

1 **Supplementary Material Cover Sheet**

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3 Temporal Variations of Organic Composition in the Tropical and Marine Atmosphere

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21 1. Background on forest and peat fires in Indonesia

22

23 Kalimantan (Borneo) of Indonesia is covered by various types of vegetations in  
24 different regions (WWF's "Borneo: Treasure Island at Risk" Report (2005):  
25 <http://www.mongabay.com/borneo.html>). Mangroves are found in estuaries and  
26 coastal regions; peat swamp forests are the dominant form of remaining lowland  
27 forest in Borneo today; montane forests are generally found at an elevation from 900  
28 meters to 3300 meters in Borneo; Heath or kerangas forest are found on well-drained,  
29 sandy soils; lowland dipterocarp forests are also available but they are most  
30 threatened forests in Borneo as timber resource.

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32 In this area, swamp forests appear in places where dead vegetation becomes  
33 waterlogged and, too wet to decompose, accumulates as peat. These tropical peat  
34 lands, formed over hundreds of years, are giant stores of carbon. Draining and/or  
35 burning these lands, releases tremendous amounts of carbon dioxide into the  
36 atmosphere. These drained areas also become highly susceptible to combustion.  
37 Under the dry El Niño conditions of 1997-98 and 2006, thousands of fires raged in the  
38 peat swamps of Indonesia. Fires in peat swamps are extraordinarily difficult to  
39 extinguish because they can burn for months virtually undetected in the deeper layers  
40 of peat. In 2002 peat forests covered about ten million hectares in Borneo according to  
41 Langner and Siegert's report (1).

42

43 Another part of Indonesia is Sumatra, where most of endemic plant species are found  
44 in lowland forests below 500 meters and the rate of deforestation currently averages  
45 2.5% per year (2). In Sumatra, especially in Jambi province, the regional government  
46 is promoting expansion of oil palm plantations. The situation in Jambi mirrors the  
47 magnitude of proposed oil palm expansion under development in at least Riau  
48 Province and in north Sumatra. At the same time, forest fires are rampant throughout  
49 Sumatra, especially in the central and southern regions. As the price of palm oil has  
50 increased, land-hungry plantation developers in Sumatra have deliberately burned  
51 large areas of forest, especially those lowland forests and plantations and  
52 land-clearing contractors used fire as the primary mechanism to clear land.

53

54 To sum up, two types of biomass burning can be expected in Indonesia: lowland forest  
55 fire and swamp peat land fire.

56

57 Reference:

58 1) Langner A. and Siegert F.: Assessment of Rainforest Ecosystems in Borneo using  
59 MODIS satellite imagery. Remote Sensing Solutions GmbH & GeoBio Center of  
60 Ludwig-Maximilians-University Munich, , June 2005

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62 2) Critical Ecosystem Partnership Fund, 2001. Sumatra Forest Ecosystems Sundaland  
63 Biodiversity Hotspot. [Http://www.cepf.net/Documents/final.sundaland.sumatra.ep.pdf](http://www.cepf.net/Documents/final.sundaland.sumatra.ep.pdf)

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Table S1  
Concentrations of all organic compounds investigated in 2006 in Singapore (ng m<sup>-3</sup>)

| Sampling Date  |                                 | 10-11 Aug | 16-17 Aug | 04-05 Sept | 20-21 Sept | 02-03 Oct | 04-05 Oct |
|----------------|---------------------------------|-----------|-----------|------------|------------|-----------|-----------|
| n-Alkanes      |                                 |           |           |            |            |           |           |
| Dodecane       | C <sub>12</sub> H <sub>26</sub> | 0.16      | 0.00      | 0.00       | 0.00       | 0.93      | 1.36      |
| Tridecane      | C <sub>13</sub> H <sub>28</sub> | 0.80      | 0.74      | 0.72       | 0.04       | 0.00      | 3.62      |
| Tetradecane    | C <sub>14</sub> H <sub>30</sub> | 0.66      | 0.47      | 0.00       | 0.04       | 0.00      | 0.98      |
| Pentadecane    | C <sub>15</sub> H <sub>32</sub> | 2.98      | 4.94      | 0.38       | 0.61       | 8.18      | 12.09     |
| Hexadecane     | C <sub>16</sub> H <sub>34</sub> | 2.30      | 2.07      | 0.03       | 0.00       | 0.00      | 1.55      |
| Heptadecane    | C <sub>17</sub> H <sub>36</sub> | 1.64      | 2.06      | 1.43       | 1.11       | 0.00      | 4.26      |
| Octadecane     | C <sub>18</sub> H <sub>38</sub> | 1.98      | 2.44      | 0.96       | 1.04       | 1.78      | 3.85      |
| Nonadecane     | C <sub>19</sub> H <sub>40</sub> | 3.06      | 5.13      | 1.72       | 1.17       | 5.35      | 8.68      |
| Eicosane       | C <sub>20</sub> H <sub>42</sub> | 4.25      | 5.19      | 2.24       | 3.40       | 7.38      | 9.46      |
| Heneicosane    | C <sub>21</sub> H <sub>44</sub> | 7.04      | 10.18     | 3.26       | 2.39       | 15.44     | 18.73     |
| Docosane       | C <sub>22</sub> H <sub>46</sub> | 5.43      | 9.36      | 5.55       | 1.18       | 13.43     | 15.64     |
| Tricosane      | C <sub>23</sub> H <sub>48</sub> | 4.19      | 7.45      | 3.89       | 0.78       | 13.03     | 15.78     |
| Tetracosane    | C <sub>24</sub> H <sub>50</sub> | 3.75      | 5.23      | 1.66       | 3.43       | 16.67     | 20.43     |
| Pentacosane    | C <sub>25</sub> H <sub>52</sub> | 3.43      | 3.49      | 3.82       | 2.13       | 35.71     | 35.88     |
| Hexacosane     | C <sub>26</sub> H <sub>54</sub> | 3.50      | 2.58      | 5.30       | 2.28       | 50.27     | 41.31     |
| Heptacosane    | C <sub>27</sub> H <sub>56</sub> | 5.07      | 2.17      | 4.38       | 3.19       | 74.92     | 60.48     |
| Octacosane     | C <sub>28</sub> H <sub>58</sub> | 4.30      | 1.46      | 6.18       | 4.73       | 61.54     | 52.62     |
| Nonacosane     | C <sub>29</sub> H <sub>60</sub> | 6.67      | 2.37      | 5.54       | 3.73       | 72.61     | 57.27     |
| Triacontane    | C <sub>30</sub> H <sub>62</sub> | 3.52      | 0.95      | 4.53       | 2.06       | 44.35     | 34.68     |
| Hentriacontane | C <sub>31</sub> H <sub>64</sub> | 7.38      | 2.69      | 6.07       | 5.04       | 97.51     | 72.54     |
| Dotriacontane  | C <sub>32</sub> H <sub>66</sub> | 2.30      | 0.85      | 3.05       | 1.10       | 27.49     | 22.45     |

|                      |                                 |                  |                        |                          |                        |                          |                  |
|----------------------|---------------------------------|------------------|------------------------|--------------------------|------------------------|--------------------------|------------------|
| Tritriacontane       | C <sub>33</sub> H <sub>68</sub> | 3.13             | 1.16                   | 4.69                     | 2.11                   | 39.49                    | 29.45            |
| Tettratriacontane    | C <sub>34</sub> H <sub>70</sub> | 0.94             | 0.83                   | 1.04                     | 0.82                   | 8.27                     | 5.47             |
| Pentatriacontane     | C <sub>35</sub> H <sub>72</sub> | 0.67             | 0.15                   | 1.28                     | 0.88                   | 6.76                     | 5.50             |
| <b>Sampling Date</b> |                                 | <b>07-08 Oct</b> | <b>10 Oct<br/>-Day</b> | <b>10 Oct<br/>-Night</b> | <b>12 Oct<br/>-Day</b> | <b>13 Oct<br/>-Night</b> | <b>14-15 Oct</b> |
| n-Alkanes            |                                 |                  |                        |                          |                        |                          |                  |
| Dodecane             | C <sub>12</sub> H <sub>26</sub> | 0.00             | 3.91                   | 0.00                     | 0.93                   | 0.14                     | 0.00             |
| Tridecane            | C <sub>13</sub> H <sub>28</sub> | 0.00             | 9.98                   | 0.00                     | 0.00                   | 0.00                     | 0.00             |
| Tetradecane          | C <sub>14</sub> H <sub>30</sub> | 1.39             | 2.47                   | 2.01                     | 3.71                   | 2.42                     | 0.32             |
| Pentadecane          | C <sub>15</sub> H <sub>32</sub> | 10.40            | 22.34                  | 16.30                    | 17.73                  | 10.74                    | 0.42             |
| Hexadecane           | C <sub>16</sub> H <sub>34</sub> | 1.01             | 3.33                   | 4.36                     | 2.35                   | 0.86                     | 2.09             |
| Heptadecane          | C <sub>17</sub> H <sub>36</sub> | 2.56             | 9.31                   | 12.44                    | 8.15                   | 3.49                     | 8.74             |
| Octadecane           | C <sub>18</sub> H <sub>38</sub> | 2.73             | 7.05                   | 21.76                    | 10.67                  | 11.04                    | 4.76             |
| Nonadecane           | C <sub>19</sub> H <sub>40</sub> | 6.54             | 12.45                  | 34.18                    | 15.45                  | 20.94                    | 8.05             |
| Eicosane             | C <sub>20</sub> H <sub>42</sub> | 9.32             | 16.29                  | 37.16                    | 16.21                  | 24.22                    | 9.99             |
| Heneicosane          | C <sub>21</sub> H <sub>44</sub> | 41.45            | 22.80                  | 39.73                    | 21.12                  | 25.99                    | 23.51            |
| Docosane             | C <sub>22</sub> H <sub>46</sub> | 52.47            | 18.48                  | 31.07                    | 14.59                  | 17.72                    | 26.50            |
| Tricosane            | C <sub>23</sub> H <sub>48</sub> | 64.41            | 23.44                  | 30.56                    | 12.77                  | 16.00                    | 34.24            |
| Tetracosane          | C <sub>24</sub> H <sub>50</sub> | 69.06            | 35.85                  | 30.22                    | 10.17                  | 15.15                    | 50.68            |
| Pentacosane          | C <sub>25</sub> H <sub>52</sub> | 108.44           | 72.88                  | 44.82                    | 9.72                   | 18.95                    | 85.64            |
| Hexacosane           | C <sub>26</sub> H <sub>54</sub> | 109.53           | 88.96                  | 52.48                    | 8.40                   | 17.86                    | 78.65            |
| Heptacosane          | C <sub>27</sub> H <sub>56</sub> | 176.12           | 128.09                 | 63.36                    | 11.39                  | 22.49                    | 119.96           |
| Octacosane           | C <sub>28</sub> H <sub>58</sub> | 131.69           | 101.18                 | 45.24                    | 6.64                   | 18.36                    | 82.21            |
| Nonacosane           | C <sub>29</sub> H <sub>60</sub> | 148.75           | 119.94                 | 54.60                    | 10.10                  | 21.70                    | 105.93           |
| Triacotane           | C <sub>30</sub> H <sub>62</sub> | 144.24           | 114.27                 | 46.01                    | 8.20                   | 23.43                    | 93.18            |

