

On Site Monitoring
 Monaghan WWTP

| Plant | Date | Upstream | | | Downstream | | | Effluent | |
|----------|------------|----------|------|-------|------------|------|-------|----------|------|
| | | PH | temp | D.O. | PH | temp | D.O. | PH | temp |
| Monaghan | 17/01/2013 | 6.7 | 6.7 | 9.92 | 7.28 | 6.82 | 9.89 | 7.17 | 8.9 |
| Monaghan | 26/02/2013 | 7.54 | 7.6 | 11.1 | 7.6 | 7.7 | 10.78 | 7.13 | 9.4 |
| Monaghan | 27/03/2013 | 7.7 | 6.4 | 11.8 | 7.6 | 6.5 | 12.1 | 7.4 | 8.1 |
| Monaghan | 01/04/2013 | 8.12 | 9.2 | 10.98 | 7.86 | 9.8 | 10.41 | 7.55 | 10.2 |
| Monaghan | 05/06/2013 | 7.48 | 19 | 7.47 | 7.51 | 19.3 | 8.56 | 7.56 | 18.1 |
| Monaghan | 25/06/2013 | 7.7 | 17.5 | 5.5 | 7.77 | 17.5 | 7.43 | 7.16 | 17.2 |
| Monaghan | 25/07/2013 | 7.43 | 19.5 | 4.1 | 7.28 | 20 | 6.53 | 6.98 | 21 |
| Monaghan | | | | | | | | | |
| Monaghan | | | | | | | | | |
| Monaghan | | | | | | | | | |

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Monaghan WWTP

| Plant | Date | Upstream | | | Downstream | | | Effluent | |
|----------|------------|----------|------|-------|------------|------|------|----------|------|
| | | PH | temp | D.O. | PH | temp | D.O. | PH | temp |
| Monaghan | 21/03/2012 | 8.02 | 10.6 | 12.8 | 7.76 | 10.6 | 11.2 | 7.2 | 12.1 |
| Monaghan | 19/04/2012 | 7.79 | 8.81 | 12.2 | 7.82 | 8.77 | 11.7 | 7.32 | 11.8 |
| Monaghan | 18/05/2012 | 7.96 | 12.5 | 10.04 | 7.44 | 12.5 | 9.68 | 6.74 | 13.7 |
| Monaghan | 14/06/2012 | 7.33 | 14 | 8.5 | 7.33 | 14.1 | 8.35 | 7.17 | 7.33 |
| Monaghan | 31/07/2012 | 7.95 | 16.5 | 7.23 | 7.57 | 16.4 | 7.75 | 7.29 | 17.2 |
| Monaghan | 30/08/2012 | 7.59 | 15.1 | 6.8 | 7.65 | 15.3 | 7.27 | 6.96 | 16.5 |
| Monaghan | 25/10/2012 | 7.79 | 11.2 | 7.44 | 7.7 | 11 | 7.62 | 7.41 | 12.9 |
| Monaghan | 08/11/2012 | 7.83 | 10 | 8.65 | 7.8 | 11 | 8.92 | 7.27 | 11.3 |
| Monaghan | 05/12/2012 | 8.11 | 6.7 | 8.11 | 8.01 | 6.8 | 8.21 | 7.66 | 8.2 |
| Monaghan | | | | | | | | | |
| Monaghan | | | | | | | | | |
| Monaghan | | | | | | | | | |

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INFLUENT.



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Web: www.iisihwatesting.com

email: info@elbltd.com

| Date Rec | Sample Description | Analyte | Result Final | Charted Value | Units | Sample | ELV | OOS |
|------------|---------------------|---------------------|--------------|---------------|--------|-----------|-----|-----|
| 28/03/2013 | Monaghan-Influent C | cBOD | 270.0 | 270 | mg/L | 64906/001 | | |
| 28/03/2013 | Monaghan-Influent C | COD | 490.0 | 490 | mg/L | 64906/001 | | |
| 28/03/2013 | Monaghan-Influent C | Suspended Solids | 74 | 74.2 | mg/L | 64906/001 | | |
| 28/03/2013 | Monaghan-Influent C | Total Nitrogen | 41.4 | 41.42 | mg/L | 64906/001 | | |
| 28/03/2013 | Monaghan-Influent C | Total Phosphorus-TP | 7.12 | 7.12 | mg/L P | 64906/001 | | |
| 07/06/2013 | Monaghan-Influent C | cBOD | 248.0 | 248 | mg/L | 66833/003 | | |
| 07/06/2013 | Monaghan-Influent C | COD | 657.0 | 657 | mg/L | 66833/003 | | |
| 07/06/2013 | Monaghan-Influent C | Suspended Solids | 302 | 302 | mg/L | 66833/003 | | |
| 07/06/2013 | Monaghan-Influent C | Total Nitrogen | 35.7 | 35.69 | mg/L | 66833/003 | | |
| 07/06/2013 | Monaghan-Influent C | Total Phosphorus-TP | 4.19 | 4.19 | mg/L P | 66833/003 | | |
| 27/06/2013 | Monaghan-Influent C | cBOD | 218.0 | 218 | mg/L | 67433/001 | | |
| 27/06/2013 | Monaghan-Influent C | COD | 691.0 | 691 | mg/L | 67433/001 | | |
| 27/06/2013 | Monaghan-Influent C | Suspended Solids | 280 | 280 | mg/L | 67433/001 | | |
| 27/06/2013 | Monaghan-Influent C | Total Nitrogen | 106.5 | 106.5 | mg/L | 67433/001 | | |
| 27/06/2013 | Monaghan-Influent C | Total Phosphorus-TP | 6.73 | 6.73 | mg/L P | 67433/001 | | |
| 26/07/2013 | Monaghan-Influent C | cBOD | 441.0 | 441 | mg/L | 68267/005 | | |
| 26/07/2013 | Monaghan-Influent C | COD | 1488.0 | 1488 | mg/L | 68267/005 | | |
| 26/07/2013 | Monaghan-Influent C | Suspended Solids | 920 | 920 | mg/L | 68267/005 | | |
| 26/07/2013 | Monaghan-Influent C | Total Nitrogen | 50.3 | 50.30 | mg/L | 68267/005 | | |
| 26/07/2013 | Monaghan-Influent C | Total Phosphorus-TP | 7.65 | 7.65 | mg/L P | 68267/005 | | |

