

# Pennine Pneumatic Services Ltd

5-7 Mount Pellon Works. Pellon New Road. Halifax. HX1 4UB. Tel: 0142 232 1772. Fax:0142 234 2430

|                      |   |                  |                |
|----------------------|---|------------------|----------------|
| <b>Customer :</b>    | <b>(Meat processing plant in Doncaster)</b> |                  |                |
| <b>Contact:</b>      | xxxxxxxxxxxxxx                              | <b>Surveyor:</b> | xxxxxxxxxxxxxx |
|                      |   | <b>Date:</b>     | 08/06/10       |
| <b>Compressor/s:</b> | xxxxxxxxxxxxxx                              |                  |                |
| <b>Notes:</b>        |   |                  |                |

| Location I/D  | Leak description                                  | Leak quantity and dB(a) rating |    |    |    |    |    |    | System pressure | Calculated loss |      |       |
|---------------|---|--------------------------------|----|----|----|----|----|----|-----------------|-----------------|------|-------|
|               |   | 1                              | 10 | 20 | 30 | 40 | 50 | 60 |                 | 70              | Cfm  | L/sec |
| <b>LINE 3</b> |   |                                |    |    |    |    |    |    |                 |                 |      |       |
| 1             | PCL coupling                                      |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42 | 0.48  |
| 2             | Drain on filter regulator unit                    |                                |    | 1  |    |    |    |    | 7               | 2.80            | 1.32 | 0.45  |
| <b>LINE 4</b> |   |                                |    |    |    |    |    |    |                 |                 |      |       |
| 3             | Hose tail on ball valve under MARREL panel        |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42 | 0.48  |
| 4             | 1/2" tee and fittings for PCL couplings on floor  |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42 | 0.48  |
| 5             | 3/8x10mm elbow push in fitting                    |                                |    | 1  |    |    |    |    | 7               | 2.80            | 1.32 | 0.45  |
| 6             | Hose tail to PCL coupling                         |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42 | 0.48  |
| 7             | Hose tail to Ball valve                           |                                |    | 1  |    |    |    |    | 7               | 2.80            | 1.32 | 0.45  |
| <b>LINE 5</b> |   |                                |    |    |    |    |    |    |                 |                 |      |       |
| 8             | Hose to hose connection approx 8' up pillar       |                                |    |    |    |    |    | 1  | 7               | 4.90            | 2.31 | 0.78  |
| 9             | 1/8 gauge port plug on filter regulator unit      |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66 | 0.22  |
| <b>LINE 6</b> |   |                                |    |    |    |    |    |    |                 |                 |      |       |
| 10            | Push in fitting on gate valve under conveyor      |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66 | 0.22  |
| 11            | Various fittings on feed to labeller              |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66 | 0.22  |
| 12            | Hose fittings to filter regulator unit            |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66 | 0.22  |
| 13            | Misc fittings                                     |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66 | 0.22  |
| 15            | Hose tail   |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32 | 0.45  |
| 16            | Fittings  |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32 | 0.45  |
| <b>LINE 7</b> |   |                                |    |    |    |    |    |    |                 |                 |      |       |
| 14            | Hose connector on 3/4 ball valve                  |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32 | 0.45  |
| 17            | Filter regulator unit body seals                  |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42 | 0.48  |
| 18            | Filter regulator unit body on mince chopper       |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42 | 0.48  |
| <b>LINE 8</b> |   |                                |    |    |    |    |    |    |                 |                 |      |       |
| 19            | Push in fittings under scales/reject unit channel |                                |    |    |    |    |    | 1  | 7               | 4.90            | 2.31 | 0.78  |
| 20            | Hose tail on ball valve                           |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32 | 0.45  |