|                      |                                 |                  |                  |                  |                  |                  |                  |
|----------------------|---------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Hentriacontane       | C <sub>31</sub> H <sub>64</sub> | 311.41           | 243.50           | 101.58           | 21.89            | 49.92            | 206.37           |
| Dotriacontane        | C <sub>32</sub> H <sub>66</sub> | 96.18            | 76.29            | 30.52            | 5.13             | 14.24            | 53.37            |
| Tritriacontane       | C <sub>33</sub> H <sub>68</sub> | 127.28           | 91.59            | 41.48            | 6.75             | 17.67            | 63.09            |
| Tettriacontane       | C <sub>34</sub> H <sub>70</sub> | 18.97            | 14.46            | 6.60             | 0.68             | 4.42             | 12.78            |
| Pentatriacontane     | C <sub>35</sub> H <sub>72</sub> | 13.60            | 9.71             | 3.54             | 1.30             | 3.11             | 9.78             |
| <b>Sampling Date</b> |                                 | <b>16-17 Oct</b> | <b>18-19 Oct</b> | <b>21-22 Oct</b> | <b>23-24 Oct</b> | <b>26-27 Oct</b> | <b>02-03 Nov</b> |
| n-Alkanes            |                                 |                  |                  |                  |                  |                  |                  |
| Dodecane             | C <sub>12</sub> H <sub>26</sub> | 1.52             | 0.00             | 0.68             | 0.00             | 0.00             | 0.05             |
| Tridecane            | C <sub>13</sub> H <sub>28</sub> | 0.00             | 0.00             | 0.00             | 0.00             | 0.00             | 0.17             |
| Tetradecane          | C <sub>14</sub> H <sub>30</sub> | 0.30             | 0.00             | 0.40             | 0.14             | 0.00             | 0.04             |
| Pentadecane          | C <sub>15</sub> H <sub>32</sub> | 2.30             | 3.14             | 0.34             | 0.46             | 1.20             | 0.04             |
| Hexadecane           | C <sub>16</sub> H <sub>34</sub> | 3.00             | 1.73             | 0.00             | 1.20             | 2.44             | 0.12             |
| Heptadecane          | C <sub>17</sub> H <sub>36</sub> | 12.77            | 4.63             | 5.64             | 1.62             | 6.22             | 0.35             |
| Octadecane           | C <sub>18</sub> H <sub>38</sub> | 5.97             | 6.63             | 1.21             | 2.47             | 9.36             | 0.25             |
| Nonadecane           | C <sub>19</sub> H <sub>40</sub> | 9.81             | 9.66             | 4.21             | 5.20             | 15.43            | 0.15             |
| Eicosane             | C <sub>20</sub> H <sub>42</sub> | 10.43            | 14.01            | 5.50             | 6.36             | 15.49            | 0.17             |
| Heneicosane          | C <sub>21</sub> H <sub>44</sub> | 21.47            | 26.78            | 10.96            | 12.93            | 24.20            | 0.47             |
| Docosane             | C <sub>22</sub> H <sub>46</sub> | 22.80            | 24.79            | 11.60            | 21.02            | 30.16            | 0.36             |
| Tricosane            | C <sub>23</sub> H <sub>48</sub> | 33.90            | 28.44            | 15.64            | 23.41            | 25.91            | 0.75             |
| Tetracosane          | C <sub>24</sub> H <sub>50</sub> | 52.26            | 35.70            | 21.24            | 21.73            | 21.00            | 1.91             |
| Pentacosane          | C <sub>25</sub> H <sub>52</sub> | 103.83           | 59.00            | 46.05            | 25.44            | 16.47            | 2.67             |
| Hexacosane           | C <sub>26</sub> H <sub>54</sub> | 103.24           | 59.88            | 52.41            | 24.88            | 12.09            | 3.32             |
| Heptacosane          | C <sub>27</sub> H <sub>56</sub> | 161.65           | 77.39            | 87.24            | 30.91            | 13.00            | 3.85             |
| Octacosane           | C <sub>28</sub> H <sub>58</sub> | 114.94           | 54.95            | 62.94            | 22.24            | 8.47             | 3.29             |
| Nonacosane           | C <sub>29</sub> H <sub>60</sub> | 142.59           | 70.18            | 77.40            | 22.19            | 8.04             | 3.18             |

|                      |                                 |                  |                  |        |       |       |      |
|----------------------|---------------------------------|------------------|------------------|--------|-------|-------|------|
| Triacontane          | C <sub>30</sub> H <sub>62</sub> | 121.17           | 65.73            | 67.02  | 24.52 | 7.38  | 3.42 |
| Hentriacontane       | C <sub>31</sub> H <sub>64</sub> | 252.39           | 141.18           | 143.09 | 46.56 | 14.99 | 4.62 |
| Dotriacontane        | C <sub>32</sub> H <sub>66</sub> | 67.00            | 38.65            | 37.55  | 13.12 | 4.11  | 1.74 |
| Tritriacontane       | C <sub>33</sub> H <sub>68</sub> | 77.13            | 46.33            | 44.36  | 14.53 | 5.22  | 1.93 |
| Tetratriacontane     | C <sub>34</sub> H <sub>70</sub> | 16.40            | 10.70            | 9.21   | 3.01  | 1.48  | 0.71 |
| Pentatriacontane     | C <sub>35</sub> H <sub>72</sub> | 9.98             | 6.51             | 6.58   | 1.24  | 1.00  | 0.41 |
| <b>Sampling Date</b> |                                 | <b>05-06 Nov</b> | <b>09-10 Nov</b> |        |       |       |      |
| n-Alkanes            |                                 |                  |                  |        |       |       |      |
| Dodecane             | C <sub>12</sub> H <sub>26</sub> | 0.06             | 0.03             |        |       |       |      |
| Tridecane            | C <sub>13</sub> H <sub>28</sub> | 0.65             | 0.18             |        |       |       |      |
| Tetradecane          | C <sub>14</sub> H <sub>30</sub> | 0.12             | 0.08             |        |       |       |      |
| Pentadecane          | C <sub>15</sub> H <sub>32</sub> | 0.06             | 0.08             |        |       |       |      |
| Hexadecane           | C <sub>16</sub> H <sub>34</sub> | 0.05             | 0.07             |        |       |       |      |
| Heptadecane          | C <sub>17</sub> H <sub>36</sub> | 0.58             | 0.10             |        |       |       |      |
| Octadecane           | C <sub>18</sub> H <sub>38</sub> | 0.18             | 0.06             |        |       |       |      |
| Nonadecane           | C <sub>19</sub> H <sub>40</sub> | 0.19             | 0.25             |        |       |       |      |
| Eicosane             | C <sub>20</sub> H <sub>42</sub> | 0.24             | 0.11             |        |       |       |      |
| Heneicosane          | C <sub>21</sub> H <sub>44</sub> | 0.84             | 0.34             |        |       |       |      |
| Docosane             | C <sub>22</sub> H <sub>46</sub> | 1.09             | 0.17             |        |       |       |      |
| Tricosane            | C <sub>23</sub> H <sub>48</sub> | 1.73             | 0.50             |        |       |       |      |
| Tetracosane          | C <sub>24</sub> H <sub>50</sub> | 2.56             | 0.72             |        |       |       |      |
| Pentacosane          | C <sub>25</sub> H <sub>52</sub> | 4.49             | 1.79             |        |       |       |      |
| Hexacosane           | C <sub>26</sub> H <sub>54</sub> | 5.52             | 3.07             |        |       |       |      |
| Heptacosane          | C <sub>27</sub> H <sub>56</sub> | 7.82             | 4.34             |        |       |       |      |
| Octacosane           | C <sub>28</sub> H <sub>58</sub> | 6.29             | 3.66             |        |       |       |      |

|                          |                                 |                  |                  |                   |                   |                  |                  |
|--------------------------|---------------------------------|------------------|------------------|-------------------|-------------------|------------------|------------------|
| Nonacosane               | C <sub>29</sub> H <sub>60</sub> | 6.65             | 3.58             |                   |                   |                  |                  |
| Triacontane              | C <sub>30</sub> H <sub>62</sub> | 7.60             | 3.46             |                   |                   |                  |                  |
| Hentriacontane           | C <sub>31</sub> H <sub>64</sub> | 13.68            | 4.83             |                   |                   |                  |                  |
| Dotriacontane            | C <sub>32</sub> H <sub>66</sub> | 3.86             | 1.95             |                   |                   |                  |                  |
| Tritriacontane           | C <sub>33</sub> H <sub>68</sub> | 4.34             | 1.75             |                   |                   |                  |                  |
| Tetracontane             | C <sub>34</sub> H <sub>70</sub> | 0.89             | 0.32             |                   |                   |                  |                  |
| Pentatriacontane         | C <sub>35</sub> H <sub>72</sub> | 0.46             | 0.26             |                   |                   |                  |                  |
| <b>Sampling Date</b>     |                                 | <b>10-11 Aug</b> | <b>16-17 Aug</b> | <b>04-05 Sept</b> | <b>20-21 Sept</b> | <b>02-03 Oct</b> | <b>04-05 Oct</b> |
| PAHs                     |                                 |                  |                  |                   |                   |                  |                  |
| Non-alkylated PAHs       |                                 |                  |                  |                   |                   |                  |                  |
| Naphthalene              |                                 | 0.48             | 1.18             | 0.72              | 7.25              | 0.00             | 6.19             |
| Acenaphthylene           |                                 | 0.01             | 0.04             | 0.05              | 0.00              | 0.02             | 0.01             |
| Acenaphthene             |                                 | 0.10             | 0.03             | 0.00              | 0.00              | 0.02             | 0.02             |
| Fluorene                 |                                 | 0.21             | 0.25             | 0.00              | 0.00              | 0.32             | 0.46             |
| Dibenzothiophene         |                                 | 0.42             | 0.71             | 0.00              | 0.00              | 0.23             | 0.42             |
| Phenanthrene             |                                 | 1.07             | 3.96             | 0.46              | 0.26              | 1.99             | 2.22             |
| Anthracene               |                                 | 0.06             | 0.10             | 0.02              | 0.00              | 0.02             | 0.08             |
| Fluoranthene             |                                 | 1.47             | 2.00             | 0.55              | 0.14              | 0.99             | 1.05             |
| Pyrene                   |                                 | 1.45             | 2.17             | 0.64              | 0.20              | 0.91             | 0.97             |
| Benzo(c)phenanthrene     |                                 | 0.07             | 0.13             | 0.07              | 0.14              | 0.02             | 0.04             |
| Benzo(ghi)fluoranthene   |                                 | 0.47             | 0.45             | 0.51              | 0.20              | 0.39             | 0.32             |
| Cyclopenta(c,d)pyrene    |                                 | 0.03             | 0.03             | 0.05              | 0.09              | 0.08             | 0.01             |
| Benz(a)anthracene        |                                 | 0.03             | 0.04             | 0.00              | 0.00              | 0.06             | 0.00             |
| Chrysene-Triphenylene    |                                 | 0.33             | 0.38             | 0.37              | 0.00              | 0.36             | 0.18             |
| Benzo(b+j+k)fluoranthene |                                 | 0.39             | 0.42             | 2.21              | 1.61              | 0.45             | 0.28             |

|                                     |  |      |      |      |      |      |      |
|-------------------------------------|--|------|------|------|------|------|------|
| Benzo(a)fluoranthene                |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BeP                                 |  | 0.17 | 0.11 | 0.91 | 0.40 | 0.25 | 0.15 |
| BaP                                 |  | 0.12 | 0.04 | 0.74 | 0.28 | 0.15 | 0.09 |
| Perylene                            |  | 0.00 | 0.05 | 0.09 | 0.00 | 0.00 | 0.05 |
| Dibenzo(a,j)anthracene              |  | 0.00 | 0.01 | 0.02 | 0.00 | 0.02 | 0.01 |
| Indeno[123-cd]pyrene                |  | 0.12 | 0.07 | 0.02 | 0.42 | 0.15 | 0.16 |
| Dibenzo(ah+ac)anthracene            |  | 0.02 | 0.01 | 0.02 | 0.03 | 0.01 | 0.01 |
| Benzo(b)chrysene                    |  | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 |
| Picene                              |  | 0.03 | 0.01 | 0.02 | 0.00 | 0.02 | 0.01 |
| Benzo(ghi)perylene                  |  | 0.16 | 0.13 | 1.23 | 0.31 | 0.30 | 0.25 |
| Anthanthrene                        |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Dibenzo(b,k)fluoranthene            |  | 0.00 | 0.38 | 0.07 | 0.09 | 0.05 | 0.01 |
| Dibenzo(a,e)pyrene                  |  | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 |
| Coronene                            |  | 0.11 | 0.12 | 0.65 | 0.06 | 0.15 | 0.19 |
| Dibenzo(a,h)pyrene                  |  | 0.00 | 0.03 | 0.09 | 0.09 | 0.02 | 0.01 |
| Methyl-alkylated PAHs               |  |      |      |      |      |      |      |
| 2-methylnaphthalene (C1)            |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1-methylnaphthalene (C1)            |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,6+2,7-dimethylnaphthalene(C2)     |  | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 |
| 1,3+1,6+1,7dimethylnaphthalene(C2)  |  | 0.00 | 0.00 | 0.04 | 0.13 | 0.00 | 0.00 |
| 1,4+1,5+2,3-dimethylnaphthalene(C2) |  | 0.05 | 0.06 | 0.07 | 0.04 | 0.00 | 0.06 |
| 1,2-dimethylnaphthalene(C2)         |  | 0.00 | 0.01 | 0.06 | 0.00 | 0.02 | 0.01 |
| 2-Methylbiphenyl                    |  | 0.07 | 0.10 | 0.14 | 0.30 | 0.14 | 0.51 |
| 3-Methylbiphenyl                    |  | 0.20 | 0.26 | 0.14 | 0.99 | 0.63 | 1.58 |
| 4-Methylbiphenyl                    |  | 0.10 | 0.14 | 0.13 | 0.30 | 0.25 | 0.66 |



