

# Appendices

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# Appendix A - Locations of Monitoring Sites

Table A.1 - Monitoring Locations of Sticky Pads (Dust) and Osiris Analysers (PM<sub>10</sub>)

Park-wide ID	OS Grid Reference		Description	Managed by	Location* (Construction Zone)	Change from Previous Report	Missing or Delayed
Dust_01	537852	186049	Located on lamp column at the end of the cul-de-sac outside 33 Ruckholt Close. Urban Background site	MCL	Off-site (7) – North of site	None	-
Dust_02	538881	185772	Background site on lamp post outside Downsell Primary School and opposite No. 34 Hall Road E15	MCL	Off-site (Residential) – NE	None	-
Dust_03	538255	185665	141 Westdown Road. Urban Background site	MCL	Off-site (6) – NE	None	-
Dust_09	537034	184940	Rear of Wick Village TMC on lamp column on Windsor Wharf, outside Ferry House. Urban Background site	MCL	Off-site (5c) – E	None	-
Dust_10	537062	184948	Towing path on canal opposite Windsor Wharf. Urban Background site. Only one direction is available (North).	MCL	Boundary (5c) – W	None	-
Dust_11	537103	184830	Leabank Square. Urban Background site	MCL	Off-site (5c) – W	None	-
Dust_11A	537103	184830	Duplicate for site	MCL	Off-site (5c) – W	None	-
Dust_12	537509	184739	Located on lamp column outside Harringay Meat Traders Ltd. Kerb site	MCL	On-site (5b)	Removed	Week 1, 2, 3, and 4
Dust_13A	537516	184561	Carpenters Rd - Lamp post 100m West of road bridge over River Lea.	BNL	On-site (4)	None	-
Dust_13	537320	184511	River Lea – adjacent to railway bridge. Urban Background site	BNL	Boundary (4) – W	None	Week 3
Dust_14	538127	185520	Located on lamp column 30 metres west of the site entrance to Fitzpatrick's depot on Temple Mill Lane. Kerb Site	MCL	Boundary (6a) – W"	None	-
Dust_15	537348	184423	Bow Industrial Park. Kerb site. Pad wrapped around hoarding post monitoring in 3 directions only (N, E & S)	BNL	Boundary (4) – W	None	-
Dust_16	537386	184173	Bow Industrial Park. Kerb site. Pad wrapped around hoarding post monitoring in 3 directions only (N, E & S)	BNL	Boundary (4) – W	None	-
Dust_17	538397	184056	Gibbins Road. Lamp post 61 adjacent to Flats Urban Background site	BNL	Off-site (Residential/ 1a) – E	None	-
Dust_18	538140	183968	Lamp post 15 opposite entrance to foot bridge over Water Works River	BNL	On-site (1a)	None	Week 1

Park-wide ID	OS Grid Reference		Description	Managed by	Location* (Construction Zone)	Change from Previous Report	Missing or Delayed
			Warton Road. Kerb site				
Dust_19	537406	184017	Lamp post 16 in car parking bay at rear of Old Ford Lock House. Kerb site	BNL	Boundary (4) – SW	None	Week 3
Dust_20	538308	183925	Lamp post 20 Rear of 1-27 Biggerstaff Road Adjacent to Lund Point Tower Block	BNL	Off-site (Residential/ 1a) – E	None	-
Dust_20A	538394	184162	Biggerstaff Rd Denison Point, Lamp post adjacent to flats	BNL	Off-site (Residential/ 1b) – E	None	-
Dust_21	538332	183879	Lamp post 10. 44-46 Biggerstaff Road0	BNL	Off-site (Residential/ 1a/ 8c) – E	None	-
Dust_22	538329	183805	Lamp post on Friendship Way / Warton Rd adjacent to flats 26 -38b	BNL	Off-site (Residential/ School/ 8c)	None	-
Dust_23	537482	183884	Construction Zone 3a adjacent to The Greenway	BNL	On-site (3a)	None	-
Dust_24	538496	183651	Rick Roberts Way Lamp post adjacent to mini roundabout	BNL	Off-site (Residential/ 12/ 8c)SE	None	-
Dust_25	538114	183623	Otter Close. Lamp post at West end of close adjacent to Flat no 85 -92	BNL	Off-site (8c / 8b) – SE	None	-
Dust_26	538209	183588	Otter Close. Lamp post at East end of close adjacent to Flat no's 61 -68	BNL	Off-site (8c / 8b) SE	None	-
Dust_27	536996	183638	On lamp post on Legion Terrace outside Flora House	MCL	Off-site (Residential/ 14/ 3b) - SW	None	-
Dust_28	537578	183208	West Side of Blackwall approach tunnel Road. Lamp post W7948 on road adjacent to Park East Apartment Building	BNL	Off-site (14/ 3b) – SE	None	-
Dust_29	537387	183369	West Side of Blackwall approach tunnel Road. Lamp post W 10513 on bottom of Wrexham Road adjacent to Paddock St	BNL	Off-site (Residential/ 3b) – S	None	-
Dust_31	538059	183329	Lamp Post On Bridge over Bow Back River adjacent to Porsche Garage	BNL	Off-site (8a) – S	None	-
Dust_32	538587	183299	Junction of Abbey Lane and Gay Road	BNL	Off-site (Residential/ 12/ 8c) – SE	None	-
Dust_37	537259	184660	Located on western boundary fence at the far end of the site (bordering the canal). Only one direction is available (North).	MCL	Boundary (5b) – W	None	Week 3 and Week 4
Dust_38	537105	184897	River Lea – Disused Footbridge. Urban Background site. Only one direction is available (North).	MCL	Boundary (5c) – W	None	Week 4
Dust_39	537673	185915	On lamp column near junction of Temple Mill Lane and	MCL	Boundary (7a) - N	None	-

Park-wide ID	OS Grid Reference		Description	Managed by	Location* (Construction Zone)	Change from Previous Report	Missing or Delayed
			Ruckholt Road on opposite side of fence to original site.				
Dust_40	538103	185578	Located on lamp column on cycle track behind clays lane estate	MCL	On-site (6a)	None	-
Dust_41	537545	185663	On lamp Column at Junction of Quartermile Lane and Core Office	MCL	On-site (7a)	None	-
Dust_45	538473	185352	On lamp column outside depot on Leyton Road	MCL	Off-site (11) – NE	None	-
Dust_46	537516	183821	Zone 3a on South Hoarding. Pad wrapped around hoarding post monitoring in 3 directions only (N, E & S)	BNL	Boundary (3a/ 3b) – S	None	-
Dust_47	537612	183794	Zone 3 on South Hoarding. Pad wrapped around hoarding post monitoring in 3 directions only (N, E & S)	BNL	Boundary (3a/ 3b) – S	None	-
Dust_48	537298	184588	North West Corner of Kings Yard. Only site direction is available (East).	BNL	Boundary (4) – W	None	-
Dust_50	537514	185625	South side of boarding at Quartermile Lane Travellers' site. Only one direction is available (North).	MCL	Boundary (7a) - NW	None	-
Dust_52	537346	185377	Waterden Rd entry gates northern	MCL	Boundary (5a/ 5b) – NW	None	-
Dust_57	537832	185569	Located on fence pole, SE of Core Team Office. Only one direction is available (North).	MCL	On-site (7a)	None	-
Dust_61	538029	185380	New position commenced 18/07/08 - Dust_61, 62 and 63 are flat boards located on fences therefore only one direction is available (North).	MCL	On-site (6b)	None	Week 4
Dust_62	537981	185269	New position commenced 18/07/08 - Dust_61, 62 and 63 are flat boards located on fences therefore only one direction is available (North).	MCL	On-site (6b)	None	Week 2 and Week 3
Dust_63	537806	185004	New position commenced 18/07/08 - Dust_61, 62 and 63 are flat boards located on fences therefore only one direction is available (North).	MCL	On-site (6a)	None	-
PM10_02 (Gainsborough Primary School)	537037	184928	Gainsborough Community Primary School. Background Site	MCL	Off-site Residential and School (5c) – W	None	-
PM10_09 (Carpenters Road South)	538227	184159	On the hoarding around the Murphy's site, approximately 100 metres south-east along Carpenters Road	BNL	On-site 1b	None	Data gap b/w 20/11/08 10:15 - 18:30 (Calibration of analyser)
PM10_08 (West Greenway)	537396	183831	The Greenway, re-positioned on the 10/07/08	BNL	3a/ 3b (now moved)	None	Data gap b/w 20/11/08 10:45 - 16:45 (Calibration of

Park-wide ID	OS Grid Reference		Description	Managed by	Location* (Construction Zone)	Change from Previous Report	Missing or Delayed
							<p>analyser);</p> <p>21/11/08 04:15 - 26/11/08 09:00 (Power failure); and</p> <p>29/11/08 21:30 – 04/12/08 (Power failure)</p>
PM10_06 (CZ4 Soil Wash)	537332	184458	On hoarding at CZ4, co-located with weather station.	BNL	4 – W boundary	None	<p>Data gap b/w 01/11/08 00:00 - 03/11/08 12:45 (Power failure); and</p> <p>20/11/08 04:30 - 18:30 (Power failure and Calibration of analyser)</p>
PM10_07 (Quartermile Lane)	537543	185666	Located near core team office	MCL	7a – On-site	None	-
PM10_010 (Site 8a)	537989	183306	South east of zone 8A, located on Bow Back River boundary wall	Hyder	Off-site (8a) – SE	<p>Low data capture (recordings available for less than a week in Nov) due to removal of monitor because works affecting the hoarding it was attached to. The monitor was relocated off-site at the nearest dwelling to the Olympic Park boundary on the 17<sup>th</sup> of Nov. Analyser performance issues; recording only started on the 28<sup>th</sup>.</p>	<p>Data gap b/w 03/11/08 00:00 - 12/11/08 13:45;</p> <p>12/11/08 15:15 - 20/11/08 16:15; and</p> <p>21/11/08 00:00 - 28/11/08 13:00.</p> <p>(Analyser performance issues)</p>
PM10_011 (Site 8c)	538228	183763	On wall of substation at entrance to zone 8C along Bridgwater Road	Hyder	8c – E	None	-

Park-wide ID	OS Grid Reference		Description	Managed by	Location* (Construction Zone)	Change from Previous Report	Missing or Delayed
PM10_012 (Metronet)	538224	185638	Located on Metronet land behind residential properties along Westdown Road. Adjacent to underground.	Hyder	Off-site, nearest zone 6c, NE	None	Data gap b/w 07/11/08 00:00 - 13/11/08 13:45; and 21/11/08 00:00 - 28/11/08 13:00 (Recurrent power failures and analyser performance issues)

\* On-site fablon pad locations are in discussion to be decommissioned (10 out of 44 sites).

# Appendix B - Sticky Pad Analysis Results Graphs

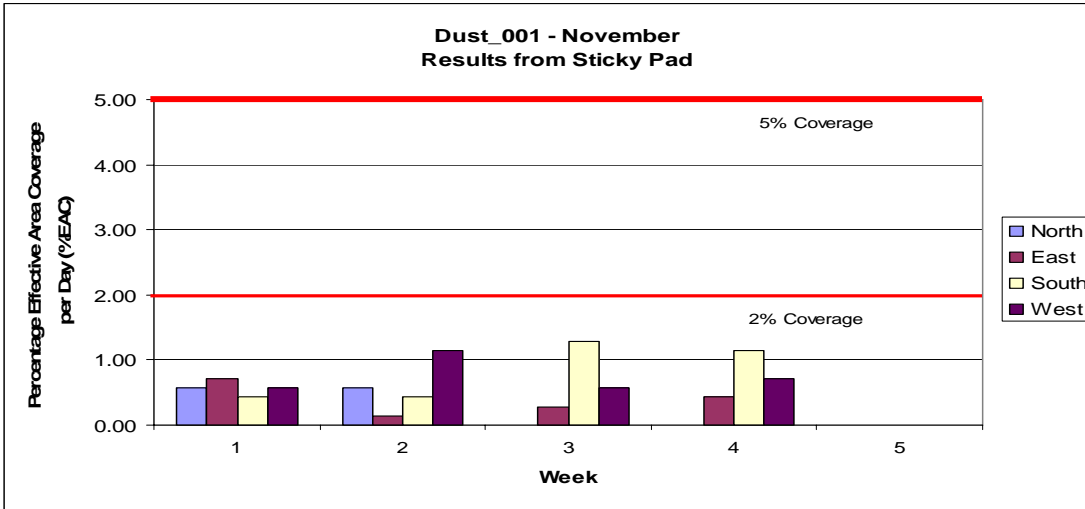
- B.1.1 The complete results of the Fablon Sticky Pad monitoring at all sites are presented here in Appendix B; this includes data from both on-site and off-site locations (total of 44 sites). Ten on-site sites which have been deemed not representative of sensitive receptors were removed from the report discussion; they are: Dust\_12, Dust\_13A, Dust\_18, Dust\_23, Dust\_40, Dust\_41, Dust\_57, Dust\_61, Dust\_62 and Dust\_63. These sites are located along main haul roads or at locations with high construction activity proving unrepresentative of the surrounding environment. Data from these on-site locations can still be found in Appendix B and Appendix C.

