

## **Dalgety Bay Particles Advisory Group**

### **DRAFT SUMMARY OF DISCUSSION and RECORD OF RECOMMENDATIONS and ACTIONS**

#### **1<sup>st</sup> MEETING OF THE DALGETY BAY PARTICLES ADVISORY GROUP – 20<sup>th</sup> December 2011**

##### **Members Present:**

Prof Alex Elliott (Member) – **AE (Chairman)**  
Prof Tim Atkinson (Member) - **TA**  
Dr Tom Bruce - **TB**  
Dr George Hunter(Member) - **GH**  
Prof Marian Scott (Member) - **MS**  
Dr Andrew Tyler (Member) - **AT**

Mr Mark Toner (Technical Secretary) - **MT**  
Miss Susan Carswell (Administration) – **SC**

##### **Apologies:**

Mr Stuart Hudson (Observer, Scottish Government) - **SH**

##### **In Attendance:**

Mr Colin McPhail, Chairman Dalgety Bay & Hillend Community Council -**CM**  
Miss Debbie Storm, SEPA Communications – **DS**  
Dr Jim Gemmill, SEPA – **JG**  
Mrs Joanne Brown, HPA - **JB**  
Mr John Burton, HPA - **JBu**  
Mrs Linda Turner, Fife Council – **LT**  
Dr Paul Dale, SEPA – **PD**  
Mr Ron Brown, Ministry of Defence (DSTL) – **RB**  
Dr Will Munro, Food Standards Agency in Scotland(FSAS) - **WM**

**AGENDA**

<b>Item</b>	<b>Time</b>	<b>Title</b>	<b>Paper Reference</b>
1	10.30	Site Visit	-
2	12.30	Lunch	-
3	13.15	Chairman's Introduction	-
4	13.30	Agreement to agenda	-
5	13.35	Terms of Reference: Role of members & observers	<b>DBAG-M1-P1</b>
6	13.50	Recent monitoring and results	
7	14:30	COMARE Letter to SEPA	<b>DBAG-M1-P2A</b> <b>DBAG-M1-P2B</b> <b>DBAG-M1-P2C</b>
8	14:40	HPA Advice to SEPA	<b>DBAG-M1-P3</b> <b>DBAG-M1-P5A</b>
9	14:50	MoD Correspondence	<b>DBAG-M1-P5B</b> <b>DBAG-M1-P5C</b> <b>DBAG-M1-P5D</b>
10	15:00	Monitoring Criteria - MoD System Criteria - Beach Monitoring Specification	<b>DBAG-M1-P4A</b> <b>DBAG-M1-P4B</b> <b>DBAG-M1-P6</b>
11	15:40	Forward Work Programme	
12	15:50	AOCB	
13	16:00	Date of Next Meeting: <u>Fri 3 Feb 2011</u>	

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<b>1. Chairman's Introduction</b>	<p>The Chairman welcomed all to the first meeting of the Dalgety Bay Particles Advisory Group. Round table introductions followed.</p> <p>The meeting followed a site visit and discussion with members and observers at various points around the intertidal area.</p> <p>The Chairman explained why the group has been formed. SEPA have asked for an expert group to be set up to parallel the approach taken for provision of advice on radioactive particles at Dounreay. This will provide a consistent approach for advice.</p>		Nil	-	-
<b>2. Agreement to Agenda</b>	All in agreement of agenda as presented.		Nil	-	-
<b>3. Terms of Reference</b>	PD explained that SEPA are seeking a similar set up to that of Dounreay Particles Advisory Group (DPAG) in its original form, for the group to provide independent views on addressing the contamination. As a	Modify draft ToR to include reference to "health impacts". Text entry at 2 <sup>nd</sup> point in 2 <sup>nd</sup> paragraph.	M1-A1: Technical Secretary to amend ToR	<b>New</b>	<b>Immediate</b>