|                              |  |      |      |      |      |      |      |
|------------------------------|--|------|------|------|------|------|------|
| A-trimethylnaphthalene       |  | 0.01 | 0.11 | 0.04 | 0.00 | 0.15 | 0.10 |
| B-trimethylnaphthalene       |  | 0.01 | 0.09 | 0.00 | 0.00 | 0.08 | 0.10 |
| C-trimethylnaphthalene       |  | 0.01 | 0.00 | 0.04 | 0.00 | 0.08 | 0.01 |
| E-trimethylnaphthalene       |  | 0.02 | 0.04 | 0.04 | 0.07 | 0.00 | 0.12 |
| F-trimethylnaphthalene       |  | 0.00 | 0.02 | 0.04 | 0.07 | 0.06 | 0.02 |
| J-trimethylnaphthalene       |  | 0.03 | 0.06 | 0.04 | 0.06 | 0.04 | 0.09 |
| 2,3,5+I-trimethylnaphthalene |  | 0.01 | 0.10 | 0.04 | 0.03 | 0.06 | 0.03 |
| 2,4,5-trimethylnaphthalene   |  | 0.19 | 0.17 | 0.00 | 2.26 | 0.04 | 0.20 |
| 1,4,5-trimethylnaphthalene   |  | 0.01 | 0.02 | 0.03 | 0.07 | 0.06 | 0.04 |
| A-methylfluorene             |  | 0.02 | 0.15 | 0.00 | 0.00 | 0.03 | 0.25 |
| B-methylfluorene             |  | 0.00 | 0.00 | 0.06 | 0.07 | 0.01 | 0.00 |
| 1-methylfluorene             |  | 0.01 | 0.01 | 0.04 | 0.07 | 0.06 | 0.06 |
| 2-methylanthracene (C1)      |  | 0.01 | 0.05 | 0.00 | 0.00 | 0.06 | 0.11 |
| 3-methylphenanthrene(C1)     |  | 0.38 | 1.17 | 0.84 | 0.00 | 0.92 | 0.58 |
| 2-methylphenanthrene(C1)     |  | 0.42 | 1.22 | 0.00 | 0.00 | 0.07 | 0.39 |
| 9-methylphenanthrene(C1)     |  | 0.29 | 1.63 | 0.00 | 0.00 | 0.50 | 0.34 |
| 4,5-methylenephenanthrene    |  | 0.12 | 0.27 | 0.04 | 0.00 | 0.14 | 0.33 |
| 1-methylphenanthrene(C1)     |  | 0.28 | 1.50 | 0.04 | 0.32 | 0.02 | 0.45 |
| 3,6-dimethylphenanthrene     |  | 0.02 | 0.40 | 0.03 | 0.03 | 0.29 | 0.24 |
| A-dimethylphenanthrene       |  | 0.06 | 0.25 | 0.03 | 0.03 | 0.17 | 0.42 |
| B-dimethylphenanthrene       |  | 0.06 | 0.03 | 0.08 | 0.03 | 0.18 | 0.37 |
| C-dimethylphenanthrene       |  | 0.27 | 0.64 | 0.03 | 0.03 | 0.35 | 0.75 |
| D-dimethylphenanthrene       |  | 0.02 | 0.27 | 0.06 | 0.01 | 0.03 | 0.45 |
| E-dimethylphenanthrene       |  | 0.07 | 0.07 | 0.04 | 0.04 | 0.05 | 0.33 |
| 1,7-dimethylphenanthrene     |  | 0.05 | 0.27 | 0.03 | 0.01 | 0.29 | 0.26 |

|                                      |  |      |      |      |      |      |      |
|--------------------------------------|--|------|------|------|------|------|------|
| 9-methylanthracene(C1)               |  | 0.01 | 0.01 | 0.04 | 0.03 | 0.06 | 0.04 |
| 1+3-methylfluoranthene               |  | 0.03 | 0.12 | 0.06 | 0.03 | 0.05 | 0.02 |
| 1-MeFl+C-MeFl/Py(C1)                 |  | 0.40 | 0.40 | 0.20 | 0.01 | 0.00 | 0.00 |
| B-MePy/MeFl(C1)                      |  | 0.41 | 0.42 | 0.26 | 0.04 | 0.02 | 0.05 |
| C-MePy/MeFl(C1)                      |  | 0.43 | 0.44 | 0.26 | 0.06 | 0.04 | 0.02 |
| D-MePy/MeFl(C1)                      |  | 0.46 | 0.55 | 0.26 | 0.03 | 0.14 | 0.05 |
| 4-methylpyrene                       |  | 0.49 | 0.48 | 0.26 | 0.03 | 0.13 | 0.22 |
| 1-methylpyrene                       |  | 0.42 | 0.49 | 0.04 | 0.04 | 0.11 | 0.07 |
| 7-methylbenz(a)anthracene            |  | 0.01 | 0.00 | 0.20 | 0.00 | 0.01 | 0.00 |
| 3-methylchrysene                     |  | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.00 |
| 5+6-methylchrysene                   |  | 0.00 | 0.01 | 0.04 | 0.07 | 0.00 | 0.01 |
| 7-methylbenzo(a)pyrene               |  | 0.00 | 0.00 | 0.07 | 0.00 | 0.02 | 0.01 |
| Oxygenated PAHs                      |  |      |      |      |      |      |      |
| Dibenzofuran                         |  | 0.17 | 0.12 | 0.02 | 0.00 | 0.34 | 0.97 |
| 9-fluorenone                         |  | 0.83 | 1.04 | 0.05 | 0.02 | 2.56 | 1.98 |
| Xanthone                             |  | 0.30 | 0.32 | 0.23 | 0.07 | 0.57 | 0.20 |
| Perinaphthenone                      |  | 0.40 | 0.69 | 0.44 | 0.26 | 0.77 | 0.95 |
| Anthrone                             |  | 0.27 | 0.00 | 0.05 | 0.00 | 0.00 | 1.23 |
| Anthraquinone                        |  | 0.63 | 0.70 | 0.67 | 0.68 | 1.22 | 0.65 |
| 9-Anthraaldehyde                     |  | 0.03 | 0.05 | 0.07 | 0.09 | 0.04 | 0.03 |
| Benzanthrone                         |  | 0.21 | 0.07 | 0.54 | 0.12 | 0.20 | 0.14 |
| Benz(a)anthracene-7,12-dione         |  | 0.22 | 0.07 | 0.21 | 0.16 | 0.14 | 0.01 |
| 9,10-dihydrobenzo(a)pyrene-7(8H)-one |  | 0.00 | 0.02 | 0.09 | 0.02 | 0.00 | 0.03 |
| Others                               |  |      |      |      |      |      |      |
| Nicotine                             |  | 0.00 | 0.79 | 0.02 | 0.24 | 0.00 | 0.00 |

|                             |  |                  |                        |                          |                        |                          |                  |
|-----------------------------|--|------------------|------------------------|--------------------------|------------------------|--------------------------|------------------|
| 1+2ethylnaphthalene         |  | 0.00             | 0.00                   | 0.01                     | 0.00                   | 0.00                     | 0.00             |
| 1-ethyl-2-methylnaphthalene |  | 0.03             | 0.00                   | 0.01                     | 0.00                   | 0.00                     | 0.06             |
| 2-ethyl-1-methylnaphthalene |  | 0.08             | 0.01                   | 0.01                     | 0.01                   | 0.02                     | 0.04             |
| Biphenyl                    |  | 0.13             | 0.04                   | 0.00                     | 0.00                   | 0.11                     | 0.65             |
| Retene                      |  | 0.02             | 0.05                   | 0.00                     | 0.00                   | 0.01                     | 0.01             |
| Benzonaphthothiophene       |  | 0.04             | 0.01                   | 0.00                     | 0.01                   | 0.29                     | 0.01             |
| <b>Sampling Date</b>        |  | <b>07-08 Oct</b> | <b>10 Oct<br/>-Day</b> | <b>10 Oct<br/>-Night</b> | <b>12 Oct<br/>-Day</b> | <b>13 Oct<br/>-Night</b> | <b>14-15 Oct</b> |
| PAHs                        |  |                  |                        |                          |                        |                          |                  |
| Non-alkylated PAHs          |  |                  |                        |                          |                        |                          |                  |
| Naphthalene                 |  | 0.00             | 1.30                   | 2.23                     | 0.75                   | 1.89                     | 1.49             |
| Acenaphthylene              |  | 0.20             | 0.11                   | 0.83                     | 0.08                   | 0.16                     | 0.13             |
| Acenaphthene                |  | 0.00             | 0.07                   | 0.29                     | 0.00                   | 0.03                     | 0.11             |
| Fluorene                    |  | 0.25             | 1.38                   | 3.05                     | 0.69                   | 1.54                     | 0.94             |
| Dibenzothiophene            |  | 0.17             | 0.60                   | 1.81                     | 0.65                   | 1.20                     | 0.38             |
| Phenanthrene                |  | 2.74             | 3.60                   | 18.17                    | 4.02                   | 11.18                    | 3.15             |
| Anthracene                  |  | 0.07             | 0.04                   | 0.79                     | 0.14                   | 0.76                     | 0.08             |
| Fluoranthene                |  | 1.81             | 1.24                   | 4.71                     | 1.72                   | 2.95                     | 2.24             |
| Pyrene                      |  | 1.60             | 1.19                   | 4.62                     | 1.42                   | 2.81                     | 1.86             |
| Benzo(c)phenanthrene        |  | 1.48             | 0.06                   | 2.55                     | 2.62                   | 1.71                     | 1.93             |
| Benzo(ghi)fluoranthene      |  | 0.44             | 0.82                   | 1.00                     | 0.31                   | 0.34                     | 0.18             |
| Cyclopenta(c,d)pyrene       |  | 0.04             | 0.04                   | 0.28                     | 0.01                   | 0.16                     | 0.01             |
| Benz(a)anthracene           |  | 0.11             | 0.00                   | 0.17                     | 0.05                   | 0.00                     | 0.04             |
| Chrysene-Triphenylene       |  | 0.56             | 0.11                   | 0.87                     | 0.16                   | 0.25                     | 0.40             |
| Benzo(b+j+k)fluoranthene    |  | 0.62             | 0.41                   | 1.32                     | 0.38                   | 0.89                     | 0.34             |

|                                     |  |      |      |      |      |      |      |
|-------------------------------------|--|------|------|------|------|------|------|
| Benzo(a)fluoranthene                |  | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 |
| BeP                                 |  | 0.26 | 0.00 | 0.56 | 0.10 | 0.16 | 0.09 |
| BaP                                 |  | 0.18 | 0.14 | 0.38 | 0.08 | 0.32 | 0.09 |
| Perylene                            |  | 0.04 | 0.07 | 0.03 | 0.02 | 0.02 | 0.05 |
| Dibenzo(a,j)anthracene              |  | 0.04 | 0.04 | 0.05 | 0.01 | 0.05 | 0.02 |
| Indeno[123-cd]pyrene                |  | 0.02 | 0.08 | 0.43 | 0.01 | 0.29 | 0.06 |
| Dibenzo(ah+ac)anthracene            |  | 0.04 | 0.08 | 0.28 | 0.01 | 0.07 | 0.04 |
| Benzo(b)chrysene                    |  | 0.02 | 0.14 | 0.03 | 0.03 | 0.05 | 0.04 |
| Picene                              |  | 0.12 | 0.03 | 0.07 | 0.05 | 0.05 | 0.09 |
| Benzo(ghi)perylene                  |  | 0.50 | 0.19 | 1.20 | 0.04 | 0.19 | 0.07 |
| Anthanthrene                        |  | 0.02 | 0.10 | 0.19 | 0.01 | 0.05 | 0.03 |
| Dibenzo(b,k)fluoranthene            |  | 0.44 | 0.03 | 0.26 | 0.16 | 0.36 | 0.12 |
| Dibenzo(a,e)pyrene                  |  | 0.02 | 0.10 | 0.14 | 0.24 | 0.13 | 0.06 |
| Coronene                            |  | 0.06 | 0.34 | 0.26 | 0.17 | 0.25 | 0.10 |
| Dibenzo(a,h)pyrene                  |  | 0.06 | 0.24 | 0.15 | 0.12 | 0.11 | 0.06 |
| Methyl-alkylated PAHs               |  |      |      |      |      |      |      |
| 2-methylnaphthalene (C1)            |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1-methylnaphthalene (C1)            |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,6+2,7-dimethylnaphthalene(C2)     |  | 0.00 | 0.00 | 0.28 | 0.00 | 0.00 | 0.00 |
| 1,3+1,6+1,7dimethylnaphthalene(C2)  |  | 0.00 | 0.00 | 0.90 | 0.00 | 0.30 | 0.19 |
| 1,4+1,5+2,3-dimethylnaphthalene(C2) |  | 0.00 | 0.00 | 0.56 | 0.12 | 0.30 | 0.08 |
| 1,2-dimethylnaphthalene(C2)         |  | 0.02 | 0.10 | 0.27 | 0.00 | 0.10 | 0.13 |
| 2-Methylbiphenyl                    |  | 0.82 | 1.07 | 0.91 | 0.52 | 0.92 | 0.76 |
| 3-Methylbiphenyl                    |  | 1.13 | 1.40 | 1.82 | 1.15 | 1.22 | 1.04 |
| 4-Methylbiphenyl                    |  | 0.35 | 0.76 | 0.95 | 0.60 | 0.71 | 0.25 |