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EFFLUENT

| Date | Rec | Sample Description | Analyte | Result Final | Charted Value | Units | Sample | ELV | OOS |
|------------|---------------------|--------------------|-----------------------|--------------|---------------|--------|-----------|-----|-------|
| 28/03/2013 | Monaghan-Effluent C | | Ammonia (as N) | 0.517 | 0.5174 | mg/l N | 64908/001 | | |
| 28/03/2013 | Monaghan-Effluent C | | cbOD | 14.0 | 14 | mg/L | 64908/001 | 25 | |
| 28/03/2013 | Monaghan-Effluent C | | COD | 63.0 | 63 | mg/L | 64908/001 | 125 | |
| 28/03/2013 | Monaghan-Effluent C | | Phosphate-Ortho(as P) | 0.302 | 0.3018 | mg/l P | 64908/001 | | |
| 28/03/2013 | Monaghan-Effluent C | | Suspended Solids | 44 | 44 | mg/L | 64908/001 | 35 | OOS-A |
| 28/03/2013 | Monaghan-Effluent C | | Total Nitrogen | 26.6 | 26.56 | mg/L | 64908/001 | 15 | OOS-A |
| 28/03/2013 | Monaghan-Effluent C | | Total Phosphorus-TP | 0.46 | 0.455 | mg/L | 64908/001 | 2 | |
| 02/05/2013 | Monaghan-Effluent C | | Ammonia (as N) | 0.050 | 0.0498 | mg/l N | 65921/001 | | |
| 02/05/2013 | Monaghan-Effluent C | | cbOD | 6.0 | 6 | mg/L | 65921/001 | 25 | |
| 02/05/2013 | Monaghan-Effluent C | | COD | 50.0 | 50 | mg/L | 65921/001 | 125 | |
| 02/05/2013 | Monaghan-Effluent C | | Phosphate-Ortho(as P) | <0.045 | 0.0308 | mg/l P | 65921/001 | | |
| 02/05/2013 | Monaghan-Effluent C | | Suspended Solids | <5 | 3 | mg/L | 65921/001 | 35 | |
| 02/05/2013 | Monaghan-Effluent C | | Total Nitrogen | 27.2 | 27.2 | mg/L | 65921/001 | 15 | OOS-A |
| 02/05/2013 | Monaghan-Effluent C | | Total Phosphorus-TP | 0.29 | 0.292 | mg/L | 65921/001 | 2 | |
| 07/06/2013 | Monaghan-Effluent C | | Ammonia (as N) | 0.040 | 0.0404 | mg/l N | 66838/001 | | |
| 07/06/2013 | Monaghan-Effluent C | | cbOD | 2.0 | 2 | mg/L | 66838/001 | 25 | |
| 07/06/2013 | Monaghan-Effluent C | | COD | 44.0 | 44 | mg/L | 66838/001 | 125 | |
| 07/06/2013 | Monaghan-Effluent C | | Phosphate-Ortho(as P) | <0.045 | 0.0112 | mg/l P | 66838/001 | | |
| 07/06/2013 | Monaghan-Effluent C | | Suspended Solids | 11 | 11 | mg/L | 66838/001 | 35 | |
| 07/06/2013 | Monaghan-Effluent C | | Total Nitrogen | 15.7 | 15.7 | mg/L | 66838/001 | 15 | OOS-A |
| 07/06/2013 | Monaghan-Effluent C | | Total Phosphorus-TP | 0.38 | 0.377 | mg/L | 66838/001 | 2 | |
| 27/06/2013 | Monaghan-Effluent C | | Ammonia (as N) | 0.267 | 0.2672 | mg/l N | 67434/001 | | |
| 27/06/2013 | Monaghan-Effluent C | | cbOD | 11.0 | 11 | mg/L | 67434/001 | 25 | |
| 27/06/2013 | Monaghan-Effluent C | | COD | 37.0 | 37 | mg/L | 67434/001 | 125 | |
| 27/06/2013 | Monaghan-Effluent C | | Phosphate-Ortho(as P) | <0.045 | -0.0199 | mg/l P | 67434/001 | | |
| 27/06/2013 | Monaghan-Effluent C | | Suspended Solids | <5 | 4 | mg/L | 67434/001 | 35 | |
| 27/06/2013 | Monaghan-Effluent C | | Total Nitrogen | 24.1 | 24.09 | mg/L | 67434/001 | 15 | OOS-A |
| 27/06/2013 | Monaghan-Effluent C | | Total Phosphorus-TP | 0.43 | 0.429 | mg/L | 67434/001 | 2 | |
| 26/07/2013 | Monaghan-Effluent C | | Ammonia (as N) | 0.120 | 0.1201 | mg/l N | 68268/001 | | |
| 26/07/2013 | Monaghan-Effluent C | | cbOD | 4.0 | 4 | mg/L | 68268/001 | 25 | |
| 26/07/2013 | Monaghan-Effluent C | | COD | 9.0 | 9 | mg/L | 68268/001 | 125 | |
| 26/07/2013 | Monaghan-Effluent C | | Phosphate-Ortho(as P) | 0.113 | 0.1134 | mg/l P | 68268/001 | | |
| 26/07/2013 | Monaghan-Effluent C | | Suspended Solids | 5 | 5 | mg/L | 68268/001 | 35 | |
| 26/07/2013 | Monaghan-Effluent C | | Total Nitrogen | 37.6 | 37.6 | mg/L | 68268/001 | 15 | OOS-A |
| 26/07/2013 | Monaghan-Effluent C | | Total Phosphorus-TP | 0.40 | 0.395 | mg/L | 68268/001 | 2 | |

