



Environment Canada Proficiency Testing Program Study #0096

Trace Elements in Water

**Environnement Canada
Programme d'essais d'aptitude
Études #0096**

Éléments traces dans l'eau

**June/Juin to September/Septembre 2010
C. Tinson
WSTD Contribution No. 10-148**



Environment
Canada

Environnement
Canada

Information and Quality Management

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September 24, 2010

To: Participants of the **Environment Canada Proficiency Testing (PT) Program**

Re: Distribution of the Final Report for **PT Study 0096** (June to September 2010)

Dear Participant,

We thank you for your co-operation and punctual responses with respect to this study. It is the aim of the PT program to give prompt evaluations and reports, and effective remedial assistance. Our PT Program is accredited by the American Association for Laboratory Accreditation (A2LA) and conforms to ILAC G13:2007, Guidelines for the Requirements for the Competence of Providers of Proficiency Testing. The scope of accreditation (A2LA 2867.01) can be viewed on the A2LA website (<http://www.a2la.org/scopepdf/2867-01.pdf>).

This final report includes results and evaluations for **trace elements in natural waters**. The evaluation includes systemic bias and precision, a laboratory proficiency appraisal and a summary of z-scores. The flagging criteria, stipulated in ISO 13528:2005, Annex C, are calculated separately for each study. Each laboratory is encouraged to compare its results and evaluations with others. A complete listing of all laboratory results is included.

Please note the sample names on columns 1 and 6 of the preliminary data assessment have been transposed in the data summary of this final report. This change was necessary due to an error in the bottle filling sequence. Investigation has confirmed the sample naming nonconformance would only impact our historical database and does not affect laboratory performance evaluations. Corrective action to the database resulted in the column name changes in this final report.

Laboratory managers are encouraged to discuss the attached report openly with those who manage their programs and those who use their laboratory data. Systemic bias is a major fault whose root cause can be uncovered. Systemic bias and its degree are given for each parameter in the Data Summary. In the event you disagree with any of our data evaluations, please contact us and we will discuss the item with you. The matter may also be brought forward to our annual Advisory Group meeting.

The laboratories listed in this report submitted their data with a confidential laboratory code. This confidentiality is fully respected by our staff. Access to these codes is possible through the relevant laboratories or program authorities.

Should you have any questions or comments regarding this study, please contact us at your earliest convenience. Your comments are instrumental to the continued improvement of our PT Program.

Sincerely,
Cheryl Tinson
Study Coordinator

Enclosures (2)
1) Laboratory Proficiency Appraisal
2) Z-Score Summary



Information and Quality Management
Proficiency Testing Program
Inorganic Environmental Substances

Canada

Environment Canada Proficiency Testing Program

Final Report

for

Trace Elements in Water

PT Study 0096* – June to September 2010

Contributors

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September 2010

*companion studies: Rain and Soft Waters: WSTD #10-146; Major Ions and Nutrients, Total Phosphorus and Turbidity in Water: WSTD #10-147 and Trace Elements in Sediment: WSTD #10-149.



Environment Canada Proficiency Testing Program

Program Description:

Environment Canada (EC) provides accredited proficiency testing (PT) studies for a wide range of inorganic constituents in water and in sediment. These PT Studies are designed to quantify laboratory performance and improve the quality of environmental data. Reports produced from the client data provide a powerful tool for the continual improvement of the quality of analytical results.

The EC PT program includes:

- all lab codes are strictly confidential
- two months to analyze and submit laboratory data
- preliminary data assessment is sent three weeks after results are due
- laboratory proficiency appraisals are sent to participants
- z-score summaries are sent to participants
- a final report is mailed to participants and concludes the study

The studies are offered twice a year and consist of six 'sample sets' per study with ten samples in each set (see Table 1). The samples are prepared in natural background waters from lakes, rivers or rainwater, and are fortified or preserved as necessary. The trace elements in water samples are generally divided to reflect both low and high concentration ranges. Participating laboratories submit results for parameters they routinely analyze. Analytical results are submitted electronically for assessment.

