

Your P.O. #: 126744  
 Your Project #: 1000  
 Site Location: PICTOU COUNTY PIPELINE  
 Your C.O.C. #: B 127516

**Attention: Scott McMillan**

Dillon Consulting Limited  
 Halifax  
 137 Chain Lake Dr  
 Suite 100  
 Halifax, NS  
 B3S 1B3

**Report Date: 2012/11/21**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B2H8140**

**Received: 2012/11/13, 16:02**

Sample Matrix: Water  
 # Samples Received: 7

| Analyses                             | Quantity | Date<br>Extracted | Date<br>Analyzed | Laboratory Method   | Method<br>Reference  |
|--------------------------------------|----------|-------------------|------------------|---------------------|----------------------|
| Carbonate, Bicarbonate and Hydroxide | 7        | N/A               | 2012/11/16       | CAM SOP-00102       | APHA 4500-CO2 D      |
| Alkalinity                           | 7        | N/A               | 2012/11/15       | ATL SOP 00013       | Based on EPA310.2    |
| Chloride                             | 7        | N/A               | 2012/11/15       | ATL SOP 00014       | Based on SM4500-Cl-  |
| Colour                               | 7        | N/A               | 2012/11/16       | ATL SOP 00020       | Based on SM2120C     |
| Conductance - water                  | 7        | N/A               | 2012/11/15       | ATL SOP 00004/00006 | Based on SM2510B     |
| Hardness (calculated as CaCO3)       | 7        | N/A               | 2012/11/15       | ATL SOP 00048       | Based on SM2340B     |
| Metals Water Total MS                | 7        | 2012/11/14        | 2012/11/15       | ATL SOP 00059       | Based on EPA6020A    |
| Ion Balance (% Difference)           | 7        | N/A               | 2012/11/19       |                     |                      |
| Anion and Cation Sum                 | 7        | N/A               | 2012/11/16       |                     |                      |
| Nitrogen Ammonia - water             | 7        | N/A               | 2012/11/15       | ATL SOP 00015       | Based on USEPA 350.1 |
| Nitrogen - Nitrate + Nitrite         | 7        | N/A               | 2012/11/16       | ATL SOP 00016       | Based on USGS - Enz. |
| Nitrogen - Nitrite                   | 7        | N/A               | 2012/11/16       | ATL SOP 00017       | Based on SM4500-NO2B |
| Nitrogen - Nitrate (as N)            | 7        | N/A               | 2012/11/16       | ATL SOP 00018       | Based on ASTM D3867  |
| pH                                   | 7        | N/A               | 2012/11/15       | ATL SOP 00003       | Based on SM4500H+B   |
| Phosphorus - ortho                   | 7        | N/A               | 2012/11/16       | ATL SOP 00021       | Based on USEPA 365.1 |
| Sat. pH and Langelier Index (@ 20C)  | 7        | N/A               | 2012/11/19       |                     |                      |
| Sat. pH and Langelier Index (@ 4C)   | 7        | N/A               | 2012/11/19       |                     |                      |
| Reactive Silica                      | 7        | N/A               | 2012/11/15       | ATL SOP 00022       | Based on EPA 366.0   |
| Sulphate                             | 7        | N/A               | 2012/11/16       | ATL SOP 00023       | Based on EPA 375.4   |
| Total Dissolved Solids (TDS calc)    | 7        | N/A               | 2012/11/19       |                     |                      |
| Organic carbon - Total (TOC)         | 7        | N/A               | 2012/11/15       | ATL SOP 00037       | Based on SM5310C     |
| Total Suspended Solids               | 6        | N/A               | 2012/11/15       | ATL SOP 00007       | based on EPA 160.2   |
| Total Suspended Solids               | 1        | N/A               | 2012/11/16       | ATL SOP 00007       | based on EPA 160.2   |
| Turbidity                            | 7        | N/A               | 2012/11/16       | ATL SOP 00011       | based on EPA 180.1   |

**Remarks:**

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

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**CERTIFICATE OF ANALYSIS**

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Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Keri Mackay, Project Manager - Bedford  
Email: kmackay@maxxam.ca  
Phone# (902) 420-0203 Ext:294

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B2H8140  
 Report Date: 2012/11/21

 Dillon Consulting Limited  
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 Your P.O. #: 126744

**RESULTS OF ANALYSES OF WATER**

|               |              |                   |                 |                   |                 |                    |            |                 |
|---------------|--------------|-------------------|-----------------|-------------------|-----------------|--------------------|------------|-----------------|
| Maxxam ID     |              | PO9635            |                 | PO9636            |                 | PO9637             |            |                 |
| Sampling Date |              | 2012/11/09        |                 | 2012/11/09        |                 | 2012/11/09         |            |                 |
| COC Number    |              | B 127516          |                 | B 127516          |                 | B 127516           |            |                 |
|               | <b>Units</b> | <b>RED 2013_2</b> | <b>QC Batch</b> | <b>RED 2013_4</b> | <b>QC Batch</b> | <b>RED 2013_5A</b> | <b>RDL</b> | <b>QC Batch</b> |

| <b>Calculated Parameters</b>                     |       |       |         |       |         |        |       |         |
|--|-------|-------|---------|-------|---------|--------|-------|---------|
| Anion Sum  | me/L  | 1.02  | 3034127 | 0.660 | 3034127 | 1.18   | N/A   | 3034127 |
| Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> ) | mg/L  | 22    | 3034124 | 18    | 3034124 | 47     | 1.0   | 3034124 |
| Calculated TDS                                   | mg/L  | 62.0  | 3034131 | 38.0  | 3034131 | 65.0   | 1.0   | 3034131 |
| Carb. Alkalinity (calc. as CaCO <sub>3</sub> )   | mg/L  | ND    | 3034124 | ND    | 3034124 | ND     | 1.0   | 3034124 |
| Cation Sum                                       | me/L  | 1.03  | 3034127 | 0.630 | 3034127 | 1.18   | N/A   | 3034127 |
| Hardness (CaCO <sub>3</sub> )                    | mg/L  | 33    | 3034125 | 21    | 3034125 | 49     | 1.0   | 3034955 |
| Ion Balance (% Difference)                       | %     | 0.490 | 3034126 | 2.33  | 3034126 | 0.00   | N/A   | 3034126 |
| Langelier Index (@ 20C)                          | N/A   | -1.61 | 3034129 | -1.97 | 3034129 | -0.612 |       | 3034129 |
| Langelier Index (@ 4C)                           | N/A   | -1.86 | 3034130 | -2.22 | 3034130 | -0.864 |       | 3034130 |
| Nitrate (N)                                      | mg/L  | ND    | 3034069 | ND    | 3034069 | ND     | 0.050 | 3034069 |
| Saturation pH (@ 20C)                            | N/A   | 8.95  | 3034129 | 9.24  | 3034129 | 8.43   |       | 3034129 |
| Saturation pH (@ 4C)                             | N/A   | 9.20  | 3034130 | 9.49  | 3034130 | 8.68   |       | 3034130 |
| <b>Inorganics</b>                                |       |       |         |       |         |        |       |         |
| Total Alkalinity (Total as CaCO <sub>3</sub> )   | mg/L  | 22    | 3036941 | 18    | 3036941 | 47     | 5.0   | 3036941 |
| Dissolved Chloride (Cl)                          | mg/L  | 11    | 3036944 | 7.5   | 3036944 | 6.8    | 1.0   | 3036944 |
| Colour   | TCU   | 34    | 3036946 | 23    | 3036946 | 22     | 5.0   | 3036946 |
| Nitrate + Nitrite                                | mg/L  | ND    | 3036948 | ND    | 3036948 | ND     | 0.050 | 3036948 |
| Nitrite (N)                                      | mg/L  | ND    | 3036943 | ND    | 3036943 | ND     | 0.010 | 3036943 |
| Nitrogen (Ammonia Nitrogen)                      | mg/L  | ND    | 3037110 | ND    | 3037110 | ND     | 0.050 | 3037110 |
| Total Organic Carbon (C)                         | mg/L  | 5.0   | 3037300 | 3.1   | 3037305 | 3.1    | 0.50  | 3037305 |
| Orthophosphate (P)                               | mg/L  | ND    | 3036947 | ND    | 3036947 | ND     | 0.010 | 3036947 |
| pH   | pH    | 7.34  | 3037491 | 7.27  | 3037491 | 7.82   | N/A   | 3037491 |
| Reactive Silica (SiO <sub>2</sub> )              | mg/L  | 3.8   | 3036945 | 3.3   | 3036945 | 3.8    | 0.50  | 3036945 |
| Total Suspended Solids                           | mg/L  | 3.2   | 3037004 | 2.0   | 3037004 | 8.6    | 1.0   | 3037004 |
| Dissolved Sulphate (SO <sub>4</sub> )            | mg/L  | 13    | 3036949 | 3.8   | 3036949 | 2.4    | 2.0   | 3036949 |
| Turbidity  | NTU   | 5.1   | 3038506 | 3.8   | 3038506 | 7.6    | 0.10  | 3038506 |
| Conductivity                                     | uS/cm | 100   | 3037493 | 64    | 3037493 | 110    | 1.0   | 3037493 |

