+00<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 17  |                            |
| 2007/09/13/01 | 1122561             | N/A       | 0       | Cs137            | Particle    | E301540 N503432 | 11         | 25                            | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 5.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 12  |                            |
| 2007/09/13/02 | 1122562             | 1 x 1     | 1       | Cs137            | Particle    | E301534 N503478 | 3          | 15                            | 1        | 15.00                            | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+03<br><sup>241</sup> Am < 2.E+02  | >             | 13  |                            |
| 2007/09/13/03 | 1122563             | N/A       | 0       | Cs137            | Particle    | E301534 N503481 | 1          | 12                            | 0        |                                  | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+03<br><sup>241</sup> Am < 8.E+01  | >             | 11  |                            |
| 2007/09/13/04 | 1122564             | N/A       | 0       | Background       | Particle    | E301552 N503431 | 5          | 1                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 3.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am 6.E+04<br><sup>238</sup> Pu 0.E+00<br><sup>239</sup> Pu 1.E+05<br><sup>237</sup> U 2.E+01<br><sup>241</sup> Pu 6.E+05 | N/A           |   | 58                         |
| 2007/09/13/05 | 1122565             | N/A       | 0       | Background       | Particle    | E301554 N503427 | 1          | 1                             | 0        |                                  | <sup>60</sup> Co < 5.E+00<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am 3.E+04<br><sup>238</sup> Pu 0.E+00<br><sup>239</sup> Pu 2.E+04<br><sup>237</sup> U 5.E+00<br><sup>241</sup> Pu 2.E+05 | N/A           |   | 50                         |
| 2007/09/13/06 | 1122566             | N/A       | 0       | Cs137            | Particle    | E301540 N503470 | 5          | 200                           | 1        | 200.00                           | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 14  |                            |
| 2007/09/13/07 | 1122567             | 2 x 2     | 2       | Cs137            | Stone       | E301559 N503427 | 8          | 15                            | 1        | 15.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 9.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+03<br><sup>241</sup> Am < 9.E+01  | >             | 12  |                            |
| 2007/09/13/08 | 1122568             | 3 x 3     | 3       | Cs137            | Stone       | E301695 N503493 | 2          | 25                            | 1        | 25.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02  | >             | 16  |                            |



| ID                              | Lab's Serial Number | Size (mm) |         | Triggered Alarms                    | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity  |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------------------------|---------------------|-----------|---------|-------------------------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|--|---------------|---|----------------------------|
|                                 |                     | Range     | Average |                                     |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide   | Activity (Bq) | Based on Cs134-Cs137 ratio                      | Based on Pu239-Pu241 ratio |
|                                 |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |
| 2007/09/14/14                   | 1122757             | N/A       | 0       | Cs137                               | Particle    | E301778 N503504 | 2          | 1                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 3.E+04<br><sup>238</sup> Pu 0.E+00<br><sup>239</sup> Pu 1.E+04<br><sup>237</sup> U 5.E+00<br><sup>241</sup> Pu 2.E+05 | N/A           | 37  |                            |
| <b>St Bees North</b>            |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |
| 2007/09/17/01                   | 1123096             | N/A       | 0       | Cs137                               | Particle    | E296037 N511597 | 3          | 40                            | 2        | 20.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 0.E+00<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 15  |                            |
| 2007/09/24/01                   | 1124092             | N/A       | 0       | Cs137, Co60, Background & Countrate | Particle    | E296028 N511675 | 1          | 1                             | 0        |                                  | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am 4.E+03<br><sup>238</sup> Pu 0.E+00<br><sup>239</sup> Pu 4.E+03<br><sup>237</sup> U 9.E-01<br><sup>241</sup> Pu 4.E+04   | N/A           | 49  |                            |
| 2007/09/28/01                   | 1124656             | N/A       | 0       | Cs137                               | Particle    | E296279 N511370 | 0          | 80                            | 2        | 40.00                            | <sup>60</sup> Co < 3.E+00<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 14  |                            |
| 2007/10/01/01                   | 1125131             | N/A       | 0       | Background & Countrate              | Particle    | E295982 N511524 | 3          | 15                            | 1        | 15.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+03<br><sup>241</sup> Am < 8.E+01  | >             | 13  |                            |
| 2007/10/01/02                   | 1125132             | N/A       | 0       | Cs137                               | Particle    | E295898 N511599 | 0          | 65                            | 2        | 32.50                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 4.E+03<br><sup>241</sup> Am < 8.E+01  | >             | 13  |                            |
| <b>Seascale South</b>           |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |
| 2007/10/03/01                   | 1125708             | N/A       | 0       | Cs137                               | Particle    | E303269 N501100 | 10         | 260                           | 8        | 32.50                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02  | >             | 17  |                            |
| 2007/10/04/01                   | 1125859             | N/A       | 0       | Cs137 & Background                  | Particle    | E303304 N501144 | 3          | 100                           | 1        | 100.00                           | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+03<br><sup>241</sup> Am 3.E+02  | >             | 14  |                            |
| 2007/10/05/01                   | 1126325             | N/A       | 0       | Cs137                               | Particle    | E303281 N501134 | 7          | 80                            | 2        | 40.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 8.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 15  |                            |
| <b>Drigg Point - (No Finds)</b> |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |
| <b>Barn Scar</b>                |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |
| 2007/10/19/01                   | 1128467             | N/A       | 0       | Cs137                               | Particle    | E304627 N498332 | 12         | 45                            | 1        | 45.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+03<br><sup>241</sup> Am < 8.E+01  | >             | 12  |                            |
| 2007/10/22/01                   | 1128922             | N/A       | 0       | Background                          | Particle    | E304880 N497961 | 3          | 0                             | 0        |                                  | <sup>60</sup> Co < 7.E+00<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 5.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am 5.E+04<br><sup>239</sup> Pu 2.E+04<br><sup>238</sup> Pu 1.E+04<br><sup>237</sup> U 7.E+00<br><sup>241</sup> Pu 3.E+05   | N/A           | 27  |                            |
| Co-located with 2007/10/22/02   |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |
| 2007/10/22/02                   | 1128923             | N/A       | 0       | Background                          | Particle    | E304880 N497961 | 3          | 0                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01  | N/A           | 27  |                            |
| Co-located with 2007/10/22/01   |                     |           |         |                                     |             |                 |            |                               |          |                                  |  |               |   |                            |







| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms   | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity      |               |                            | Estimated Age in Years for Magnox Type Material |   |
|---------------|---------------------|-----------|---------|--------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|----------------------------|---------------|----------------------------|---|---|
|               |                     | Range     | Average |                    |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide               | Activity (Bq) | Based on Cs134:Cs137 ratio | Based on Pu239:Pu241 ratio                      |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  |                            |               |                            |   | < |
| 2007/11/13/08 | 1133644             | 2 x 3     | 2       | Cs137              | Stone       | E301402 N504018 | 6          | 12                            | 1        | 12.00                            | <sup>60</sup> Co < 1.E+01  | >             | 16                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 9.E+03 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/13/09 | 1133645             | 1 x 1     | 1       | Cs137 & Background | Particle    | E301406 N504022 | 4          | 10                            | 0        |                                  | <sup>60</sup> Co < 2.E+01  | >             | 20                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 5.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 3.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |               |                            |   |   |
| 2007/11/13/10 | 1133646             | 20 x 30   | 25      | Cs137              | Stone       | E301414 N504028 | 9          | 32                            | 1        | 32.00                            | <sup>60</sup> Co < 1.E+01  | >             | 13                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 1.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 5.E+03 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/13/11 | 1133647             | 30 x 35   | 32      | Cs137 & Background | Stone       | E301354 N504127 | 15         | 130                           | 2        | 65.00                            | <sup>60</sup> Co < 2.E+01  | >             | 21                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 8.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 5.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 3.E+02 |               |                            |   |   |
| 2007/11/13/12 | 1133648             | N/A       | 0       | Cs137              | Particle    | E301341 N504143 | 3          | 8                             | 1        | 8.00                             | <sup>60</sup> Co < 2.E+01  | >             | 17                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 1.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/13/13 | 1133649             | 20 x 20   | 20      | Cs137              | Stone       | E301396 N504101 | 14         | 80                            | 4        | 20.00                            | <sup>60</sup> Co < 7.E+00  | >             | 21                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 8.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 5.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 7.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 3.E+02 |               |                            |   |   |
| 2007/11/13/14 | 1133650             | 35 x 50   | 32      | Cs137              | Stone       | E301354 N504153 | 0          | 2                             | 1        | 2.00                             | <sup>60</sup> Co < 2.E+01  | >             | 17                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 1.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/13/15 | 1133651             | 35 x 50   | 32      | Cs137              | Stone       | E301289 N504228 | 10         | 1                             | 0        |                                  | <sup>60</sup> Co < 2.E+01  | >             | 14                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+03 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/13/16 | 1133652             | 1 x 1     | 1       | Cs137              | Particle    | E301289 N504227 | 3          | 32                            | 1        | 32.00                            | <sup>60</sup> Co < 1.E+01  | >             | 17                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |               |                            |   |   |
| 2007/11/13/17 | 1133653             | N/A       | 0       | Cs137              | Particle    | E301408 N504066 | 8          | 60                            | 1        | 60.00                            | <sup>60</sup> Co < 2.E+01  | >             | 7                          |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 5.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 7.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |               |                            |   |   |
| 2007/11/13/18 | 1133654             | N/A       | 0       | Cs137              | Particle    | E301285 N504227 | 5          | 70                            | 0        | ? Beta                           | <sup>60</sup> Co < 2.E+01  | >             | 18                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/14/01 | 1134094             | N/A       | 0       | Cs137              | Particle    | E301387 N503556 | 10         | 9                             | 5        | 1.80                             | <sup>60</sup> Co < 2.E+01  | >             | 22                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 7.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 5.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 3.E+02 |               |                            |   |   |
| 2007/11/14/02 | 1134095             | N/A       | 0       | Cs137              | Particle    | E301424 N503493 | 7          | 20                            | 2        | 10.00                            | <sup>60</sup> Co < 1.E+01  | >             | 19                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |               |                            |   |   |
| 2007/11/14/03 | 1134096             | N/A       | 0       | Cs137              | Particle    | E301425 N503490 | 5          | 45                            | 2        | 22.50                            | <sup>60</sup> Co < 9.E+00  | >             | 16                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 1.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/14/04 | 1134097             | 2 x 2     | 2       | Cs137              | Stone       | E301442 N503457 | 4          | 15                            | 3        | 5.00                             | <sup>60</sup> Co < 2.E+01  | >             | 19                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 5.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 3.E+04 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |               |                            |   |   |
| 2007/11/14/05 | 1134098             | 3 x 3     | 2       | Cs137              | Stone       | E301451 N503443 | 2          | 7                             | 1        | 7.00                             | <sup>60</sup> Co < 1.E+01  | >             | 14                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+03 |               |                            |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |               |                            |   |   |
| 2007/11/14/06 | 1134099             | 1 x 1     | 1       | Cs137              | Particle    | E301450 N503450 | 1          | 42                            | 1        | 42.00                            | <sup>60</sup> Co < 2.E+01  | >             | 17                         |   |   |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |               |                            |   |   |