**Table B.1 - The appendix presents November Graphs for the following sites:**

Park-wide ID	On or Off- Site
Dust_01	<b>Off-site</b>
Dust_02	<b>Off-site</b>
Dust_03	<b>Off-site</b>
Dust_09	<b>Off-site</b>
Dust_10	On-site (boundary)
Dust_11	<b>Off-site</b>
Dust_11A	<b>Off-site</b>
Dust_12	On-site
Dust_13A	On-site
Dust_13	On-site (boundary)
Dust_14	On-site (boundary)
Dust_15	On-site (boundary)
Dust_16	On-site (boundary)
Dust_17	<b>Off-site</b>
Dust_18	On-site
Dust_19	On-site (boundary)
Dust_20	<b>Off-site</b>
Dust_21	<b>Off-site</b>
Dust_20A	<b>Off-site</b>
Dust_22	<b>Off-site</b>
Dust_23	On-site
Dust_24	<b>Off-site</b>
Dust_25	<b>Off-site</b>
Dust_26	<b>Off-site</b>
Dust_27	<b>Off-site</b>
Dust_28	<b>Off-site</b>
Dust_29	<b>Off-site</b>
Dust_31	<b>Off-site</b>
Dust_32	<b>Off-site</b>
Dust_37	On-site (boundary)
Dust_38	On-site (boundary)
Dust_39	On-site (boundary)
Dust_40	On-site
Dust_41	On-site
Dust_45	<b>Off-site</b>
Dust_46	On-site (boundary)
Dust_47	On-site (boundary)
Dust_48	On-site (boundary)
Dust_50	On-site (boundary)
Dust_52	On-site (boundary)
Dust_57	On-site
Dust_61	On-site
Dust_62	On-site
Dust_63	On-site