ND = Not detected  
 RDL = Reportable Detection Limit  
 QC Batch = Quality Control Batch

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**RESULTS OF ANALYSES OF WATER**

|               |              |                   |                       |                 |                       |            |                 |
|---------------|--------------|-------------------|-----------------------|-----------------|-----------------------|------------|-----------------|
| Maxxam ID     |              | PO9638            | PO9639                |                 | PO9640                |            |                 |
| Sampling Date |              | 2012/11/09        | 2012/11/09            |                 | 2012/11/09            |            |                 |
| COC Number    |              | B 127516          | B 127516              |                 | B 127516              |            |                 |
|               |              |                   |                       |                 |                       |            |                 |
|               | <b>Units</b> | <b>RED 2014 3</b> | <b>MAGENTA 2013 2</b> | <b>QC Batch</b> | <b>MAGENTA 2013 6</b> | <b>RDL</b> | <b>QC Batch</b> |

| <b>Calculated Parameters</b>                     |       |       |       |         |       |       |         |
|--|-------|-------|-------|---------|-------|-------|---------|
| Anion Sum  | me/L  | 1.26  | 0.360 | 3034957 | 1.37  | N/A   | 3034957 |
| Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> ) | mg/L  | 22    | 5.3   | 3034954 | 30    | 1.0   | 3034954 |
| Calculated TDS                                   | mg/L  | 77.0  | 26.0  | 3034960 | 83.0  | 1.0   | 3034960 |
| Carb. Alkalinity (calc. as CaCO <sub>3</sub> )   | mg/L  | ND    | ND    | 3034954 | ND    | 1.0   | 3034954 |
| Cation Sum                                       | me/L  | 1.38  | 0.450 | 3034957 | 1.45  | N/A   | 3034957 |
| Hardness (CaCO <sub>3</sub> )                    | mg/L  | 27    | 10    | 3034955 | 35    | 1.0   | 3034955 |
| Ion Balance (% Difference)                       | %     | 4.55  | 11.1  | 3034956 | 2.84  | N/A   | 3034956 |
| Langelier Index (@ 20C)                          | N/A   | -1.69 | -3.92 | 3034958 | -1.37 |       | 3034958 |
| Langelier Index (@ 4C)                           | N/A   | -1.94 | -4.18 | 3034959 | -1.62 |       | 3034959 |
| Nitrate (N)                                      | mg/L  | ND    | ND    | 3034069 | 0.18  | 0.050 | 3034069 |
| Saturation pH (@ 20C)                            | N/A   | 9.08  | 10.1  | 3034958 | 8.83  |       | 3034958 |
| Saturation pH (@ 4C)                             | N/A   | 9.33  | 10.4  | 3034959 | 9.08  |       | 3034959 |
| <b>Inorganics</b>                                |       |       |       |         |       |       |         |
| Total Alkalinity (Total as CaCO <sub>3</sub> )   | mg/L  | 22    | 5.3   | 3036941 | 30    | 5.0   | 3036956 |
| Dissolved Chloride (Cl)                          | mg/L  | 27    | 8.9   | 3036944 | 22    | 1.0   | 3036960 |
| Colour   | TCU   | 90    | 110   | 3036946 | 130   | 25    | 3036963 |
| Nitrate + Nitrite                                | mg/L  | ND    | ND    | 3036948 | 0.18  | 0.050 | 3036965 |
| Nitrite (N)                                      | mg/L  | ND    | ND    | 3036943 | ND    | 0.010 | 3036966 |
| Nitrogen (Ammonia Nitrogen)                      | mg/L  | ND    | ND    | 3037110 | 0.12  | 0.050 | 3037110 |
| Total Organic Carbon (C)                         | mg/L  | 11    | 13    | 3037305 | 12    | 0.50  | 3037305 |
| Orthophosphate (P)                               | mg/L  | ND    | ND    | 3036947 | ND    | 0.010 | 3036964 |
| pH   | pH    | 7.39  | 6.20  | 3037491 | 7.46  | N/A   | 3037491 |
| Reactive Silica (SiO <sub>2</sub> )              | mg/L  | 3.7   | 4.1   | 3036945 | 3.8   | 0.50  | 3036962 |
| Total Suspended Solids                           | mg/L  | 5.4   | 3.2   | 3037004 | 14    | 1.0   | 3037004 |
| Dissolved Sulphate (SO <sub>4</sub> )            | mg/L  | 3.0   | ND    | 3036949 | 6.5   | 2.0   | 3036961 |
| Turbidity  | NTU   | 14    | 1.0   | 3038506 | 24    | 0.10  | 3038506 |
| Conductivity                                     | uS/cm | 130   | 45    | 3037493 | 140   | 1.0   | 3037493 |