Table 1 'Sample Sets' offered in the Summer and Winter Studies

| SUMMER STUDY | WINTER STUDY |
|--|--|
| <ol style="list-style-type: none">1. rain and soft waters (RN)2. major ions and nutrients (MI)3. trace elements in water (TE)4. total phosphorus in water (TP)5. turbidity in water (TU)6. (a)trace elements in sediment (SED)* | <ol style="list-style-type: none">1. rain and soft waters (RN)2. major ions and nutrients (MI)3. trace elements in water (TE)4. total phosphorus in water (TP)5. turbidity in water (TU)6. (b)total mercury in water (HG) |

*five samples per set

PT study reports feature tabulation of all results and provide extensive evaluations. All analytical and data results are listed in the data summary. Of particular interest to laboratories, proficiency is ranked in terms of the number of biased parameters (systemic bias) and flagged results (precision measurement). Each laboratory receives a formal appraisal and z-score summary indicating the proficiency for each parameter submitted.

The Environment Canada PT program conforms to the requirements of the American Association for Laboratory Accreditation (A2LA). The program meets the ILAC G-13:2007 Guidelines for the Requirements for the Competence of Providers of Proficiency Testing. Environment Canada is the A2LA accredited Proficiency Testing Provider with scope of accreditation 2867.01.





Programme d'essais d'aptitude d'Environnement Canada

Description du programme:

Environnement Canada offre un programme accrédité d'études d'essais d'aptitude (EA) pour un large éventail de substances inorganiques présentes dans l'eau et dans les sédiments. Ces études sont conçues de façon à quantifier la performance des laboratoires et à améliorer la qualité des données sur l'environnement. Les rapports établis à partir des données des clients constituent un outil très puissant d'amélioration permanente de la qualité des résultats d'analyse.

Le programme de EA d'Environnement Canada prévoit :

- la stricte confidentialité de tous les codes de laboratoire;
- une période de deux mois pour l'analyse et la présentation des données de laboratoire;
- la communication d'une évaluation préliminaire des données trois semaines après la date prévue de présentation des résultats;
- la communication aux participants des évaluations de compétences;
- la communication aux participants des résumés des scores z;
- l'envoi par la poste d'un rapport final des données, qui met fin à l'étude.

Les études peuvent être réalisées deux fois par an et chaque étude comporte six « ensembles d'échantillons » formés de dix échantillons (voir le tableau 1). Les échantillons sont préparés à l'aide d'eau de lacs, de cours d'eau ou de pluie représentative des conditions naturelles de fond et sont au besoin enrichis ou préservés. Les éléments traces des échantillons sont généralement répartis de façon à refléter des gammes de concentrations faibles et élevées. Les laboratoires participants présentent les résultats obtenus pour les paramètres qu'ils analysent généralement. Les résultats d'analyse sont soumis par voie électronique aux fins d'évaluation.

Tableau 1 « Ensembles d'échantillons » offerts pour les études d'été et d'hiver

| ÉTUDE D'ÉTÉ | ÉTUDE D'HIVER |
|--|--|
| 1. eau de pluie et eau douce (EP-ED) | 1. eau de pluie et eau douce (EP-ED) |
| 2. principaux ions et substances nutritives (PI) | 2. principaux ions et substances nutritives (PI) |
| 3. éléments traces dans l'eau (ET) | 3. éléments traces dans l'eau (ET) |
| 4. phosphore total dans l'eau (PT) | 4. phosphore total dans l'eau (PT) |
| 5. turbidité dans l'eau (TU) | 5. turbidité dans l'eau (TU) |
| 6. (a)éléments traces dans les sédiments (ETS)* | 6. (b)mercure total dans l'eau (MT) |

*cinq échantillons par ensemble

Les rapports des études de EA présentent tous les résultats sous forme de tableaux et des évaluations détaillées. Tous les résultats obtenus pour les analyses et les données sont présentés dans l'annexe des données. Le niveau d'aptitude est indiqué en fonction du nombre de paramètres présentant un biais (biais systématique) et de résultats anormaux (mesure de l'exactitude), ce qui est particulièrement intéressant pour les laboratoires. Chaque laboratoire reçoit une évaluation formelle et un résumé du score z indiquant le niveau d'aptitude pour chacun des paramètres présentés.

Le programme EA d'Environnement Canada satisfait aux exigences du ILAC G13:2007 du l'association américaine pour l'accréditation de laboratoire (A2AL). Environnement Canada est le fournisseur de services d'essais d'aptitude avec la portée d'accréditation 2867.01.



