



PARTICLES PROGRESS REPORT

January to July 2012

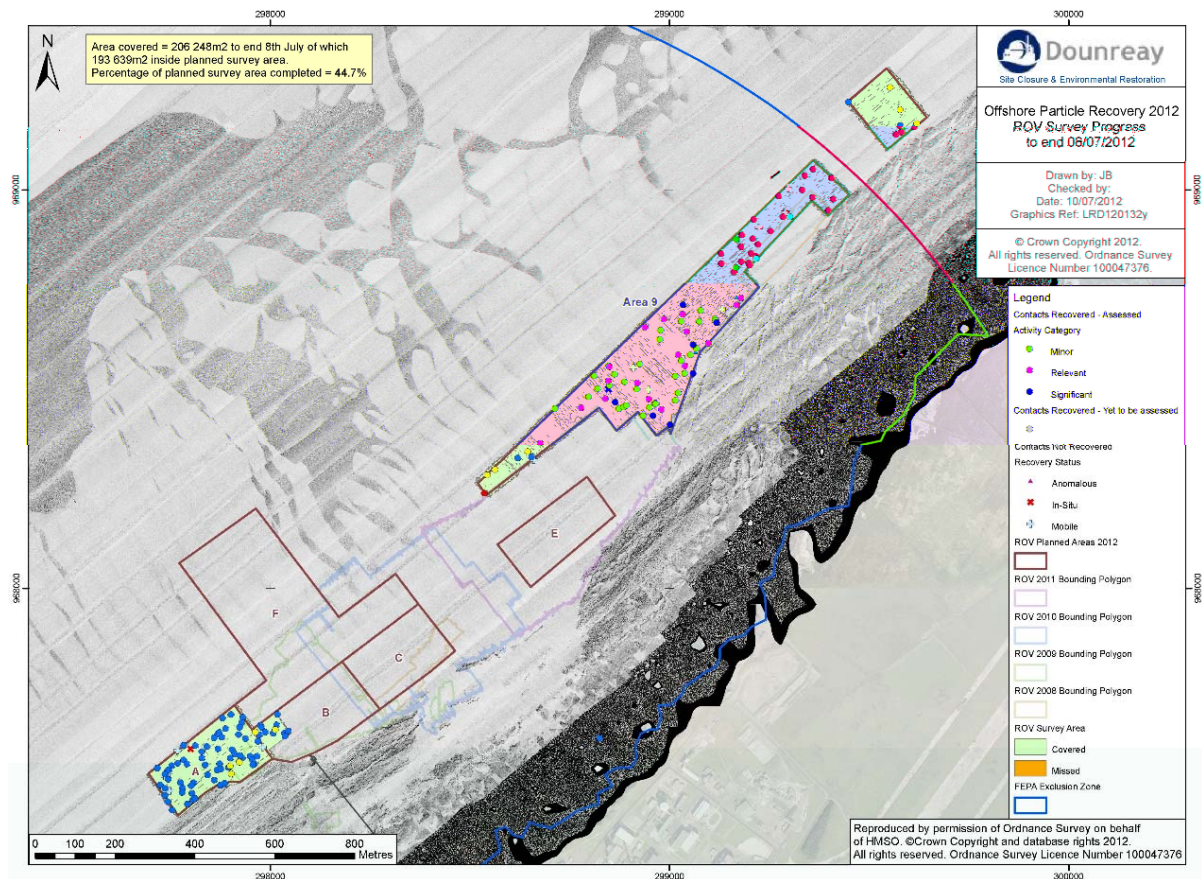
1 OFFSHORE WORK

2.1 Off-shore particle retrieval

Offshore operations recommenced at the end of May 2012 focussed on coverage of the areas agreed with PRAG(D), with a view to supplying PRAG(D) with information on a weekly basis, to allow any unexpected findings to be examined as the work progresses. At the 8th July a total area of just over 20.6 Ha has been surveyed and has resulted in 194 radiological contacts and 173 particle recoveries. These are detailed in the table and the map below.

Contact Category	Number
Significant	10
Relevant	30
Minor	133
Anomalous	3
Mobile	15
In Situ	3
Total	173

The anomalous contacts indicated low count rates that did not provide a clear signal. On operation of the retrieval tool the counts disappeared. This seemed to be indicative of contaminated sand, possibly a low activity fragmented particle. Most of mobile contacts were thought to have been retrieved but were not captured by the system, they were either moved by the deployment of the retrieval tool or were too small to be captured by the system; one is thought to be a repeat contact as it was found within a meter of the previous one and had a very similar count-rate. 189 separate particles have been isolated from the collected sand so far, indicating that 16 particle fragments have also been produced during the retrieval. 10 of these fragments were located in a single tank and had assessed activities of between 2,100 Bq and 4,500 Bq and indicate the break up of a particle.



The detection and retrieval system has functioned well and only 3 stationary particles have not been retrieved so far. The numbers of particles being found are in line with the current models, although the number of significant particles being found is lower than predicted.

DSRL would like to record their thanks to the two fishermen who moved their creels to permit the monitoring of the area at the east end of this year's work, outside the fishing zone.

The meeting with PRAG(D) is planned for the 18th July and hence coincides with the DSG meeting. A secretary's note will be provided to the DSG minutes. The offshore work is expected to continue into August, subject to weather and equipment performance.

Assessment of the results for the year will be carried out by DSRL and PRAG(D) with a view to determining whether further offshore work is justified.

2 THE OLD EFFLUENT DISCHARGE SYSTEM

SEPA have undertaken an initial review of the environmental safety case, for the Old Liquid Effluent Discharge system, provided by DSRL in December 2009. DSRL have provided additional information and there have been initial discussions on the way forward. This will be further developed in a meeting with SEPA on the 17th July.

3 MONITORING OF BEACHES



The statutory beach monitoring programme continues as per the SEPA Authorisation requirements.

5.1 Dounreay Foreshore

Weekly surveys, alternating between the East and West foreshores continued until seabird nesting led to suspension of monitoring on the west foreshore in May and on the east foreshore in June. Two particles have been found on the foreshore this year, one minor and one relevant.

5.2 Sandside Beach

Access for monitoring has been available throughout the period and is expected to continue under the current Administration and beyond. The monitoring regime being undertaken at present is more intense than required by the site authorisation and is aimed at ensuring particles are found as they arrive and also to provide support to a reduction in monitoring at the appropriate time.

Under this enhanced regime 9 particles have been detected so far this year. This includes 1 relevant particle, 7 minor particles and the particle which had a higher than expected Strontium content. The analysis of this particle, including dissolution in gastric and intestinal solutions, has been provided to SEPA.

P Cartwright
DSRL

Dounreay Particles Advisory Group (DPAG) – classification of particles

<i>Significant</i>	Caesium 137 activity greater than 1,000,000 Bq	Likely to cause serious ulceration (visible after 1-2 weeks). This may take several weeks to heal along with the associated risk of infection which might require medical treatment.
<i>Relevant</i>	Caesium 137 activity between 100,000 and 1,000,000 Bq	Would require a minimum of 7 hours stationary contact with the skin to have any discernable effect. Indeed, time periods of 1-2 days would be required for any reddening with small lesion of the skin to be observed. The affected area of skin would be expected to heal completely within 2-4 weeks without further problems. Anyone coming into contact with this type of particle is unlikely to experience any observable effects.
<i>Minor</i>	Caesium 137 activity less than 100,000 Bq	Will not cause discernable health effects.