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**RESULTS OF ANALYSES OF WATER**

|               |              |                                   |            |                 |                       |            |                 |
|---------------|--------------|-----------------------------------|------------|-----------------|-----------------------|------------|-----------------|
| Maxxam ID     |              | PO9640                            |            |                 | PO9641                |            |                 |
| Sampling Date |              | 2012/11/09                        |            |                 | 2012/11/09            |            |                 |
| COC Number    |              | B 127516                          |            |                 | B 127516              |            |                 |
|               |              |                                   |            |                 |                       |            |                 |
|               | <b>Units</b> | <b>MAGENTA_2013_6<br/>Lab-Dup</b> | <b>RDL</b> | <b>QC Batch</b> | <b>MAGENTA_2014_1</b> | <b>RDL</b> | <b>QC Batch</b> |

| <b>Calculated Parameters</b>                     |       |      |       |         |       |       |         |
|--|-------|------|-------|---------|-------|-------|---------|
| Anion Sum  | me/L  |      | N/A   | 3034957 | 1.34  | N/A   | 3034957 |
| Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> ) | mg/L  |      | 1.0   | 3034954 | 25    | 1.0   | 3034954 |
| Calculated TDS                                   | mg/L  |      | 1.0   | 3034960 | 79.0  | 1.0   | 3034960 |
| Carb. Alkalinity (calc. as CaCO <sub>3</sub> )   | mg/L  |      | 1.0   | 3034954 | ND    | 1.0   | 3034954 |
| Cation Sum                                       | me/L  |      | N/A   | 3034957 | 1.33  | N/A   | 3034957 |
| Hardness (CaCO <sub>3</sub> )                    | mg/L  |      | 1.0   | 3034955 | 31    | 1.0   | 3034955 |
| Ion Balance (% Difference)                       | %     |      | N/A   | 3034956 | 0.370 | N/A   | 3034956 |
| Langelier Index (@ 20C)                          | N/A   |      |       | 3034958 | -1.43 |       | 3034958 |
| Langelier Index (@ 4C)                           | N/A   |      |       | 3034959 | -1.68 |       | 3034959 |
| Nitrate (N)                                      | mg/L  |      | 0.050 | 3034069 | ND    | 0.050 | 3034069 |
| Saturation pH (@ 20C)                            | N/A   |      |       | 3034958 | 8.94  |       | 3034958 |
| Saturation pH (@ 4C)                             | N/A   |      |       | 3034959 | 9.19  |       | 3034959 |
| <b>Inorganics</b>                                |       |      |       |         |       |       |         |
| Total Alkalinity (Total as CaCO <sub>3</sub> )   | mg/L  | 31   | 5.0   | 3036956 | 25    | 5.0   | 3036956 |
| Dissolved Chloride (Cl)                          | mg/L  | 22   | 1.0   | 3036960 | 22    | 1.0   | 3036960 |
| Colour   | TCU   | 120  | 25    | 3036963 | 38    | 5.0   | 3036963 |
| Nitrate + Nitrite                                | mg/L  | 0.18 | 0.050 | 3036965 | ND    | 0.050 | 3036965 |
| Nitrite (N)                                      | mg/L  | ND   | 0.010 | 3036966 | ND    | 0.010 | 3036966 |
| Nitrogen (Ammonia Nitrogen)                      | mg/L  |      | 0.050 | 3037110 | ND    | 0.050 | 3037110 |
| Total Organic Carbon (C)                         | mg/L  |      | 0.50  | 3037305 | 5.9   | 0.50  | 3037305 |
| Orthophosphate (P)                               | mg/L  | ND   | 0.010 | 3036964 | ND    | 0.010 | 3036964 |
| pH   | pH    |      | N/A   | 3037491 | 7.51  | N/A   | 3037491 |
| Reactive Silica (SiO <sub>2</sub> )              | mg/L  | 3.8  | 0.50  | 3036962 | 3.4   | 0.50  | 3036962 |
| Total Suspended Solids                           | mg/L  |      | 1.0   | 3037004 | 3.0   | 1.0   | 3037503 |
| Dissolved Sulphate (SO <sub>4</sub> )            | mg/L  | 6.5  | 2.0   | 3036961 | 11    | 2.0   | 3036961 |
| Turbidity  | NTU   |      | 0.10  | 3038506 | 3.0   | 0.10  | 3038508 |
| Conductivity                                     | uS/cm |      | 1.0   | 3037493 | 140   | 1.0   | 3037493 |

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**ELEMENTS BY ICP/MS (WATER)**

| Maxxam ID     |       | PO9635     | PO9636     | PO9637      | PO9638     | PO9639         |     |          |
|---------------|-------|------------|------------|-------------|------------|----------------|-----|----------|
| Sampling Date |       | 2012/11/09 | 2012/11/09 | 2012/11/09  | 2012/11/09 | 2012/11/09     |     |          |
| COC Number    |       | B 127516   | B 127516   | B 127516    | B 127516   | B 127516       |     |          |
|               | Units | RED 2013_2 | RED 2013_4 | RED 2013_5A | RED 2014_3 | MAGENTA_2013_2 | RDL | QC Batch |

| <b>Metals</b>         |      |       |       |       |       |       |       |         |
|-----------------------|------|-------|-------|-------|-------|-------|-------|---------|
| Total Aluminum (Al)   | ug/L | 347   | 265   | 538   | 862   | 273   | 5.0   | 3035561 |
| Total Antimony (Sb)   | ug/L | ND    | ND    | ND    | ND    | ND    | 1.0   | 3035561 |
| Total Arsenic (As)    | ug/L | ND    | ND    | ND    | ND    | ND    | 1.0   | 3035561 |
| Total Barium (Ba)     | ug/L | 19.7  | 19.9  | 74.3  | 80.3  | 110   | 1.0   | 3035561 |
| Total Beryllium (Be)  | ug/L | ND    | ND    | ND    | ND    | ND    | 1.0   | 3035561 |
| Total Bismuth (Bi)    | ug/L | ND    | ND    | ND    | ND    | ND    | 2.0   | 3035561 |
| Total Boron (B)       | ug/L | ND    | ND    | ND    | ND    | ND    | 50    | 3035561 |
| Total Cadmium (Cd)    | ug/L | ND    | 0.019 | 0.018 | 0.021 | 0.032 | 0.017 | 3035561 |
| Total Calcium (Ca)    | ug/L | 10700 | 6240  | 16600 | 8020  | 2740  | 100   | 3035561 |
| Total Chromium (Cr)   | ug/L | ND    | ND    | ND    | 1.1   | ND    | 1.0   | 3035561 |
| Total Cobalt (Co)     | ug/L | ND    | ND    | ND    | 0.40  | ND    | 0.40  | 3035561 |
| Total Copper (Cu)     | ug/L | ND    | ND    | ND    | ND    | ND    | 2.0   | 3035561 |
| Total Iron (Fe)       | ug/L | 361   | 217   | 440   | 978   | 454   | 50    | 3035561 |
| Total Lead (Pb)       | ug/L | ND    | ND    | ND    | 1.13  | ND    | 0.50  | 3035561 |
| Total Magnesium (Mg)  | ug/L | 1520  | 1280  | 1800  | 1650  | 758   | 100   | 3035561 |
| Total Manganese (Mn)  | ug/L | 21.3  | 44.8  | 31.4  | 127   | 190   | 2.0   | 3035561 |
| Total Molybdenum (Mo) | ug/L | ND    | ND    | ND    | ND    | ND    | 2.0   | 3035561 |
| Total Nickel (Ni)     | ug/L | ND    | ND    | ND    | ND    | ND    | 2.0   | 3035561 |
| Total Phosphorus (P)  | ug/L | ND    | ND    | ND    | ND    | ND    | 100   | 3035561 |
| Total Potassium (K)   | ug/L | 824   | 513   | 818   | 1790  | 709   | 100   | 3035561 |
| Total Selenium (Se)   | ug/L | ND    | ND    | ND    | ND    | ND    | 1.0   | 3035561 |
| Total Silver (Ag)     | ug/L | ND    | ND    | ND    | ND    | ND    | 0.10  | 3035561 |
| Total Sodium (Na)     | ug/L | 7750  | 4370  | 3920  | 17500 | 4940  | 100   | 3035561 |
| Total Strontium (Sr)  | ug/L | 52.6  | 11.6  | 33.7  | 42.8  | 28.7  | 2.0   | 3035561 |
| Total Thallium (Tl)   | ug/L | ND    | ND    | ND    | ND    | ND    | 0.10  | 3035561 |
| Total Tin (Sn)        | ug/L | ND    | ND    | ND    | ND    | ND    | 2.0   | 3035561 |
| Total Titanium (Ti)   | ug/L | 7.4   | 5.4   | 7.2   | 16.4  | 3.7   | 2.0   | 3035561 |
| Total Uranium (U)     | ug/L | ND    | ND    | ND    | ND    | ND    | 0.10  | 3035561 |
| Total Vanadium (V)    | ug/L | ND    | ND    | ND    | ND    | ND    | 2.0   | 3035561 |
| Total Zinc (Zn)       | ug/L | 5.4   | 8.7   | 7.6   | 9.6   | 10.7  | 5.0   | 3035561 |