Management Perspective

The Information and Quality Management Group of Environment Canada (EC) provides a Proficiency Testing (PT) program for inorganic substances in water at environmental levels. This program offers parameters and concentration ranges not covered by any other PT program in Canada. Participation in these PT studies assists laboratories in assuring the quality of analytical results. Quality assured analytical results are critical when providing scientific advice.

Laboratories receive a preliminary data assessment which discloses systemic bias and precision. The final reports provide a complete listing of current and historical performance. Individual proficiency appraisals indicate areas and parameters where remedial action is required to improve accuracy and performance. In this way, the PT studies are an effective means to improve data quality.

Participants include EC laboratories, public and private laboratories in Canada and around the world.

Perspective de gestion

Le Groupe de la gestion de l'information et de la qualité d'Environnement Canada (EC) offre un programme d'essais d'aptitude (EA) pour l'analyse des substances inorganiques présentes dans l'eau aux concentrations normales dans l'environnement. Ce programme vise des paramètres et des gammes de concentrations dont l'analyse n'est offerte par aucun autre programme du genre au Canada. La participation à ces études de EA aide les laboratoires à garantir la qualité de leurs résultats d'analyse. L'assurance de la qualité des résultats d'analyse est un élément essentiel de la prestation d'avis scientifiques.

Les laboratoires reçoivent tout d'abord une évaluation préliminaire des données qui fait état des biais systémiques et des erreurs. Les rapports finaux donnent un état détaillé de la performance actuelle et antérieure. Des évaluations individuelles de la performance précisent les secteurs et les paramètres pour lesquels des mesures correctives doivent être prises pour améliorer l'exactitude et la performance. Les études de EA constituent ainsi un moyen efficace d'améliorer la qualité des données.

Des laboratoires d'EC de même que des laboratoires publics et privés au Canada et à l'étranger participent à ce programme.

Abstract

Interlaboratory proficiency testing (PT) studies are an important part of assuring the accuracy and comparability of analytical results.

In this study, results are evaluated for systemic bias and precision. Systemic bias is tested with the non-parametric method of Youden and precision is tested with the “robust analysis algorithm A” found in Annex C of ISO 13528:2005. The total of flagged results and biased methods gives the proficiency rating for each laboratory. The former is extremely important for comparing data sets from different origins and the latter measures the reliability of the data.

Proficiency ratings for laboratories are given in relative terms. In real terms, laboratories with good performance have few flagged results and laboratories with poor performance may have many flagged results. Results are summarized in individual laboratory appraisals and z-score summaries, which are sent to the laboratory managers. The PT program provides an objective, third-party performance assessment as a tool to help laboratories generate reliable and accurate analytical measurements.

Résumé

Les programmes d'essais d'aptitude (EA) sont un élément important de l'assurance de l'exactitude et de la comparabilité des résultats d'analyse.

Dans le cadre de ces études, les résultats font l'objet d'une évaluation de leur biais systémique et de leur exactitude. Le biais systémique est testé par la méthode non paramétrique de Youden et l'exactitude par l'algorithme A d'analyse robuste présenté dans l'annexe C de la norme ISO 13528:2005. La cote des compétences, ou d'aptitude, de chaque laboratoire est donnée par le total des résultats recensés anormaux et des méthodes biaisées. Le premier élément est extrêmement important pour la comparaison des ensembles de données d'origines diverses et le second détermine la fiabilité des données.

Les cotes des compétences des laboratoires sont assignées de façon relative. Concrètement, les laboratoires dont la performance est bonne présentent peu de résultats anormaux tandis que les laboratoires dont la performance est mauvaise présentent plusieurs résultats anormaux. Les résultats de chaque laboratoire sont résumés par des évaluations individuelles et un résumé des scores z est communiqué aux gestionnaires du laboratoire. Le programme EA est un outil objectif d'évaluation de la performance par un tiers qui aide les laboratoires à effectuer des mesures d'analyse fiables et exactes.