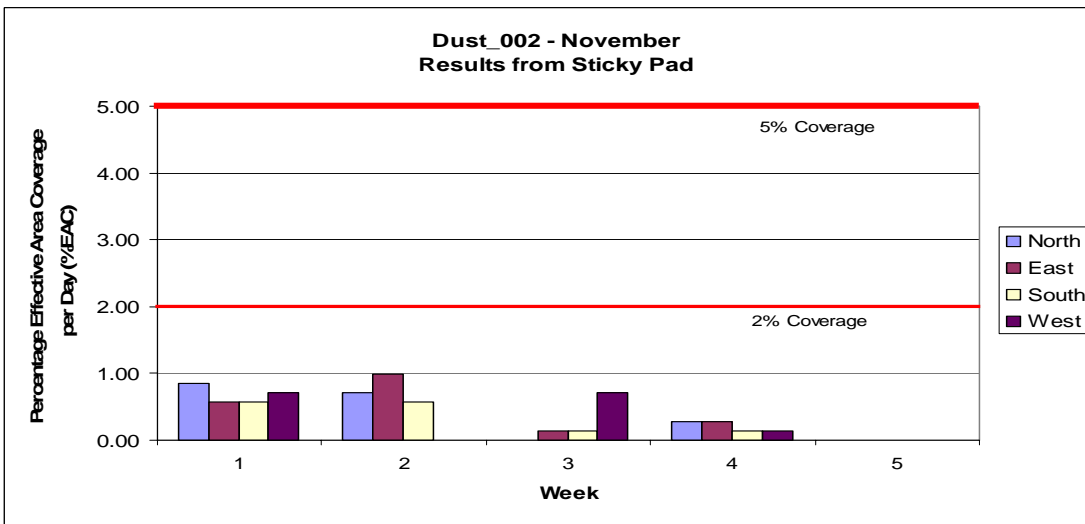
Site Dust\_001

North – offsite; East – offsite; South – offsite/ CZ7a; West – offsite



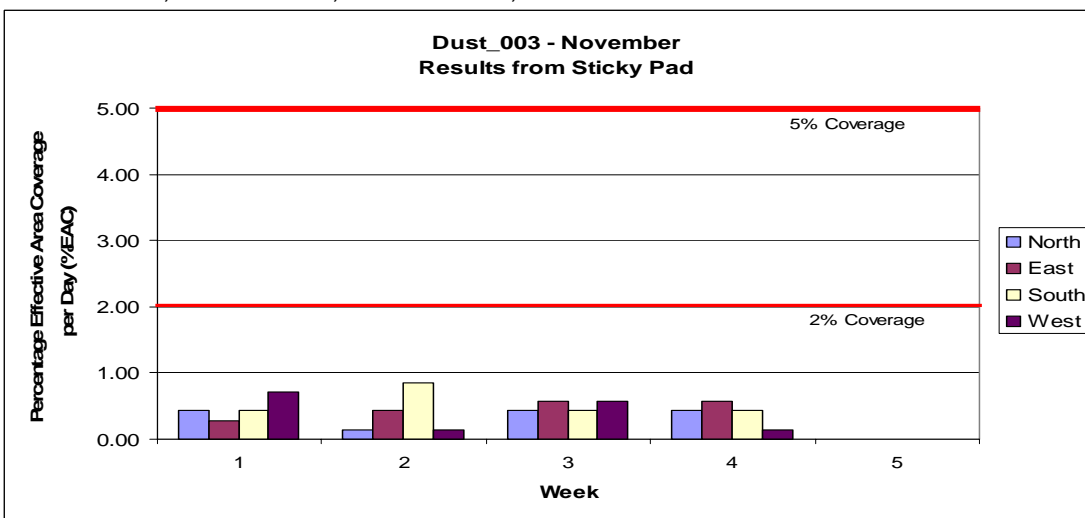
Site Dust\_002

North – offsite; East – offsite; South – offsite; West – offsite/CZ6/7a



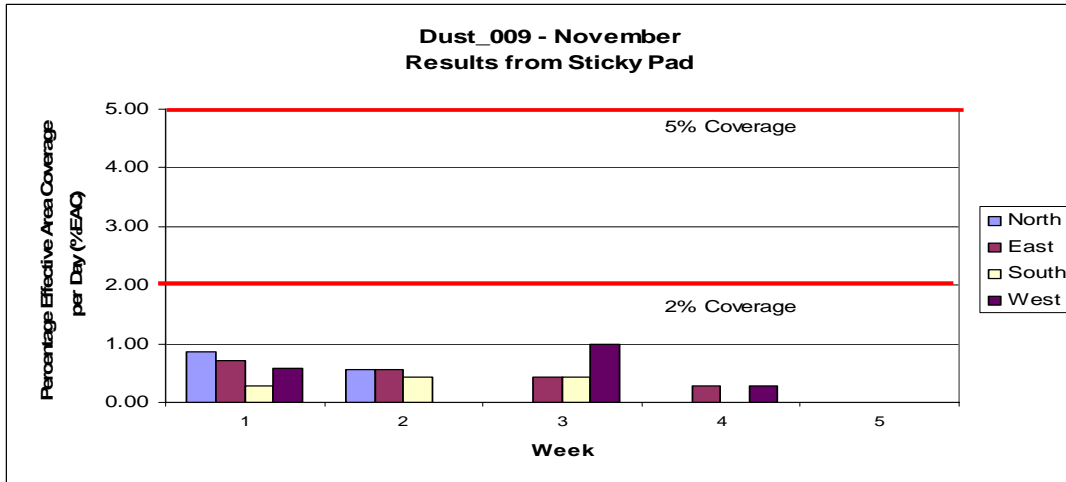
Site Dust\_003

North – offsite; East – offsite; South – CZ6c; West – CZ6a/7a



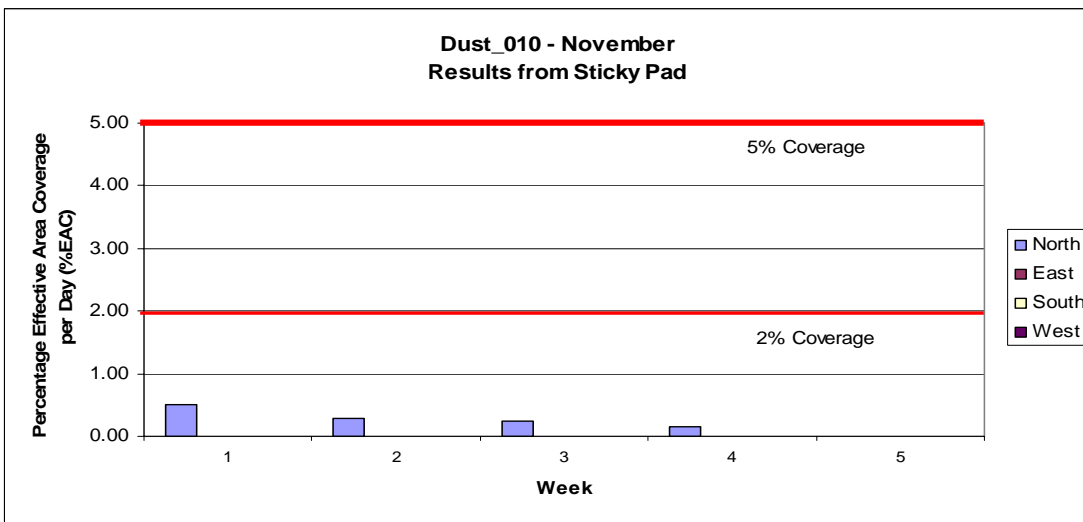
Site Dust\_009

North – CZ5c; East – CZ5c/5b; South – offsite; West – offsite



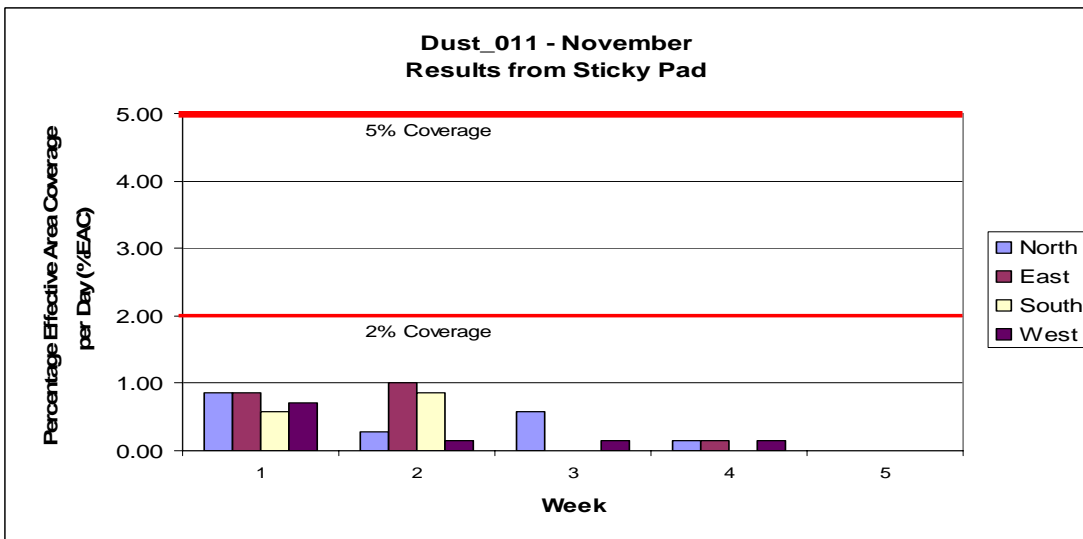
Site Dust\_010

North – CZ5c; East – CZ5c/5b; South – offsite; West – offsite



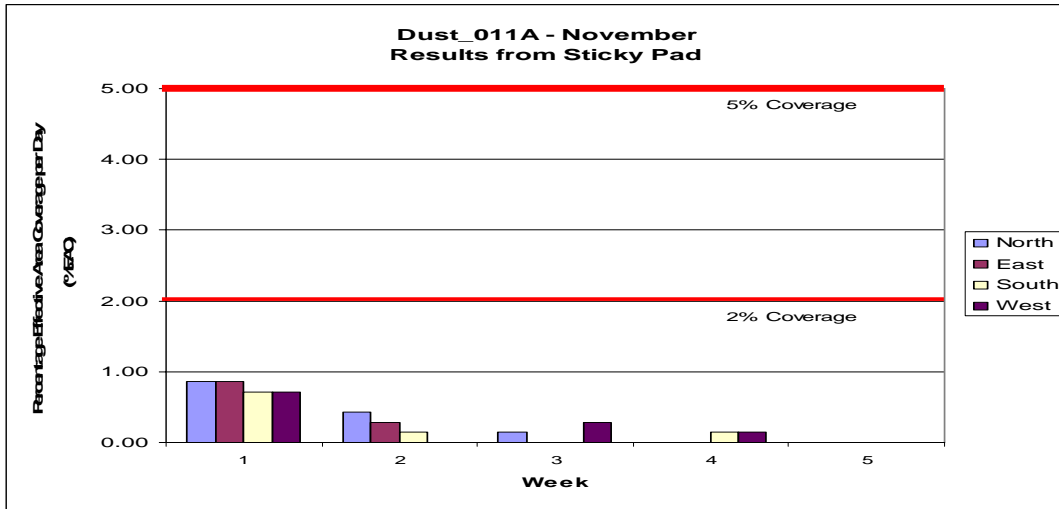
Site Dust\_011

North – CZ5c/5b; East – CZ5c/b; South – offsite; West – offsite



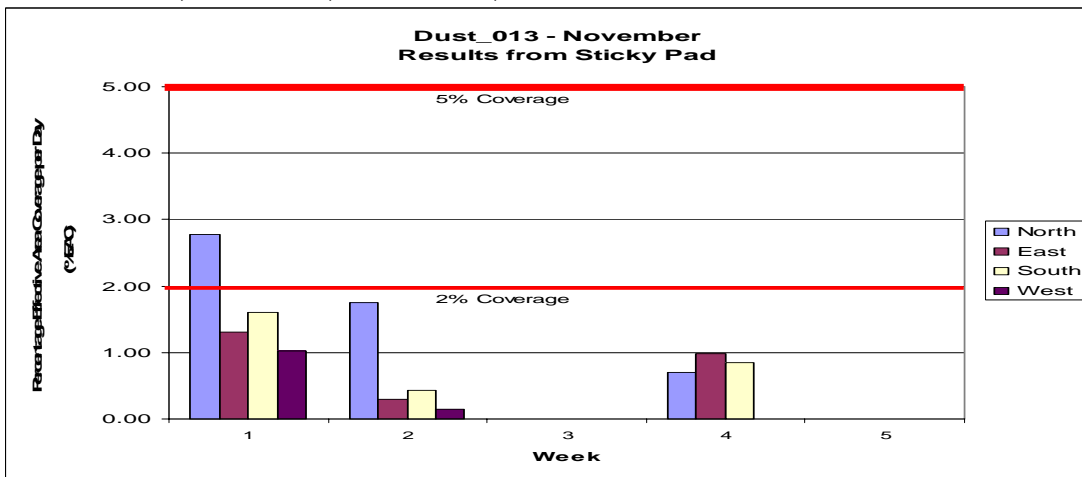
Site Dust\_011A