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	<p>result much of the Terms of Reference has been lifted from the DPAG ToR and amended as required.</p> <p>PD continued that the group was established relatively quickly following the detection of high-activity sources by SEPA in October, and noted that SEPA were grateful to all members for accepting the invitation to join the group. SEPA initially considered the DPAG group and addressed data-gaps, which resulted in Dr Tom Bruce joining the group. PD noted that other individuals can be added to the group if required.</p> <p>JB asked that the TOR should also make reference to health impact of radioactive particles. This change was agreed.</p> <p>CM asked if the group has a timescale that it is required to run for. The Chairman advised that the timescales is set in terms of when SEPA wish to receive advice, however there is no endpoint.</p>				

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<p><b>4. Recent Monitoring and Results</b></p>	<p>RB noted that over the years there have been surveys by various groups using different equipment, limits of detection and survey procedures. He suggested starting with a clean sheet using a common monitoring requirement set by the group. The Chairman noted the validity of this observation.</p> <p>PD explained that SEPA 2006-2008 study found tens of point sources and these finds pointed to the possibility of the cache coming from the headland. MOD then committed to a 3-year survey following recovery of a number of sources in the slipways. SEPA's 2011 investigation was designed to identify if the particles found on the beach were being fed from a terrestrial source. During this intrusive investigation of the headland, concurrent monitoring was undertaken by the MoD's contractor. It became clear that a large number of particles had been missed by the contractor on the intertidal area.</p> <p>Difference in what has been found</p>	<p>In order to assess the discrepancies in data between both parties, AT to provide a note of the information required for his assessment.</p> <p>JG proposed that MoD distribute copies of the 3 part 2007 Enviro Report.</p> <p>The Chairman request that a map be produced containing geology, terrain and 2011 finds.</p>	<p>M1-A2: AT to contact RB &amp; PD (via technical secretary) with requirements for data analysis. RB &amp; PD to provide details of monitoring specification.</p> <p>M1-A3: SEPA to produce map with 2011 data, geology and terrain.</p> <p>M1-A4: MoD to provide Enviro 2007 3 volume report to technical secretary, who will redistribute to the group.</p>		<p><b>Next meeting</b></p> <p><b>Next meeting</b></p>

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	<p>recently to that found in 2008 is:</p> <ul style="list-style-type: none"> <li>- number of point sources uncovered has increased, with more than 475 in total</li> <li>- radioactivity – higher activity sources detected; range from 10kBq – 76MBq</li> <li>- physical size – many more small particles &amp; are of size that are potentially inhalable &amp; ingestible</li> </ul> <p>3 potential caches of sources:</p> <ul style="list-style-type: none"> <li>- Headland</li> <li>- Ross plantation</li> <li>- Northern shore at Crowhill</li> </ul> <p>There is the potential for more erosion of made ground revealing more sources. It is believed that there is a large population of particles, which can be released and break down episodically. It was also noted by PD during the site visit that SEPA had been informed of potential elevated areas on the northern shore of the bay. During the walk round PD demonstrated how particles were detected. PD noted that it was clear that there was some time to go before</p>				

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	<p>a steady-state was achieved.</p> <p>The Chairman asked the criteria that MOD'S Contractor had been working to. RB explained that the MoD's current system was designed to assess re-population of the beach with a single contractor surveying the beach on a regular basis using an identical procedure. They had been given a broad job spec of undertaking 3 surveys and assessing the results from each in terms of re-population.</p> <p>The Chairman queried why there was significant disparity of results between MoD and SEPA.</p> <p>RB explained MoD use a 3x3 crystal and have 2 calibrations for bulk activity and single point sources. However he suggested that spacing and speed of monitoring across the surface are likely to be more important.</p> <p>The Chairman requested a map of the site be produced plotted with 2011 findings only and including as</p>				