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### ELEMENTS BY ICP/MS (WATER)

|               |              |                       |                       |            |                 |
|---------------|--------------|-----------------------|-----------------------|------------|-----------------|
| Maxxam ID     |              | PO9640                | PO9641                |            |                 |
| Sampling Date |              | 2012/11/09            | 2012/11/09            |            |                 |
| COC Number    |              | B 127516              | B 127516              |            |                 |
|               |              |                       |                       |            |                 |
|               | <b>Units</b> | <b>MAGENTA 2013 6</b> | <b>MAGENTA 2014 1</b> | <b>RDL</b> | <b>QC Batch</b> |

| <b>Metals</b>         |      |       |       |       |         |
|-----------------------|------|-------|-------|-------|---------|
| Total Aluminum (Al)   | ug/L | 1220  | 202   | 5.0   | 3035561 |
| Total Antimony (Sb)   | ug/L | ND    | ND    | 1.0   | 3035561 |
| Total Arsenic (As)    | ug/L | ND    | ND    | 1.0   | 3035561 |
| Total Barium (Ba)     | ug/L | 73.8  | 37.9  | 1.0   | 3035561 |
| Total Beryllium (Be)  | ug/L | ND    | ND    | 1.0   | 3035561 |
| Total Bismuth (Bi)    | ug/L | ND    | ND    | 2.0   | 3035561 |
| Total Boron (B)       | ug/L | ND    | ND    | 50    | 3035561 |
| Total Cadmium (Cd)    | ug/L | 0.052 | ND    | 0.017 | 3035561 |
| Total Calcium (Ca)    | ug/L | 10600 | 9890  | 100   | 3035561 |
| Total Chromium (Cr)   | ug/L | 1.6   | ND    | 1.0   | 3035561 |
| Total Cobalt (Co)     | ug/L | 0.69  | ND    | 0.40  | 3035561 |
| Total Copper (Cu)     | ug/L | 2.2   | ND    | 2.0   | 3035561 |
| Total Iron (Fe)       | ug/L | 1290  | 447   | 50    | 3035561 |
| Total Lead (Pb)       | ug/L | 1.71  | ND    | 0.50  | 3035561 |
| Total Magnesium (Mg)  | ug/L | 2150  | 1590  | 100   | 3035561 |
| Total Manganese (Mn)  | ug/L | 106   | 148   | 2.0   | 3035561 |
| Total Molybdenum (Mo) | ug/L | ND    | ND    | 2.0   | 3035561 |
| Total Nickel (Ni)     | ug/L | 3.2   | ND    | 2.0   | 3035561 |
| Total Phosphorus (P)  | ug/L | ND    | ND    | 100   | 3035561 |
| Total Potassium (K)   | ug/L | 3180  | 1030  | 100   | 3035561 |
| Total Selenium (Se)   | ug/L | ND    | ND    | 1.0   | 3035561 |
| Total Silver (Ag)     | ug/L | ND    | ND    | 0.10  | 3035561 |
| Total Sodium (Na)     | ug/L | 14000 | 15200 | 100   | 3035561 |
| Total Strontium (Sr)  | ug/L | 48.4  | 78.1  | 2.0   | 3035561 |
| Total Thallium (Tl)   | ug/L | ND    | ND    | 0.10  | 3035561 |
| Total Tin (Sn)        | ug/L | ND    | ND    | 2.0   | 3035561 |
| Total Titanium (Ti)   | ug/L | 56.2  | 3.1   | 2.0   | 3035561 |
| Total Uranium (U)     | ug/L | ND    | ND    | 0.10  | 3035561 |
| Total Vanadium (V)    | ug/L | ND    | ND    | 2.0   | 3035561 |
| Total Zinc (Zn)       | ug/L | 17.8  | 5.3   | 5.0   | 3035561 |

ND = Not detected  
 RDL = Reportable Detection Limit  
 QC Batch = Quality Control Batch

Maxxam Job #: B2H8140  
Report Date: 2012/11/21

Dillon Consulting Limited  
Client Project #: 1000  
Site Location: PICTOU COUNTY PIPELINE  
Your P.O. #: 126744

**GENERAL COMMENTS**

Sample PO9639-01: RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

**Results relate only to the items tested.**



Dillon Consulting Limited  
 Attention: Scott McMillan  
 Client Project #: 1000  
 P.O. #: 126744  
 Site Location: PICTOU COUNTY PIPELINE

