

**APPENDIX E      Dust Impact Assessment Report from Clyde Analytical**

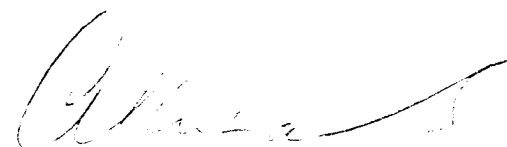
**ENVIRONMENTAL DUST MONITORING**

**Attn:- Rebecca Richardson  
BMT CORDAH Ltd  
Doherty Building  
Pentland Science Park  
Penicuik  
Edinburgh EH26 0PZ**

**Reference:- 41521/1-12/CORDAH3.SAM**

**Date:- 17th March 2004**

<b>Sample Reference(s)</b>	41521/1-12
Date Received	15/03/04
Analysis Started	15/03/04
Sampled By	Client
Delivered By	Post

  
**C.I. Winstanley (Technical Director)  
for Clyde Analytical Ltd**

1. Introduction

1.1 12 sticky pad dust monitoring samples were delivered to Clyde Analytical Ltd for computer scanned image analysis. Received samples are detailed in Table 1.

2. Procedure

2.1 Sticky pad dust guages have been used by local authorities and industry since the early 1980's as a simple and robust method of assessing dust fallout from a variety of sources (1).The technique was recently refined using the now readily available computer scanning systems (2).

2.2 White self adhesive surface covering or suitable alternative is attached to a board or other suitable support with the sticky side facing upwards and a control area with the protective backing left in place. The sampler is left out on-site for a suitable time period (usually 3-48 hours). A refinement of the technique involves the attachment of the guage to a vertical cylinder to produce a directional system (2).

2.3 After exposure the sampler is covered and returned to the laboratory. The previous method involved determination using a reflectometer (designed for smoke stain measurement). The developed method involves scanning the guage surface into a bitmapped greyscale 50 dpi image file and carrying out analysis using the scanning software. The procedure effectively produces an analysed pixel size of 500 microns. The results from the exposed area are compared with the unexposed control area.

2.4 The acquired data is calculated as daily effective area coverage (EAC) and the data compared to typical levels and public response levels (1).

**Table 1**  
**Exposure Periods**

Location	Reference	Date	Exposure
a) Commanders House, Kinloss	41521/1	4-5th March 2004	24 hours
b) Glebe Road, Kinloss	41521/2	4-5th March 2004	24 hours
c) Kinloss Speed limit	41521/3	4-5th March 2004	24 hours
d) Covesea Village	41521/4	4-5th March 2004	24 hours
e) Gordonstoun Gate	41521/5	4-5th March 2004	24 hours
f) Junction B9012 Duffus Castle Road	41521/6	4-5th March 2004	24 hours
g) Westerfolds	41521/7	4-5th March 2004	24 hours
h) Crash Gate 4	41521/8	4-5th March 2004	24 hours
i) Stotfield Road	41521/9	4-5th March 2004	24 hours
j) Silver Sands Caravan Park	41521/10	4-5th March 2004	24 hours
k) Gilmour Crescent, Lossiemouth	41521/11	4-5th March 2004	24 hours
l) Priory Place, Elgin	41521/12	4-5th March 2004	24 hours

3. Results

3.1 Results are detailed in Table 2 and area graphs below. Scans are appended. Data based on 24 hour exposure.

Table 2  
Results

Location	% EAC/day			
	North	East	South	West
a) Commanders House, Kinloss	0.04	0.08	0.08	0.04
b) Glebe Road, Kinloss	0.08	0.08	0.08	0.08
c) Kinloss Speed limit	0.04	0.08	0.04	0.04
d) Covesea Village	0.04	0.04	0.04	0.04
e) Gordonstoun Gate	0.04	0.08	0.04	0.08
f) Junction B9012 Duffus Castle Road	0.08	0.12	0.08	0.08
g) Westerfolds	0.08	0.04	0.08	0.04
h) Crash Gate 4	0.16	0.12	0.12	0.12
i) Stotfield Road	0.16	0.16	0.16	0.16
j) Silver Sands Caravan Park	0.04	0.04	0.08	0.04
k) Gilmour Crescent, Lossiemouth	0.20	0.20	0.16	0.16
l) Priory Place, Elgin	0.04	0.08	0.08	0.08

4. Comments

4.1 Typical levels are detailed in Table 3 (1).

Table 3  
Typical Levels

% EAC/day	Situation
0.01	Rural
0.02	Suburban/small towns
0.3-0.4	Urban
0.5	Rural summertime
0.8-1	Industrial
% EAC/day	Public Response
0.2	Noticeable
0.5	Possible complaints
0.7	Objectionable
2	Probable complaints
5	Serious complaints

5. References

(1) Assessment of nuisance from deposited particulates using a simple and inexpensive measuring system. Beaman, Kingsbury (Atkins Research and Development) NSCA Vol 11 No2 (1981).

(2) Environmental dust monitoring using computer scanned images obtained from sticky pad polydirectional dust guages. Farnfield, Birch (Dept of Mining, Univ. of Leeds) NSCA Vol 27 No3 (1999).

**Graphical Presentation Of EAC**