North – CZ5; East – CZ5; South – offsite; West – offsite



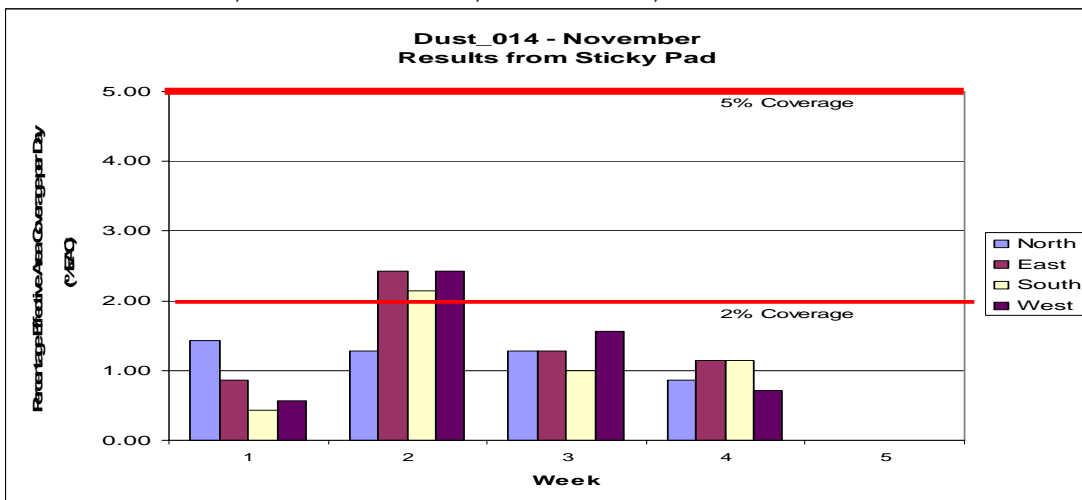
Site Dust\_013

North – CZ5b/4; East – CZ4; South – CZ4; West – offsite/ CZ4



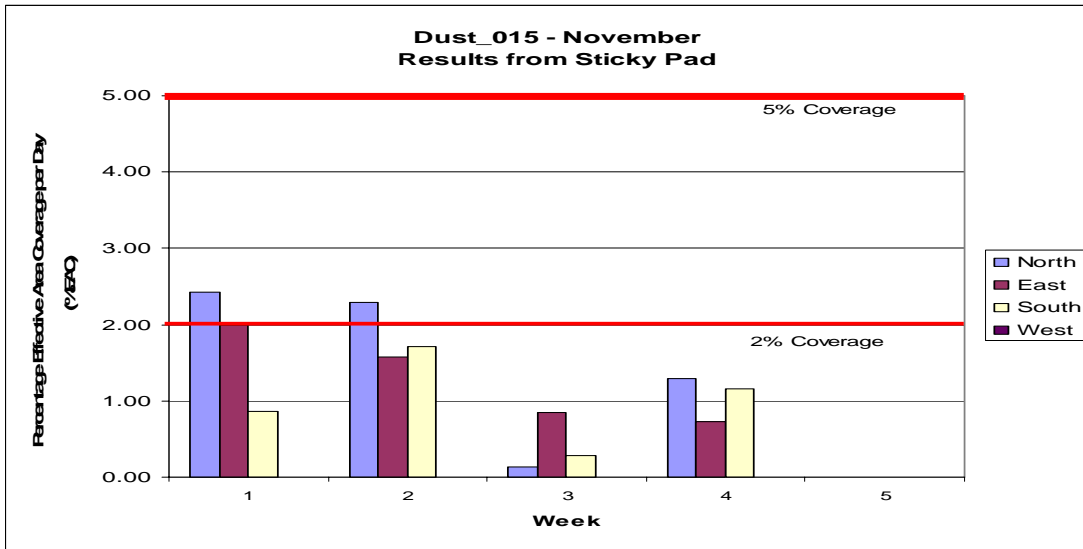
Site Dust\_014

North – CZ6c/offsite; East – CZ6c/offsite; South – CZ6c; West – CZ6a



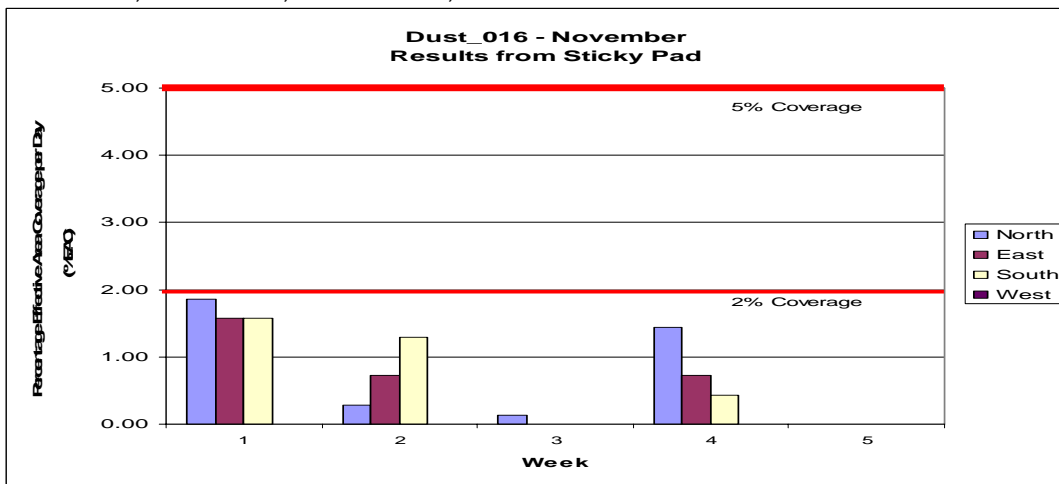
Site Dust\_015

North – CZ4/ 5b; East – CZ4; South – CZ4; West – offsite



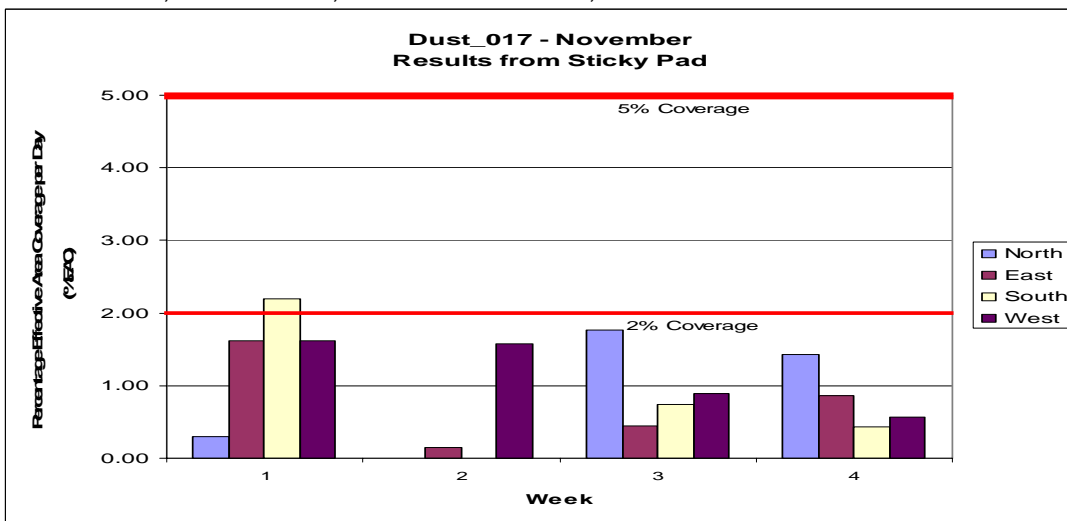
Site Dust\_016

North – CZ4; East – CZ4; South – CZ4; West – offsite



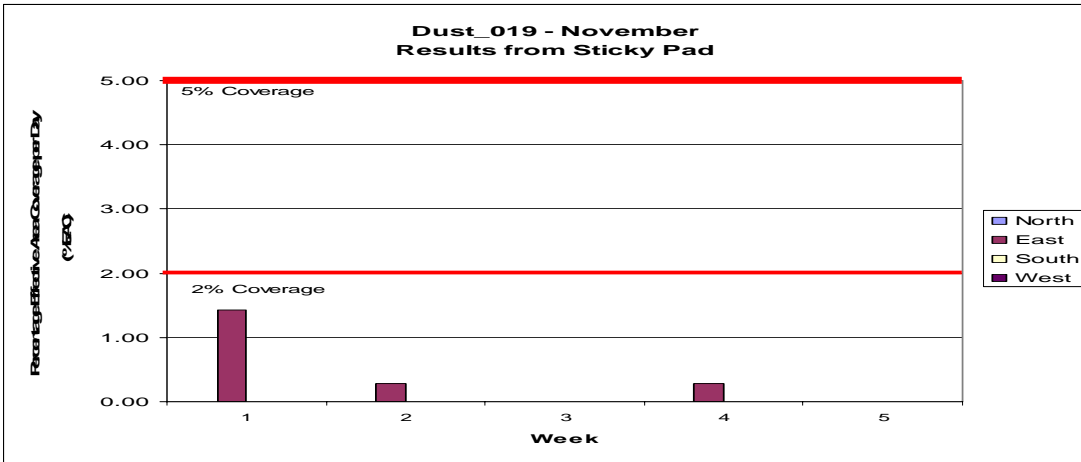
Site Dust\_017

North – offsite; East – offsite; South – CZ8c/offsite; West – offsite



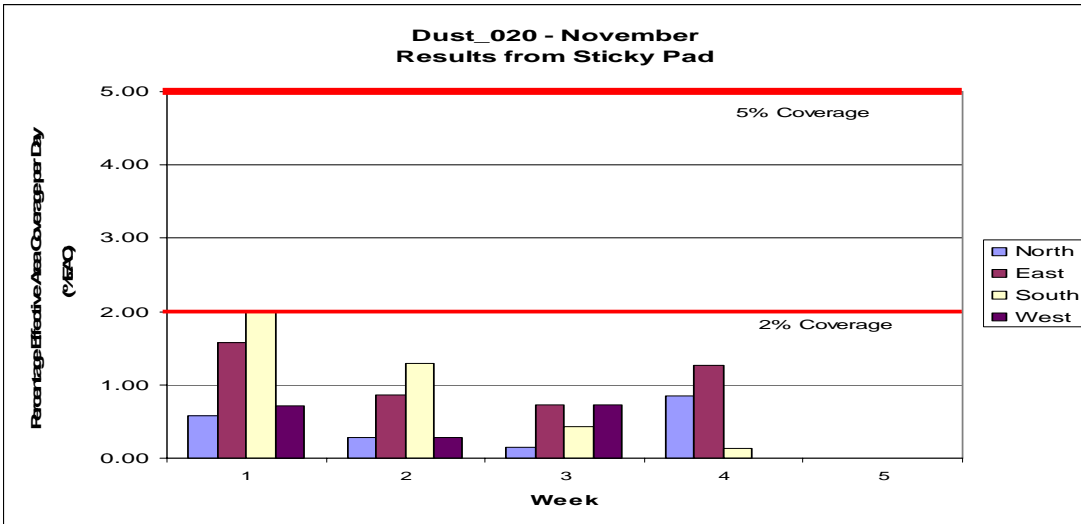
Site Dust\_019

North – CZ4; East – CZ4/ 3a; South – CZ4/ 3; West – CZ4/offsite



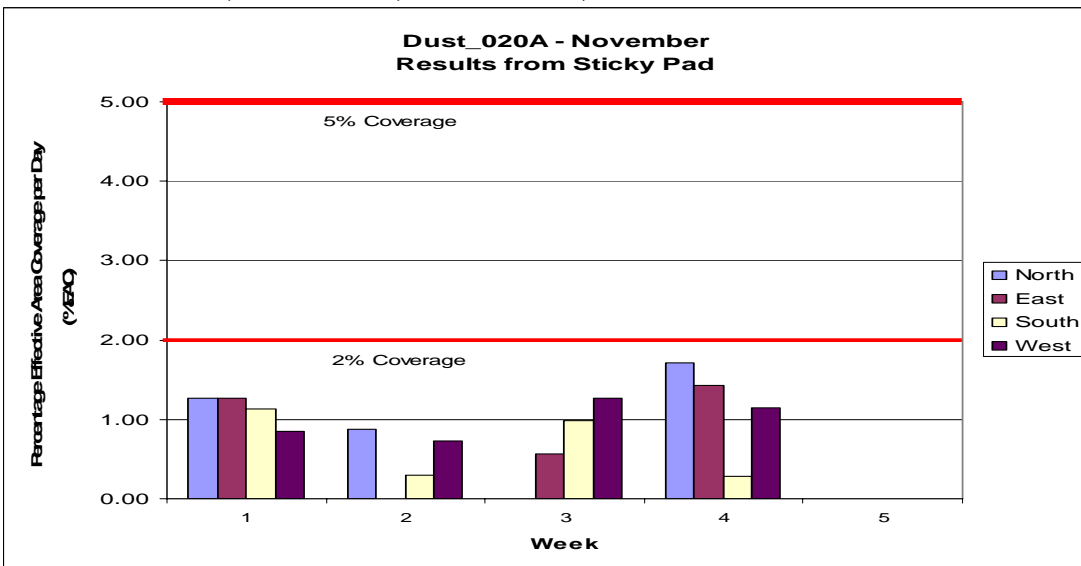