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River ambient DS



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| Date Rec | Sample Description | Analyte | Result Final | Charted Value | Units | Sample | ELV | OOS |
|------------|---------------------------------|-----------------------|--------------|---------------|--------|-----------|-------|-------|
| 28/03/2013 | Monaghan-Ambient - downstream G | Ammonia (as N) | 1.563 | 1.5631 | mg/l N | 64910/001 | | |
| 28/03/2013 | Monaghan-Ambient - downstream G | cBOD | 7.0 | 7 | mg/L | 64910/001 | | |
| 28/03/2013 | Monaghan-Ambient - downstream G | Phosphate-Ortho(as P) | 0.059 | 0.0594 | mg/l P | 64910/001 | | |
| 28/03/2013 | Monaghan-Ambient - downstream G | Total Nitrogen | 6.2 | 6.19 | mg/L | 64910/001 | | |
| 28/03/2013 | Monaghan-Ambient - downstream G | Total Phosphorus-TP | 0.18 | 0.183 | mg/l P | 64910/001 | | |
| 02/05/2013 | Monaghan-Ambient - downstream G | Ammonia | 0.078 | 0.078 | mg/l N | 65923/008 | 0.065 | OOS-A |
| 02/05/2013 | Monaghan-Ambient - downstream G | cBOD | 3.0 | 3 | mg/L | 65923/008 | 1.5 | OOS-A |
| 02/05/2013 | Monaghan-Ambient - downstream G | Phosphate-Ortho(MRP) | 0.015 | 0.0154 | mg/l P | 65923/008 | 0.035 | |
| 07/06/2013 | Monaghan-Ambient - downstream G | Ammonia | 0.178 | 0.1779 | mg/l N | 66837/004 | 0.065 | OOS-A |
| 07/06/2013 | Monaghan-Ambient - downstream G | cBOD | 3.0 | 3 | mg/L | 66837/004 | 1.5 | OOS-A |
| 07/06/2013 | Monaghan-Ambient - downstream G | Phosphate-Ortho(MRP) | 0.030 | 0.0303 | mg/l P | 66837/004 | 0.035 | |
| 07/06/2013 | Monaghan-Ambient - downstream G | Total Nitrogen | 3.8 | 3.796 | mg/L | 66837/004 | | |
| 07/06/2013 | Monaghan-Ambient - downstream G | Total Phosphorus-TP | 0.12 | 0.115 | mg/l P | 66837/004 | | |

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 email: info@elslab.com

| Date Rec | Sample Description | Analyte | Result Final | Charted Value | Units | Sample | ELV | OOS |
|------------|-------------------------------|-----------------------|--------------|---------------|--------|-----------|-------|-------|
| 28/03/2013 | Monaghan-Ambient - upstream G | Ammonia (as N) | 0.169 | 0.1694 | mg/l N | 64909/001 | | |
| 28/03/2013 | Monaghan-Ambient - upstream G | cBOD | 3.0 | 3 | mg/L | 64909/001 | | |
| 28/03/2013 | Monaghan-Ambient - upstream G | Phosphate-Ortho(as P) | 0.029 | 0.0293 | mg/l P | 64909/001 | | |
| 28/03/2013 | Monaghan-Ambient - upstream G | Total Nitrogen | 1.9 | 1.926 | mg/L | 64909/001 | | |
| 28/03/2013 | Monaghan-Ambient - upstream G | Total Phosphorus-TP | 0.15 | 0.148 | mg/l P | 64909/001 | | |
| 02/05/2013 | Monaghan-Ambient - upstream G | Ammonia | 0.264 | 0.2638 | mg/l N | 65923/007 | 0.065 | OOS-A |
| 02/05/2013 | Monaghan-Ambient - upstream G | cBOD | 3.0 | 3 | mg/L | 65923/007 | 1.5 | OOS-A |
| 02/05/2013 | Monaghan-Ambient - upstream G | Phosphate-Ortho(MRP) | <0.009 | -0.0034 | mg/l P | 65923/007 | 0.035 | |
| 07/06/2013 | Monaghan-Ambient - upstream G | Ammonia | 0.147 | 0.1467 | mg/l N | 66837/003 | 0.065 | OOS-A |
| 07/06/2013 | Monaghan-Ambient - upstream G | cBOD | 3.0 | 3 | mg/L | 66837/003 | 1.5 | OOS-A |
| 07/06/2013 | Monaghan-Ambient - upstream G | Phosphate-Ortho(MRP) | 0.022 | 0.0224 | mg/l P | 66837/003 | 0.035 | |
| 07/06/2013 | Monaghan-Ambient - upstream G | Total Nitrogen | 1.2 | 1.18 | mg/L | 66837/003 | | |
| 07/06/2013 | Monaghan-Ambient - upstream G | Total Phosphorus-TP | 0.10 | 0.098 | mg/l P | 66837/003 | | |