|                              |  |      |      |      |      |      |      |
|------------------------------|--|------|------|------|------|------|------|
| A-trimethylnaphthalene       |  | 0.82 | 1.03 | 0.83 | 0.25 | 0.85 | 0.08 |
| B-trimethylnaphthalene       |  | 0.05 | 0.22 | 1.24 | 0.08 | 0.90 | 0.32 |
| C-trimethylnaphthalene       |  | 0.06 | 0.27 | 1.21 | 0.08 | 0.00 | 0.31 |
| E-trimethylnaphthalene       |  | 0.06 | 0.46 | 0.92 | 0.33 | 0.59 | 0.51 |
| F-trimethylnaphthalene       |  | 0.13 | 0.10 | 0.48 | 0.01 | 0.07 | 0.02 |
| J-trimethylnaphthalene       |  | 0.14 | 0.08 | 0.68 | 0.10 | 0.04 | 0.37 |
| 2,3,5+I-trimethylnaphthalene |  | 0.20 | 0.20 | 2.18 | 0.43 | 0.54 | 0.14 |
| 2,4,5-trimethylnaphthalene   |  | 0.07 | 0.05 | 0.54 | 0.00 | 0.73 | 0.23 |
| 1,4,5-trimethylnaphthalene   |  | 0.04 | 0.06 | 0.41 | 0.25 | 0.43 | 0.01 |
| A-methylfluorene             |  | 0.28 | 0.48 | 2.80 | 0.63 | 1.86 | 0.52 |
| B-methylfluorene             |  | 0.08 | 0.10 | 0.09 | 0.00 | 0.02 | 0.04 |
| 1-methylfluorene             |  | 0.07 | 0.13 | 0.16 | 0.03 | 0.22 | 0.13 |
| 2-methylanthracene (C1)      |  | 0.17 | 0.09 | 0.35 | 0.59 | 0.18 | 0.16 |
| 3-methylphenanthrene(C1)     |  | 0.83 | 0.81 | 2.59 | 1.21 | 2.27 | 0.83 |
| 2-methylphenanthrene(C1)     |  | 1.08 | 0.89 | 2.59 | 1.21 | 0.03 | 1.26 |
| 9-methylphenanthrene(C1)     |  | 0.88 | 0.36 | 1.59 | 0.60 | 1.49 | 0.37 |
| 4,5-methylenephenanthrene    |  | 0.35 | 0.10 | 1.06 | 0.25 | 1.09 | 0.45 |
| 1-methylphenanthrene(C1)     |  | 0.60 | 0.42 | 1.59 | 0.12 | 1.10 | 0.24 |
| 3,6-dimethylphenanthrene     |  | 0.33 | 0.20 | 0.51 | 0.16 | 0.44 | 0.22 |
| A-dimethylphenanthrene       |  | 0.33 | 0.27 | 0.38 | 0.25 | 0.26 | 0.22 |
| B-dimethylphenanthrene       |  | 0.04 | 0.08 | 0.14 | 0.25 | 0.16 | 0.24 |
| C-dimethylphenanthrene       |  | 0.90 | 0.17 | 1.99 | 0.35 | 1.40 | 0.95 |
| D-dimethylphenanthrene       |  | 0.33 | 0.13 | 0.86 | 0.23 | 0.16 | 0.32 |
| E-dimethylphenanthrene       |  | 0.07 | 0.36 | 0.71 | 0.10 | 0.54 | 0.47 |
| 1,7-dimethylphenanthrene     |  | 0.17 | 0.27 | 0.83 | 0.50 | 0.70 | 0.37 |

|                                      |  |      |      |      |      |      |      |
|--------------------------------------|--|------|------|------|------|------|------|
| 9-methylanthracene(C1)               |  | 0.18 | 0.06 | 1.30 | 0.42 | 0.41 | 0.07 |
| 1+3-methylfluoranthene               |  | 0.12 | 0.18 | 0.17 | 0.08 | 0.04 | 0.13 |
| 1-MeFl+C-MeFl/Py(C1)                 |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.21 | 0.07 |
| B-MePy/MeFl(C1)                      |  | 0.06 | 0.18 | 0.30 | 0.07 | 0.14 | 0.15 |
| C-MePy/MeFl(C1)                      |  | 0.11 | 0.16 | 0.18 | 0.03 | 0.14 | 0.07 |
| D-MePy/MeFl(C1)                      |  | 0.25 | 0.16 | 0.03 | 0.08 | 0.48 | 0.03 |
| 4-methylpyrene                       |  | 0.30 | 0.23 | 0.66 | 0.18 | 0.41 | 0.25 |
| 1-methylpyrene                       |  | 0.07 | 0.17 | 0.45 | 0.03 | 0.15 | 0.21 |
| 7-methylbenz(a)anthracene            |  | 0.04 | 0.02 | 0.00 | 0.02 | 0.00 | 0.02 |
| 3-methylchrysene                     |  | 0.05 | 0.01 | 0.04 | 0.00 | 0.03 | 0.01 |
| 5+6-methylchrysene                   |  | 0.01 | 0.09 | 0.06 | 0.02 | 0.00 | 0.01 |
| 7-methylbenzo(a)pyrene               |  | 0.05 | 0.03 | 0.09 | 0.03 | 0.01 | 0.03 |
| Oxygenated PAHs                      |  |      |      |      |      |      |      |
| Dibenzofuran                         |  | 0.44 | 1.71 | 1.85 | 0.56 | 1.46 | 1.56 |
| 9-fluorenone                         |  | 5.30 | 7.43 | 8.90 | 3.20 | 4.86 | 8.67 |
| Xanthone                             |  | 1.70 | 0.82 | 1.86 | 0.21 | 1.46 | 0.45 |
| Perinaphthenone                      |  | 0.42 | 0.44 | 1.00 | 0.14 | 1.15 | 0.60 |
| Anthrone                             |  | 1.88 | 1.19 | 0.00 | 0.05 | 1.94 | 2.35 |
| Anthraquinone                        |  | 1.19 | 0.34 | 1.20 | 0.87 | 1.14 | 1.10 |
| 9-Anthraaldehyde                     |  | 0.13 | 0.22 | 0.05 | 0.06 | 0.12 | 0.06 |
| Benzanthrone                         |  | 0.13 | 0.24 | 0.09 | 0.03 | 0.11 | 0.03 |
| Benz(a)anthracene-7,12-dione         |  | 0.19 | 0.44 | 0.22 | 0.14 | 0.02 | 0.06 |
| 9,10-dihydrobenzo(a)pyrene-7(8H)-one |  | 0.01 | 0.06 | 0.02 | 0.03 | 0.04 | 0.01 |
| Others                               |  |      |      |      |      |      |      |
| Nicotine                             |  | 0.00 | 0.00 | 0.00 | 2.97 | 4.02 | 0.24 |

|                             |  |                  |                  |                  |                  |                  |                  |
|-----------------------------|--|------------------|------------------|------------------|------------------|------------------|------------------|
| 1+2ethylnaphthalene         |  | 0.00             | 0.00             | 0.00             | 0.00             | 0.00             | 0.00             |
| 1-ethyl-2-methylnaphthalene |  | 0.16             | 0.11             | 0.32             | 0.09             | 0.01             | 0.10             |
| 2-ethyl-1-methylnaphthalene |  | 0.24             | 0.01             | 0.03             | 0.44             | 0.86             | 0.24             |
| Biphenyl                    |  | 0.26             | 1.60             | 0.75             | 0.30             | 0.58             | 0.67             |
| Retene                      |  | 0.03             | 0.04             | 0.05             | 0.03             | 0.06             | 0.04             |
| Benzonaphthothiophene       |  | 0.04             | 0.15             | 0.21             | 0.02             | 0.11             | 0.11             |
| <b>Sampling Date</b>        |  | <b>16-17 Oct</b> | <b>18-19 Oct</b> | <b>21-22 Oct</b> | <b>23-24 Oct</b> | <b>26-27 Oct</b> | <b>02-03 Nov</b> |
| PAHs                        |  |                  |                  |                  |                  |                  |                  |
| Non-alkylated PAHs          |  |                  |                  |                  |                  |                  |                  |
| Naphthalene                 |  | 0.00             | 0.00             | 0.16             | 0.00             | 0.09             | 0.07             |
| Acenaphthylene              |  | 0.06             | 0.08             | 0.11             | 0.10             | 0.30             | 0.01             |
| Acenaphthene                |  | 0.00             | 0.00             | 0.05             | 0.02             | 0.07             | 0.01             |
| Fluorene                    |  | 0.10             | 0.17             | 0.50             | 0.44             | 0.73             | 0.00             |
| Dibenzothiophene            |  | 0.24             | 0.22             | 0.41             | 0.36             | 0.49             | 0.01             |
| Phenanthrene                |  | 1.84             | 1.87             | 3.22             | 2.50             | 4.07             | 0.12             |
| Anthracene                  |  | 0.00             | 0.04             | 0.17             | 0.15             | 0.48             | 0.03             |
| Fluoranthene                |  | 1.14             | 1.58             | 2.64             | 2.76             | 3.64             | 0.20             |
| Pyrene                      |  | 1.11             | 1.28             | 2.72             | 2.70             | 3.85             | 0.23             |
| Benzo(c)phenanthrene        |  | 1.02             | 1.72             | 1.98             | 1.44             | 1.50             | 0.02             |
| Benzo(ghi)fluoranthene      |  | 0.22             | 0.31             | 0.70             | 0.94             | 1.71             | 0.54             |
| Cyclopenta(c,d)pyrene       |  | 0.02             | 0.02             | 0.04             | 0.00             | 0.18             | 0.03             |
| Benz(a)anthracene           |  | 0.02             | 0.05             | 0.10             | 0.16             | 0.28             | 0.13             |
| Chrysene-Triphenylene       |  | 0.28             | 0.25             | 0.43             | 0.29             | 0.49             | 0.06             |
| Benzo(b+j+k)fluoranthene    |  | 0.45             | 0.37             | 0.39             | 0.41             | 0.84             | 1.16             |
| Benzo(a)fluoranthene        |  | 0.00             | 0.00             | 0.00             | 0.00             | 0.00             | 0.02             |

|                                     |  |      |      |      |      |      |      |
|-------------------------------------|--|------|------|------|------|------|------|
| BeP                                 |  | 0.10 | 0.10 | 0.20 | 0.17 | 0.43 | 0.51 |
| BaP                                 |  | 0.06 | 0.05 | 0.12 | 0.08 | 0.35 | 0.30 |
| Perylene                            |  | 0.04 | 0.04 | 0.06 | 0.02 | 0.03 | 0.07 |
| Dibenzo(a,j)anthracene              |  | 0.06 | 0.04 | 0.04 | 0.01 | 0.01 | 0.02 |
| Indeno[123-cd]pyrene                |  | 0.17 | 0.11 | 0.03 | 0.17 | 0.06 | 0.02 |
| Dibenzo(ah+ac)anthracene            |  | 0.06 | 0.02 | 0.01 | 0.01 | 0.04 | 0.02 |
| Benzo(b)chrysene                    |  | 0.02 | 0.03 | 0.08 | 0.01 | 0.02 | 0.01 |
| Picene                              |  | 0.00 | 0.04 | 0.02 | 0.05 | 0.01 | 0.01 |
| Benzo(ghi)perylene                  |  | 0.31 | 0.17 | 0.20 | 0.01 | 0.01 | 1.09 |
| Anthanthrene                        |  | 0.03 | 0.02 | 0.05 | 0.02 | 0.01 | 0.02 |
| Dibenzo(b,k)fluoranthene            |  | 0.16 | 0.12 | 0.12 | 0.19 | 0.10 | 0.12 |
| Dibenzo(a,e)pyrene                  |  | 0.00 | 0.01 | 0.07 | 0.08 | 0.10 | 0.08 |
| Coronene                            |  | 0.08 | 0.05 | 0.12 | 0.08 | 0.03 | 0.02 |
| Dibenzo(a,h)pyrene                  |  | 0.00 | 0.15 | 0.18 | 0.11 | 0.12 | 0.04 |
| Methyl-alkylated PAHs               |  |      |      |      |      |      |      |
| 2-methylnaphthalene (C1)            |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 |
| 1-methylnaphthalene (C1)            |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 |
| 2,6+2,7-dimethylnaphthalene(C2)     |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,3+1,6+1,7dimethylnaphthalene(C2)  |  | 0.00 | 0.00 | 0.00 | 0.10 | 0.02 | 0.02 |
| 1,4+1,5+2,3-dimethylnaphthalene(C2) |  | 0.02 | 0.05 | 0.00 | 0.11 | 0.00 | 0.00 |
| 1,2-dimethylnaphthalene(C2)         |  | 0.03 | 0.01 | 0.00 | 0.11 | 0.01 | 0.01 |
| 2-Methylbiphenyl                    |  | 0.78 | 0.95 | 0.33 | 0.50 | 0.01 | 0.01 |
| 3-Methylbiphenyl                    |  | 0.73 | 1.31 | 0.47 | 0.81 | 0.01 | 0.01 |
| 4-Methylbiphenyl                    |  | 0.42 | 0.59 | 0.24 | 0.46 | 0.00 | 0.00 |
| A-trimethylnaphthalene              |  | 0.01 | 0.16 | 0.00 | 0.04 | 0.01 | 0.01 |



