



West Winch Housing Access Road

Environment Statement Chapter 12: Road Drainage and the Water Environment Appendix 12.2: Drainage Network Water Quality Assessment Sub Appendix B: Routine Runoff on Groundwater Quality Data

Author: WSP

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1 HEWRAT assessment of routine runoff on groundwater quality

1.1.1 **Table 1.1** to **Table 1.5** below provide a full summary of the input parameters and results for each individual basin assessed.

Table 1.1 – Outfall 1 results

| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|-------------------------|-------------------------------|--|-------------|-------------------------|--------------|
| Source | Traffic flow | 34,583 | Low | 10 | 10 |
| Source | Rainfall depth | 683 | Low | 10 | 10 |
| Source | Drainage area ratio | Drainage area 1.93ha Receiving watercourse area 420m ² Ratio 45 | Low | 10 | 10 |
| Pathway | Infiltration Method | Continuous | Low | 15 | 15 |
| Pathway | Unsaturated Zone | 1 - 5m | High | 20 | 60 |
| Pathway | Flow Type | Mixed fracture and intergranular | Medium | 20 | 40 |
| Pathway | Unsaturated Zone Clay content | ≤1% clay minerals | High | 5 | 15 |
| Pathway | Organic Carbon | ≤1% soil organic matter | High | 5 | 15 |



| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|------------------|--------------------------|-------|------|------------------|-------|
| Pathway | Unsaturated Zone Soil pH | pH≤5 | High | 5 | 15 |



Table 1.2 – Outfall 2 results

| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|------------------|-------------------------------|---|--------|------------------|-------|
| Source | Traffic flow | 34,583 | Low | 10 | 10 |
| Source | Rainfall depth | 683 | Low | 10 | 10 |
| Source | Drainage area ratio | Drainage area 2.93ha Receiving watercourse area 260m ² Ratio 112 | Medium | 10 | 20 |
| Pathway | Infiltration Method | Continuous | Low | 15 | 15 |
| Pathway | Unsaturated Zone | 1 - 5m | High | 20 | 60 |
| Pathway | Flow Type | Mixed fracture and intergranular | Medium | 20 | 40 |
| Pathway | Unsaturated Zone Clay content | ≤1% clay minerals | High | 5 | 15 |
| Pathway | Organic Carbon | ≤1% soil organic matter | High | 5 | 15 |



| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|------------------|--------------------------|-------|------|------------------|-------|
| Pathway | Unsaturated Zone Soil pH | pH≤5 | High | 5 | 15 |

Table 1.3 – Outfall 3 results

| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|-------------------------|-------------------------------|--|-------------|-------------------------|--------------|
| Source | Traffic flow | 34,583 | Low | 10 | 10 |
| Source | Rainfall depth | 683 | Low | 10 | 10 |
| Source | Drainage area ratio | Drainage area 0.87ha Receiving watercourse area 420m ² Ratio 20 | Low | 10 | 10 |
| Pathway | Infiltration Method | Continuous | Low | 15 | 15 |
| Pathway | Unsaturated Zone | 1 - 5m | High | 20 | 60 |
| Pathway | Flow Type | Mixed fracture and intergranular | Medium | 20 | 40 |
| Pathway | Unsaturated Zone Clay content | ≤1% clay minerals | High | 5 | 15 |
| Pathway | Organic Carbon | ≤1% soil organic matter | High | 5 | 15 |



| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|------------------|--------------------------|-------|------|------------------|-------|
| Pathway | Unsaturated Zone Soil pH | pH≤5 | High | 5 | 15 |



Table 1.4 – Outfall 7 results

| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|------------------|-------------------------------|--|--------|------------------|-------|
| Source | Traffic flow | 34,583 | Low | 10 | 10 |
| Source | Rainfall depth | 683 | Low | 10 | 10 |
| Source | Drainage area ratio | Drainage area 3.54ha Receiving watercourse area 570m ² Ratio 62 | Medium | 10 | 20 |
| Pathway | Infiltration Method | Continuous | Low | 15 | 15 |
| Pathway | Unsaturated Zone | 1 - 5m | High | 20 | 60 |
| Pathway | Flow Type | Mixed fracture and intergranular | Medium | 20 | 40 |
| Pathway | Unsaturated Zone Clay content | ≤1% clay minerals | High | 5 | 15 |
| Pathway | Organic Carbon | ≤1% soil organic matter | High | 5 | 15 |



| Source / Pathway | Parameter | Value | Risk | Weighting factor | Score |
|------------------|--------------------------|-------|------|------------------|-------|
| Pathway | Unsaturated Zone Soil pH | pH≤5 | High | 5 | 15 |



Table 1.5 – Final results

| Outfall | Total Score |
|----------------|--------------------|
| 1 | 190 |
| 2 | 200 |
| 3 | 190 |
| 7 | 200 |