Site Dust\_020

North – offsite; East – offsite; South – offsite/ CZ8c; West – offsite/ CZ1a/ 2b



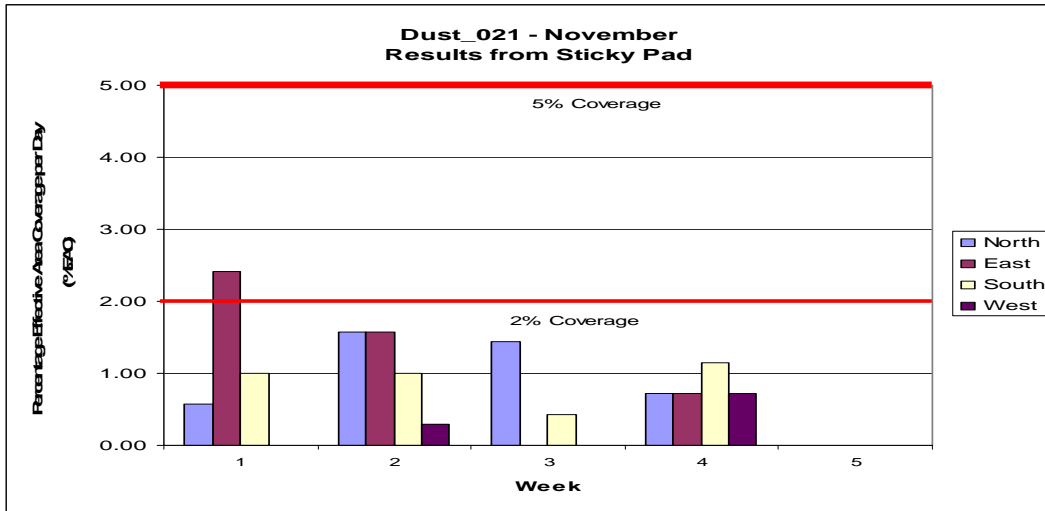
Site Dust\_020A

North – offsite/ CZ9; East – offsite; South – offsite; West – offsite/ CZ1b



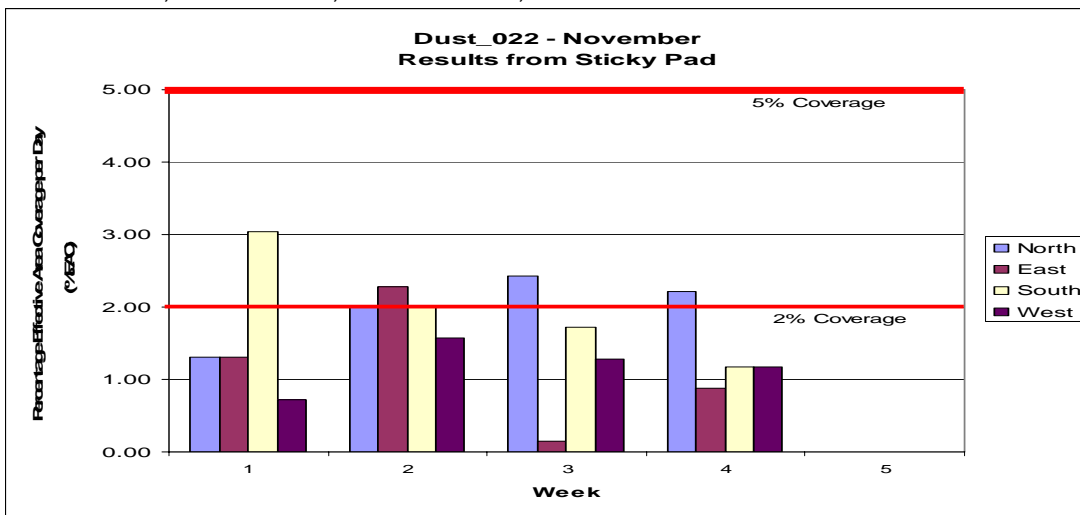
Site Dust\_021

North – offsite; East – offsite; South – offsite/ CZ8c; West – offsite/ CZ2b



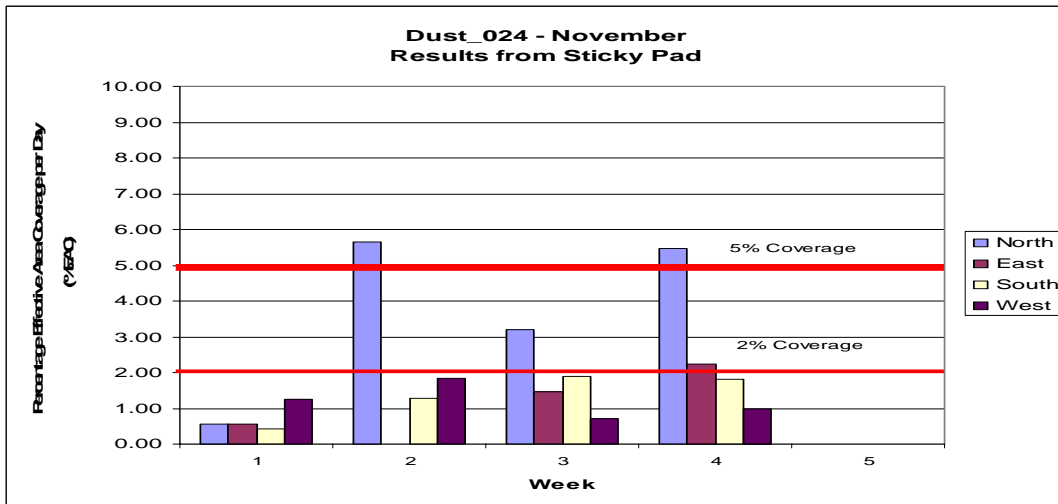
Site Dust\_022

North – offsite; East – offsite; South – offsite; West – CZ8c



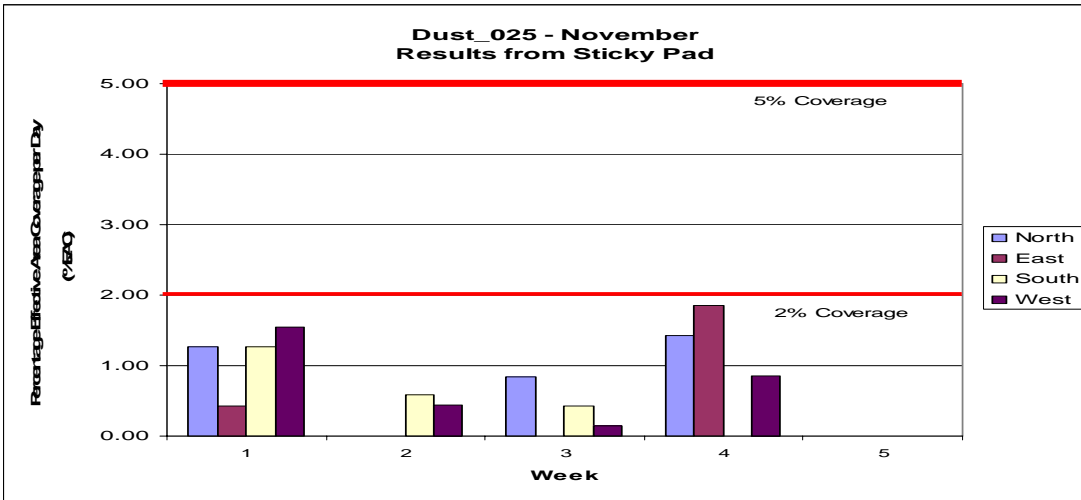
Site Dust\_024

North – CZ8; East – offsite; South – offsite; West – CZ8c



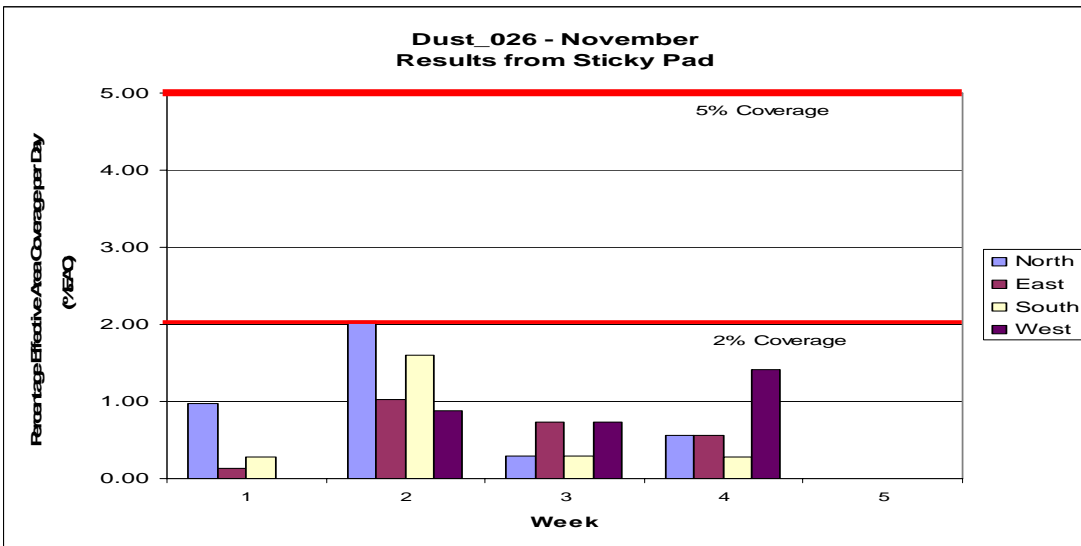
Site Dust\_025

North – CZ8c; East – CZ8c; South – CZ8c/b; West – CZ8b



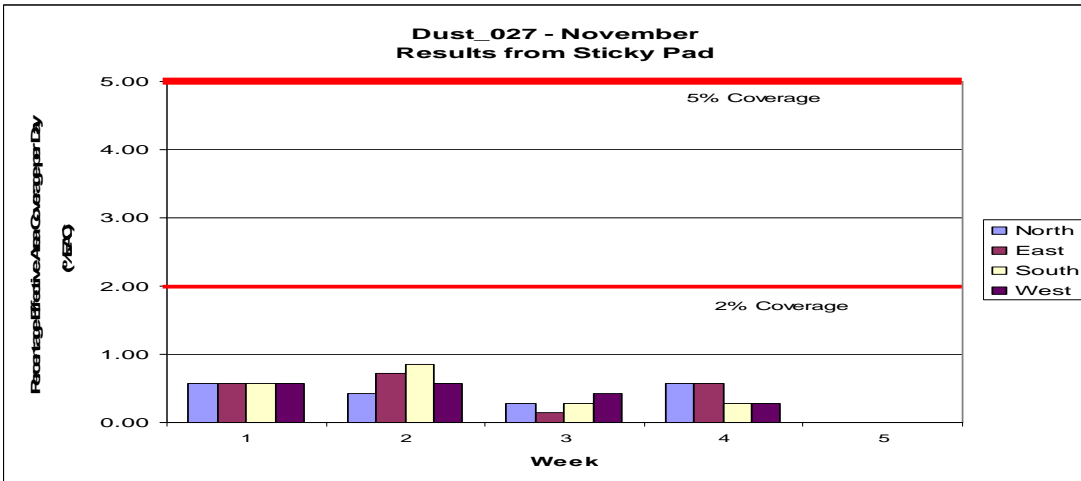
Site Dust\_026

North – CZ8c; East – offsite; South – offsite; West – CZ8b