|                              |  |      |      |      |      |      |      |
|------------------------------|--|------|------|------|------|------|------|
| B-trimethylnaphthalene       |  | 0.01 | 0.25 | 0.07 | 0.14 | 0.01 | 0.01 |
| C-trimethylnaphthalene       |  | 0.04 | 0.09 | 0.00 | 0.30 | 0.00 | 0.00 |
| E-trimethylnaphthalene       |  | 0.10 | 0.12 | 0.03 | 0.25 | 0.00 | 0.00 |
| F-trimethylnaphthalene       |  | 0.02 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 |
| J-trimethylnaphthalene       |  | 0.02 | 0.04 | 0.05 | 0.03 | 0.00 | 0.00 |
| 2,3,5-I-trimethylnaphthalene |  | 0.23 | 0.11 | 0.11 | 0.21 | 0.00 | 0.00 |
| 2,4,5-trimethylnaphthalene   |  | 0.01 | 0.08 | 0.04 | 0.29 | 0.01 | 0.01 |
| 1,4,5-trimethylnaphthalene   |  | 0.01 | 0.14 | 0.01 | 0.07 | 0.01 | 0.01 |
| A-methylfluorene             |  | 0.12 | 0.47 | 0.31 | 0.71 | 0.00 | 0.00 |
| B-methylfluorene             |  | 0.04 | 0.17 | 0.00 | 0.07 | 0.01 | 0.01 |
| 1-methylfluorene             |  | 0.08 | 0.28 | 0.09 | 0.11 | 0.01 | 0.01 |
| 2-methylanthracene (C1)      |  | 0.10 | 0.06 | 0.19 | 0.35 | 0.00 | 0.00 |
| 3-methylphenanthrene(C1)     |  | 0.31 | 1.57 | 0.75 | 1.32 | 0.02 | 0.02 |
| 2-methylphenanthrene(C1)     |  | 0.33 | 1.74 | 1.19 | 1.97 | 0.00 | 0.00 |
| 9-methylphenanthrene(C1)     |  | 0.35 | 1.09 | 0.75 | 1.53 | 0.00 | 0.00 |
| 4,5-methylenephenanthrene    |  | 0.19 | 0.44 | 0.24 | 0.62 | 0.00 | 0.00 |
| 1-methylphenanthrene(C1)     |  | 0.07 | 0.80 | 0.63 | 1.47 | 0.00 | 0.00 |
| 3,6-dimethylphenanthrene     |  | 0.05 | 0.50 | 0.36 | 0.30 | 0.00 | 0.00 |
| A-dimethylphenanthrene       |  | 0.04 | 0.59 | 0.56 | 0.78 | 0.00 | 0.00 |
| B-dimethylphenanthrene       |  | 0.11 | 0.36 | 0.03 | 0.39 | 0.00 | 0.00 |
| C-dimethylphenanthrene       |  | 0.47 | 1.26 | 1.17 | 1.65 | 0.01 | 0.01 |
| D-dimethylphenanthrene       |  | 0.25 | 0.52 | 0.61 | 0.78 | 0.01 | 0.01 |
| E-dimethylphenanthrene       |  | 0.28 | 0.40 | 0.39 | 0.44 | 0.01 | 0.01 |
| 1,7-dimethylphenanthrene     |  | 0.22 | 0.50 | 0.67 | 1.04 | 0.02 | 0.02 |
| 9-methylanthracene(C1)       |  | 0.10 | 0.06 | 0.04 | 0.09 | 0.01 | 0.01 |

|                                      |  |       |       |       |       |       |      |
|--------------------------------------|--|-------|-------|-------|-------|-------|------|
| 1+3-methylfluoranthene               |  | 0.02  | 0.21  | 0.10  | 0.09  | 0.05  | 0.05 |
| 1-MeFl+C-MeFl/Py(C1)                 |  | 0.04  | 0.04  | 0.00  | 0.00  | 0.05  | 0.05 |
| B-MePy/MeFl(C1)                      |  | 0.06  | 0.16  | 0.21  | 0.17  | 0.02  | 0.02 |
| C-MePy/MeFl(C1)                      |  | 0.04  | 0.04  | 0.09  | 0.08  | 0.02  | 0.02 |
| D-MePy/MeFl(C1)                      |  | 0.01  | 0.31  | 0.48  | 0.53  | 0.01  | 0.01 |
| 4-methylpyrene                       |  | 0.04  | 0.47  | 0.54  | 0.92  | 0.01  | 0.01 |
| 1-methylpyrene                       |  | 0.05  | 0.26  | 0.17  | 0.44  | 0.05  | 0.05 |
| 7-methylbenz(a)anthracene            |  | 0.01  | 0.01  | 0.02  | 0.03  | 0.00  | 0.00 |
| 3-methylchrysene                     |  | 0.01  | 0.00  | 0.02  | 0.01  | 0.03  | 0.03 |
| 5+6-methylchrysene                   |  | 0.02  | 0.02  | 0.01  | 0.02  | 0.01  | 0.01 |
| 7-methylbenzo(a)pyrene               |  | 0.01  | 0.00  | 0.04  | 0.02  | 0.02  | 0.02 |
| Oxygenated PAHs                      |  |       |       |       |       |       |      |
| Dibenzofuran                         |  | 0.533 | 1.136 | 0.287 | 0.433 | 0.003 | 0.01 |
| 9-fluorenone                         |  | 3.443 | 7.835 | 2.098 | 1.647 | 0.012 | 0.02 |
| Xanthone                             |  | 0.245 | 0.996 | 0.109 | 0.621 | 0.007 | 0.01 |
| Perinaphthenone                      |  | 0.491 | 0.107 | 0.619 | 1.695 | 0.016 | 0.02 |
| Anthrone                             |  | 1.031 | 1.243 | 0.536 | 2.688 | 0.017 | 0.06 |
| Anthraquinone                        |  | 0.819 | 1.026 | 0.528 | 1.254 | 0.061 | 0.07 |
| 9-Anthraaldehyde                     |  | 0.017 | 0.016 | 0.018 | 0.065 | 0.014 | 0.02 |
| Benzanthrone                         |  | 0.115 | 0.091 | 0.210 | 0.042 | 0.104 | 0.01 |
| Benz(a)anthracene-7,12-dione         |  | 0.178 | 0.023 | 0.049 | 0.101 | 0.154 | 0.02 |
| 9,10-dihydrobenzo(a)pyrene-7(8H)-one |  | 0.115 | 0.055 | 0.023 | 0.014 | 0.026 | 0.04 |
| Others                               |  |       |       |       |       |       |      |
| Nicotine                             |  | 0.000 | 0.000 | 0.000 | 0.000 | 0.464 | 0.02 |
| 1+2ethylnaphthalene                  |  | 0.000 | 0.000 | 0.000 | 0.011 | 0.003 | 0.01 |

|                             |  |                  |                  |       |       |       |      |
|-----------------------------|--|------------------|------------------|-------|-------|-------|------|
| 1-ethyl-2-methylnaphthalene |  | 0.176            | 0.182            | 0.158 | 0.236 | 0.005 | 0.01 |
| 2-ethyl-1-methylnaphthalene |  | 0.042            | 0.088            | 0.000 | 0.177 | 0.003 | 0.02 |
| Biphenyl                    |  | 0.249            | 0.617            | 0.080 | 0.256 | 0.000 | 0.00 |
| Retene                      |  | 0.008            | 0.062            | 0.060 | 0.073 | 0.000 | 0.00 |
| Benzonaphthothiophene       |  | 0.021            | 0.153            | 0.109 | 0.079 | 0.036 | 0.01 |
| <b>Sampling Date</b>        |  | <b>05-06 Nov</b> | <b>09-10 Nov</b> |       |       |       |      |
| PAHs                        |  |                  |                  |       |       |       |      |
| Non-alkylated PAHs          |  |                  |                  |       |       |       |      |
| Naphthalene                 |  | 0.07             | 0.08             |       |       |       |      |
| Acenaphthylene              |  | 0.00             | 0.01             |       |       |       |      |
| Acenaphthene                |  | 0.02             | 0.03             |       |       |       |      |
| Fluorene                    |  | 0.01             | 0.00             |       |       |       |      |
| Dibenzothiophene            |  | 0.00             | 0.00             |       |       |       |      |
| Phenanthrene                |  | 0.09             | 0.14             |       |       |       |      |
| Anthracene                  |  | 0.00             | 0.01             |       |       |       |      |
| Fluoranthene                |  | 0.12             | 0.08             |       |       |       |      |
| Pyrene                      |  | 0.16             | 0.24             |       |       |       |      |
| Benzo(c)phenanthrene        |  | 0.01             | 0.03             |       |       |       |      |
| Benzo(ghi)fluoranthene      |  | 0.03             | 0.34             |       |       |       |      |
| Cyclopenta(c,d)pyrene       |  | 0.02             | 0.26             |       |       |       |      |
| Benz(a)anthracene           |  | 0.09             | 0.18             |       |       |       |      |
| Chrysene-Triphenylene       |  | 0.12             | 0.32             |       |       |       |      |
| Benzo(b+j+k)fluoranthene    |  | 0.48             | 1.32             |       |       |       |      |
| Benzo(a)fluoranthene        |  | 0.00             | 0.04             |       |       |       |      |
| BeP                         |  | 0.00             | 0.63             |       |       |       |      |

|                                     |  |      |      |  |  |  |  |
|-------------------------------------|--|------|------|--|--|--|--|
| BaP                                 |  | 0.03 | 0.61 |  |  |  |  |
| Perylene                            |  | 0.02 | 0.13 |  |  |  |  |
| Dibenzo(a,j)anthracene              |  | 0.02 | 0.03 |  |  |  |  |
| Indeno[123-cd]pyrene                |  | 0.01 | 0.03 |  |  |  |  |
| Dibenzo(ah+ac)anthracene            |  | 0.01 | 0.02 |  |  |  |  |
| Benzo(b)chrysene                    |  | 0.01 | 0.02 |  |  |  |  |
| Picene                              |  | 0.02 | 0.01 |  |  |  |  |
| Benzo(ghi)perylene                  |  | 0.02 | 1.55 |  |  |  |  |
| Anthanthrene                        |  | 0.01 | 0.04 |  |  |  |  |
| Dibenzo(b,k)fluoranthene            |  | 0.06 | 0.26 |  |  |  |  |
| Dibenzo(a,e)pyrene                  |  | 0.06 | 0.04 |  |  |  |  |
| Coronene                            |  | 0.07 | 0.32 |  |  |  |  |
| Dibenzo(a,h)pyrene                  |  | 0.13 | 0.08 |  |  |  |  |
| Methyl-alkylated PAHs               |  |      |      |  |  |  |  |
| 2-methylnaphthalene (C1)            |  | 0.01 | 0.02 |  |  |  |  |
| 1-methylnaphthalene (C1)            |  | 0.01 | 0.00 |  |  |  |  |
| 2,6+2,7-dimethylnaphthalene(C2)     |  | 0.00 | 0.01 |  |  |  |  |
| 1,3+1,6+1,7dimethylnaphthalene(C2)  |  | 0.01 | 0.01 |  |  |  |  |
| 1,4+1,5+2,3-dimethylnaphthalene(C2) |  | 0.01 | 0.01 |  |  |  |  |
| 1,2-dimethylnaphthalene(C2)         |  | 0.01 | 0.01 |  |  |  |  |
| 2-Methylbiphenyl                    |  | 0.02 | 0.02 |  |  |  |  |
| 3-Methylbiphenyl                    |  | 0.03 | 0.03 |  |  |  |  |
| 4-Methylbiphenyl                    |  | 0.01 | 0.00 |  |  |  |  |
| A-trimethylnaphthalene              |  | 0.01 | 0.00 |  |  |  |  |
| B-trimethylnaphthalene              |  | 0.01 | 0.00 |  |  |  |  |

|                              |  |      |      |  |  |  |  |
|------------------------------|--|------|------|--|--|--|--|
| C-trimethylnaphthalene       |  | 0.01 | 0.00 |  |  |  |  |
| E-trimethylnaphthalene       |  | 0.02 | 0.01 |  |  |  |  |
| F-trimethylnaphthalene       |  | 0.01 | 0.00 |  |  |  |  |
| J-trimethylnaphthalene       |  | 0.01 | 0.01 |  |  |  |  |
| 2,3,5+I-trimethylnaphthalene |  | 0.01 | 0.01 |  |  |  |  |
| 2,4,5-trimethylnaphthalene   |  | 0.01 | 0.00 |  |  |  |  |
| 1,4,5-trimethylnaphthalene   |  | 0.00 | 0.00 |  |  |  |  |
| A-methylfluorene             |  | 0.00 | 0.00 |  |  |  |  |
| B-methylfluorene             |  | 0.01 | 0.00 |  |  |  |  |
| 1-methylfluorene             |  | 0.01 | 0.00 |  |  |  |  |
| 2-methylanthracene (C1)      |  | 0.00 | 0.01 |  |  |  |  |
| 3-methylphenanthrene(C1)     |  | 0.00 | 0.00 |  |  |  |  |
| 2-methylphenanthrene(C1)     |  | 0.00 | 0.00 |  |  |  |  |
| 9-methylphenanthrene(C1)     |  | 0.00 | 0.01 |  |  |  |  |
| 4,5-methylenephenanthrene    |  | 0.00 | 0.01 |  |  |  |  |
| 1-methylphenanthrene(C1)     |  | 0.01 | 0.00 |  |  |  |  |
| 3,6-dimethylphenanthrene     |  | 0.00 | 0.01 |  |  |  |  |
| A-dimethylphenanthrene       |  | 0.01 | 0.00 |  |  |  |  |
| B-dimethylphenanthrene       |  | 0.01 | 0.01 |  |  |  |  |
| C-dimethylphenanthrene       |  | 0.00 | 0.00 |  |  |  |  |
| D-dimethylphenanthrene       |  | 0.01 | 0.01 |  |  |  |  |
| E-dimethylphenanthrene       |  | 0.01 | 0.01 |  |  |  |  |
| 1,7-dimethylphenanthrene     |  | 0.01 | 0.01 |  |  |  |  |
| 9-methylanthracene(C1)       |  | 0.01 | 0.01 |  |  |  |  |
| 1+3-methylfluoranthene       |  | 0.01 | 0.00 |  |  |  |  |