Quality Assurance Report  
 Maxxam Job Number: DB2H8140

| QA/QC Batch           | QC Type      | Parameter             | Date Analyzed<br>yyyy/mm/dd | Value               | Recovery   | Units | QC Limits |   |          |
|-----------------------|--------------|-----------------------|-----------------------------|---------------------|------------|-------|-----------|---|----------|
| 3035561 DLB           | Matrix Spike | Total Aluminum (Al)   | 2012/11/15                  |                     | 107        | %     | 80 - 120  |   |          |
|                       |              | Total Antimony (Sb)   | 2012/11/15                  |                     | 109        | %     | 80 - 120  |   |          |
|                       |              | Total Arsenic (As)    | 2012/11/15                  |                     | 105        | %     | 80 - 120  |   |          |
|                       |              | Total Barium (Ba)     | 2012/11/15                  |                     | 104        | %     | 80 - 120  |   |          |
|                       |              | Total Beryllium (Be)  | 2012/11/15                  |                     | 110        | %     | 80 - 120  |   |          |
|                       |              | Total Bismuth (Bi)    | 2012/11/15                  |                     | 104        | %     | 80 - 120  |   |          |
|                       |              | Total Boron (B)       | 2012/11/15                  |                     | NC         | %     | 80 - 120  |   |          |
|                       |              | Total Cadmium (Cd)    | 2012/11/15                  |                     | 103        | %     | 80 - 120  |   |          |
|                       |              | Total Calcium (Ca)    | 2012/11/15                  |                     | NC         | %     | 80 - 120  |   |          |
|                       |              | Total Chromium (Cr)   | 2012/11/15                  |                     | 104        | %     | 80 - 120  |   |          |
|                       |              | Total Cobalt (Co)     | 2012/11/15                  |                     | 105        | %     | 80 - 120  |   |          |
|                       |              | Total Copper (Cu)     | 2012/11/15                  |                     | 102        | %     | 80 - 120  |   |          |
|                       |              | Total Iron (Fe)       | 2012/11/15                  |                     | 106        | %     | 80 - 120  |   |          |
|                       |              | Total Lead (Pb)       | 2012/11/15                  |                     | 107        | %     | 80 - 120  |   |          |
|                       |              | Total Magnesium (Mg)  | 2012/11/15                  |                     | 106        | %     | 80 - 120  |   |          |
|                       |              | Total Manganese (Mn)  | 2012/11/15                  |                     | NC         | %     | 80 - 120  |   |          |
|                       |              | Total Molybdenum (Mo) | 2012/11/15                  |                     | 113        | %     | 80 - 120  |   |          |
|                       |              | Total Nickel (Ni)     | 2012/11/15                  |                     | 100        | %     | 80 - 120  |   |          |
|                       |              | Total Phosphorus (P)  | 2012/11/15                  |                     | 107        | %     | 80 - 120  |   |          |
|                       |              | Total Potassium (K)   | 2012/11/15                  |                     | 102        | %     | 80 - 120  |   |          |
|                       |              | Total Selenium (Se)   | 2012/11/15                  |                     | 105        | %     | 80 - 120  |   |          |
|                       |              | Total Silver (Ag)     | 2012/11/15                  |                     | 105        | %     | 80 - 120  |   |          |
|                       |              | Total Sodium (Na)     | 2012/11/15                  |                     | NC         | %     | 80 - 120  |   |          |
|                       |              | Total Strontium (Sr)  | 2012/11/15                  |                     | NC         | %     | 80 - 120  |   |          |
|                       |              | Total Thallium (Tl)   | 2012/11/15                  |                     | 104        | %     | 80 - 120  |   |          |
|                       |              | Total Tin (Sn)        | 2012/11/15                  |                     | 109        | %     | 80 - 120  |   |          |
|                       |              | Total Titanium (Ti)   | 2012/11/15                  |                     | 110        | %     | 80 - 120  |   |          |
|                       |              | Total Uranium (U)     | 2012/11/15                  |                     | 111        | %     | 80 - 120  |   |          |
|                       |              | Total Vanadium (V)    | 2012/11/15                  |                     | 109        | %     | 80 - 120  |   |          |
|                       |              | Total Zinc (Zn)       | 2012/11/15                  |                     | 102        | %     | 80 - 120  |   |          |
|                       |              | Spiked Blank          |                             | Total Aluminum (Al) | 2012/11/15 |       | 102       | % | 80 - 120 |
|                       |              |                       |                             | Total Antimony (Sb) | 2012/11/15 |       | 104       | % | 80 - 120 |
|                       |              |                       |                             | Total Arsenic (As)  | 2012/11/15 |       | 104       | % | 80 - 120 |
|                       |              |                       |                             | Total Barium (Ba)   | 2012/11/15 |       | 103       | % | 80 - 120 |
| Total Beryllium (Be)  | 2012/11/15   |                       |                             |                     | 104        | %     | 80 - 120  |   |          |
| Total Bismuth (Bi)    | 2012/11/15   |                       |                             |                     | 106        | %     | 80 - 120  |   |          |
| Total Boron (B)       | 2012/11/15   |                       |                             |                     | 101        | %     | 80 - 120  |   |          |
| Total Cadmium (Cd)    | 2012/11/15   |                       |                             |                     | 102        | %     | 80 - 120  |   |          |
| Total Calcium (Ca)    | 2012/11/15   |                       |                             |                     | 95         | %     | 80 - 120  |   |          |
| Total Chromium (Cr)   | 2012/11/15   |                       |                             |                     | 104        | %     | 80 - 120  |   |          |
| Total Cobalt (Co)     | 2012/11/15   |                       |                             |                     | 106        | %     | 80 - 120  |   |          |
| Total Copper (Cu)     | 2012/11/15   |                       |                             |                     | 104        | %     | 80 - 120  |   |          |
| Total Iron (Fe)       | 2012/11/15   |                       |                             |                     | 103        | %     | 80 - 120  |   |          |
| Total Lead (Pb)       | 2012/11/15   |                       |                             |                     | 107        | %     | 80 - 120  |   |          |
| Total Magnesium (Mg)  | 2012/11/15   |                       |                             |                     | 102        | %     | 80 - 120  |   |          |
| Total Manganese (Mn)  | 2012/11/15   |                       |                             |                     | 103        | %     | 80 - 120  |   |          |
| Total Molybdenum (Mo) | 2012/11/15   |                       |                             |                     | 107        | %     | 80 - 120  |   |          |
| Total Nickel (Ni)     | 2012/11/15   |                       |                             |                     | 103        | %     | 80 - 120  |   |          |
| Total Phosphorus (P)  | 2012/11/15   |                       |                             |                     | 107        | %     | 80 - 120  |   |          |
| Total Potassium (K)   | 2012/11/15   |                       |                             |                     | 101        | %     | 80 - 120  |   |          |
| Total Selenium (Se)   | 2012/11/15   |                       |                             |                     | 104        | %     | 80 - 120  |   |          |
| Total Silver (Ag)     | 2012/11/15   |                       |                             |                     | 107        | %     | 80 - 120  |   |          |
| Total Sodium (Na)     | 2012/11/15   |                       |                             |                     | 100        | %     | 80 - 120  |   |          |
| Total Strontium (Sr)  | 2012/11/15   |                       |                             |                     | 105        | %     | 80 - 120  |   |          |
| Total Thallium (Tl)   | 2012/11/15   |                       |                             |                     | 107        | %     | 80 - 120  |   |          |

Dillon Consulting Limited  
 Attention: Scott McMillan  
 Client Project #: 1000  
 P.O. #: 126744  
 Site Location: PICTOU COUNTY PIPELINE