| ID   | Lab's Serial Number | Size (mm) |         | Triggered Alarms   | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity   |               | Estimated Age in Years for Magnox Type Material |                            |  |
|--|---------------------|-----------|---------|--------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|---|---------------|---|----------------------------|--|
|  |                     | Range     | Average |                    |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide  | Activity (Bq) | Based on Cs134-Cs137 ratio                      | Based on Pu239-Pu241 ratio |  |
|  |                     |           |         |                    |             |                 |            |                               |          |                                  |   |               | >   | >                          |  |
| 2007/11/19/01  | 1134895             | N/A       | 0       | Cs137              | Particle    | E300659 N504882 | 6          | 12                            | 0        |                                  | <sup>137</sup> Cs < 3.E+03<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 2.E+02<br><sup>125</sup> Sb < 1.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 7.E+01   | >             | 10  |                            |  |
| 2007/11/19/02  | 1134896             | N/A       | 0       | Cs137 & Background | Particle    | E300611 N504980 | 5          | 0                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 9.E+04<br><sup>238</sup> Pu < 3.E+04<br><sup>239</sup> Pu < 2.E+04<br><sup>237</sup> U < 2.E+01<br><sup>241</sup> Pu < 5.E+05  |               | N/A   | 32                         |  |
| 2007/11/19/03  | 1134897             | N/A       | 0       | Cs137              | Particle    | E300594 N504837 | 6          | 240                           | 3        | 80.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 7.E+01<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 5.E+03<br><sup>238</sup> Pu < 0.E+00<br><sup>239</sup> Pu < 4.E+03<br><sup>237</sup> U < 7.E-01<br><sup>241</sup> Pu < 3.E+04 | >             | 19  |                            |  |
| 2007/11/19/04  | 1134898             | N/A       | 0       | Background         | Particle    | E300663 N504962 | 5          | 0                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 5.E+03<br><sup>238</sup> Pu < 0.E+00<br><sup>239</sup> Pu < 4.E+03<br><sup>237</sup> U < 7.E-01<br><sup>241</sup> Pu < 3.E+04  |               | N/A   | 55                         |  |
| 2007/11/19/05  | 1134899             | N/A       | 0       | Cs137 & Co60       | Particle    | E300732 N504921 | 6          | 50                            | 1        | 50.00                            | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 8.E+03<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 2.E+04<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+02<br><sup>137</sup> Cs < 1.E+02<br><sup>241</sup> Am < 2.E+02  | >             | 15  |                            |  |
| 2007/11/19/06  | 1134900             | N/A       | 0       | Co60               | Particle    | E300784 N504853 | 10         | 10                            | 1        | 10.00                            | <sup>60</sup> Co < 2.E+04<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+02<br><sup>137</sup> Cs < 1.E+02<br><sup>241</sup> Am < 2.E+02   |               | N/A   |                            |  |
| 2007/11/20/01  | 1135198             | N/A       | 0       | Cs137              | Particle    | E300349 N505431 | 0          | 30                            | 1        | 30.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 8.E+03<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 14  |                            |  |
| 2007/11/20/02  | 1135199             | N/A       | 0       | Cs137 & Background | Particle    | E300689 N504900 | 7          | 120                           | 2        | 60.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 6.E+01   | >             | 15  |                            |  |
| 2007/11/20/03  | 1135200             | 10 x 20   | 15      | Cs137 & Co60       | Stone       | E301695 N503546 | 4          | 28                            | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 9.E+03<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 6.E+00<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 15  |                            |  |
| 2007/11/20/04  | 1135201             | N/A       | 0       | Cs137              | Particle    | E301208 N504282 | 1          | 100                           | 2        | 50.00                            | <sup>60</sup> Co < 6.E+00<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 8.E+00<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>241</sup> Am < 3.E+02  | >             | 18  |                            |  |
| 2007/11/20/05  | 1135202             | 2 x 5     | 3       | Cs137              | Stone       | E300929 N504647 | 8          | 30                            | 2        | 15.00                            | <sup>60</sup> Co < 8.E+00<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>241</sup> Am < 3.E+02   | >             | 19  |                            |  |
| <b>Sellafield Beach (Second part of half speed monitoring)</b> |                     |           |         |                    |             |                 |            |                               |          |                                  |   |               |   |                            |  |
| 2007/11/22/01  | 1135556             | 4 x 4     | 4       | Cs137 & Background | Stone       | E301866 N503409 | 8          | 75                            | 7        | 10.71                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+04<br><sup>241</sup> Am < 3.E+02   | >             | 21  |                            |  |
| 2007/11/22/02  | 1135557             | N/A       | 0       | Cs137 & Countrate  | Particle    | E301836 N503454 | 17         | 120                           | 4        | 30.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02   | >             | 19  |                            |  |
| 2007/11/23/01  | 1135607             | 30 x 50   | 40      | Background         | Stone       | E301716 N503551 | 26         | 80                            | 12       | 6.67                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 8.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 2.E+05<br><sup>241</sup> Am < 5.E+02   | >             | 22  |                            |  |





| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms   | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity      |   |               | Estimated Age in Years for Magnox Type Material |                            |                            |
|---------------|---------------------|-----------|---------|--------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|----------------------------|---|---------------|---|----------------------------|----------------------------|
|               |                     | Range     | Average |                    |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide               | < | Activity (Bq) | >   | Based on Cs134-Cs137 ratio | Based on Pu239-Pu241 ratio |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  |                            |   |               |   |                            |                            |
| 2007/12/03/01 | 1137849             | 15 x 8    | 11      | Cs137              | Stone       | E301721 N503622 | 8          | 28                            | 4        | 7.00                             | <sup>60</sup> Co < 8.E+00  | > | 20            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 7.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 4.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 5.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 3.E+02 |   |               |   |                            |                            |
| 2007/12/03/02 | 1137850             | 12 x 8    | 10      | Cs137              | Stone       | E301713 N503605 | 3          | 10                            | 1        | 10.00                            | <sup>60</sup> Co < 1.E+01  | > | 13            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 1.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 4.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |   |               |   |                            |                            |
| 2007/12/03/03 | 1137852             | N/A       | 0       | Cs137              | Particle    | E301700 N503597 | 4          | 60                            | 2        | 30.00                            | <sup>60</sup> Co < 1.E+01  | > | 14            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 1.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 8.E+01 |   |               |   |                            |                            |
| 2007/12/03/04 | 1137853             | N/A       | 0       | Cs137              | Particle    | E301714 N503569 | 9          | 50                            | 2        | 25.00                            | <sup>60</sup> Co < 2.E+01  | > | 16            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 1.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 7.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 9.E+01 |   |               |   |                            |                            |
| 2007/12/03/05 | 1137854             | 15 x 15   | 15      | Cs137              | Stone       | E301705 N503568 | 10         | 25                            | 2        | 12.50                            | <sup>60</sup> Co < 2.E+01  | > | 21            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 6.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 4.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 5.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 5.E+03 |   |               |   |                            |                            |
| 2007/12/03/06 | 1137855             | 4 x 3     | 3       | Cs137              | Stone       | E301687 N503588 | 9          | 32                            | 1        | 32.00                            | <sup>60</sup> Co < 1.E+01  | > | 16            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 1.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |   |               |   |                            |                            |
| 2007/12/03/07 | 1137856             | 3 x 3     | 3       | Cs137              | Stone       | E301689 N503584 | 10         | 6                             | 1        | 6.00                             | <sup>60</sup> Co < 1.E+01  | > | 12            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 9.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 1.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |   |               |   |                            |                            |
| 2007/12/03/08 | 1137857             | 10 x 5    | 7       | Cs137              | Stone       | E301691 N503571 | 11         | 26                            | 1        | 26.00                            | <sup>60</sup> Co < 1.E+01  | > | 18            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |   |               |   |                            |                            |
| 2007/12/03/09 | 1137858             | N/A       | 0       | Background         | Particle    | E301594 N503484 | 3          | 0                             | 0        |                                  | <sup>60</sup> Co < 1.E+01  |   | N/A           | 61  |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 1.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 4.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 4.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>238</sup> Pu < 0.E+00 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>239</sup> Pu < 4.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>237</sup> U < 6.E+00  |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Pu < 2.E+05 |   |               |   |                            |                            |
| 2007/12/03/10 | 1137859             | 25 x 25   | 25      | Cs137 & Background | Stone       | E301673 N503495 | 15         | 15                            | 1        | 15.00                            | <sup>60</sup> Co < 2.E+01  | > | 16            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 1.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |   |               |   |                            |                            |
| 2007/12/03/11 | 1137860             | 5 x 3     | 4       | Cs137              | Stone       | E301652 N503535 | 0          | 4                             | 0        |                                  | <sup>60</sup> Co < 2.E+01  | > | 13            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 1.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 1.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 3.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 9.E+01 |   |               |   |                            |                            |
| 2007/12/03/12 | 1137861             | 15 x 12   | 13      | Cs137              | Stone       | E301703 N503509 | 5          | 20                            | 3        | 6.67                             | <sup>60</sup> Co < 2.E+01  | > | 20            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 5.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 3.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 3.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |   |               |   |                            |                            |
| 2007/12/04/01 | 1138100             | 8 x 4     | 6       | Cs137 & Background | Stone       | E301671 N503475 | 27         | 650                           | 35       | 18.57                            | <sup>60</sup> Co < 5.E+01  | > | 23            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 2.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 1.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+05 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+03 |   |               |   |                            |                            |
| 2007/12/04/02 | 1138101             | 5 x 5     | 5       | Cs137              | Stone       | E301682 N503473 | 15         | 28                            | 2        | 14.00                            | <sup>60</sup> Co < 2.E+01  | > | 16            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 4.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 2.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 1.E+04 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 2.E+02 |   |               |   |                            |                            |
| 2007/12/04/03 | 1138102             | N/A       | 0       | Cs137              | Particle    | E301679 N503482 | 6          | 48                            | 2        | 24.00                            | <sup>60</sup> Co < 2.E+01  | > | 15            |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>106</sup> Ru < 3.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>125</sup> Sb < 2.E+02 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>134</sup> Cs < 1.E+01 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>137</sup> Cs < 6.E+03 |   |               |   |                            |                            |
|               |                     |           |         |                    |             |                 |            |                               |          |                                  | <sup>241</sup> Am < 1.E+02 |   |               |   |                            |                            |

[Seascale to Barn Scar](#)



| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity   |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|---|---------------|---|----------------------------|
|               |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide  | Activity (Bq) | Based on Cs134-Cs137 ratio                      | Based on Pu239-Pu241 ratio |
|               |                     |           |         |                  |             |                 |            |                               |          |                                  |   |               |   |                            |
| 2008/01/08/02 | 1143638             | N/A       | 0       | Background       | Particle    | E301692 N503621 | 2          | 1                             | 0        |                                  | <sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 3.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 1.E+05<br><sup>238</sup> Pu < 1.E+04<br><sup>239</sup> Pu < 5.E+04<br><sup>237</sup> U < 2.E+01<br><sup>241</sup> Pu < 7.E+05  | N/A           | 41  |                            |
| 2008/01/09/01 | 1143841             | 10 x 10   | 10      | Cs137            | Stone       | E301588 N503764 | 3          | 25                            | 2        | 12.50                            | <sup>60</sup> Co < 7.E+00<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 5.E+02<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 3.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02 | >             | 7   |                            |
| 2008/01/10/01 | 1144015             | N/A       | 0       | Cs137            | Particle    | E301692 N503514 | 4          | 20                            | 2        | 10.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 16  |                            |
| 2008/01/10/02 | 1144016             | N/A       | 0       | Cs137            | Particle    | E301758 N503451 | 10         | 20                            | 2        | 10.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 18  |                            |
| 2008/01/10/03 | 1144017             | 15 x 15   | 15      | Background       | Stone       | E301694 N503522 | 12         | 45                            | 4        | 11.25                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>154</sup> Eu < 3.E+02<br><sup>233</sup> Pa < 2.E+02<br><sup>241</sup> Am < 9.E+03  | >             | 19  |                            |
| 2008/01/11/01 | 1144421             | 70 x 40   | 55      | Cs137            | Stone       | E301469 N503911 | 5          | 2                             | 1        | 2.00                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 14  |                            |
| 2008/01/11/02 | 1144422             | 1 x 1     | 1       | Background       | Particle    | E301395 N504021 | 9          | 100                           | 3        | 33.33                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 17  |                            |
| 2008/01/11/03 | 1144423             | 10 x 15   | 12      | Cs137            | Stone       | E301332 N504110 | 7          | 12                            | 2        | 6.00                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 17  |                            |
| 2008/01/11/04 | 1144424             | 1 x 1     | 1       | Cs137            | Particle    | E301368 N504079 | 14         | 20                            | 1        | 20.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02  | >             | 14  |                            |
| 2008/01/11/05 | 1144425             | 5 x 4     | 4       | Cs137            | Stone       | E301325 N504139 | 5          | 25                            | 2        | 12.50                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02  | >             | 16  |                            |
| 2008/01/16/01 | 1145281             | N/A       | 0       | Cs137            | Particle    | E300544 N504809 | 4          | 35                            | 1        | 35.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 17  |                            |
| 2008/01/16/02 | 1145282             | N/A       | 0       | Cs137            | Particle    | E300611 N504913 | 2          | 9                             | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 7.E+04<br><sup>238</sup> Pu < 2.E+04<br><sup>239</sup> Pu < 2.E+04<br><sup>237</sup> U < 1.E+01<br><sup>241</sup> Pu < 4.E+05  | N/A           | 30  |                            |
| 2008/01/22/01 | 1146151             | 1 x 1     | 1       | Cs137            | Particle    | E301270 N504227 | 7          | 50                            | 18       | 2.78                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 9.E+02<br><sup>125</sup> Sb < 7.E+02<br><sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 1.E+05<br><sup>241</sup> Am < 4.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02   | >             | 22  |                            |
| 2008/01/22/02 | 1146152             | 25 x 20   | 22      | Cs137            | Stone       | E301050 N504536 | 5          | 4                             | 1        | 4.00                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02  | >             | 19  |                            |
| 2008/01/22/03 | 1146153             | 10 x 3    | 6       | Co60             | Stone       | E301019 N504561 | 5          | 10                            | 1        | 10.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02   | >             | 19  |                            |

| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu\text{Sv/hr}$ |          |                                  | Radionuclide Activity  |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------------|----------|----------------------------------|--|---------------|---|----------------------------|
|               |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                      | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide   | Activity (Bq) | Based on Cs134:Cs137 ratio                      | Based on Pu239:Pu241 ratio |
|               |                     |           |         |                  |             |                 |            |                                     |          |                                  |  |               |   |                            |
| 2008/01/22/04 | 1146154             | 10 x 5    | 7       | Cs137            | Stone       | E300765 N504933 | 5          | 32                                  | 2        | 16.00                            | <sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 9.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+04<br><sup>241</sup> Am < 4.E+02                              | >             | 21  |                            |
| 2008/01/23/01 | 1146359             | 40 x 30   | 35      | Cs137            | Stone       | E301268 N504018 | 7          | 4                                   | 1        | 4.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 8.E+03<br><sup>241</sup> Am < 1.E+02  | >             | 16  |                            |
| 2008/01/23/02 | 1146360             | N/A       | 0       | Cs137            | Particle    | E301217 N504295 | 6          | 25                                  | 1        | 25.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 16  |                            |
| 2008/01/23/03 | 1146361             | 10 x 7    | 8       | Cs137            | Stone       | E301241 N504285 | 9          | 25                                  | 1        | 25.00                            | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 7.E+01<br><sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 4.E+02  | >             | 16  |                            |
| 2008/01/24/01 | 1147697             | N/A       | 0       | Co60             | Particle    | E300869 N504557 | 2          | 80                                  | 8        | 10.00                            | <sup>60</sup> Co < 2.E+04<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+02<br><sup>137</sup> Cs < 1.E+02<br><sup>241</sup> Am < 2.E+02  |               | N/A   |                            |
| 2008/01/24/02 | 1147698             | N/A       | 0       | Cs137            | Particle    | E300712 N505049 | 5          | 35                                  | 4        | 8.75                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 18  |                            |
| 2008/01/25/01 | 1147699             | N/A       | 0       | Cs137            | Particle    | E300884 N504596 | 10         | 60                                  | 1        | 60.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 18  |                            |
| 2008/01/25/02 | 1147700             | N/A       | 0       | Background       | Particle    | E300945 N504521 | 2          | 1                                   | 1        | 1.00                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+01<br><sup>241</sup> Am < 6.E+04<br><sup>239</sup> Pu < 1.E+04<br><sup>238</sup> Pu < 4.E+04<br><sup>237</sup> U < 1.E+01<br><sup>241</sup> Pu < 4.E+05 |               | N/A   | 46                         |
| 2008/01/25/03 | 1147701             | 3 x 3     | 3       | Cs137            | Stone       | E301126 N504408 | 10         | 50                                  | 2        | 25.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 6.E+02<br><sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 1.E+05<br><sup>241</sup> Am < 4.E+02  | >             | 22  |                            |
| 2008/01/29/01 | 1147702             | N/A       | 0       | Background       | Particle    | E300415 N505107 | 6          | 280                                 | 2        | 140.00                           | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 20  |                            |
| 2008/01/30/01 | 1147703             | N/A       | 0       | Cs137            | Particle    | E301315 N504020 | 5          | 10                                  | 1        | 10.00                            | <sup>60</sup> Co < 6.E+00<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 3.E+02  | >             | 13  |                            |
| 2008/01/30/02 | 1147704             | N/A       | 0       | Cs137            | Particle    | E301313 N504023 | 5          | 27                                  | 2        | 13.50                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02  | >             | 16  |                            |
| 2008/01/30/03 | 1147705             | N/A       | 0       | Cs137            | Particle    | E301367 N503906 | 4          | 60                                  | 2        | 30.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02  | >             | 15  |                            |
| 2008/01/30/04 | 1147706             | 3 x 3     | 3       | Cs137            | Stone       | E301290 N504035 | 7          | 15                                  | 4        | 3.75                             | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02  | >             | 14  |                            |
| 2008/01/30/05 | 1147707             | 1 x 1     | 1       | Cs137            | Particle    | E301176 N504358 | 5          | 60                                  | 3        | 20.00                            | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 19  |                            |
| 2008/01/31/01 | 1147709             | 40 x 30   | 35      | Cs137            | Stone       | E301656 N503749 | 30         | 480                                 | 60       | 8.00                             | <sup>60</sup> Co < 3.E+01<br><sup>106</sup> Ru < 3.E+03  | >             | 23  |                            |