|                                      |  |      |       |  |  |  |  |
|--------------------------------------|--|------|-------|--|--|--|--|
| 1-MeFl+C-MeFl/Py(C1)                 |  | 0.04 | 0.04  |  |  |  |  |
| B-MePy/MeFl(C1)                      |  | 0.00 | 0.03  |  |  |  |  |
| C-MePy/MeFl(C1)                      |  | 0.01 | 0.01  |  |  |  |  |
| D-MePy/MeFl(C1)                      |  | 0.01 | 0.03  |  |  |  |  |
| 4-methylpyrene                       |  | 0.03 | 0.08  |  |  |  |  |
| 1-methylpyrene                       |  | 0.02 | 0.05  |  |  |  |  |
| 7-methylbenz(a)anthracene            |  | 0.00 | 0.01  |  |  |  |  |
| 3-methylchrysene                     |  | 0.00 | 0.01  |  |  |  |  |
| 5+6-methylchrysene                   |  | 0.01 | 0.03  |  |  |  |  |
| 7-methylbenzo(a)pyrene               |  | 0.01 | 0.04  |  |  |  |  |
| Oxygenated PAHs                      |  |      |       |  |  |  |  |
| Dibenzofuran                         |  | 0.01 | 0.007 |  |  |  |  |
| 9-fluorenone                         |  | 0.02 | 0.011 |  |  |  |  |
| Xanthone                             |  | 0.01 | 0.004 |  |  |  |  |
| Perinaphthenone                      |  | 0.02 | 0.017 |  |  |  |  |
| Anthrone                             |  | 0.06 | 0.035 |  |  |  |  |
| Anthraquinone                        |  | 0.07 | 0.041 |  |  |  |  |
| 9-Anthraaldehyde                     |  | 0.02 | 0.007 |  |  |  |  |
| Benzanthrone                         |  | 0.01 | 0.407 |  |  |  |  |
| Benz(a)anthracene-7,12-dione         |  | 0.02 | 0.013 |  |  |  |  |
| 9,10-dihydrobenzo(a)pyrene-7(8H)-one |  | 0.04 | 0.013 |  |  |  |  |
| Others                               |  |      |       |  |  |  |  |
| Nicotine                             |  | 0.02 | 0.000 |  |  |  |  |
| 1+2ethylnaphthalene                  |  | 0.01 | 0.004 |  |  |  |  |
| 1-ethyl-2-methylnaphthalene          |  | 0.01 | 0.004 |  |  |  |  |

|                                |  |                  |                  |                   |                   |                  |                  |
|--------------------------------|--|------------------|------------------|-------------------|-------------------|------------------|------------------|
| 2-ethyl-1-methylnaphthalene    |  | 0.02             | 0.007            |                   |                   |                  |                  |
| Biphenyl                       |  | 0.00             | 0.011            |                   |                   |                  |                  |
| Retene                         |  | 0.00             | 0.002            |                   |                   |                  |                  |
| Benzonaphthothiophene          |  | 0.01             | 0.028            |                   |                   |                  |                  |
| <b>Sampling Date</b>           |  | <b>10-11 Aug</b> | <b>16-17 Aug</b> | <b>04-05 Sept</b> | <b>20-21 Sept</b> | <b>02-03 Oct</b> | <b>04-05 Oct</b> |
| Polar organic compounds        |  |                  |                  |                   |                   |                  |                  |
| Alkanoic acids                 |  |                  |                  |                   |                   |                  |                  |
| decanoic acid (c10)            |  | 2.97             | 3.19             | 0.60              | 1.05              | 1.79             | 2.64             |
| undecanoic acid (c11)          |  | 0.14             | 0.90             | 0.49              | 1.16              | 0.16             | 0.39             |
| dodecanoic (lauric) acid (c12) |  | 1.29             | 5.26             | 1.18              | 2.27              | 0.00             | 0.14             |
| tridecanoic acid (c13)         |  | 2.48             | 4.65             | 0.19              | 0.82              | 0.43             | 2.04             |
| myristic acid (c14)            |  | 30.65            | 53.54            | 7.12              | 8.22              | 16.75            | 32.51            |
| pentadecanoic acid (c15)       |  | 14.21            | 16.00            | 2.87              | 3.23              | 13.39            | 15.47            |
| palmitic acid (c16)            |  | 0.00             | 0.00             | 33.71             | 34.25             | 14.30            | 23.15            |
| heptadecanoic acid (c17)       |  | 3.17             | 0.00             | 2.81              | 2.80              | 9.16             | 7.20             |
| stearic acid (c18)             |  | 0.00             | 0.00             | 2.21              | 1.07              | 0.00             | 0.00             |
| nonadecanoic acid (c19)        |  | 0.00             | 0.00             | 0.78              | 1.37              | 0.00             | 0.00             |
| eicosanoic acid (c20)          |  | 4.50             | 3.76             | 4.50              | 2.82              | 14.13            | 17.43            |
| heneicosanoic acid (c21)       |  | 1.39             | 0.00             | 3.54              | 1.99              | 13.03            | 13.78            |
| docosanoic acid (c22)          |  | 6.98             | 0.40             | 11.63             | 7.85              | 6.68             | 24.79            |
| tricosanoic acid (c23)         |  | 11.52            | 3.79             | 8.24              | 5.73              | 20.84            | 33.82            |
| tetracosanoic acid (c24)       |  | 18.42            | 4.73             | 19.92             | 16.51             | 11.42            | 15.33            |
| n-Alkanedioic acid             |  |                  |                  |                   |                   |                  |                  |
| succinic acid (d-c4)           |  | 29.39            | 37.84            | 21.31             | 37.37             | 33.64            | 52.88            |
| glutaric acid (d-c5)           |  | 33.63            | 22.79            | 6.58              | 15.38             | 59.66            | 36.59            |

|  |  |        |        |       |       |        |        |
|--|--|--------|--------|-------|-------|--------|--------|
| hexanedioic (adipic) acid (d-c6)       |  | 3.52   | 0.38   | 5.15  | 8.13  | 4.17   | 5.47   |
| heptanedioic (pimelic) acid (d-c7)     |  | 1.21   | 0.00   | 3.74  | 4.39  | 2.84   | 3.45   |
| suberic acid (d-c8)                    |  | 0.64   | 0.99   | 0.86  | 1.16  | 2.70   | 0.43   |
| azelaic acid (d-c9)                    |  | 10.52  | 13.75  | 7.95  | 6.45  | 35.26  | 22.65  |
| sebacic acid (d-c10)                   |  | 0.03   | 1.13   | 2.50  | 1.67  | 21.57  | 11.64  |
| undecanedioic acid (d-c11)             |  | 3.39   | 0.35   | 2.75  | 2.00  | 25.93  | 13.14  |
| dodecanedioic acid (d-c12)             |  | 1.23   | 0.43   | 1.41  | 1.06  | 17.65  | 9.31   |
| 1,11-undecanedicarboxylic acid (d-c13) |  | 3.98   | 0.46   | 1.21  | 1.06  | 12.16  | 5.89   |
| 1,12-dodecanedicarboxylic acid (d-c14) |  | 0.47   | 0.11   | 0.76  | 0.27  | 3.76   | 2.17   |
| Methyl-alkanedioic acid                |  |        |        |       |       |        |        |
| methyl-malonic acid(d-c4)              |  | 2.79   | 3.38   | 0.81  | 2.08  | 14.19  | 9.95   |
| methyl-succinic acid(d-c5)             |  | 16.01  | 15.89  | 4.17  | 7.02  | 57.15  | 24.12  |
| 2-methyl glutaric acid (d-c6)          |  | 1.99   | 1.83   | 0.84  | 1.59  | 3.32   | 1.04   |
| 3-methylglutaric acid (d-c6)           |  | 1.61   | 0.51   | 0.62  | 0.82  | 3.98   | 1.99   |
| 3-methyladipic acid (d-c7)             |  | 0.72   | 1.31   | 0.85  | 0.68  | 0.43   | 0.60   |
| Aromatic monocarboxylic acid           |  |        |        |       |       |        |        |
| benzoic acid                           |  | 126.06 | 198.11 | 11.74 | 33.54 | 151.96 | 238.96 |
| salcylic acid                          |  | 10.56  | 10.38  | 0.31  | 0.52  | 0.95   | 10.00  |
| vanillic acid                          |  | 3.14   | 2.90   | 0.61  | 0.91  | 1.97   | 3.78   |
| homovanillic acid                      |  | 0.05   | 0.15   | 0.13  | 0.14  | 0.17   | 0.28   |
| syringic acid                          |  | 3.81   | 0.00   | 0.56  | 0.98  | 0.79   | 4.69   |
| pimaric acid                           |  | 1.55   | 0.91   | 0.38  | 0.88  | 1.16   | 0.48   |
| isopimaric acid                        |  | 0.25   | 0.08   | 0.09  | 0.00  | 0.28   | 0.20   |
| dehydroabietic acid                    |  | 4.00   | 19.83  | 10.11 | 8.63  | 3.24   | 2.87   |
| abietic acid                           |  | 0.02   | 0.09   | 0.03  | 0.04  | 0.19   | 0.19   |



| Aromatic dicarboxylic acid    |  |        |        |        |        |        |        |
|-------------------------------|--|--------|--------|--------|--------|--------|--------|
| phthalic acid                 |  | 4.84   | 0.97   | 9.35   | 9.22   | 0.00   | 3.43   |
| isophthalic acid              |  | 1.57   | 0.26   | 1.54   | 1.95   | 0.00   | 1.25   |
| Methoxylated phenol           |  |        |        |        |        |        |        |
| 4-methyl-guaiacol             |  | 0.40   | 0.24   | 0.01   | 0.00   | 0.17   | 0.05   |
| 4-ethyl-guaiacol              |  | 0.02   | 0.00   | 0.01   | 0.00   | 0.05   | 0.03   |
| syringol                      |  | 0.06   | 0.34   | 0.02   | 0.00   | 0.07   | 0.06   |
| 4-allyl-guaiacol (eugenol)    |  | 0.25   | 0.24   | 0.03   | 0.01   | 0.00   | 0.00   |
| 4-methyl-syringol             |  | 0.02   | 0.00   | 0.02   | 0.00   | 0.04   | 0.04   |
| 4-formyl-guaiacol (vanillin)  |  | 0.29   | 0.05   | 0.36   | 0.03   | 0.87   | 1.22   |
| isoeugenol                    |  | 0.00   | 0.00   | 0.03   | 0.02   | 0.00   | 0.06   |
| acetovanillone                |  | 0.00   | 0.00   | 0.04   | 0.02   | 1.05   | 0.00   |
| Anhydrosugar                  |  |        |        |        |        |        |        |
| levoglucosan                  |  | 353.20 | 175.24 | 284.54 | 383.77 | 523.17 | 935.08 |
| Other polar organic compounds |  |        |        |        |        |        |        |
| maleic acid                   |  | 17.22  | 17.86  | 3.04   | 3.69   | 1.94   | 11.51  |
| cis-pinonic acid              |  | 0.10   | 0.44   | 0.73   | 1.80   | 0.07   | 0.53   |
| syringaldehyde                |  | 0.11   | 0.00   | 0.06   | 0.02   | 0.00   | 0.00   |
| myristoleic acid              |  | 1.22   | 0.97   | 0.91   | 0.75   | 1.51   | 1.21   |
| palmitoleic acid              |  | 1.40   | 0.00   | 1.46   | 0.49   | 3.34   | 0.00   |
| isostearic acid               |  | 0.61   | 0.57   | 0.38   | 0.00   | 0.95   | 0.48   |
| traumatic acid                |  | 0.86   | 1.69   | 2.47   | 1.03   | 0.54   | 1.91   |
| oleic acid                    |  | 0.00   | 14.50  | 2.36   | 0.78   | 0.00   | 2.13   |
| elaidic acid                  |  | 0.00   | 0.00   | 0.84   | 0.51   | 1.83   | 0.29   |
| 8,15-pimaradien-18-oic acid   |  | 0.22   | 0.58   | 0.03   | 0.00   | 0.18   | 0.16   |