## Quality Assurance Report (Continued)

Maxxam Job Number: DB2H8140

| QA/QC Batch           | QC Type      | Parameter             | Date Analyzed<br>yyyy/mm/dd | Value               | Recovery   | Units    | QC Limits |   |    |
|-----------------------|--------------|-----------------------|-----------------------------|---------------------|------------|----------|-----------|---|----|
| 3035561 DLB           | Spiked Blank | Total Tin (Sn)        | 2012/11/15                  |                     | 107        | %        | 80 - 120  |   |    |
|                       |              | Total Titanium (Ti)   | 2012/11/15                  |                     | 108        | %        | 80 - 120  |   |    |
| Total Uranium (U)     |              | 2012/11/15            |                             | 109                 | %          | 80 - 120 |           |   |    |
| Total Vanadium (V)    |              | 2012/11/15            |                             | 105                 | %          | 80 - 120 |           |   |    |
| Total Zinc (Zn)       |              | 2012/11/15            |                             | 105                 | %          | 80 - 120 |           |   |    |
| Method Blank          | Method Blank | Total Aluminum (Al)   | 2012/11/15                  | 9.7, RDL=5.0        |            | ug/L     |           |   |    |
|                       |              | Total Antimony (Sb)   | 2012/11/15                  | ND, RDL=1.0         |            | ug/L     |           |   |    |
|                       |              | Total Arsenic (As)    | 2012/11/15                  | ND, RDL=1.0         |            | ug/L     |           |   |    |
|                       |              | Total Barium (Ba)     | 2012/11/15                  | ND, RDL=1.0         |            | ug/L     |           |   |    |
|                       |              | Total Beryllium (Be)  | 2012/11/15                  | ND, RDL=1.0         |            | ug/L     |           |   |    |
|                       |              | Total Bismuth (Bi)    | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Boron (B)       | 2012/11/15                  | ND, RDL=50          |            | ug/L     |           |   |    |
|                       |              | Total Cadmium (Cd)    | 2012/11/15                  | ND, RDL=0.017       |            | ug/L     |           |   |    |
|                       |              | Total Calcium (Ca)    | 2012/11/15                  | ND, RDL=100         |            | ug/L     |           |   |    |
|                       |              | Total Chromium (Cr)   | 2012/11/15                  | ND, RDL=1.0         |            | ug/L     |           |   |    |
|                       |              | Total Cobalt (Co)     | 2012/11/15                  | ND, RDL=0.40        |            | ug/L     |           |   |    |
|                       |              | Total Copper (Cu)     | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Iron (Fe)       | 2012/11/15                  | ND, RDL=50          |            | ug/L     |           |   |    |
|                       |              | Total Lead (Pb)       | 2012/11/15                  | ND, RDL=0.50        |            | ug/L     |           |   |    |
|                       |              | Total Magnesium (Mg)  | 2012/11/15                  | ND, RDL=100         |            | ug/L     |           |   |    |
|                       |              | Total Manganese (Mn)  | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Molybdenum (Mo) | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Nickel (Ni)     | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Phosphorus (P)  | 2012/11/15                  | ND, RDL=100         |            | ug/L     |           |   |    |
|                       |              | Total Potassium (K)   | 2012/11/15                  | ND, RDL=100         |            | ug/L     |           |   |    |
|                       |              | Total Selenium (Se)   | 2012/11/15                  | ND, RDL=1.0         |            | ug/L     |           |   |    |
|                       |              | Total Silver (Ag)     | 2012/11/15                  | ND, RDL=0.10        |            | ug/L     |           |   |    |
|                       |              | Total Sodium (Na)     | 2012/11/15                  | ND, RDL=100         |            | ug/L     |           |   |    |
|                       |              | Total Strontium (Sr)  | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Thallium (Tl)   | 2012/11/15                  | ND, RDL=0.10        |            | ug/L     |           |   |    |
|                       |              | Total Tin (Sn)        | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Titanium (Ti)   | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Uranium (U)     | 2012/11/15                  | ND, RDL=0.10        |            | ug/L     |           |   |    |
|                       |              | Total Vanadium (V)    | 2012/11/15                  | ND, RDL=2.0         |            | ug/L     |           |   |    |
|                       |              | Total Zinc (Zn)       | 2012/11/15                  | ND, RDL=5.0         |            | ug/L     |           |   |    |
|                       |              | RPD                   | RPD                         | Total Aluminum (Al) | 2012/11/15 | NC       |           | % | 25 |
|                       |              |                       |                             | Total Antimony (Sb) | 2012/11/15 | NC       |           | % | 25 |
|                       |              |                       |                             | Total Arsenic (As)  | 2012/11/15 | NC       |           | % | 25 |
| Total Barium (Ba)     | 2012/11/15   |                       |                             | 2.8                 |            | %        | 25        |   |    |
| Total Beryllium (Be)  | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Bismuth (Bi)    | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Boron (B)       | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Cadmium (Cd)    | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Calcium (Ca)    | 2012/11/15   |                       |                             | 1.3                 |            | %        | 25        |   |    |
| Total Chromium (Cr)   | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Cobalt (Co)     | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Copper (Cu)     | 2012/11/15   |                       |                             | 0.5                 |            | %        | 25        |   |    |
| Total Iron (Fe)       | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Lead (Pb)       | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Magnesium (Mg)  | 2012/11/15   |                       |                             | 2.7                 |            | %        | 25        |   |    |
| Total Manganese (Mn)  | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Molybdenum (Mo) | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Nickel (Ni)     | 2012/11/15   |                       |                             | NC                  |            | %        | 25        |   |    |
| Total Phosphorus (P)  | 2012/11/15   | NC                    |                             | %                   | 25         |          |           |   |    |
| Total Potassium (K)   | 2012/11/15   | 2.7                   |                             | %                   | 25         |          |           |   |    |

Dillon Consulting Limited  
 Attention: Scott McMillan  
 Client Project #: 1000  
 P.O. #: 126744  
 Site Location: PICTOU COUNTY PIPELINE