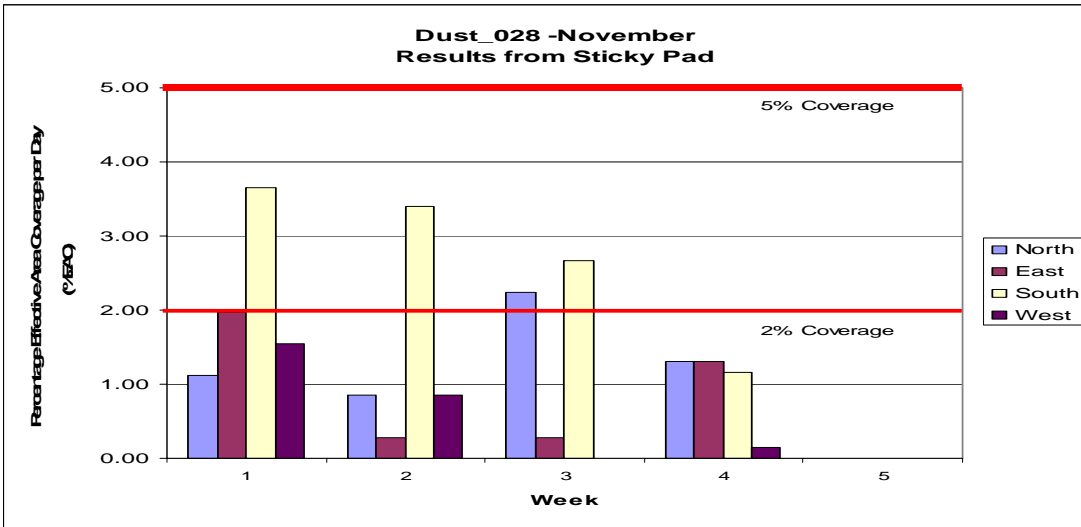
Site Dust\_027

North – offsite; East – offsite/CZ3; South – offsite; West – offsite



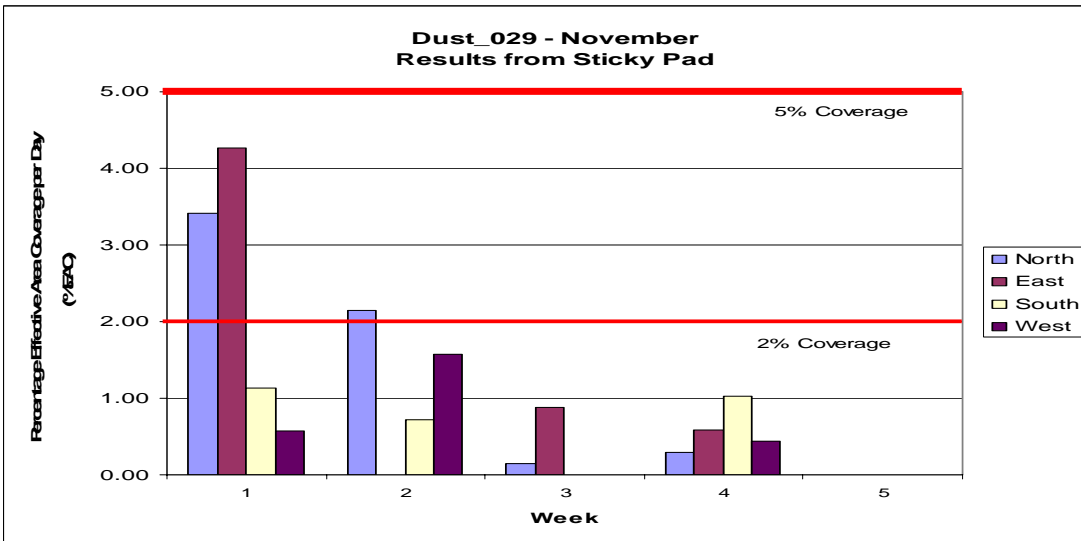
Site Dust\_028

North – CZ3b; East – offsite; South – offsite; West – offsite



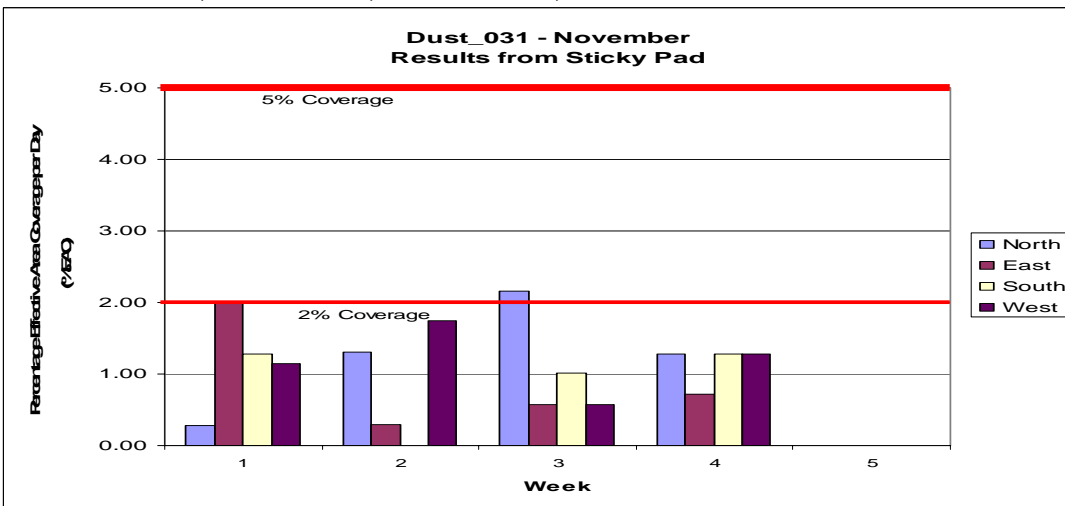
Site Dust\_029

North – CZ3b/ 14; East – offsite; South – offsite; West – offsite



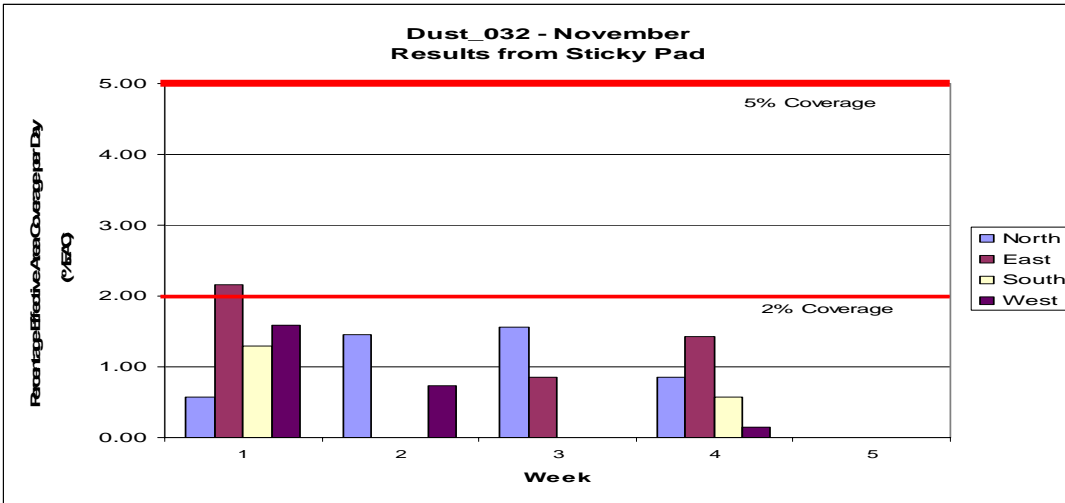
Site Dust\_031

North – CZ8a/ 3b; East – offsite; South – offsite; West – offsite



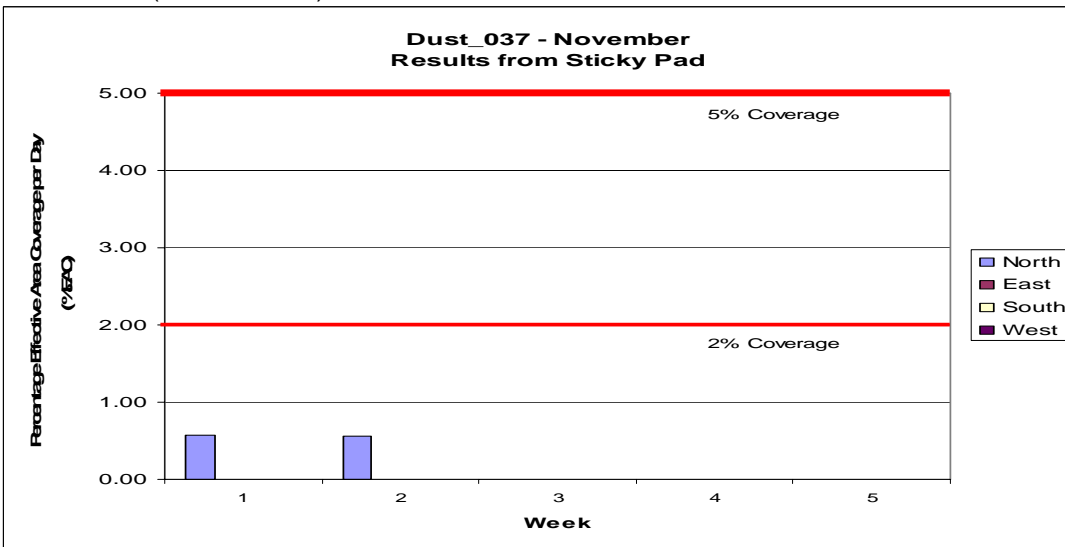
Site Dust\_032

North – offsite/CZ8; East – offsite; South – offsite; West – offsite



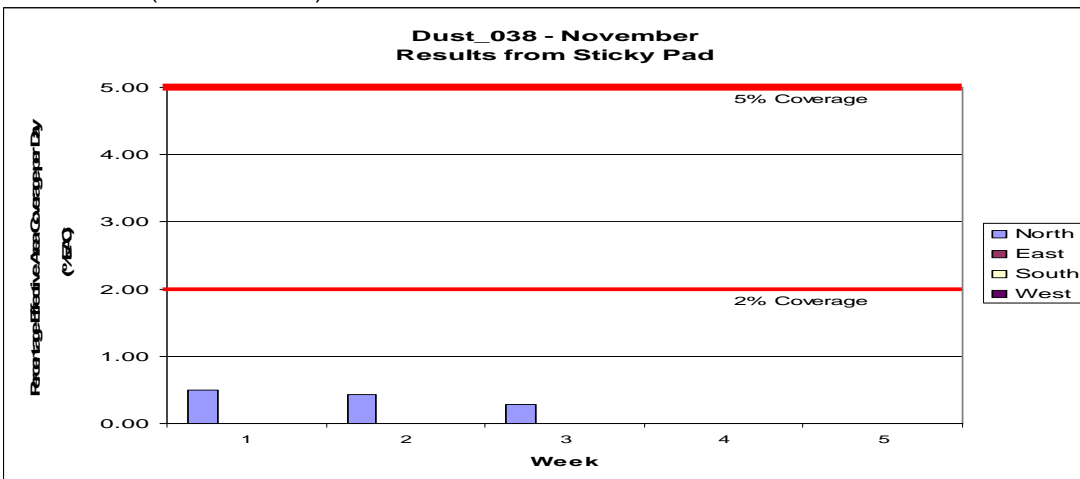
Site Dust\_037

East – CZ5b (unidirectional)



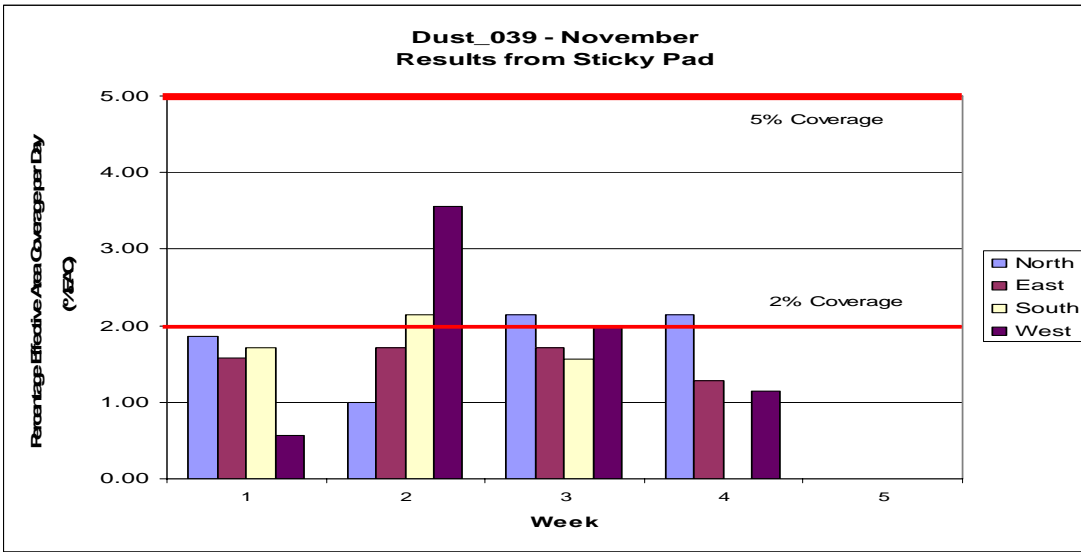
Site Dust\_038

East – CZ5c (unidirectional)