|                                  |  |                  |                        |                          |                        |                          |                  |
|----------------------------------|--|------------------|------------------------|--------------------------|------------------------|--------------------------|------------------|
| cholesterol                      |  | 0.89             | 2.15                   | 1.58                     | 1.60                   | 1.33                     | 1.26             |
| sitosterol                       |  | 0.00             | 0.00                   | 0.62                     | 0.28                   | 0.00                     | 0.00             |
| 7-oxodehydroabiatic acid         |  | 0.55             | 0.00                   | 0.60                     | 0.95                   | 0.31                     | 0.95             |
| <b>Sampling Date</b>             |  | <b>07-08 Oct</b> | <b>10 Oct<br/>-Day</b> | <b>10 Oct<br/>-Night</b> | <b>12 Oct<br/>-Day</b> | <b>13 Oct<br/>-Night</b> | <b>14-15 Oct</b> |
| Alkanoic acids                   |  |                  |                        |                          |                        |                          |                  |
| decanoic acid (c10)              |  | 6.40             | 4.87                   | 3.96                     | 10.45                  | 23.33                    | 3.86             |
| undecanoic acid (c11)            |  | 3.30             | 2.49                   | 0.95                     | 1.56                   | 8.01                     | 2.85             |
| dodecanoic (lauric) acid (c12)   |  | 0.87             | 0.00                   | 12.30                    | 6.12                   | 20.94                    | 0.00             |
| tridecanoic acid (c13)           |  | 0.00             | 6.98                   | 1.28                     | 0.00                   | 5.38                     | 11.29            |
| myristic acid (c14)              |  | 0.00             | 71.11                  | 65.48                    | 63.21                  | 53.94                    | 3.00             |
| pentadecanoic acid (c15)         |  | 0.02             | 28.02                  | 5.36                     | 29.53                  | 19.41                    | 2.41             |
| palmitic acid (c16)              |  | 0.00             | 34.35                  | 0.00                     | 10.32                  | 6.72                     | 0.00             |
| heptadecanoic acid (c17)         |  | 0.00             | 9.16                   | 0.00                     | 0.00                   | 0.00                     | 0.00             |
| stearic acid (c18)               |  | 0.00             | 0.00                   | 0.00                     | 0.00                   | 0.00                     | 0.00             |
| nonadecanoic acid (c19)          |  | 0.00             | 11.53                  | 0.00                     | 0.00                   | 0.00                     | 0.00             |
| eicosanoic acid (c20)            |  | 15.21            | 69.89                  | 77.82                    | 16.68                  | 11.70                    | 1.52             |
| heneicosanoic acid (c21)         |  | 21.56            | 52.23                  | 60.52                    | 0.00                   | 0.00                     | 18.84            |
| docosanoic acid (c22)            |  | 9.14             | 30.37                  | 0.52                     | 42.61                  | 29.82                    | 16.59            |
| tricosanoic acid (c23)           |  | 16.94            | 53.77                  | 87.92                    | 30.45                  | 32.60                    | 9.63             |
| tetracosanoic acid (c24)         |  | 11.03            | 2.68                   | 18.93                    | 50.86                  | 37.11                    | 15.23            |
| n-Alkanedioic acid               |  |                  |                        |                          |                        |                          |                  |
| succinic acid (d-c4)             |  | 49.54            | 176.59                 | 91.41                    | 115.40                 | 94.24                    | 101.16           |
| glutaric acid (d-c5)             |  | 11.68            | 107.02                 | 75.36                    | 45.08                  | 33.88                    | 3.19             |
| hexanedioic (adipic) acid (d-c6) |  | 0.57             | 11.15                  | 7.42                     | 6.26                   | 8.92                     | 1.83             |

|  |  |         |         |         |        |        |         |
|--|--|---------|---------|---------|--------|--------|---------|
| heptanedioic (pimelic) acid (d-c7)     |  | 5.27    | 9.57    | 3.80    | 0.00   | 1.24   | 9.23    |
| suberic acid (d-c8)                    |  | 0.00    | 0.04    | 7.17    | 2.01   | 1.01   | 0.00    |
| azelaic acid (d-c9)                    |  | 0.00    | 46.55   | 37.48   | 17.84  | 13.30  | 0.00    |
| sebacic acid (d-c10)                   |  | 0.00    | 36.17   | 30.27   | 4.97   | 0.13   | 0.00    |
| undecanedioic acid (d-c11)             |  | 23.39   | 28.17   | 27.39   | 5.77   | 4.50   | 15.22   |
| dodecanedioic acid (d-c12)             |  | 14.55   | 21.48   | 0.56    | 0.51   | 0.12   | 48.77   |
| 1,11-undecanedicarboxylic acid (d-c13) |  | 1.38    | 19.42   | 1.32    | 4.91   | 0.84   | 11.39   |
| 1,12-dodecanedicarboxylic acid (d-c14) |  | 13.91   | 11.43   | 1.59    | 1.55   | 0.21   | 3.51    |
| Methyl-alkanedioic acid                |  |         |         |         |        |        |         |
| methyl-malonic acid(d-c4)              |  | 29.40   | 13.44   | 0.18    | 0.75   | 1.88   | 40.32   |
| methyl-succinic acid(d-c5)             |  | 19.91   | 73.51   | 39.15   | 20.38  | 13.00  | 20.42   |
| 2-methyl glutaric acid (d-c6)          |  | 5.95    | 1.57    | 2.54    | 0.65   | 0.01   | 55.13   |
| 3-methylglutaric acid (d-c6)           |  | 0.24    | 8.32    | 1.90    | 3.71   | 1.70   | 16.21   |
| 3-methyladipic acid (d-c7)             |  | 22.74   | 1.98    | 45.45   | 0.00   | 4.02   | 8.13    |
| Anhydrosugar                           |  |         |         |         |        |        |         |
| Levoglucosan                           |  | 7671.39 | 1831.59 | 1972.25 | 664.67 | 518.23 | 5009.13 |
| Aromatic monocarboxylic acid           |  |         |         |         |        |        |         |
| benzoic acid                           |  | 141.38  | 385.88  | 390.60  | 479.14 | 354.54 | 253.40  |
| salicylic acid                         |  | 0.00    | 31.10   | 0.00    | 30.41  | 19.99  | 0.00    |
| vanillic acid                          |  | 0.00    | 3.73    | 0.40    | 0.18   | 2.59   | 2.17    |
| homovanillic acid                      |  | 0.81    | 0.45    | 0.00    | 0.50   | 0.00   | 1.27    |
| syringic acid                          |  | 0.26    | 1.15    | 2.07    | 0.00   | 8.59   | 0.64    |
| pimaric acid                           |  | 40.83   | 2.00    | 1.15    | 4.85   | 0.42   | 8.97    |
| isopimaric acid                        |  | 7.93    | 0.82    | 0.71    | 0.32   | 0.40   | 0.29    |
| dehydroabietic acid                    |  | 1.18    | 6.23    | 86.40   | 7.95   | 7.33   | 0.00    |

|                               |  |       |      |       |      |      |        |
|-------------------------------|--|-------|------|-------|------|------|--------|
| abietic acid                  |  | 3.48  | 0.16 | 1.51  | 0.35 | 0.11 | 1.05   |
| Aromatic dicarboxylic acid    |  |       |      |       |      |      |        |
| phthalic acid                 |  | 0.00  | 5.38 | 4.32  | 7.14 | 6.02 | 0.00   |
| isophthalic acid              |  | 0.23  | 9.91 | 6.58  | 0.00 | 0.00 | 1.10   |
| Methoxylated phenol           |  |       |      |       |      |      |        |
| 4-methyl-guaiacol             |  | 0.43  | 0.13 | 0.07  | 0.15 | 0.09 | 0.26   |
| 4-ethyl-guaiacol              |  | 1.22  | 0.00 | 0.10  | 0.00 | 0.00 | 0.12   |
| syringol                      |  | 0.11  | 0.05 | 1.01  | 0.05 | 0.13 | 0.49   |
| 4-allyl-guaiacol (eugenol)    |  | 0.20  | 0.15 | 2.77  | 1.47 | 1.46 | 0.04   |
| 4-methyl-syringol             |  | 6.74  | 0.00 | 2.28  | 0.00 | 0.02 | 0.15   |
| 4-formyl-guaiacol (vanillin)  |  | 19.16 | 0.00 | 3.86  | 0.00 | 0.00 | 0.20   |
| isoeugenol                    |  | 1.68  | 0.09 | 0.01  | 0.00 | 0.14 | 1.00   |
| acetovanillone                |  | 0.39  | 3.32 | 13.87 | 1.26 | 3.63 | 0.00   |
| Other polar organic compounds |  |       |      |       |      |      |        |
| maleic acid                   |  | 64.13 | 0.46 | 25.65 | 0.00 | 9.03 | 0.00   |
| cis-pinonic acid              |  | 20.77 | 0.41 | 1.95  | 0.19 | 1.80 | 5.55   |
| syringaldehyde                |  | 0.96  | 0.00 | 0.00  | 0.00 | 0.00 | 0.18   |
| myristoleic acid              |  | 3.09  | 0.58 | 4.91  | 2.50 | 0.45 | 2.97   |
| palmitoleic acid              |  | 0.00  | 0.00 | 3.19  | 0.00 | 8.80 | 2.23   |
| isostearic acid               |  | 0.62  | 1.05 | 2.40  | 0.44 | 0.68 | 1.43   |
| traumatic acid                |  | 1.07  | 0.00 | 0.00  | 0.00 | 1.62 | 0.00   |
| oleic acid                    |  | 0.00  | 0.00 | 0.00  | 0.00 | 0.00 | 102.98 |
| elaidic acid                  |  | 3.22  | 0.73 | 2.63  | 0.00 | 0.17 | 1.44   |
| 8,15-pimaradien-18-oic acid   |  | 1.11  | 0.59 | 0.42  | 0.10 | 0.08 | 1.42   |
| cholesterol                   |  | 2.33  | 4.24 | 3.93  | 1.13 | 1.02 | 7.88   |

|                                    |  |                  |                  |                  |                  |                  |                  |
|------------------------------------|--|------------------|------------------|------------------|------------------|------------------|------------------|
| sitosterol                         |  | 0.00             | 0.00             | 5.43             | 0.00             | 0.51             | 1.87             |
| 7-oxodehydroabiatic acid           |  | 4.39             | 0.42             | 11.26            | 0.39             | 0.00             | 3.02             |
| <b>Sampling Date</b>               |  | <b>16-17 Oct</b> | <b>18-19 Oct</b> | <b>21-22 Oct</b> | <b>23-24 Oct</b> | <b>26-27 Oct</b> | <b>02-03 Nov</b> |
| Alkanoic acids                     |  |                  |                  |                  |                  |                  |                  |
| decanoic acid (c10)                |  | 0.04             | 4.75             | 1.95             | 3.13             | 6.06             | 0.76             |
| undecanoic acid (c11)              |  | 2.23             | 0.58             | 0.25             | 0.58             | 1.71             | 0.46             |
| dodecanoic (lauric) acid (c12)     |  | 0.55             | 0.00             | 0.00             | 0.00             | 4.32             | 1.38             |
| tridecanoic acid (c13)             |  | 6.22             | 3.51             | 1.28             | 0.00             | 0.36             | 0.05             |
| myristic acid (c14)                |  | 0.00             | 0.00             | 18.86            | 24.64            | 42.15            | 3.68             |
| pentadecanoic acid (c15)           |  | 27.21            | 20.67            | 5.82             | 30.30            | 31.00            | 2.19             |
| palmitic acid (c16)                |  | 0.00             | 0.00             | 0.00             | 0.00             | 0.00             | 22.67            |
| heptadecanoic acid (c17)           |  | 0.00             | 9.12             | 7.20             | 0.00             | 7.63             | 2.29             |
| stearic acid (c18)                 |  | 0.00             | 0.00             | 0.00             | 19.64            | 5.12             | 80.97            |
| nonadecanoic acid (c19)            |  | 6.66             | 0.00             | 5.21             | 131.11           | 136.44           | 13.95            |
| eicosanoic acid (c20)              |  | 1.82             | 37.35            | 20.18            | 91.37            | 27.43            | 27.55            |
| heneicosanoic acid (c21)           |  | 15.76            | 68.06            | 23.60            | 100.59           | 13.57            | 9.04             |
| docosanoic acid (c22)              |  | 6.67             | 11.38            | 15.35            | 43.40            | 39.29            | 30.74            |
| tricosanoic acid (c23)             |  | 26.03            | 53.21            | 20.23            | 45.02            | 30.40            | 19.72            |
| tetracosanoic acid (c24)           |  | 3.10             | 17.96            | 19.54            | 69.33            | 58.90            | 53.36            |
| n-Alkanedioic acid                 |  |                  |                  |                  |                  |                  |                  |
| succinic acid (d-c4)               |  | 75.69            | 56.84            | 50.88            | 53.35            | 42.56            | 7.14             |
| glutaric acid (d-c5)               |  | 22.61            | 46.49            | 16.81            | 63.35            | 20.93            | 1.66             |
| hexanedioic (adipic) acid (d-c6)   |  | 1.20             | 0.10             | 0.77             | 2.71             | 3.53             | 0.97             |
| heptanedioic (pimelic) acid (d-c7) |  | 4.32             | 8.74             | 2.80             | 3.02             | 1.18             | 0.61             |
| suberic acid (d-c8)                |  | 4.99             | 5.55             | 5.10             | 0.92             | 0.85             | 1.11             |