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	<p>much data as possible. SEPA advised that GPS readings would only be accurate to 5 m.</p> <p>The Chairman requested details of shellfish sampling in the Forth. WM indicated that the routine monitoring near nuclear sites (Torness &amp; Rosyth) did not include Dalgety Bay. He confirmed that mussel and winkle samples were taken in previously and nothing of concern had been detected. Additional samples are planned.</p>		<p>M1-A5: FSA to provide details of sampling in the Forth under the routine radiological monitoring programme and details of previous ad-hoc seafood sampling at Dalgety Bay.</p>		<p><b>Next meeting</b></p>
<p><b>6. COMARE letter to SEPA</b></p>	<p>The Chairman explained that COMARE formed a small sub-group to undertake a request from Scottish Government &amp; SEPA to check previous reports relating to cancer incidence.</p> <p>Nothing was found in the literature to link radium to leukaemia. There are no cases of bone cancer at all in area and lung cancer is below the national average. In October 2011 COMARE requested that the NHS ISD update the survey of the area and focus on data taking into account 2010. This work will start Jan/Feb 2012 after the</p>	<p>SEPA to undertake survey of adjacent beaches at request of COMARE.</p>	<p>M1-A6: SEPA to monitor adjacent beaches</p>		



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	<p>2010 data set has been validated.</p> <p>JG confirmed that SEPA will undertake a survey of the adjacent beaches.</p>				
<p><b>7. HPA advice to SEPA</b></p>	<p>Paper submitted to the meeting details the latest formal correspondence with SEPA following a meeting on 21<sup>st</sup> November with the Scottish Government regarding public health issues. 3 key areas of recommendations are the need for:</p> <ol style="list-style-type: none"> <li>1. a monitoring strategy</li> <li>2. characterisation of objects</li> <li>3. full survey of beach usage to inform likelihood of contact by public (habits survey).</li> <li>4. Prevention of further erosion</li> </ol> <p>Aim HPA has agreed to carry out an interim scoping assessment of public health by end of January based on the current available information. Require information from SEPA with regards to finds and their solubility. Currently the HPA's position on the health risk is that the risk of particles being swallowed, inhaled or touching the skin is low for normal activities but the public should follow the advice on</p>	<p>The Group recommended that a combined data set of all known particle parameters be collated. SEPA are in the process of compiling this information from historic reports.</p>	<p>M1-A7: SEPA to provide combined data set (rough draft being prepared)</p> <p>M1-A8: HPA to consider strengthening the Q&amp;A in relation to digging</p>		

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	<p>the signage. As the beach area is a wet environment the HPA believe the likelihood of sand/dust sized sources being inhaled is very small, however it was considered that wet particles may cause an increased change of adherence to skin. JB stated that the advice was made based on the high activity items of 13 and 76 MBq. It was acknowledged that the 76MBq objet could give rise to localised skin ulceration if it was carried around in a pocket.</p> <p>The Chairman stated that it was not clear how the HPA has determined the statement on low risk. JB responded by indicating that the HPA have responded to SEPA's questions in relation to finding the high-activity sources. There is not currently enough information available to determine the probability of encounter, or to undertake a full public health risk assessment. The criteria basis used for the advice as discussed with SEPA and Scottish Government was consistent with that used for in advice to the EA for beach</p>	<p>The Group recommended that the HPA consider strengthening the current Q&amp;A on digging.</p>			

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	<p>contamination around Sellafield.</p> <p>CM noted that the main public activities in the area are sailing, walkers, dog walkers and picnicking. Although at present there has been no habit survey done to provide data. PD stated that habits are informed by the situation, and that he has observed a decrease in the numbers of people present on the beach since October.</p> <p>CM &amp; LT requested that some kind of short term remediation was carried out for public safety &amp; re-assurance, such as fencing, signage or concrete blocks. There are concerns that winter storms will cause further erosion and expose caches of sources.</p> <p>TB advised caution in this area as a quick fix could exacerbate the situation.</p> <p>TA explained his concerns were that sources of particles contain radium and these are breaking up. Coastal</p>				

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	erosion may also be causing the recent increase in numbers. Over time the particles will get smaller and fine sediment will collect in the back corner of the bay and create a concentration of particles thus increasing the hazard to children who play in the area. This scenario should inform the level of activity the MoD are looking for and the HPA's advice. We need a database to clarify whether there is a relationship between particle size and level of activity.	Create database of particle size & activity results	M1-A9: SEPA to create particle size/activity database?		
<b>8. MoD Correspondence</b>	RB confirmed the MoD's commitment is to monitor once per year for the next 3 years. He clarified concern, in a letter to HPA, about future proposals being over ambitious. He suggested that the aim should be to focus resources to ensure prompt completion of individual pieces of work rather than attempt a "scatter-gun" approach.				
<b>9. Monitoring Criteria</b>	Due to the timing of the meeting not everyone had the chance to read paper M1-P6 in advance of the meeting therefore the meeting focused on finding solutions.	The Group recommend that the following specification and area is used for monitoring at Dalgety Bay:	M1-A10: SEPA to act on recommendation for monthly monitoring and minimum specification.		