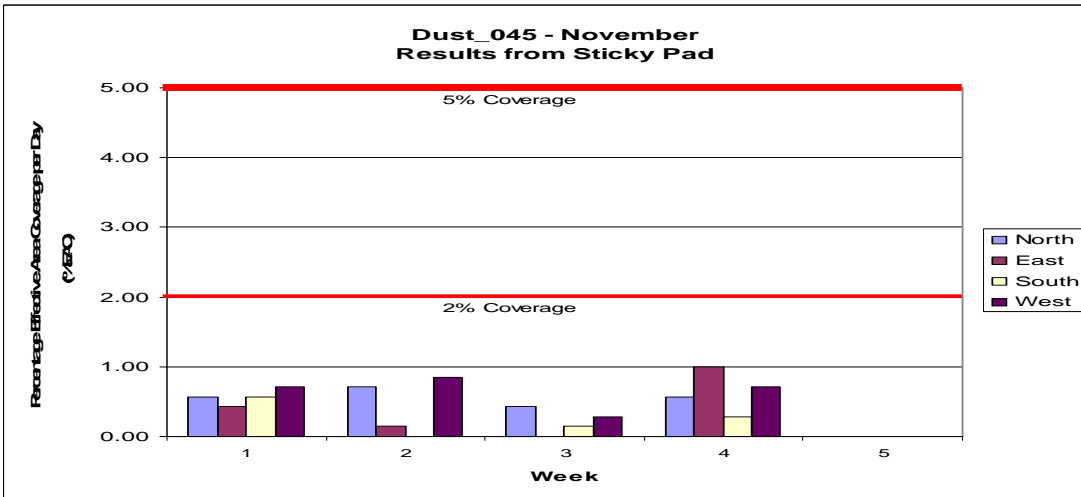
Site Dust\_039

North – offsite; East – offsite; South – CZ7a; West – CZ7a



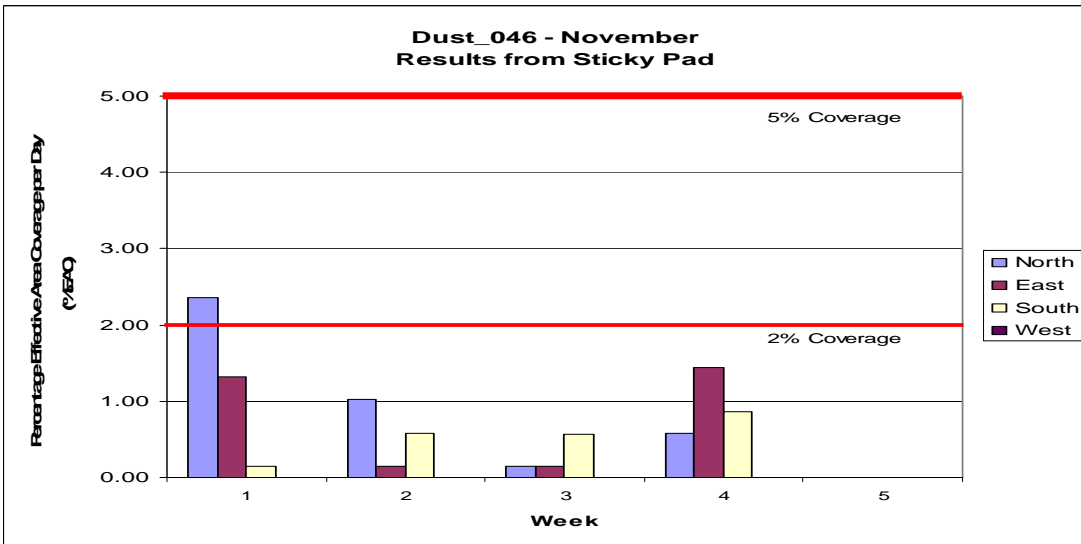
Site Dust\_045

North – offsite; East – offsite; South – offsite; West – CZ6b/c



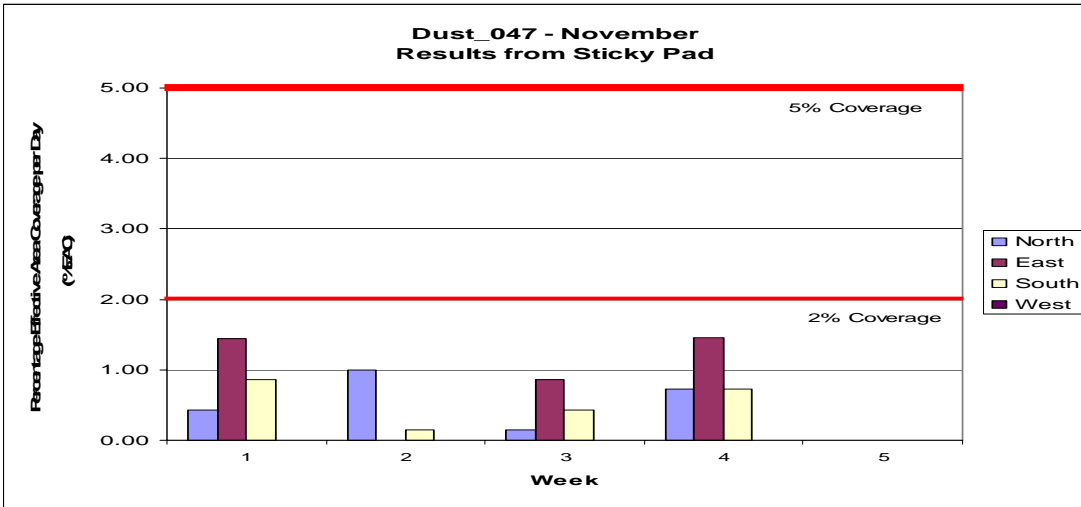
Site Dust\_046

North – CZ3a; East – CZ3a/b; South – CZ3b; West – CZ3a/b



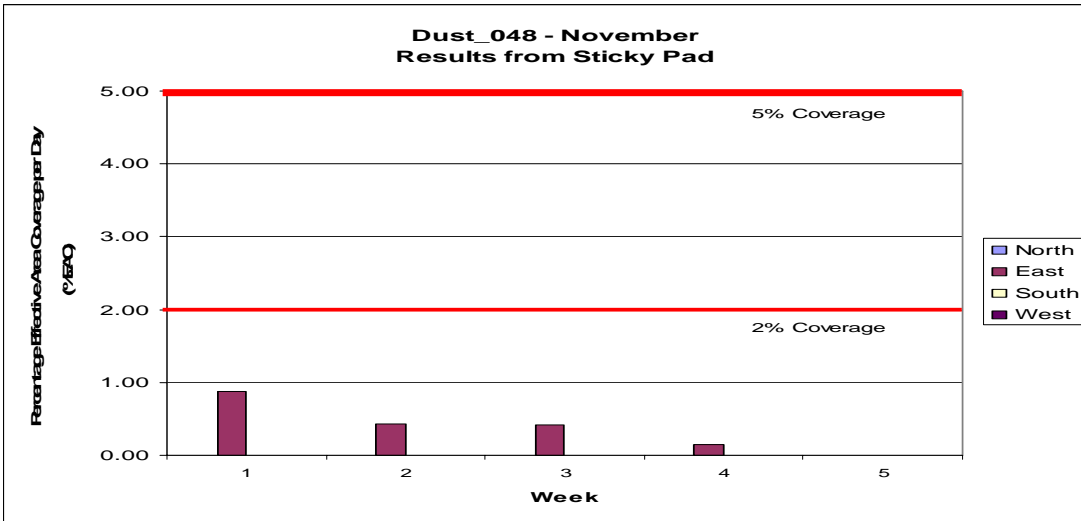
Site Dust\_047

North – CZ3a; East – CZ3a/b; South – CZ3b; West – CZ3a/b



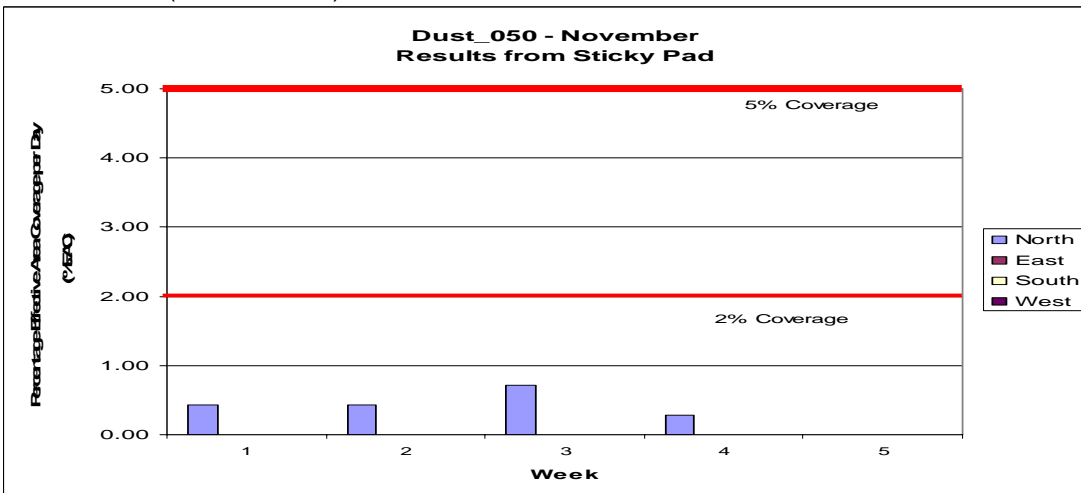
Site Dust\_048

East – CZ5b/4 (unidirectional)



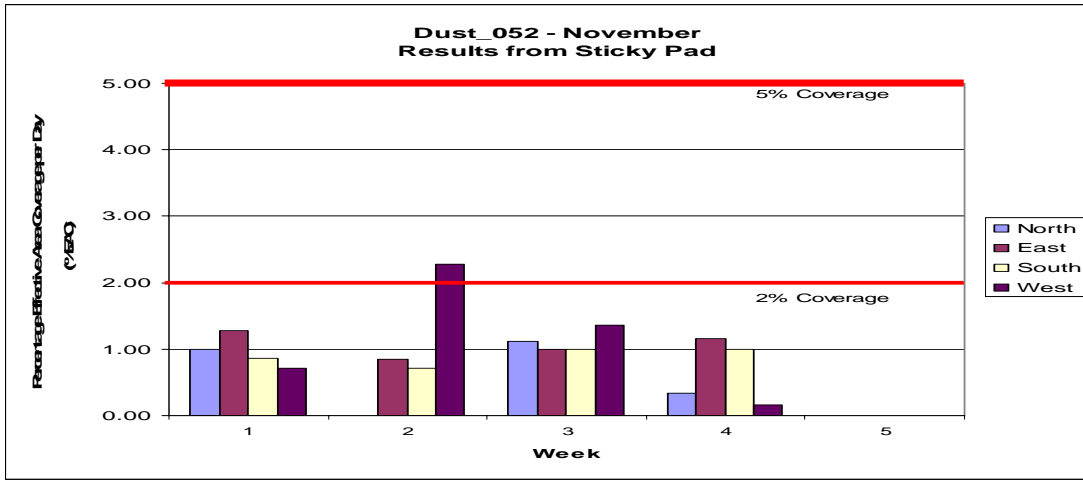
Site Dust\_050

South – CZ7a (unidirectional)



Site Dust\_052

North – CZ7a; East – CZ5a/6d; South – CZ5a/b; West – CZ5b



# Appendix C - Examination of in-week Soiling Events

C.1.1 Table C.1 presents an examination of >5% EAC events by week and location for all 44 sites. The most probable cause of soiling has been suggested from a review of site activity logs kept by both Tier 1 contractors. On-site observations made by Tier 1 contractors were also available for the month of November, which provide a better understanding of the local environment.

Table C.1 - Examination of in-week Soiling Events

Week	Monitoring Site (and if off-site)*	Most soiled bearing	Week's predominant Wind Direction	Zone upwind of monitoring site	Activities at the time	Dust and Mitigation Observations at the time
1	No Exceedances in 1 <sup>st</sup> week					
2	Dust_24 (off-site)	North	South-Westerly	CZ8c (or offsite)	<p>Predominant soiling was on the north bearing of the Fablon indicating to sources not related to the Olympic Park - possibly Stratford City development, Murphy's tunnelling works or/and construction of apartments on Warton Road and Stratford High Street.</p> <p>CZ8c activities - Stockpiling of crushed materials and site clearance. This data is for information only as off-site sources are far more likely to have predominated given the separation between the CZ8c boundary and Dust_24.</p>	Visible dust was not seen during site observations this week.
3	No Exceedances in 3 <sup>rd</sup> week					
	Dust_24 (off-site)	North	South-Westerly	CZ8c (or offsite)	<p>Predominant soiling was on the north bearing of the Fablon indicating to sources not related to the Olympic Park - possibly Stratford City development, Murphy's tunnelling works or/and construction of apartments on Warton Road and Stratford High Street.</p> <p>CZ8c activities - Stockpiling of crushed materials and site clearance. This data is for information only as off-site sources are far more likely to have predominated given the separation between the CZ8c boundary and Dust_24.</p>	Visible dust was not seen during site observations this week.



# Appendix D – Trends of Sticky Pad Analysis

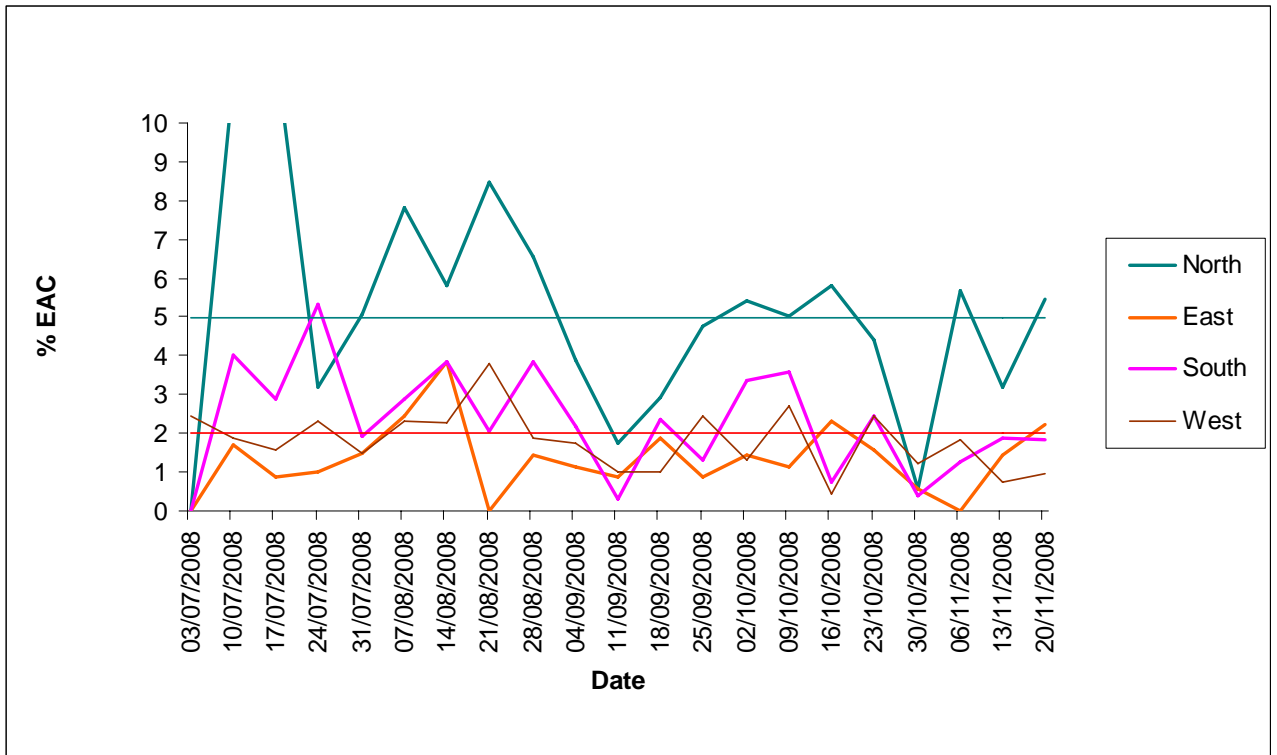
## D.1 October - November Trends

- D.1.1 The trend of dust monitoring in comparison with the previous month of October is summarised in Table D.1. An increase is presented with a "+", a decrease with a "-" and an insignificant change of <0.1 %EAC from the previous month with a "0". Where no data are available, and a trend could hence not be established, the cell is left blank. Traffic light colour coding was added to illustrate the trend with green representing a reduction of soiling, red representing an increase and amber representing no change. Some of the sites were not comparable due to a lack of data on bearings for either month and are represented by "n/a".
- D.1.2 The overall trend from October to November on all bearing appears to have more decreases in %EAC observed.