**Total loss due to leaks      54.40      25.67      8.70**

|   |                |              |                |                 |
|---|----------------|--------------|----------------|-----------------|
| <b>Cost of electricity per unit (kW/h) day rate</b>   | <b>£0.1000</b> | <b>Total</b> | <b>£0.8704</b> | <b>Per Hour</b> |
| <b>Cost of electricity per unit (kW/h) night rate</b> | <b>£0.0800</b> | <b>Total</b> | <b>£0.6963</b> | <b>Per Hour</b> |

**CFM      L/sec      kW**

|                      |  |           |                     |                |                 |                  |                  |                   |                  |
|----------------------|--|-----------|---------------------|----------------|-----------------|------------------|------------------|-------------------|------------------|
| <b>07:00 - 24:00</b> | <b>Start/Finish time on day rate / Total hours</b>   | <b>17</b> | <b>Loss in kW/h</b> |                |                 | <b>Loss in £</b> |                  | <b>Total loss</b> |                  |
| <b>24:00 - 07:00</b> | <b>Start/Finish time on night rate / Total hours</b> | <b>7</b>  | <b>Day</b>          | <b>Night</b>   | <b>Total</b>    | <b>Day</b>       | <b>Night</b>     | <b>£</b>          |                  |
|                      | <b>Total hours worked in 24 hr period</b>            | <b>24</b> | <b>147.968</b>      | <b>60.928</b>  | <b>208.896</b>  | <b>Day</b>       | <b>£14.80</b>    | <b>£4.87</b>      | <b>£19.67</b>    |
|                      | <b>Days worked in a week</b>                         | <b>7</b>  | <b>1035.776</b>     | <b>426.496</b> | <b>1462.272</b> | <b>Week</b>      | <b>£103.58</b>   | <b>£34.12</b>     | <b>£137.70</b>   |
|                      | <b>Nights worked in a week</b>                       | <b>7</b>  |                     |                |                 | <b>Year</b>      | <b>£5,178.88</b> | <b>£1,705.98</b>  | <b>£6,884.86</b> |
|                      | <b>Weeks worked in a year</b>                        | <b>50</b> | <b>51788.8</b>      | <b>21324.8</b> | <b>73113.6</b>  |                  |                  |                   |                  |

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|               |                                      |           |                |
|---------------|--------------------------------------|-----------|----------------|
| Customer :    | (Meat processing plant in Doncaster) |           |                |
| Contact:      | xxxxxxxxxxxxxx                       | Surveyor: | xxxxxxxxxxxxxx |
|               |                                      | Date:     | 08/06/10       |
| Compressor/s: | xxxxxxxxxxxxxxxxxx                   |           |                |
| Notes:        | 0                                    |           |                |
|               | 0                                    |           |                |

| Location I/D                     | Leak description                                  | Leak quantity and dB(a) rating |    |    |    |    |    |    | System pressure | Calculated loss |             |             |
|----------------------------------|---|--------------------------------|----|----|----|----|----|----|-----------------|-----------------|-------------|-------------|
|                                  |   | 1                              | 10 | 20 | 30 | 40 | 50 | 60 |                 | 70              | Cfm         | L/sec       |
| <b>LINE 9</b>                    |   |                                |    |    |    |    |    |    |                 |                 |             |             |
| 21                               | Hose tail to 1/2 tee                              |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66        | 0.22        |
| 22                               | Push in fitting on labeller                       |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32        | 0.45        |
| <b>LINE 10</b>                   |   |                                |    |    |    |    |    |    |                 |                 |             |             |
| 23                               | Push in fittings under scales/reject unit channel |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32        | 0.45        |
| 24                               | Push in fitting on tee at low level               |                                |    |    | 1  |    |    |    | 7               | 2.80            | 1.32        | 0.45        |
| <b>LINE 11</b>                   |   |                                |    |    |    |    |    |    |                 |                 |             |             |
| 25                               | Hose tail to ball valve on cabinet                |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42        | 0.48        |
| <b>UPPER LEVEL (OCM loaders)</b> |   |                                |    |    |    |    |    |    |                 |                 |             |             |
| 26                               | Line 4 loader fitting from filter regulator unit  |                                |    | 1  |    |    |    |    | 7               | 1.40            | 0.66        | 0.22        |
| <b>DEPALLETISER DEPT</b>         |   |                                |    |    |    |    |    |    |                 |                 |             |             |
| 27                               | Hose joint at high level adjacent to line 1       |                                |    |    |    | 1  |    |    | 7               | 3.00            | 1.42        | 0.48        |
| <b>BURGER BUN ROOM</b>           |   |                                |    |    |    |    |    |    |                 |                 |             |             |
| 28                               | 1/2" fittings on PCL couplings                    |                                | 1  |    |    |    |    |    | 7               | 1.10            | 0.52        | 0.18        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
|                                  |   |                                |    |    |    |    |    |    |                 | 0.00            | 0.00        | 0.00        |
| <b>Total loss due to leaks</b>   |   |                                |    |    |    |    |    |    |                 | <b>18.30</b>    | <b>8.64</b> | <b>2.93</b> |