| ID  | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu\text{Sv/hr}$ |          |                                  | Radionuclide Activity   |               | Estimated Age in Years for Magnox Type Material |                            |
|---|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------------|----------|----------------------------------|---|---------------|---|----------------------------|
|   |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                      | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide  | Activity (Bq) | Based on Cs134:Cs137 ratio                      | Based on Pu239:Pu241 ratio |
|   |                     |           |         |                  |             |                 |            |                                     |          |                                  |   |               |   |                            |
| 2008/02/13/07   | 1150059             | 10 x 8    | 9       | Cs137            | Stone       | E301404 N503502 | 8          | 18                                  | 4        | 4.50                             | <sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 2.E+05<br><sup>241</sup> Am < 6.E+02<br><sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02 | <             | >   | 18                         |
| 2008/02/14/01   | 1150377             | 10 x 8    | 9       | Cs137            | Stone       | E300977 N503961 | 10         | 60                                  | 10       | 6.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 8.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+04<br><sup>241</sup> Am < 4.E+02   | <             | >   | 21                         |
| 2008/02/14/02   | 1150378             | 15 x 10   | 12      | Background       | Stone       | E300938 N504007 | 6          | 36                                  | 6        | 6.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02   | <             | >   | 18                         |
| 2008/02/14/03   | 1150380             | N/A       | 0       | Cs137            | Particle    | E300914 N504050 | 5          | 22                                  | 7        | 3.14                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 8.E+01<br><sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >   | 16                         |
| <b>Whitehaven (No Finds)</b>                                    |                     |           |         |                  |             |                 |            |                                     |          |                                  |   |               |   |                            |
| <b>Seascale to Barn Scar (Return in 2008) - No Finds</b>        |                     |           |         |                  |             |                 |            |                                     |          |                                  |   |               |   |                            |
| <b>Sellafield Beach - Resurvey of Previously Surveyed Areas</b> |                     |           |         |                  |             |                 |            |                                     |          |                                  |   |               |   |                            |
| 2008/03/03/01   | 1152091             | 25 x 25   | 25      | Cs137            | Stone       | E301691 N503469 | 5          | 60                                  | 4        | 15.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02   | <             | >   | 18                         |
| 2008/03/03/02   | 1152092             | N/A       | 0       | Background       | Particle    | E301708 N503413 | 14         | 1000                                | 380      | 2.63                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 8.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 3.E+01<br><sup>137</sup> Cs < 6.E+04<br><sup>154</sup> Eu < 1.E+02<br><sup>241</sup> Am < 4.E+02   | <             | >   | 20                         |
| 2008/03/03/03   | 1152093             | 2 x 2     | 2       | Cs137            | Stone       | E301724 N503407 | 8          | 32                                  | 4        | 8.00                             | <sup>60</sup> Co < 7.E+00<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >   | 21                         |
| 2008/03/03/04   | 1152094             | 25 x 20   | 22      | Cs137            | Stone       | E301726 N503419 | 2          | 18                                  | 3        | 6.00                             | <sup>60</sup> Co < 2.E+02<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 8.E+03<br><sup>241</sup> Am < 1.E+02   | <             | >   | 13                         |
| 2008/03/03/05   | 1152095             | 5 x 4     | 4       | Cs137            | Stone       | E301685 N503446 | 4          | 28                                  | 3        | 9.33                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02   | <             | >   | 19                         |
| 2008/03/04/01   | 1152281             | 40 x 25   | 32      | Cs137            | Stone       | E301670 N503456 | 4          | 28                                  | 4        | 7.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02   | <             | >   | 15                         |
| 2008/03/04/02   | 1152282             | 8 x 6     | 7       | Background       | Stone       | E301688 N503451 | 5          | 32                                  | 3        | 10.67                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >   | 17                         |
| 2008/03/06/01   | 1152638             | 6 x 4     | 5       | Cs137            | Stone       | E301656 N503495 | 10         | 60                                  | 5        | 12.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >   | 21                         |
| 2008/03/06/02   | 1152639             | 2 x 2     | 2       | Co60             | Stone       | E301594 N503561 | 17         | 80                                  | 5        | 16.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 8.E+02<br><sup>125</sup> Sb < 6.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 8.E+04<br><sup>241</sup> Am < 4.E+02   | <             | >   | 22                         |
| 2008/03/06/03   | 1152640             | 30 x 30   | 30      | Cs137            | Stone       | E301444 N503344 | 12         | 80                                  | 10       | 8.00                             | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 3.E+02   | <             | >   | 21                         |
| 2008/03/06/04   | 1152641             | 120 x 90  | 105     | Cs137            | Stone       | E301631 N503598 | 33         | 220                                 | 20       | 11.00                            | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+03<br><sup>125</sup> Sb < 1.E+03   | <             | >   | 23                         |

| ID            | Lab's Serial Number | Size (mm) |         | Triggered Alarms | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu$ Sv/hr |          |                                  | Radionuclide Activity   |               | Estimated Age in Years for Magnox Type Material |                            |
|---------------|---------------------|-----------|---------|------------------|-------------|-----------------|------------|-------------------------------|----------|----------------------------------|---|---------------|---|----------------------------|
|               |                     | Range     | Average |                  |             |                 |            | $\beta/\gamma$                | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide  | Activity (Bq) | Based on Cs134:Cs137 ratio                      | Based on Pu239:Pu241 ratio |
|               |                     |           |         |                  |             |                 |            |                               |          |                                  |   |               |   |                            |
| 2008/03/07/01 | 1152656             | N/A       | 0       | Background       | Particle    | E301635 N503606 | 8          | 800                           | 4        | 200.00                           | <sup>134</sup> Cs < 1.E+02<br><sup>137</sup> Cs < 5.E+05<br><sup>241</sup> Am < 1.E+03<br><sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>137</sup> Cs < 2.E+02<br><sup>241</sup> Am < 3.E+02 | >             | 20  |                            |