## Quality Assurance Report (Continued)

Maxxam Job Number: DB2H8140

| QA/QC Batch | QC Type | Parameter            | Date Analyzed<br>yyyy/mm/dd       | Value      | Recovery      | Units | QC Limits |          |
|-------------|---------|----------------------|-----------------------------------|------------|---------------|-------|-----------|----------|
| 3035561     | DLB     | RPD                  |                                   |            |               |       |           |          |
|             |         | Total Selenium (Se)  | 2012/11/15                        | NC         |               | %     | 25        |          |
|             |         | Total Silver (Ag)    | 2012/11/15                        | NC         |               | %     | 25        |          |
|             |         | Total Sodium (Na)    | 2012/11/15                        | 2.0        |               | %     | 25        |          |
|             |         | Total Strontium (Sr) | 2012/11/15                        | 1.8        |               | %     | 25        |          |
|             |         | Total Thallium (Tl)  | 2012/11/15                        | NC         |               | %     | 25        |          |
|             |         | Total Tin (Sn)       | 2012/11/15                        | NC         |               | %     | 25        |          |
|             |         | Total Titanium (Ti)  | 2012/11/15                        | NC         |               | %     | 25        |          |
|             |         | Total Uranium (U)    | 2012/11/15                        | 2.8        |               | %     | 25        |          |
|             |         | Total Vanadium (V)   | 2012/11/15                        | NC         |               | %     | 25        |          |
|             |         | Total Zinc (Zn)      | 2012/11/15                        | NC         |               | %     | 25        |          |
| 3036941     | ARS     | Matrix Spike         | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | 104   | %         | 80 - 120 |
|             |         | QC Standard          | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | 111   | %         | 80 - 120 |
|             |         | Spiked Blank         | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | 98    | %         | 80 - 120 |
|             |         | Method Blank         | Total Alkalinity (Total as CaCO3) | 2012/11/15 | ND, RDL=5.0   |       | mg/L      |          |
|             |         | RPD                  | Total Alkalinity (Total as CaCO3) | 2012/11/15 | NC            |       | %         | 25       |
| 3036943     | JOA     | Matrix Spike         | Nitrite (N)                       | 2012/11/16 |               | 102   | %         | 80 - 120 |
|             |         | QC Standard          | Nitrite (N)                       | 2012/11/16 |               | 102   | %         | 80 - 120 |
|             |         | Spiked Blank         | Nitrite (N)                       | 2012/11/16 |               | 108   | %         | 80 - 120 |
|             |         | Method Blank         | Nitrite (N)                       | 2012/11/16 | ND, RDL=0.010 |       | mg/L      |          |
|             |         | RPD                  | Nitrite (N)                       | 2012/11/16 | NC            |       | %         | 25       |
| 3036944     | JOA     | Matrix Spike         | Dissolved Chloride (Cl)           | 2012/11/15 |               | 108   | %         | 80 - 120 |
|             |         | QC Standard          | Dissolved Chloride (Cl)           | 2012/11/15 |               | 102   | %         | 80 - 120 |
|             |         | Spiked Blank         | Dissolved Chloride (Cl)           | 2012/11/15 |               | 105   | %         | 80 - 120 |
|             |         | Method Blank         | Dissolved Chloride (Cl)           | 2012/11/15 | ND, RDL=1.0   |       | mg/L      |          |
|             |         | RPD                  | Dissolved Chloride (Cl)           | 2012/11/15 | 0.03          |       | %         | 25       |
| 3036945     | JOA     | Matrix Spike         | Reactive Silica (SiO2)            | 2012/11/15 |               | NC    | %         | 80 - 120 |
|             |         | Spiked Blank         | Reactive Silica (SiO2)            | 2012/11/15 |               | 98    | %         | 80 - 120 |
|             |         | Method Blank         | Reactive Silica (SiO2)            | 2012/11/15 | ND, RDL=0.50  |       | mg/L      |          |
|             |         | RPD                  | Reactive Silica (SiO2)            | 2012/11/15 | 0.4           |       | %         | 25       |
| 3036946     | ARS     | QC Standard          | Colour                            | 2012/11/16 |               | 100   | %         | 80 - 120 |
|             |         | Method Blank         | Colour                            | 2012/11/16 | ND, RDL=5.0   |       | TCU       |          |
|             |         | RPD                  | Colour                            | 2012/11/16 | NC            |       | %         | 25       |
| 3036947     | JOA     | Matrix Spike         | Orthophosphate (P)                | 2012/11/16 |               | 94    | %         | 80 - 120 |
|             |         | QC Standard          | Orthophosphate (P)                | 2012/11/16 |               | 100   | %         | 80 - 120 |
|             |         | Spiked Blank         | Orthophosphate (P)                | 2012/11/16 |               | 100   | %         | 80 - 120 |
|             |         | Method Blank         | Orthophosphate (P)                | 2012/11/16 | ND, RDL=0.010 |       | mg/L      |          |
|             |         | RPD                  | Orthophosphate (P)                | 2012/11/16 | NC            |       | %         | 25       |
| 3036948     | ARS     | Matrix Spike         | Nitrate + Nitrite                 | 2012/11/16 |               | 97    | %         | 80 - 120 |
|             |         | QC Standard          | Nitrate + Nitrite                 | 2012/11/16 |               | 96    | %         | 80 - 120 |
|             |         | Spiked Blank         | Nitrate + Nitrite                 | 2012/11/16 |               | 99    | %         | 80 - 120 |
|             |         | Method Blank         | Nitrate + Nitrite                 | 2012/11/16 | ND, RDL=0.050 |       | mg/L      |          |
|             |         | RPD                  | Nitrate + Nitrite                 | 2012/11/16 | NC            |       | %         | 25       |
| 3036949     | JOA     | Matrix Spike         | Dissolved Sulphate (SO4)          | 2012/11/16 |               | 104   | %         | 80 - 120 |
|             |         | QC Standard          | Dissolved Sulphate (SO4)          | 2012/11/16 |               | 102   | %         | 80 - 120 |
|             |         | Spiked Blank         | Dissolved Sulphate (SO4)          | 2012/11/16 |               | 108   | %         | 80 - 120 |
|             |         | Method Blank         | Dissolved Sulphate (SO4)          | 2012/11/16 | ND, RDL=2.0   |       | mg/L      |          |
|             |         | RPD                  | Dissolved Sulphate (SO4)          | 2012/11/16 | NC            |       | %         | 25       |
| 3036956     | ARS     | Matrix Spike         | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | NC    | %         | 80 - 120 |
|             |         | [PO9640-02]          | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | 110   | %         | 80 - 120 |
|             |         | QC Standard          | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | 107   | %         | 80 - 120 |
|             |         | Spiked Blank         | Total Alkalinity (Total as CaCO3) | 2012/11/15 |               | 107   | %         | 80 - 120 |
|             |         | Method Blank         | Total Alkalinity (Total as CaCO3) | 2012/11/15 | ND, RDL=5.0   |       | mg/L      |          |
|             |         | RPD [PO9640-02]      | Total Alkalinity (Total as CaCO3) | 2012/11/15 | 1.4           |       | %         | 25       |
| 3036960     | JOA     | Matrix Spike         | Dissolved Chloride (Cl)           | 2012/11/15 |               | 104   | %         | 80 - 120 |
|             |         | [PO9640-02]          | Dissolved Chloride (Cl)           | 2012/11/15 |               | 104   | %         | 80 - 120 |

Dillon Consulting Limited  
 Attention: Scott McMillan  
 Client Project #: 1000  
 P.O. #: 126744  
 Site Location: PICTOU COUNTY PIPELINE