|  |   |           |  |                |                |                  |                |  |                |       |                |          |  |  |  |     |       |    |
|--|---|-----------|--|----------------|----------------|------------------|----------------|--|----------------|-------|----------------|----------|--|--|--|-----|-------|----|
| <table border="1" style="width: 100%;"> <tr> <td>Cost of electricity per unit (kW/h) day rate</td> <td><b>£0.1000</b></td> <td>Total</td> <td><b>£0.2928</b></td> <td>Per Hour</td> </tr> <tr> <td>Cost of electricity per unit (kW/h) night rate</td> <td><b>£0.0800</b></td> <td>Total</td> <td><b>£0.2342</b></td> <td>Per Hour</td> </tr> </table> |   |           | Cost of electricity per unit (kW/h) day rate | <b>£0.1000</b> | Total          | <b>£0.2928</b>   | Per Hour       | Cost of electricity per unit (kW/h) night rate | <b>£0.0800</b> | Total | <b>£0.2342</b> | Per Hour |  |  |  | CFM | L/sec | kW |
| Cost of electricity per unit (kW/h) day rate   | <b>£0.1000</b>                                | Total     | <b>£0.2928</b>                               | Per Hour       |                |                  |                |  |                |       |                |          |  |  |  |     |       |    |
| Cost of electricity per unit (kW/h) night rate   | <b>£0.0800</b>                                | Total     | <b>£0.2342</b>                               | Per Hour       |                |                  |                |  |                |       |                |          |  |  |  |     |       |    |
| <b>07:00 - 24:00</b>   | Start/Finish time on day rate / Total hours   | <b>17</b> |  |                |                |                  |                |  |                |       |                |          |  |  |  |     |       |    |
| <b>24:00 - 07:00</b>   | Start/Finish time on night rate / Total hours | <b>7</b>  |  |                |                |                  |                |  |                |       |                |          |  |  |  |     |       |    |
|  | Total hours worked in 24 hr period            | <b>24</b> |  |                |                |                  |                |  |                |       |                |          |  |  |  |     |       |    |
|  | Days worked in a week                         | <b>7</b>  | Loss in kW/h                                 |                |                | Loss in £        |                |  |                |       |                |          |  |  |  |     |       |    |
|  |   |           | Day  | Night          | Total          | Day              | Night          |  |                |       |                |          |  |  |  |     |       |    |
|  | Days worked in a week                         | <b>7</b>  | <b>49.776</b>                                | <b>20.496</b>  | <b>70.272</b>  | <b>£4.98</b>     | <b>£1.64</b>   |  |                |       |                |          |  |  |  |     |       |    |
|  | Nights worked in a week                       | <b>7</b>  | <b>348.432</b>                               | <b>143.472</b> | <b>491.904</b> | <b>£34.84</b>    | <b>£11.48</b>  |  |                |       |                |          |  |  |  |     |       |    |
|  | Weeks worked in a year                        | <b>50</b> | <b>17421.6</b>                               | <b>7173.6</b>  | <b>24595.2</b> | <b>£1,742.16</b> | <b>£573.89</b> |  |                |       |                |          |  |  |  |     |       |    |
|  |   |           |  |                |                | <b>£2,316.05</b> |                |  |                |       |                |          |  |  |  |     |       |    |