### Sellafield North - Resurvey of Previously Surveyed Areas

|               |         |         |    |            |          |                 |    |     |    |       |   |   |    |
|---------------|---------|---------|----|------------|----------|-----------------|----|-----|----|-------|---|---|----|
| 2008/03/11/01 | 1153223 | 2 x 2   | 2  | Cs137      | Stone    | E301493 N503715 | 12 | 80  | 2  | 40.00 | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 5.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 3.E+02 | > | 15 |
| 2008/03/13/01 | 1153625 | N/A     | 0  | Cs137      | Particle | E301431 N503818 | 10 | 24  | 2  | 12.00 | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 7.E+03<br><sup>241</sup> Am < 1.E+02 | > | 15 |
| 2008/03/13/02 | 1153626 | N/A     | 0  | Cs137      | Particle | E301323 N503522 | 6  | 220 | 5  | 44.00 | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>241</sup> Am < 3.E+02 | > | 19 |
| 2008/03/13/03 | 1153628 | 20 x 12 | 16 | Cs137      | Stone    | E301315 N503520 | 6  | 42  | 5  | 8.40  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 2.E+02 | > | 19 |
| 2008/03/13/04 | 1153629 | 8 x 4   | 6  | Background | Stone    | E301460 N503832 | 25 | 280 | 14 | 20.00 | <sup>60</sup> Co < 9.E+00<br><sup>106</sup> Ru < 1.E+03<br><sup>125</sup> Sb < 9.E+02<br><sup>134</sup> Cs < 4.E+01<br><sup>137</sup> Cs < 2.E+05<br><sup>241</sup> Am < 6.E+02 | > | 23 |

### St Bees (1st April until 20th April 2008)

|               |         |     |   |            |          |                 |   |     |    |       |  |   |     |    |
|---------------|---------|-----|---|------------|----------|-----------------|---|-----|----|-------|--|---|-----|----|
| 2008/04/01/01 | 1156869 | N/A | 0 | Background | Particle | E296488 N511133 | 6 | 0   | 0  |       | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+01<br><sup>241</sup> Am < 2.E+04<br><sup>239</sup> Pu < 1.E+04<br><sup>238</sup> Pu < 1.E+04<br><sup>237</sup> U < 3.E+00<br><sup>241</sup> Pu < 1.E+05 | > | N/A | 46 |
| 2008/04/11/01 | 1158989 | N/A | 0 | Cs137      | Particle | E295874 N511615 | 1 | 60  | 1  | 60.00 | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 6.E+03<br><sup>241</sup> Am < 1.E+02  | > | 14  |    |
| 2008/04/16/01 | 1159552 | N/A | 0 | Cs137      | Particle | E295953 N511661 | 5 | 150 | 12 | 12.50 | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 3.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 2.E+04<br><sup>241</sup> Am < 2.E+02  | > | 19  |    |

### Seascale (21 April to 11th May 2008)

|               |         |       |   |       |          |                 |    |     |   |       |   |   |    |
|---------------|---------|-------|---|-------|----------|-----------------|----|-----|---|-------|---|---|----|
| 2008/04/21/01 | 1160613 | N/A   | 0 | Cs137 | Particle | E303575 N500853 | 15 | 140 | 7 | 20.00 | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 5.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 3.E+04<br><sup>241</sup> Am < 3.E+02 | > | 19 |
| 2008/04/23/01 | 1160739 | N/A   | 0 | Cs137 | Particle | E303543 N500907 | 8  | 60  | 4 | 15.00 | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 4.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 1.E+01<br><sup>137</sup> Cs < 1.E+04<br><sup>241</sup> Am < 1.E+02 | > | 16 |
| 2008/05/09/01 | 1163415 | 8 x 6 | 7 | Cs137 | Stone    | E303344 N501385 | 4  | 42  | 5 | 8.40  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 4.E+04<br><sup>241</sup> Am < 3.E+02 | > | 19 |

### Drigg (12th May to 15th June 2008)

|               |         |     |   |            |          |                 |   |     |    |       |   |   |     |    |
|---------------|---------|-----|---|------------|----------|-----------------|---|-----|----|-------|---|---|-----|----|
| 2008/05/27/01 | 1166689 | N/A | 0 | Cs137      | Particle | E305990 N495968 | 5 | 280 | 10 | 28.00 | <sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 7.E+02<br><sup>125</sup> Sb < 5.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs < 5.E+04<br><sup>241</sup> Am < 3.E+02 | > | 20  |    |
| 2008/05/27/02 | 1166690 | N/A | 0 | Background | Particle | E306058 N495892 | 1 | 0   | 0  |       | <sup>60</sup> Co < 1.E+01   | > | N/A | 30 |