|  |  |         |         |         |        |        |       |
|--|--|---------|---------|---------|--------|--------|-------|
| azelaic acid (d-c9)                    |  | 0.00    | 0.00    | 0.00    | 18.84  | 17.68  | 12.33 |
| sebacic acid (d-c10)                   |  | 68.32   | 0.00    | 0.14    | 10.27  | 0.00   | 1.51  |
| undecanedioic acid (d-c11)             |  | 59.34   | 53.19   | 58.11   | 9.70   | 2.72   | 1.14  |
| dodecanedioic acid (d-c12)             |  | 41.89   | 36.70   | 39.99   | 4.57   | 0.10   | 0.52  |
| 1,11-undecanedicarboxylic acid (d-c13) |  | 26.63   | 3.20    | 12.35   | 6.72   | 2.83   | 0.16  |
| 1,12-dodecanedicarboxylic acid (d-c14) |  | 1.20    | 0.68    | 5.86    | 4.50   | 0.20   | 0.33  |
| Methyl-alkanedioic acid                |  |         |         |         |        |        |       |
| methyl-malonic acid(d-c4)              |  | 44.92   | 13.07   | 65.84   | 13.94  | 0.02   | 0.00  |
| methyl-succinic acid(d-c5)             |  | 7.26    | 11.69   | 7.93    | 26.15  | 9.70   | 0.62  |
| 2-methyl glutaric acid (d-c6)          |  | 7.62    | 11.21   | 14.83   | 3.91   | 1.70   | 0.29  |
| 3-methylglutaric acid (d-c6)           |  | 6.79    | 3.65    | 12.33   | 7.77   | 2.45   | 0.03  |
| 3-methyladipic acid (d-c7)             |  | 7.96    | 11.12   | 7.53    | 3.00   | 0.43   | 0.00  |
| Anhydrosugar                           |  |         |         |         |        |        |       |
| Levogluconan                           |  | 3837.96 | 2594.22 | 4334.42 | 720.95 | 346.24 | 87.80 |
| Aromatic monocarboxylic acid           |  |         |         |         |        |        |       |
| benzoic acid                           |  | 252.51  | 366.07  | 212.49  | 66.51  | 47.61  | 1.25  |
| salcylic acid                          |  | 1.74    | 2.14    | 0.00    | 0.00   | 9.68   | 0.26  |
| vanillic acid                          |  | 0.25    | 0.42    | 0.25    | 1.58   | 0.02   | 0.63  |
| homovanillic acid                      |  | 0.34    | 1.66    | 1.05    | 0.12   | 0.45   | 0.03  |
| syringic acid                          |  | 0.78    | 0.50    | 1.06    | 2.09   | 1.38   | 0.39  |
| pimaric acid                           |  | 38.42   | 101.09  | 39.44   | 6.46   | 1.01   | 2.43  |
| isopimaric acid                        |  | 4.80    | 6.16    | 10.08   | 1.25   | 0.01   | 0.55  |
| dehydroabietic acid                    |  | 11.49   | 14.30   | 5.82    | 99.11  | 98.40  | 46.86 |
| abietic acid                           |  | 3.28    | 2.74    | 3.83    | 0.46   | 1.65   | 0.12  |
| Aromatic dicarboxylic acid             |  |         |         |         |        |        |       |

|                               |       |      |       |       |       |       |       |
|-------------------------------|-------|------|-------|-------|-------|-------|-------|
| phthalic acid                 | 0.25  | 0.00 | 1.72  | 1.72  | 5.10  | 5.12  | 0.25  |
| isophthalic acid              | 0.00  | 0.00 | 0.00  | 0.00  | 1.13  | 1.65  | 0.00  |
| Methoxylated phenol           |       |      |       |       |       |       |       |
| 4-methyl-guaiacol             | 0.31  | 0.31 | 0.48  | 0.03  | 0.01  | 0.01  | 0.31  |
| 4-ethyl-guaiacol              | 0.04  | 0.34 | 0.20  | 0.01  | 0.06  | 0.00  | 0.04  |
| syringol                      | 0.07  | 0.41 | 0.14  | 0.02  | 0.19  | 0.00  | 0.07  |
| 4-allyl-guaiacol (eugenol)    | 0.03  | 1.20 | 0.04  | 0.05  | 0.02  | 0.00  | 0.03  |
| 4-methyl-syringol             | 0.70  | 0.93 | 1.13  | 0.00  | 0.02  | 0.01  | 0.70  |
| 4-formyl-guaiacol (vanillin)  | 0.05  | 0.04 | 0.00  | 0.00  | 0.05  | 0.02  | 0.05  |
| isoeugenol                    | 0.03  | 0.06 | 0.14  | 0.02  | 0.01  | 0.01  | 0.03  |
| acetovanillone                | 0.00  | 0.90 | 0.00  | 0.76  | 2.70  | 1.52  | 0.00  |
| Other polar organic compounds |       |      |       |       |       |       |       |
| maleic acid                   | 0.44  | 8.98 | 1.89  | 15.33 | 13.52 | 1.58  | 0.44  |
| cis-pinonic acid              | 1.31  | 1.14 | 4.30  | 0.21  | 0.00  | 0.00  | 1.31  |
| syringaldehyde                | 0.22  | 0.39 | 0.68  | 0.23  | 0.00  | 0.01  | 0.22  |
| myristoleic acid              | 13.15 | 1.60 | 18.47 | 0.24  | 0.71  | 0.51  | 13.15 |
| palmitoleic acid              | 3.01  | 2.57 | 6.40  | 29.49 | 38.41 | 0.31  | 3.01  |
| isostearic acid               | 2.17  | 1.17 | 4.02  | 0.86  | 0.70  | 1.34  | 2.17  |
| traumatic acid                | 4.14  | 1.79 | 6.46  | 4.63  | 0.16  | 1.60  | 4.14  |
| oleic acid                    | 0.00  | 0.00 | 4.81  | 0.08  | 3.54  | 4.25  | 0.00  |
| elaidic acid                  | 21.84 | 1.49 | 4.04  | 0.46  | 0.00  | 0.58  | 21.84 |
| 8,15-pimaradien-18-oic acid   | 7.13  | 5.62 | 1.60  | 0.59  | 0.15  | 0.19  | 7.13  |
| cholesterol                   | 0.00  | 1.88 | 0.04  | 6.67  | 13.96 | 1.41  | 0.00  |
| sitosterol                    | 0.97  | 0.00 | 0.81  | 0.00  | 0.00  | 1.19  | 0.97  |
| 7-oxodehydroabietic acid      | 4.83  | 7.75 | 2.93  | 13.90 | 7.36  | 11.27 | 4.83  |

| Sampling Date                      |  | 05-06 Nov | 09-10 Nov |  |  |  |  |
|------------------------------------|--|-----------|-----------|--|--|--|--|
| Alkanoic acids                     |  |           |           |  |  |  |  |
| decanoic acid (c10)                |  | 1.34      | 1.16      |  |  |  |  |
| undecanoic acid (c11)              |  | 0.28      | 0.15      |  |  |  |  |
| dodecanoic (lauric) acid (c12)     |  | 1.38      | 1.32      |  |  |  |  |
| tridecanoic acid (c13)             |  | 0.18      | 0.16      |  |  |  |  |
| myristic acid (c14)                |  | 9.80      | 4.04      |  |  |  |  |
| pentadecanoic acid (c15)           |  | 6.99      | 1.90      |  |  |  |  |
| palmitic acid (c16)                |  | 48.24     | 23.20     |  |  |  |  |
| heptadecanoic acid (c17)           |  | 3.14      | 2.69      |  |  |  |  |
| stearic acid (c18)                 |  | 45.32     | 72.47     |  |  |  |  |
| nonadecanoic acid (c19)            |  | 26.78     | 29.26     |  |  |  |  |
| eicosanoic acid (c20)              |  | 46.52     | 27.50     |  |  |  |  |
| heneicosanoic acid (c21)           |  | 38.28     | 9.45      |  |  |  |  |
| docosanoic acid (c22)              |  | 20.69     | 34.73     |  |  |  |  |
| tricosanoic acid (c23)             |  | 0.00      | 23.27     |  |  |  |  |
| tetracosanoic acid (c24)           |  | 33.25     | 58.35     |  |  |  |  |
| n-Alkanedioic acid                 |  |           |           |  |  |  |  |
| succinic acid (d-c4)               |  | 45.04     | 6.01      |  |  |  |  |
| glutaric acid (d-c5)               |  | 20.28     | 2.14      |  |  |  |  |
| hexanedioic (adipic) acid (d-c6)   |  | 9.15      | 1.39      |  |  |  |  |
| heptanedioic (pimelic) acid (d-c7) |  | 7.33      | 0.87      |  |  |  |  |
| suberic acid (d-c8)                |  | 3.07      | 0.74      |  |  |  |  |
| azelaic acid (d-c9)                |  | 30.14     | 17.52     |  |  |  |  |
| sebacic acid (d-c10)               |  | 8.88      | 0.12      |  |  |  |  |



|  |  |        |        |  |  |  |  |
|--|--|--------|--------|--|--|--|--|
| undecanedioic acid (d-c11)             |  | 7.49   | 1.35   |  |  |  |  |
| dodecanedioic acid (d-c12)             |  | 3.76   | 0.67   |  |  |  |  |
| 1,11-undecanedicarboxylic acid (d-c13) |  | 3.33   | 0.84   |  |  |  |  |
| 1,12-dodecanedicarboxylic acid (d-c14) |  | 0.29   | 0.18   |  |  |  |  |
| Methyl-alkanedioic acid                |  |        |        |  |  |  |  |
| methyl-malonic acid(d-c4)              |  | 1.53   | 0.00   |  |  |  |  |
| methyl-succinic acid(d-c5)             |  | 5.99   | 0.66   |  |  |  |  |
| 2-methyl glutaric acid (d-c6)          |  | 1.26   | 0.16   |  |  |  |  |
| 3-methylglutaric acid (d-c6)           |  | 1.27   | 0.15   |  |  |  |  |
| 3-methyladipic acid (d-c7)             |  | 1.26   | 0.00   |  |  |  |  |
| Anhydrosugar                           |  |        |        |  |  |  |  |
| Levogluconan                           |  | 277.62 | 118.37 |  |  |  |  |
| Aromatic monocarboxylic acid           |  |        |        |  |  |  |  |
| benzoic acid                           |  | 2.47   | 0.86   |  |  |  |  |
| salicylic acid                         |  | 1.21   | 0.34   |  |  |  |  |
| vanillic acid                          |  | 0.90   | 0.74   |  |  |  |  |
| homovanillic acid                      |  | 0.08   | 0.15   |  |  |  |  |
| syringic acid                          |  | 1.96   | 2.01   |  |  |  |  |
| pimaric acid                           |  | 3.48   | 1.81   |  |  |  |  |
| isopimaric acid                        |  | 0.00   | 4.76   |  |  |  |  |
| dehydroabietic acid                    |  | 39.17  | 106.80 |  |  |  |  |
| abietic acid                           |  | 0.00   | 1.54   |  |  |  |  |
| Aromatic dicarboxylic acid             |  |        |        |  |  |  |  |
| phthalic acid                          |  | 12.82  | 5.99   |  |  |  |  |
| isophthalic acid                       |  | 2.43   | 1.51   |  |  |  |  |

| Methoxylated phenol           |  |      |       |  |  |  |  |
|-------------------------------|--|------|-------|--|--|--|--|
| 4-methyl-guaiacol             |  | 0.02 | 0.02  |  |  |  |  |
| 4-ethyl-guaiacol              |  | 0.01 | 0.01  |  |  |  |  |
| syringol                      |  | 0.00 | 0.01  |  |  |  |  |
| 4-allyl-guaiacol (eugenol)    |  | 0.00 | 0.00  |  |  |  |  |
| 4-methyl-syringol             |  | 0.04 | 0.01  |  |  |  |  |
| 4-formyl-guaiacol (vanillin)  |  | 0.14 | 0.07  |  |  |  |  |
| isoeugenol                    |  | 0.00 | 0.00  |  |  |  |  |
| acetovanillone                |  | 3.08 | 1.83  |  |  |  |  |
| Other polar organic compounds |  |      |       |  |  |  |  |
| maleic acid                   |  | 5.69 | 1.79  |  |  |  |  |
| cis-pinonic acid              |  | 0.01 | 0.01  |  |  |  |  |
| syringaldehyde                |  | 0.01 | 0.01  |  |  |  |  |
| myristoleic acid              |  | 0.95 | 0.26  |  |  |  |  |
| palmitoleic acid              |  | 0.00 | 0.28  |  |  |  |  |
| isostearic acid               |  | 0.91 | 1.35  |  |  |  |  |
| traumatic acid                |  | 1.67 | 1.53  |  |  |  |  |
| oleic acid                    |  | 2.05 | 1.65  |  |  |  |  |
| elaidic acid                  |  | 1.16 | 0.80  |  |  |  |  |
| 8,15-pimaradien-18-oic acid   |  | 0.34 | 0.06  |  |  |  |  |
| cholesterol                   |  | 2.01 | 1.64  |  |  |  |  |
| sitosterol                    |  | 1.13 | 2.29  |  |  |  |  |
| 7-oxodehydroabietic acid      |  | 9.78 | 10.94 |  |  |  |  |