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| | | | |
|---------------------|--|------------------------------|------------------|
| Contact Name | Mark Johnston | Report Number | 64906 - 1 |
| Address | Monaghan County Council The Glen, Monaghan | Sample Number | 64906/001 |
| Tel No | 047 30537 | Date of Receipt | 28/03/2013 |
| Fax No | | Date Started | 28/03/2013 |
| Customer PO | | Received or Collected | NPX |
| Quotation No | QN001889 | Condition on Receipt | Good |
| Customer Ref | Monaghan-Influent C | Date of Report | 05/04/2013 |
| | | Sample Type | Waste Water |

| | | | | | |
|---------------------|------------|--------------------|------------|---------------------|-----------------|
| LRN | 97 | Category | Wastewater | Entity | Monaghan |
| Station | Influent | Template | Influent | | |
| Laboratory | ELS | Analyst | ELS | SampleDate | 2013-03-27 |
| SampleReason | Compliance | SampleNotes | | SampleTime | 00:00 |
| | | | | SampleMethod | 24 hr composite |

CERTIFICATE OF ANALYSIS

| TEST | ANALYTE | SUB | METHOD | LOQ | SPEC | RESULT | UNITS | ACCRED. | OOS |
|----------------------------|---------|-----|--------|-------|------|--------|--------|---------|-----|
| BOD | | | | | | | | | |
| cBOD | | | EW001 | 1.0 | | 270.0 | mg/L | INAB | |
| COD | | | | | | | | | |
| COD | | | EW094 | 8.000 | | 490.0 | mg/L | INAB | |
| Suspended Solids | | | | | | | | | |
| Suspended Solids | | | EW017 | 5.000 | | 74 | mg/L | INAB | |
| Total Nitrogen | | | | | | | | | |
| Total Nitrogen | | | EW140 | 1.0 | | 41.4 | mg/L | INAB | |
| Total Phosphorus-TP | | | | | | | | | |
| Total Phosphorus-TP | | | EW146 | 0.1 | | 7.12 | mg/l P | INAB | |

Signed : _____

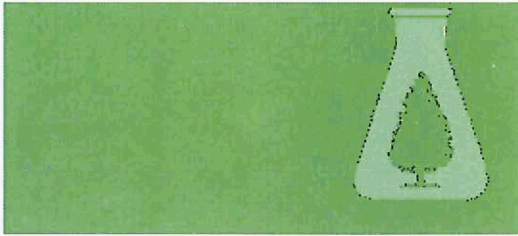
05/04/2013

Technical Manager (or Deputy):

Brendan Murray

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| | | | |
|---------------------|--|------------------------------|------------------|
| Contact Name | Mark Johnston | Report Number | 64908 - 1 |
| Address | Monaghan County Council The Glen, Monaghan | Sample Number | 64908/001 |
| Tel No | 047 30537 | Date of Receipt | 28/03/2013 |
| Fax No | | Date Started | 28/03/2013 |
| Customer PO | | Received or Collected | NPX |
| Quotation No | QN001761 | Condition on Receipt | Good |
| Customer Ref | Monaghan-Effluent C | Date of Report | 05/04/2013 |
| | | Sample Type | Waste Water |

| | | | | | |
|---------------------|------------|--------------------|------------|---------------------|-----------------|
| LRN | 94 | Category | Wastewater | Entity | Monaghan |
| Station | Effluent | Template | Effluent | | |
| Laboratory | ELS | Analyst | ELS | SampleDate | 2013-03-27 |
| SampleReason | Compliance | SampleNotes | | SampleTime | 0:00 |
| | | | | SampleMethod | 24 hr composite |

CERTIFICATE OF ANALYSIS

| TEST | ANALYTE | SUB | METHOD | LOQ | SPEC | RESULT | UNITS | ACCRED. | OOS |
|----------------------------|-----------------------|-----|--------|-------|------|--------|--------|---------|-------|
| Ammonia | | | | | | | | | |
| | Ammonia (as N) | | EW154M | 0.035 | | 0.517 | mg/l N | INAB | |
| AQ2-UP1 | | | | | | | | | |
| | Phosphate-Ortho(as P) | | EW154M | 0.045 | | 0.302 | mg/l P | INAB | |
| BODc | | | | | | | | | |
| | cBOD | | EW094 | 1.0 | 25 | 14.0 | mg/L | INAB | |
| COD | | | | | | | | | |
| | COD | | EW094 | 8.0 | 125 | 63.0 | mg/L | INAB | |
| Suspended Solids | | | | | | | | | |
| | Suspended Solids | | EW013 | 5 | 35 | 44 | mg/L | INAB | OOS-A |
| Total Nitrogen | | | | | | | | | |
| | Total Nitrogen | | EW140 | 1.0 | 15 | 26.6 | mg/L | INAB | OOS-A |
| Total Phosphorus-TP | | | | | | | | | |
| | Total Phosphorus-TP | | EW146 | 0.10 | 2 | 0.46 | mg/L | INAB | |