| ID  | Lab's Serial Number | Size (mm)  |              | Triggered Alarms              | Description | GPS Location    | Depth (cm) | Contact Dose Rate $\mu\text{Sv/hr}$ |          |                                  | Radionuclide Activity  |               | Estimated Age in Years for Magnox Type Material |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
|---|---------------------|------------|--------------|-------------------------------|-------------|-----------------|------------|-------------------------------------|----------|----------------------------------|--|---------------|---|----------------------------|---|---------|--------------|-------------------------------|------|-------|------------|-----------|----------|--|-------|-----------|-----------|----------|--|-------|------------|-----------|----------|--|-------|------------|-----------|----------|
|   |                     | Range      | Average      |                               |             |                 |            | $\beta/\gamma$                      | $\gamma$ | $\beta/\gamma$ to $\gamma$ ratio | Radionuclide   | Activity (Bq) | Based on Cs134:Cs137 ratio                      | Based on Pu239:Pu241 ratio |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
|   |                     |            |              |                               |             |                 |            |                                     |          |                                  |  |               |   |                            | < | >       |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| 2008/07/07/03   | 1175496             | N/A        | 0            | Cs137                         | Particle    | E301408 N503835 | 4          | 48                                  | 2        | 24.00                            | <sup>241</sup> Am < 3.E+02<br><sup>60</sup> Co < 2.E+01<br><sup>106</sup> Ru < 3.E+02<br><sup>125</sup> Sb < 2.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs 1.E+04<br><sup>241</sup> Am < 2.E+02  | >             | 17  |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| 2008/07/08/01   | 1175815             | 5 x 5      | 5            | Cs137                         | Stone       | E301308 N503564 | 5          | 60                                  | 5        | 12.00                            | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 6.E+02<br><sup>125</sup> Sb < 4.E+02<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs 4.E+04<br><sup>241</sup> Am < 3.E+02  | >             | 20  |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| 2008/07/08/02   | 1175816             | N/A        | 0            | Cs137                         | Particle    | E301314 N503565 | 4          | 0                                   | 0        |                                  | <sup>60</sup> Co < 1.E+01<br><sup>106</sup> Ru < 1.E+02<br><sup>125</sup> Sb < 4.E+01<br><sup>134</sup> Cs < 2.E+01<br><sup>137</sup> Cs 2.E+01<br><sup>241</sup> Am 9.E+04<br><sup>238</sup> Pu 4.E+04<br><sup>239</sup> Pu 3.E+04<br><sup>237</sup> U 1.E+01<br><sup>241</sup> Pu 9.E+05 |               | N/A   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| <b>Sellafield (15th September to ?? September 2008)</b>   |                     |            |              |                               |             |                 |            |                                     |          |                                  |  |               |   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| 2008/09/15/01   | 1187688             | N/A        | 0            | Cs137                         | Particle    | E300690 N504947 | 5          | 300                                 | 5        | 60.00                            | <sup>60</sup> Co<br><sup>106</sup> Ru<br><sup>125</sup> Sb<br><sup>134</sup> Cs<br><sup>137</sup> Cs<br><sup>241</sup> Am  |               | ##  | #VALUE!                    |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| <p>Assumptions:</p> <ol style="list-style-type: none"> <li>The <math>\beta</math> dose rate for all betas is approximately 8E-2 <math>\mu\text{Sv/h}</math> per Bq at 1 cm from a point source</li> <li>The <math>\gamma</math> dose rate for Cs137 is approximately 9E-4 <math>\mu\text{Sv/h}</math> per Bq at 1 cm from a point source</li> <li>Cs137 will have an approximate <math>\beta/\gamma</math> to <math>\gamma</math> dose rate ratio of 90 for a point source</li> <li>If the measured <math>\gamma</math> dose rate is zero then the true dose rate could be 0.5 <math>\mu\text{Sv/h}</math></li> <li>Age calculations based on the starting ratios for typical Magnox fuel (i.e. 5000 MWd/t, 2.3MW/t, Natural U, 180 days cooled)</li> </ol> <table border="1"> <thead> <tr> <th></th> <th></th> <th>Bq/t(U)</th> <th>T1/2 (years)</th> <th><math>\lambda</math> (<math>\text{y}^{-1}</math>)</th> </tr> </thead> <tbody> <tr> <td>i.e.</td> <td>Cs134</td> <td>1.3475E+14</td> <td>2.063E+00</td> <td>3.36E-01</td> </tr> <tr> <td></td> <td>Cs137</td> <td>5.402E+14</td> <td>3.005E+01</td> <td>2.31E-02</td> </tr> <tr> <td></td> <td>Pu239</td> <td>4.5991E+12</td> <td>2.411E+04</td> <td>2.87E-05</td> </tr> <tr> <td></td> <td>Pu241</td> <td>5.0394E+14</td> <td>1.429E+01</td> <td>4.85E-02</td> </tr> </tbody> </table> <ol style="list-style-type: none"> <li>If both current results are LOD the age calculation is inappropriate and hence not available (i.e. N/A)</li> <li>If one of the results is LOD then it is assumed that the age will be &gt; or &lt; the calculated value depending on which results is LOD</li> <li>For low positive Cs137 results and LOD Cs134 results the age calculation can return a negative age and hence is not available (i.e. N/A)</li> </ol> <p>Footnotes</p> <ol style="list-style-type: none"> <li>Dose rate ratios &gt; 90 would suggest a Beta radionuclides is present (highlighted as red ratio)</li> <li>If the g dose rate is zero a possible Beta radionuclide is indicated if the b/g dose rate is &gt; 50</li> <li>Cs137 activity values greater than 1.00E+05 highlighted in red and bold</li> <li>Am241 activity values greater than 1.00E+04 highlighted in amber and bold</li> <li>Particle definition based on average size less than 10 mm</li> <li>NUKEM Hillcat Evolution system alarms ==&gt; Cs137, Co60, Background Change &amp; High Count Rate</li> <li>Early estimates of Pu241 were calculated from U237 daughter using 0.00245% branching ratio (highlighted in blue). In later samples this technique was replaced by a gamma counting techniques, with the branching ratio method used as confirmation</li> <li>First date for processed fuel was 1952, which would make age estimates &gt; 55 years invalid. However, to allow for uncertainty both averages with and without these data are given.</li> </ol> |                     |            |              |                               |             |                 |            |                                     |          |                                  |  |               |   |                            |   | Bq/t(U) | T1/2 (years) | $\lambda$ ( $\text{y}^{-1}$ ) | i.e. | Cs134 | 1.3475E+14 | 2.063E+00 | 3.36E-01 |  | Cs137 | 5.402E+14 | 3.005E+01 | 2.31E-02 |  | Pu239 | 4.5991E+12 | 2.411E+04 | 2.87E-05 |  | Pu241 | 5.0394E+14 | 1.429E+01 | 4.85E-02 |
|   |                     | Bq/t(U)    | T1/2 (years) | $\lambda$ ( $\text{y}^{-1}$ ) |             |                 |            |                                     |          |                                  |  |               |   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
| i.e.  | Cs134               | 1.3475E+14 | 2.063E+00    | 3.36E-01                      |             |                 |            |                                     |          |                                  |  |               |   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
|   | Cs137               | 5.402E+14  | 3.005E+01    | 2.31E-02                      |             |                 |            |                                     |          |                                  |  |               |   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
|   | Pu239               | 4.5991E+12 | 2.411E+04    | 2.87E-05                      |             |                 |            |                                     |          |                                  |  |               |   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |
|   | Pu241               | 5.0394E+14 | 1.429E+01    | 4.85E-02                      |             |                 |            |                                     |          |                                  |  |               |   |                            |   |         |              |                               |      |       |            |           |          |  |       |           |           |          |  |       |            |           |          |  |       |            |           |          |