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	<p>Although both CM &amp; LT requested some type of short term fix to ease public concerns, TB confirmed that this would not be the best course of action and any temporary fix may exacerbate the problem. TB was not in a position to offer any confident solutions at present due to the lack of data on key parameters.</p> <p>CM disagreed with this suggestion and passed his report on coastal protection measures to the Chair for distribution to the group.</p> <p>The group agreed that a monthly monitoring and recovery programme should be undertaken for anything above 20kBq to a depth of 10cm. These. This criteria would provide the same level of protection for beach users at Dalgety Bay as is given to users of Sandside Bay in Caithness. Monitoring should cover the largest area reasonably achievable – from the headland round to the outflow pipe, including the demarcated area.</p>	<ul style="list-style-type: none"> <li>• Capable of detecting a 20 kBq radium particle at 10 cm depth (to 95% confidence)</li> <li>• Covers area between high and low water as far as practicable as indicated on signs on a monthly basis</li> <li>• Monitoring to include recovery</li> <li>• More characterisation of recovered</li> <li>• Beach height data to be gathered (x,y,z coordinates)</li> </ul>	<p>M1-A11: SEPA to define edge of demarcated zone on beach and add additional signage</p> <p>M1-A12: TB to produce a list of data requirements for coastal flow and submit to the technical secretary</p> <p>M1-A13: Technical Secretary to copy Colin’s coastal protection report to group.</p>		<p style="text-align: center;"><b>Next meeting</b></p> <p style="text-align: center;"><b>Next meeting</b></p>

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	<p>The ends of the demarcated area should be signposted, so that it is clear for public. Fife Council offered to assist with this although raised concerns over costs and health &amp; safety of staff.</p> <p>Marine monitoring should be undertaken to determine the flow in the bay, details of any re-suspension and impact on shellfish.            RB said that monthly monitoring will begin as soon as it practicable</p> <p><u>Summary of agreed proposals:</u></p> <ul style="list-style-type: none"> <li>• monthly monitoring and source removal programme was needed</li> <li>• shellfish monitoring was needed</li> <li>• demarcated area was needed with better signage</li> <li>• previous monitoring &amp; shellfish data needed</li> <li>• gather wave, current &amp; tidal data to inform for long term remediation solution.</li> <li>• previous MoD &amp; SEPA monitoring methodology &amp; data needed to understand the disparities</li> <li>• habits survey was needed. PD</li> </ul>	<p>The Group recommends SEPA define the edge of the demarcated area and add additional signage.</p> <p>The Group recommends monitoring to characterise:</p> <ul style="list-style-type: none"> <li>• flow in the bay</li> <li>• re-suspension of particles impact on shellfish</li> <li>•</li> </ul>	<p>M1-A14: TB to produce a list of data requirements for flow and re-suspension characterisation and advise the technical secretary.</p> <p>M1-A15: FSA to undertake additional shellfish sampling in Dalgety Bay under the ad-hoc arrangements in the SEPA/FSA joint monitoring programme.</p> <p>M1-A16: FSA to undertake a food chain risk assessment based on data provided from</p>		<p><b>Next meeting</b></p>

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	noted that the issue of preferential selection of artefacts needs to be considered as it is known to occur.	The Group recommend that the FSA undertake sampling (through SEPA) to inform a risk assessment of the food chain.	SEPA's current monitoring and analysis.  M1-A17: JB to contact Donald Adrian at Sailing Club following an introduction via Colin McPhail to discuss boat maintenance activities at site (habits surveys). Email <a href="mailto:commodore@dalgetybaysc.org">commodore@dalgetybaysc.org</a>		

Next meeting is on Friday 3<sup>rd</sup> February 2012.