Table D.1 - October to November Trends at Directional Dust Sticky Pads

Park-wide ID	North	East	South	West
Dust_001	-	0	+	+
Dust_002	+	-	-	+
Dust_003	-	-	-	-
Dust_009	0	-	-	+
Dust_010	0	n/a	n/a	n/a
Dust_011	+	+	+	+
Dust_011A	+	+	+	+
Dust_013A	-	-	-	-
Dust_014	-	-	-	-
Dust_015	-	+	-	n/a
Dust_016	0	0	+	n/a
Dust_017	-	+	+	+
Dust_019	n/a	+	n/a	n/a
Dust_020	-	-	+	-
Dust_020A	+	-	+	-
Dust_021	0	+	-	-
Dust_022	-	+	+	-
Dust_023	+	+	-	n/a
Dust_024	-	0	-	-
Dust_026	+	+	+	-
Dust_027	+	+	+	0
Dust_028	+	-	-	+
Dust_029	+	+	0	+
Dust_031	+	-	-	+
Dust_032	-	+	+	-
Dust_037	-	n/a	n/a	n/a
Dust_038	-	n/a	n/a	n/a
Dust_039	-	-	-	+
Dust_045	-	-	-	-
Dust_046	+	+	-	n/a
Dust_047	-	-	n/a	n/a
Dust_048	n/a	-	n/a	n/a
Dust_050	0	n/a	n/a	n/a
Dust_052	-	-	-	-

**Table D.2 – Deposited Dust 5-month Trend Fablon Site Dust\_24 (Off-site)**



NB The Olympic Park is due west of the sampling location.

# Appendix E

## Background Information on the Parameters Covered

- E.1.1 The November report summarises the monitoring results over the period 01/11/2008 to 30/11/2008. This appendix includes background information to the parameters covered, their guidelines, criteria, monitoring coverage and techniques used.

### Parameters

- E.1.2 The parameters covered in the scope of the report are deposited dust and fine particulate matter with an effective aerodynamic diameter of less than 10 micrometers (PM<sub>10</sub>).
- E.1.3 Data are expressed as percentage effective area coverage (%EAC) for dust and micrograms per cubic metre (µg/m<sup>3</sup>) for PM<sub>10</sub>.

### Suggested Guidelines for Dust

- E.1.4 No statutory criteria for deposited dust or soiling are currently published in the United Kingdom. Although there are no statutory criteria, some guidance is provided in such publications as the UK Department of the Environment document "The Environmental Effects of Dust from Surface Mineral Workings" (1991) and more latterly the Environment Agency Guidance note M17 "Monitoring of particulate matter in ambient air around waste facilities" (2004). All publications suggest guidelines for dust monitoring as both deposition rates and soiling.
- E.1.5 These publications suggest a guideline of 200 milligrams per square metre per day (mg/m<sup>2</sup>/d) for general dust deposition and a guideline for soiling or percentage of Effective Area Coverage per day (% EAC) of 0.2% as noticeable, 0.5% as a marginal nuisance, 2.0% as a probable nuisance and 5.0% as a severe nuisance.
- E.1.6 Further background on sampling rationale, strategy and guidelines can be found in the 2007 January to November Summary Report.

### Statutory and Advisory Criteria for Fine Particulate Matter

- E.1.7 The Government's Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS<sup>1</sup>) provides details of national air quality standards and objectives for a number of local air pollutants, including PM<sub>10</sub>.
- E.1.8 The air quality criteria for PM<sub>10</sub> are detailed in Table E.1.

**Table E.1 – Local Air Quality Criteria**

Pollutant	Objective	Compliance date
PM <sub>10</sub>	24-hour mean concentration should not exceed 50µg/m <sup>3</sup> more than 35 times a year	31 December 2004 [1 January 2005]
	Annual mean concentration should not exceed 40µg/m <sup>3</sup>	
Notes: [ ] denotes EU Limit Value compliance date in UK Regulations		

- E.1.9 Air quality objectives for PM<sub>10</sub> are that the daily mean should not to exceed 50 µg/m<sup>3</sup> more than 35 days per year and the annual mean must not exceed 40 µg/m<sup>3</sup>. Additionally, the London Best Practice Guidance for the Control of Dust and Emissions from Construction and Demolition (2006) suggest a site action limit of 250 µg/m<sup>3</sup> over a 15 minute average. This guideline has been adopted by the Tier 1 contractors.

<sup>1</sup> The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Defra, July 2007

## Sampling Regime

- E.1.10 The following techniques are in use or proposed for use on the site:
- PM<sub>10</sub> by optical scattering technique using OSIRIS analysers which give indicative real time PM<sub>10</sub> data;
  - PM<sub>10</sub> by beta-attenuation meter (BAM) which gives more robust 24-hour average concentrations;
  - Fablon sticky pads, which give indicative data on soiling relative to wind direction; and
  - Frisbee gauges, which give direct mass of deposition per unit area data.
- E.1.11 Twenty-two sites were analysed for dust by MCL and 22 sites by BNL in November. These 44 monitoring locations were chosen on the basis of security and distance from the site and sensitive receptors. Monitoring of dust at the 44 sites was undertaken using Fablon sticky pads. Only 34 of these sites are fully discussed in the November report; the ten sites removed include sites which are located too close to haul roads or activity to be representative of the local environment.
- E.1.12 Fablon is a proprietary self-adhesive material used in sheet form to collect coarse particulate material. The "pads" are wrapped around an upright item of street furniture such as a signpost to ensure 360 degree coverage. The relative degree of soiling at the desired bearing (generally north, south, east and west) is determined in the laboratory using a calibrated reflectance meter.
- E.1.13 The dust data are collected weekly over a period of four weeks to include all of November. The periods in the report are described by week numbers. The north side managed by MCL and south side managed by BNL. Week 1 starts on the 30/10/08; week 2 on the 06/11/08; week 3 on the 13/11/08; and week 4 on the 20/11/08. The last three days of November would be included in week 1 of next month's December report
- E.1.14 Monitoring of PM<sub>10</sub> was undertaken using Osiris dust monitors, which are continuous analysers operating on the principle of measuring light scattering proportionate to particulate concentrations in various size fractions. This method is the most practicable available to measure particulates in real time and the method performance by comparison with EU Reference Method equivalents is the subject of ongoing investigation.
- E.1.15 Real-time PM<sub>10</sub> monitoring during November took place at the following locations:
- Gainsborough School outside the Olympic Park, opposite CZ5c, operated by MCL;
  - Carpenters Road South in CZ1 operated by BNL;
  - CZ4 Soil Wash near the soil washing unit operated by BNL;
  - The Greenway in CZ3 operated by BNL and;
  - Quartermile Lane in CZ7a operated by MCL.
- E.1.16 MCL's consultants have installed three additional analysers in Metronet land and construction zones 8A and 8C to provide additional geographical coverage around the Olympic Park & Village.
- E.1.17 The dust and PM<sub>10</sub> monitoring sites selected and their descriptions (and data coverage) are presented in Appendix A. Site locations remained the same as those discussed in the previous month for all sites. All of these locations can be found on the site map in the main report.

# Appendix F – Atkins QA/QC Process

## Quality Control and Quality Assurance

- F.1.1 Quality Control (QC) is the term for the system of checks undertaken to ensure that the data produced by the Osiris analysers is of an appropriate standard and contains no material errors. Quality Assurance (QA) is the procedure by which the correct application of the QC system is confirmed.
- F.1.2 This note does not cover the procedures for calibration and maintenance which are assumed to be as per manufacturer's instructions. Routine checks on instrument functionality are performed on a weekly basis; consumables are replaced and inlet flow adjusted on a quarterly basis.
- F.1.3 The part of the QC process which Atkins undertakes is essentially the data validation (for Data Warehouse purposes) and ratification (for interpretation purposes).

### Validation

- F.1.4 Validation in this context is the visual screening of a dataset for anomalies (paraphrased from Defra Local Air Quality Management Technical Guidance Note TG(03) Annex 1.70). Suspicious data are flagged for future investigation and possible removal by the Tier 1 contractors. This prepares the data for uploading to the Data Warehouse.

Data immediately flagged by the monthly Atkins validation process are:

- Zero readings;
  - Negative readings; and
  - PM<sub>10</sub> values which are lower than PM<sub>2.5</sub> or PM<sub>1</sub>.
- F.1.5 The Osiris analysers generate no zero or calibration spikes – optical instruments are calibrated by surrogate electronic means.

Data flagged as suspicious include:

- Spikes or sudden discrete peaks;
- Periods of abrupt change in concentration range;
- Periods of very low concentrations;
- 24-hour periods with >10% (>10 x 15-minute values) data gaps.
- Data recorded within 30 minutes of the reactivation of an analyser

### Ratification

- F.1.6 Traditionally ratification is undertaken on a quarterly or even less frequent basis, but in order to get the maximum value from the Olympic Park PM<sub>10</sub> data, Atkins undertakes contextual ratification on a monthly basis in connection with the production of the monthly review reports. The procedure includes the examination of:

- site activities (and any recorded off-site incidents) which may cause “suspicious” episodes as described above;
- prevailing meteorological conditions;
- site-wide PM<sub>10</sub> performance from the whole Osiris network; and
- off-site LAQN analyser data (itself un-ratified if downloaded less than 3-6 months after monitoring data was generated).
- Removal of 24-hour means when less than 90% of the data points collected in any given day are missing

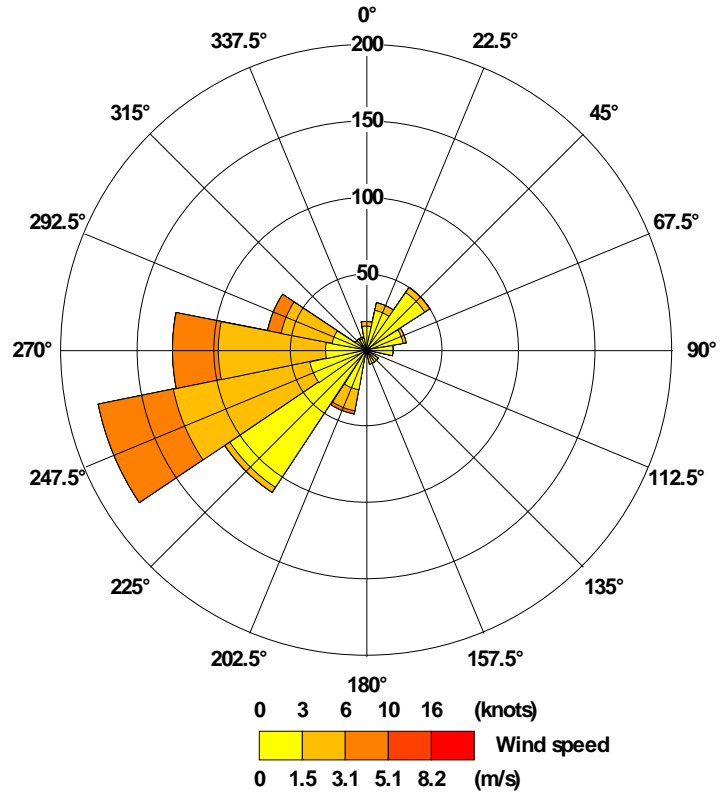
- F.1.7 If, in the professional opinion of the reviewer and checker, suspicious data cannot be explained by the ratification process or other reasonable explanation, the data are removed from the monthly interpretation exercise. Un-ratified and ratified datasets are both kept on record.

**Assurance**

- F.1.8 The above processes are undertaken by a qualified air quality specialist and checked by a senior member of staff. A Quality Statement indicating that this process has been followed will be included in reviews of data supplied for uploading into the central database.

# Appendix G - Dawlish Road Site November Windrose

Figure G.1 - November 2008 Wind rose for CZ4 Soil Wash Meteorological Station



# Appendix H - Hourly November Data

H.1.1 One-hour average Osiris data is presented in Appendix H for the most sensitive receptor representative Olympic Park Osiris Analysers; Gainsborough School, Greenway and Quartermile Lane alongside the nearest London-Networks sites; Cam Road in the south and Ruckholt Close in the North. The PM<sub>10</sub> data at the Olympic Park Osiris sites appear to generally follow the trends of the local analyser sites.

**Figure H.1 - Gainsborough School, Greenway and Quartermile Lane Hourly Results vs. Local Analysers; Ruckholt Close and Cam Road**