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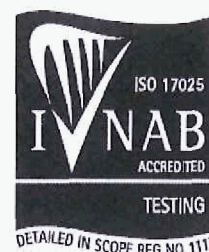


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| | | | |
|---------------------|--|------------------------------|----------------|
| Contact Name | Mark Johnston | Report Number | 64910 - 1 |
| Address | Monaghan County Council The Glen, Monaghan | Sample Number | 64910/001 |
| Tel No | 047 30537 | Date of Receipt | 28/03/2013 |
| Fax No | | Date Started | 28/03/2013 |
| Customer PO | | Received or Collected | NPX |
| Quotation No | QN001890 | Condition on Receipt | Good |
| Customer Ref | Monaghan-Ambient -downstream G | Date of Report | 05/04/2013 |
| | | Sample Type | Surface Waters |

| | | | | | |
|---------------------|------------|---------------------|------------|-------------------|------------|
| LRN | 96 | Category | Wastewater | Entity | Monaghan |
| Station | Downstream | Template | Downstream | | |
| Laboratory | ELS | Analyst | 0-Not A | SampleDate | 2013-03-27 |
| SampleReason | | SampleNotes | | SampleTime | 0:00 |
| | | SampleMethod | Grab | | |

CERTIFICATE OF ANALYSIS

| TEST | ANALYTE | SUB | METHOD | LOQ | SPEC | RESULT | UNITS | ACCRED. | OOS |
|----------------------------|-----------------------|-----|--------|-------|------|--------|--------|---------|-----|
| Ammonia | | | | | | | | | |
| | Ammonia (as N) | | EW154M | 0.007 | | 1.563 | mg/l N | INAB | |
| AQ2-UP1 | | | | | | | | | |
| | Phosphate-Ortho(as P) | | EW154M | 0.009 | | 0.059 | mg/l P | INAB | |
| BOD | | | | | | | | | |
| | cBOD | | EW140 | 1.0 | | 7.0 | mg/L | INAB | |
| Total Nitrogen | | | | | | | | | |
| | Total Nitrogen | | EW140 | 1.000 | | 6.2 | mg/L | INAB | |
| Total Phosphorus-TP | | | | | | | | | |
| | Total Phosphorus-TP | | EW146 | 0.01 | | 0.18 | mg/l P | INAB | |

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|---------------------|--|------------------------------|----------------|
| Contact Name | Mark Johnston | Report Number | 64909 - 1 |
| Address | Monaghan County Council The Glen, Monaghan | Sample Number | 64909/001 |
| Tel No | 047 30537 | Date of Receipt | 28/03/2013 |
| Fax No | | Date Started | 28/03/2013 |
| Customer PO | | Received or Collected | NPX |
| Quotation No | QN001890 | Condition on Receipt | Good |
| Customer Ref | Monaghan-Ambient -upstream G | Date of Report | 05/04/2013 |
| | | Sample Type | Surface Waters |

| | | | | | |
|---------------------|------------|--------------------|------------|---------------------|------------|
| LRN | 95 | Category | Wastewater | Entity | Monaghan |
| Station | Upstream | Template | Upstream | | |
| Laboratory | ELS | Analyst | ELS | SampleDate | 2013-03-27 |
| SampleReason | Compliance | SampleTime | 0:00 | SampleMethod | Grab |
| | | SampleNotes | | | |

CERTIFICATE OF ANALYSIS

| TEST | ANALYTE | SUB | METHOD | LOQ | SPEC | RESULT | UNITS | ACCRED. | OOS |
|----------------------------|-----------------------|-----|--------|-------|------|--------|--------|---------|-----|
| Ammonia | | | | | | | | | |
| | Ammonia (as N) | | EW154M | 0.009 | | 0.169 | mg/l N | INAB | |
| AQ2-UP1 | | | | | | | | | |
| | Phosphate-Ortho(as P) | | EW154M | 0.009 | | 0.029 | mg/l P | INAB | |
| BOD | | | | | | | | | |
| | cBOD | | EW091 | 1.0 | | 3.0 | mg/L | INAB | |
| Total Nitrogen | | | | | | | | | |
| | Total Nitrogen | | EW140 | 1.000 | | 1.9 | mg/L | INAB | |
| Total Phosphorus-TP | | | | | | | | | |
| | Total Phosphorus-TP | | EW146 | 0.01 | | 0.15 | mg/l P | INAB | |

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Signed : _____ 05/04/2013

Technical Manager (or Deputy): **Brendan Murray**

NOTES

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- 2.SPEC= Allowable limit or parametric value
- 3.OOS=Result which is outside specification highlighted as OOS
- 4.LOQ=Limit of Quantification or lowest value that can be reported for the test
- 5.ACCRED=Indicates matrix accreditation for the test,a blank field indicates not accredited