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|                      |                                      |                  |              |
|----------------------|--------------------------------------|------------------|--------------|
| <b>Customer :</b>    | (Meat processing plant in Doncaster) |                  |              |
| <b>Contact:</b>      | XXXXXXXXXXXX                         | <b>Surveyor:</b> | XXXXXXXXXXXX |
|                      |                                      | <b>Date:</b>     | 08/06/10     |
| <b>Compressor/s:</b> | XXXXXXXXXXXXXXXXXXXX                 |                  |              |
| <b>Notes:</b>        | 0                                    |                  |              |
|                      | 0                                    |                  |              |

| Location I/D  | Leak description                                     | Leak quantity and dB(a) rating |    |    |    |    |    |    |    | System pressure | Calculated loss |                  |                  |                  |            |              |           |
|---|--|--------------------------------|----|----|----|----|----|----|----|-----------------|-----------------|------------------|------------------|------------------|------------|--------------|-----------|
|   |  | 1                              | 10 | 20 | 30 | 40 | 50 | 60 | 70 |                 | Cfm             | L/sec            | kW               |                  |            |              |           |
| SHEET 1   |  | 0                              | 0  | 5  | 7  | 6  | 2  | 0  | 0  | 7               | 54.40           | 25.67            | 8.70             |                  |            |              |           |
| SHEET 2   |  | 0                              | 1  | 2  | 3  | 2  | 0  | 0  | 0  | 7               | 18.30           | 8.64             | 2.93             |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
|   |  |                                |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
| <b>Total loss due to leaks</b>                        |  |                                |    |    |    |    |    |    |    |                 | <b>72.70</b>    | <b>34.31</b>     | <b>11.63</b>     |                  |            |              |           |
| <b>Cost of electricity per unit (kW/h) day rate</b>   |  |                                |    |    |    |    |    |    |    |                 | <b>£0.1000</b>  | <b>Total</b>     | <b>£1.1632</b>   | <b>Per Hour</b>  | <b>CFM</b> | <b>L/sec</b> | <b>kW</b> |
| <b>Cost of electricity per unit (kW/h) night rate</b> |  |                                |    |    |    |    |    |    |    |                 | <b>£0.0800</b>  | <b>Total</b>     | <b>£0.9306</b>   | <b>Per Hour</b>  |            |              |           |
| <b>07:00 - 24:00</b>                                  | <b>Start/Finish time on day rate / Total hours</b>   | <b>17</b>                      |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
| <b>24:00 - 07:00</b>                                  | <b>Start/Finish time on night rate / Total hours</b> | <b>7</b>                       |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
| <b>Total hours worked in 24 hr period</b>             |  | <b>24</b>                      |    |    |    |    |    |    |    |                 |                 |                  |                  |                  |            |              |           |
| <b>Days worked in a week</b>                          |  | <b>7</b>                       |    |    |    |    |    |    |    |                 | <b>Day</b>      | <b>£19.77</b>    | <b>£6.51</b>     | <b>£26.29</b>    |            |              |           |
| <b>Nights worked in a week</b>                        |  | <b>7</b>                       |    |    |    |    |    |    |    |                 | <b>Week</b>     | <b>£138.42</b>   | <b>£45.60</b>    | <b>£184.02</b>   |            |              |           |
| <b>Weeks worked in a year</b>                         |  | <b>50</b>                      |    |    |    |    |    |    |    |                 | <b>Year</b>     | <b>£6,921.04</b> | <b>£2,279.87</b> | <b>£9,200.91</b> |            |              |           |