## Quality Assurance Report (Continued)

Maxxam Job Number: DB2H8140

| QA/QC Batch | QC Type         | Parameter                   | Date Analyzed<br>yyyy/mm/dd | Value         | Recovery | Units | QC Limits |
|-------------|-----------------|-----------------------------|-----------------------------|---------------|----------|-------|-----------|
| 3036960 JOA | QC Standard     | Dissolved Chloride (Cl)     | 2012/11/15                  |               | 101      | %     | 80 - 120  |
|             | Spiked Blank    | Dissolved Chloride (Cl)     | 2012/11/15                  |               | 105      | %     | 80 - 120  |
|             | Method Blank    | Dissolved Chloride (Cl)     | 2012/11/15                  | ND, RDL=1.0   |          | mg/L  |           |
|             | RPD [PO9640-02] | Dissolved Chloride (Cl)     | 2012/11/15                  | 0.9           |          | %     | 25        |
| 3036961 JOA | Matrix Spike    |                             |                             |               |          |       |           |
|             | [PO9640-02]     | Dissolved Sulphate (SO4)    | 2012/11/16                  |               | 114      | %     | 80 - 120  |
|             | QC Standard     | Dissolved Sulphate (SO4)    | 2012/11/16                  |               | 100      | %     | 80 - 120  |
|             | Spiked Blank    | Dissolved Sulphate (SO4)    | 2012/11/16                  |               | 103      | %     | 80 - 120  |
|             | Method Blank    | Dissolved Sulphate (SO4)    | 2012/11/16                  | ND, RDL=2.0   |          | mg/L  |           |
|             | RPD [PO9640-02] | Dissolved Sulphate (SO4)    | 2012/11/16                  | NC            |          | %     | 25        |
| 3036962 JOA | Matrix Spike    |                             |                             |               |          |       |           |
|             | [PO9640-02]     | Reactive Silica (SiO2)      | 2012/11/15                  |               | 104      | %     | 80 - 120  |
|             | Spiked Blank    | Reactive Silica (SiO2)      | 2012/11/15                  |               | 98       | %     | 80 - 120  |
|             | Method Blank    | Reactive Silica (SiO2)      | 2012/11/15                  | ND, RDL=0.50  |          | mg/L  |           |
|             | RPD [PO9640-02] | Reactive Silica (SiO2)      | 2012/11/15                  | 0.6           |          | %     | 25        |
| 3036963 ARS | QC Standard     | Colour                      | 2012/11/16                  |               | 103      | %     | 80 - 120  |
|             | Method Blank    | Colour                      | 2012/11/16                  | ND, RDL=5.0   |          | TCU   |           |
|             | RPD [PO9640-02] | Colour                      | 2012/11/16                  | NC            |          | %     | 25        |
| 3036964 JOA | Matrix Spike    |                             |                             |               |          |       |           |
|             | [PO9640-02]     | Orthophosphate (P)          | 2012/11/16                  |               | 90       | %     | 80 - 120  |
|             | QC Standard     | Orthophosphate (P)          | 2012/11/16                  |               | 100      | %     | 80 - 120  |
|             | Spiked Blank    | Orthophosphate (P)          | 2012/11/16                  |               | 100      | %     | 80 - 120  |
|             | Method Blank    | Orthophosphate (P)          | 2012/11/16                  | ND, RDL=0.010 |          | mg/L  |           |
|             | RPD [PO9640-02] | Orthophosphate (P)          | 2012/11/16                  | NC            |          | %     | 25        |
| 3036965 ARS | Matrix Spike    |                             |                             |               |          |       |           |
|             | [PO9640-02]     | Nitrate + Nitrite           | 2012/11/16                  |               | 102      | %     | 80 - 120  |
|             | QC Standard     | Nitrate + Nitrite           | 2012/11/16                  |               | 97       | %     | 80 - 120  |
|             | Spiked Blank    | Nitrate + Nitrite           | 2012/11/16                  |               | 97       | %     | 80 - 120  |
|             | Method Blank    | Nitrate + Nitrite           | 2012/11/16                  | ND, RDL=0.050 |          | mg/L  |           |
|             | RPD [PO9640-02] | Nitrate + Nitrite           | 2012/11/16                  | NC            |          | %     | 25        |
| 3036966 JOA | Matrix Spike    |                             |                             |               |          |       |           |
|             | [PO9640-02]     | Nitrite (N)                 | 2012/11/16                  |               | 100      | %     | 80 - 120  |
|             | QC Standard     | Nitrite (N)                 | 2012/11/16                  |               | 103      | %     | 80 - 120  |
|             | Spiked Blank    | Nitrite (N)                 | 2012/11/16                  |               | 109      | %     | 80 - 120  |
|             | Method Blank    | Nitrite (N)                 | 2012/11/16                  | ND, RDL=0.010 |          | mg/L  |           |
|             | RPD [PO9640-02] | Nitrite (N)                 | 2012/11/16                  | NC            |          | %     | 25        |
| 3037004 AWM | QC Standard     | Total Suspended Solids      | 2012/11/15                  |               | 100      | %     | 80 - 120  |
|             | Method Blank    | Total Suspended Solids      | 2012/11/15                  | ND, RDL=1.0   |          | mg/L  |           |
|             | RPD             | Total Suspended Solids      | 2012/11/15                  | 11.3          |          | %     | 25        |
| 3037110 ARS | Matrix Spike    | Nitrogen (Ammonia Nitrogen) | 2012/11/16                  |               | 86       | %     | 80 - 120  |
|             | QC Standard     | Nitrogen (Ammonia Nitrogen) | 2012/11/15                  |               | 101      | %     | 80 - 120  |
|             | Spiked Blank    | Nitrogen (Ammonia Nitrogen) | 2012/11/15                  |               | 93       | %     | 80 - 120  |
|             | Method Blank    | Nitrogen (Ammonia Nitrogen) | 2012/11/15                  | ND, RDL=0.050 |          | mg/L  |           |
|             | RPD             | Nitrogen (Ammonia Nitrogen) | 2012/11/15                  | 0.6           |          | %     | 25        |
| 3037300 KFO | Matrix Spike    | Total Organic Carbon (C)    | 2012/11/15                  |               | NC       | %     | 80 - 120  |
|             | Spiked Blank    | Total Organic Carbon (C)    | 2012/11/15                  |               | 95       | %     | 80 - 120  |
|             | Method Blank    | Total Organic Carbon (C)    | 2012/11/15                  | ND, RDL=0.50  |          | mg/L  |           |
|             | RPD             | Total Organic Carbon (C)    | 2012/11/15                  | 1.8           |          | %     | 25        |
| 3037305 KFO | Matrix Spike    | Total Organic Carbon (C)    | 2012/11/15                  |               | NC       | %     | 80 - 120  |
|             | Spiked Blank    | Total Organic Carbon (C)    | 2012/11/15                  |               | 94       | %     | 80 - 120  |
|             | Method Blank    | Total Organic Carbon (C)    | 2012/11/15                  | ND, RDL=0.50  |          | mg/L  |           |
|             | RPD             | Total Organic Carbon (C)    | 2012/11/15                  | 0.1 (f)       |          | %     | 25        |
| 3037491 SCR | QC Standard     | pH                          | 2012/11/15                  |               | 100      | %     | 80 - 120  |
|             | RPD             | pH                          | 2012/11/15                  | 0.1           |          | %     | 25        |
| 3037493 SCR | Spiked Blank    | Conductivity                | 2012/11/15                  |               | 100      | %     | 80 - 120  |

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### Quality Assurance Report (Continued)

Maxxam Job Number: DB2H8140

| QA/QC Batch | QC Type | Parameter    | Date Analyzed<br>yyyy/mm/dd | Value       | Recovery | Units | QC Limits |
|-------------|---------|--------------|-----------------------------|-------------|----------|-------|-----------|
| 3037493     | SCR     | Method Blank | 2012/11/15                  | ND, RDL=1.0 |          | uS/cm |           |
|             |         | RPD          | 2012/11/15                  | 0           |          | %     | 25        |
| 3037503     | AWM     | QC Standard  | 2012/11/16                  |             | 98       | %     | 80 - 120  |
|             |         | Method Blank | 2012/11/16                  | ND, RDL=1.0 |          | mg/L  |           |
|             |         | RPD          | 2012/11/16                  | 17.5        |          | %     | 25        |
| 3038506     | SCR     | QC Standard  | 2012/11/16                  |             | 102      | %     | 80 - 120  |
|             |         | RPD          | 2012/11/16                  | NC          |          | %     | 25        |
| 3038508     | SCR     | QC Standard  | 2012/11/16                  |             | 102      | %     | 80 - 120  |
|             |         | RPD          | 2012/11/16                  | NC          |          | %     | 25        |

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

( 1 ) Analysis performed on decanted sample due to sediment content.

## Validation Signature Page

Maxxam Job #: B2H8140

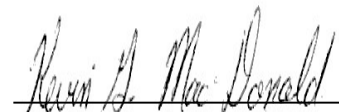
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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



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Gollene Acker, Supervisor, General Chemistry



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Kevin Macdonald, Inorganics Supervisor

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.