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| | | | |
|---------------------|---|-------------------------------|-----------------------|
| Customer | Eugene Farmer Monaghan Co. Co. Monaghan WWTP Tierkeenan Monaghan Town Co. Monaghan | Lab Report Ref. No. | 0810/245/01 |
| Customer PO | | Date of Receipt | 21/01/2013 |
| Customer Ref | Monaghan Raw - 17/01/13 | Sampled On | 17/01/2013 |
| Ref 2 | | Date Testing Commenced | 21/01/2013 |
| | | Received or Collected | Delivered by Customer |
| | | Condition on Receipt | Acceptable |
| | | Date of Report | 29/01/2013 |
| | | Sample Type | Trade Effluent |

CERTIFICATE OF ANALYSIS

| Test Parameter | SOP | Analytical Technique | Result | Units | Acc. |
|---------------------------------------|-----|-------------------------------------|--------|-----------|------|
| **BOD (Sewage Eff.) | 113 | Electrometry | 200 | mg/L | |
| COD | 107 | Colorimetry | 1380 | mg/L | |
| Nitrogen (Total Kjeldahl) | 104 | Digestion/ Distillation/ Titrimetry | 86.80 | mg/L as N | |
| **Nitrogen (Total Oxidised) (Sewage E | 151 | Colorimetry | 0.14 | mg/L as N | |
| Nitrogen (Total) | 0 | Calculation | 86.94 | mg/L as N | |
| Phosphorus (Total) Sewage Effluent | 166 | Colorimetry | 1.209 | mg/L as P | UKAS |
| Solids (Total Suspended) | 108 | Filtration/ Drying @ 104C | 1382 | mg/L | |

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Aoife Harmon - Technical Supervisor

Date : 29/01/2013

Acc. : Accredited Parameters by ISO 17025:2005
 PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)
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| | | | |
|---------------------|---|-------------------------------|-----------------------|
| Customer | Eugene Farmer Monaghan Co. Co. Monaghan WWTP Tierkeenan Monaghan Town Co. Monaghan | Lab Report Ref. No. | 0810/245/02 |
| Customer PO | | Date of Receipt | 21/01/2013 |
| Customer Ref | Monaghan Final - 17/01/13 | Sampled On | 17/01/2013 |
| Ref 2 | | Date Testing Commenced | 21/01/2013 |
| | | Received or Collected | Delivered by Customer |
| | | Condition on Receipt | Acceptable |
| | | Date of Report | 29/01/2013 |
| | | Sample Type | Trade Effluent |

CERTIFICATE OF ANALYSIS

| Test Parameter | SOP | Analytical Technique | Limit | Result | Units | Acc. |
|--|-----|-------------------------------------|-------|--------|-----------|------|
| Ammonia (Industrial Eff.) | 114 | Colorimetry | - | 0.151 | mg/L as N | UKAS |
| **BOD (Industrial Eff.) | 113 | Electrometry | 5 | 4 | mg/L | |
| COD (Industrial Eff.) | 107 | Colorimetry | 125 | 54 | mg/L | UKAS |
| Nitrogen (Total Kjeldahl) Ind Effluent | 104 | Digestion/ Distillation/ Titrimetry | - | 6.16 | mg/L as N | UKAS |
| Nitrogen (Total Oxidised) (Industrial Ef | 151 | Colorimetry | - | 19.72 | mg/L as N | UKAS |
| Nitrogen (Total) | 0 | Calculation | 15 | 25.88 | mg/L as N | |
| Phosphate (Ortho) Industrial Eff. | 117 | Colorimetry | - | 0.019 | mg/L as P | UKAS |
| Phosphate (Total) Industrial Eff. | 166 | Digestion/ Colorimetry | 2 | 0.162 | mg/L as P | UKAS |
| Suspended Solids (Industrial Eff.) | 106 | Gravimetry | 35 | 21 | mg/L | UKAS |

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Date : 29/01/2013

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|---------------------|---|-------------------------------|-----------------------|
| Customer | Eugene Farmer Monaghan Co. Co. Monaghan WWTP Tierkeenan Monaghan Town Co. Monaghan | Lab Report Ref. No. | 0810/245/03 |
| Customer PO | | Date of Receipt | 21/01/2013 |
| Customer Ref | Monaghan USW - 17/01/13 | Sampled On | 17/01/2013 |
| Ref 2 | | Date Testing Commenced | 21/01/2013 |
| | | Received or Collected | Delivered by Customer |
| | | Condition on Receipt | Acceptable |
| | | Date of Report | 06/02/2013 |
| | | Sample Type | Surface Water |

CERTIFICATE OF ANALYSIS

| Test Parameter | SOP | Analytical Technique | Limit | Result | Units | Acc. |
|---------------------------------------|-----|-------------------------------------|-------|--------|-----------|------|
| Ammonia (Surface Water) | 114 | Colorimetry | 0.065 | 0.157 | mg/L as N | UKAS |
| **BOD (Surface Water) | 113 | Electrometry | 1.5 | 2 | mg/L | |
| Nitrogen (Total Kjeldahl) | 104 | Digestion/ Distillation/ Titrimetry | - | 1.12 | mg/L as N | |
| Nitrogen (Total Oxidised) (Surface Wa | 151 | Colorimetry | - | 1.11 | mg/L as N | UKAS |
| Nitrogen (Total) | 0 | Calculation | - | 2.23 | mg/L as N | |
| Phosphate (Ortho) Surface Water | 117 | Colorimetry | 0.035 | 0.040 | mg/L as P | UKAS |
| Phosphate (Total) Surface Water | 166 | Colorimetry | - | 0.060 | mg/L as P | UKAS |

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| | | | |
|---------------------|---|-------------------------------|-----------------------|
| Customer | Eugene Farmer Monaghan Co. Co. Monaghan WWTP Tierkeenan Monaghan Town Co. Monaghan | Lab Report Ref. No. | 0810/245/04 |
| Customer PO | | Date of Receipt | 21/01/2013 |
| Customer Ref | Monaghan DSW - 17/01/13 | Sampled On | 17/01/2013 |
| Ref 2 | | Date Testing Commenced | 21/01/2013 |
| | | Received or Collected | Delivered by Customer |
| | | Condition on Receipt | Acceptable |
| | | Date of Report | 06/02/2013 |
| | | Sample Type | Surface Water |

CERTIFICATE OF ANALYSIS

| Test Parameter | SOP | Analytical Technique | Limit | Result | Units | Acc. |
|---------------------------------------|-----|-------------------------------------|-------|--------|-----------|------|
| Ammonia (Surface Water) | 114 | Colorimetry | 0.065 | 1.29 | mg/L as N | UKAS |
| **BOD (Surface Water) | 113 | Electrometry | 1.5 | 3.6 | mg/L | |
| Nitrogen (Total Kjeldahl) | 104 | Digestion/ Distillation/ Titrimetry | - | 1.12 | mg/L as N | |
| Nitrogen (Total Oxidised) (Surface Wa | 151 | Colorimetry | - | 3.60 | mg/L as N | UKAS |
| Nitrogen (Total) | 0 | Calculation | - | 4.72 | mg/L as N | |
| Phosphate (Ortho) Surface Water | 117 | Colorimetry | 0.035 | 0.015 | mg/L as P | UKAS |
| Phosphate (Total) Surface Water | 166 | Colorimetry | - | 0.073 | mg/L as P | UKAS |

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Date : 06/02/2013

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| Entity | Station | Template | Date | Nitrogen (Total Oxidised) | Phosphate O | Phosphate Ortho | BOD | COD | Solids (Total Suspended) | Ammonia | Phosphate Total | Nitrogen | Phosphate Ortho | BOD | COD | Ammonia | Phosphate T | Nitrogen (Total Oxidised) | Nitrogen (Total Kjeldahl) | Nitrogen (Total) |
|----------|------------|------------|----------|---------------------------|-------------|-----------------|-----|-----|--------------------------|---------|-----------------|----------|-----------------|-----|-----|---------|-------------|---------------------------|---------------------------|------------------|
| Monaghan | Influent | Influent | 12/01/12 | <0.12 | 2.118 | | | | | | | | | | | | | | | |
| Monaghan | Effluent | Effluent | 12/01/12 | | | 0.492 | 3 | 44 | 9 | 6.4 | 0.611 | 28.6 | | | | | | | | |
| Monaghan | Upstream | Upstream | 12/01/12 | | | | | | | | | | 0.031 | <2 | 7 | 0.074 | 0.059 | | 1.55 | |
| Monaghan | Downstream | Downstream | 12/01/12 | | | | | | | | | | 0.178 | 2 | 6 | 2.49 | 0.221 | | 7.92 | |
| Monaghan | Influent | Influent | 16/02/12 | <0.12 | | | | | | | | | | | | | | | | |
| Monaghan | Effluent | Effluent | 16/02/12 | | | 0.325 | <2 | 26 | 13 | 12.27 | 0.459 | 17.03 | | | | | | | | |
| Monaghan | Upstream | Upstream | 16/02/12 | | | | | | | | | | 0.019 | <2 | | 0.142 | | | | |
| Monaghan | Downstream | Downstream | 16/02/12 | | | | | | | | | | 0.108 | <2 | | 4.35 | | | | |
| Monaghan | Influent | Influent | 23/03/12 | <0.12 | | | | | | | | | | | | | | | 106.96 | 106.99 |
| Monaghan | Effluent | Effluent | 23/03/12 | | | 0.12 | 10 | 67 | 13 | 13.86 | 0.242 | 17.75 | | | | | | | 19.04 | 36.79 |
| Monaghan | Upstream | Upstream | 23/03/12 | | | | | | | | | | <0.006 | <2 | | 0.086 | 0.052 | 0.43 | <1.00 | <1.00 |
| Monaghan | Downstream | Downstream | 23/03/12 | | | | | | | | | | 0.06 | 3 | | 6.99 | 0.16 | 8.23 | 8.4 | 16.63 |
| Monaghan | Influent | Influent | 22/04/12 | <0.12 | | | | | | | | | | | | | | | 80.08 | 80.08 |
| Monaghan | Effluent | Effluent | 22/04/12 | | | 0.413 | 1.8 | 43 | 6 | <0.01 | 0.456 | 16.7 | | | | | | | 1.68 | 18.38 |
| Monaghan | Upstream | Upstream | 22/04/12 | | | | | | | | | | 0.052 | 2.2 | | 0.514 | 0.086 | 0.62 | 1.12 | 1.74 |
| Monaghan | Downstream | Downstream | 22/04/12 | | | | | | | | | | 0.159 | 1.6 | | 3.84 | 0.211 | 0.67 | 4.48 | 5.15 |
| Monaghan | Influent | Influent | 18/05/12 | <0.12 | | | | | | | | | | | | | | | 57.68 | 57.68 |
| Monaghan | Effluent | Effluent | 18/05/12 | | | 0.333 | 4 | 47 | 10 | 0.106 | | 26.37 | | | | | | | <1.00 | 26.93 |
| Monaghan | Upstream | Upstream | 18/05/12 | | | | | | | | | | 0.044 | 1.3 | | 0.38 | | 0.51 | 1.12 | 1.63 |
| Monaghan | Downstream | Downstream | 18/05/12 | | | | | | | | | | 0.091 | 1.3 | | 0.036 | | 13.07 | <1.00 | 13.63 |
| Monaghan | Influent | Influent | 14/06/12 | <0.12 | | | | | | | | | | | | | | | 20.72 | 20.72 |
| Monaghan | Effluent | Effluent | 14/06/12 | | | 0.043 | 1.1 | 13 | 13 | 0.11 | | 17.68 | | | | | | | 1.68 | 19.36 |
| Monaghan | Upstream | Upstream | 14/06/12 | | | | | | | | | | 0.053 | 0.7 | | | 0.116 | 1.13 | 1.68 | 2.81 |
| Monaghan | Downstream | Downstream | 14/06/12 | | | | | | | | | | 0.09 | 1.5 | | | 0.155 | 3.64 | 1.12 | 4.76 |
| Monaghan | Influent | Influent | 30/07/12 | <0.12 | | | | | | | | | | | | | | | 57.68 | 57.68 |
| Monaghan | Effluent | Effluent | 30/07/12 | | | 0.059 | 1.2 | 32 | 8 | <0.01 | 0.184 | 42.76 | | | | | | | 1.68 | 44.44 |
| Monaghan | Upstream | Upstream | 30/07/12 | | | | | | | | | | 0.021 | 3 | | | 0.04 | 0.29 | 1.12 | 1.41 |
| Monaghan | Downstream | Downstream | 30/07/12 | | | | | | | | | | 0.041 | 2.6 | | | 0.085 | 15.46 | 3.36 | 18.82 |
| Monaghan | Influent | Influent | 29/08/12 | 0.38 | | | | | | | | | | | | | | | 31.92 | 32.3 |
| Monaghan | Effluent | Effluent | 29/08/12 | | | 0.097 | 1.5 | 35 | 10 | 1.64 | 0.221 | 17.55 | | | | | | | 6.16 | 23.71 |
| Monaghan | Upstream | Upstream | 29/08/12 | | | | | | | | | | 0.039 | 1.6 | | | 0.098 | 0.66 | 3.36 | 4.02 |
| Monaghan | Downstream | Downstream | 29/08/12 | | | | | | | | | | <0.006 | 12 | | | 0.087 | 2.21 | 5.6 | 7.81 |
| Monaghan | Influent | Influent | 25/10/12 | <0.12 | | | | | | | | | | | | | | | 47.6 | 47.6 |
| Monaghan | Effluent | Effluent | 25/10/12 | | | 0.096 | <2 | 34 | 13 | 0.02 | 0.167 | 38.5 | | | | | | | 1.68 | 40.18 |
| Monaghan | Upstream | Upstream | 25/10/12 | | | | | | | | | | 0.046 | 1.1 | | | 0.098 | 0.84 | <1.00 | 1.4 |
| Monaghan | Downstream | Downstream | 25/10/12 | | | | | | | | | | 0.056 | 1.2 | | | 0.104 | 6.85 | <1.00 | 7.41 |
| Monaghan | Influent | Influent | 08/11/12 | 16.95 | | | | | | | | | | | | | | | 83.44 | 100.39 |
| Monaghan | Effluent | Effluent | 08/11/12 | | | 0.068 | <2 | 30 | 12 | 0.069 | 0.168 | 29.45 | | | | | | | 1.68 | 31.13 |
| Monaghan | Upstream | Upstream | 08/11/12 | | | | | | | | | | 0.031 | 3.5 | | | 0.101 | 0.35 | 1.12 | 1.47 |
| Monaghan | Downstream | Downstream | 08/11/12 | | | | | | | | | | 0.064 | 0.5 | | | 0.137 | 5.79 | 1.12 | 6.91 |
| Monaghan | Influent | Influent | 23/11/12 | 0.42 | | | | | | | | | | | | | | | 45.92 | 46.34 |
| Monaghan | Effluent | Effluent | 23/11/12 | | | 0.033 | 1.9 | 44 | 20 | 0.292 | 0.354 | 24.92 | | | | | | | 2.24 | 27.16 |
| Monaghan | Upstream | Upstream | 23/11/12 | | | | | | | | | | 0.02 | 6.1 | | | 0.15 | 0.9 | <1.00 | 1.46 |
| Monaghan | Downstream | Downstream | 23/11/12 | | | | | | | | | | 0.008 | 5.2 | | | 1.532 | 4.63 | 1.12 | 5.75 |
| Monaghan | Influent | Influent | 04/12/12 | | | | 100 | 342 | 133 | | 0.823 | <0.27 | | | | | | | 49.28 | 49.46 |
| Monaghan | Effluent | Effluent | 04/12/12 | | | 0.011 | 2 | 32 | 5 | 0.032 | 0.135 | 22.59 | | | | | | | 1.12 | 23.71 |
| Monaghan | Upstream | Upstream | 04/12/12 | | | | | | | | | | <0.006 | | 5.4 | | 0.048 | 0.79 | <1.00 | 1.35 |
| Monaghan | Downstream | Downstream | 04/12/12 | | | | | | | | | | 0.017 | 2 | | | 0.083 | 6.41 | <1.00 | 6.97 |

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