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Program Name: FPTM

Study Code: 0096

Range of Samples: 1 to 10

Table 1 Participating Laboratories - EC PT for Trace Elements in Water

ALS Laboratory Group, MB Technology Centre Ltd., Winnipeg, MB
 Capital District Health Authority, QEII Lab, Halifax, NS
 Environment Canada, AAQS, Ottawa, ON
 Environment Canada, ALET, Moncton, NB
 Environment Canada, NLET, Burlington, ON
 Environment Canada, PYLET, Vancouver, BC
 Environnement Quebec, CEAEQ, Laval, QC
 Environnement Quebec, CEAEQ, Ste-Foy, QC
 Exova, Edmonton, AB
 GLOW SPP 3 Co. Ltd., Bangkok, Thailand
 Kinetrics Inc., Toronto, ON
 Maxxam Analytics Incorporated, Burnaby, BC
 Minera Alumbrera, Tucuman, Argentina
 Ministry of ND & Mines, Geoscience Laboratories, Sudbury, ON
 MINLAB-SRL, Callao, Peru
 Natural Resources Canada-CFS-GL, Sault Ste. Marie, ON
 Ontario Ministry of Environment, LSB, Etobicoke, ON
 Santé Canada - DSPA, Longueuil, QC
 Saskatchewan Research Council, Saskatoon, SK
 Sisecam Soda Sanayii A.S., Mersin, Turkey
 South Florida Water Management District, West Palm Beach, FL
 TAIGA Environmental Laboratory, Yellowknife, NT
 Tsakalidis Inc., Pireaus, Greece
 U.S. Geological Survey, NWQL, Denver, CO
 Universidade da Coruña, A Coruña, Spain
 University of Maine, Sawyer Environmental Centre, Orono, ME
 Ville de Montreal, Montreal, QC

27 Laboratories.

Program Name: FPTM

Number of Labs: 35

Study Code: 0096

Range of Samples: 1 to 10

Table 2 Laboratory Performance Scores - EC PT for Trace Elements in Water

| Lab Code | Systemic Bias | | | Flagged Results | | | | % Score (Sum of Parameters Biased & Results Flagged) |
|----------|----------------------------|--------------------------|-------------------------|-------------------------|-----------------------|-----------------------|--|--|
| | No. of Parameters Analyzed | No. of Parameters Biased | Parameters Biased (50%) | No. of Results Reported | No. of Flags Assigned | Results Flagged (50%) | | |
| F193 | 18 | 0 | 0.00 | 180 | 0 | 0.00 | | 0.00 |
| F021 | 18 | 0 | 0.00 | 180 | 2 | 0.56 | | 0.56 |
| F032c | 23 | 0 | 0.00 | 230 | 3 | 0.65 | | 0.65 |
| F068 | 23 | 0 | 0.00 | 230 | 3 | 0.65 | | 0.65 |
| F022 | 29 | 0 | 0.00 | 290 | 7 | 1.21 | | 1.21 |
| F026 | 15 | 0 | 0.00 | 150 | 4 | 1.33 | | 1.33 |
| F003 | 28 | 1 | 1.79 | 280 | 0 | 0.00 | | 1.79 |
| F207 | 9 | 0 | 0.00 | 90 | 4 | 2.22 | | 2.22 |
| F248 | 20 | 0 | 0.00 | 199 | 9 | 2.26 | | 2.26 |
| F010 | 21 | 1 | 2.38 | 210 | 0 | 0.00 | | 2.38 |
| F247 | 2 | 0 | 0.00 | 20 | 1 | 2.50 | | 2.50 |
| F032 | 3 | 0 | 0.00 | 30 | 2 | 3.33 | | 3.33 |
| F020 | 28 | 2 | 3.57 | 280 | 2 | 0.36 | | 3.93 |
| F223 | 14 | 1 | 3.57 | 140 | 2 | 0.71 | | 4.29 |
| F032d | 23 | 2 | 4.35 | 230 | 1 | 0.22 | | 4.57 |
| F011 | 27 | 2 | 3.70 | 270 | 7 | 1.30 | | 5.00 |
| F139 | 28 | 3 | 5.36 | 279 | 5 | 0.90 | | 6.25 |
| F021c | 18 | 1 | 2.78 | 180 | 18 | 5.00 | | 7.78 |
| F060 | 27 | 3 | 5.56 | 270 | 13 | 2.41 | | 7.96 |
| F032h | 21 | 1 | 2.38 | 210 | 29 | 6.90 | | 9.29 |
| F024 | 28 | 4 | 7.14 | 280 | 14 | 2.50 | | 9.64 |
| F154 | 28 | 2 | 3.57 | 280 | 35 | 6.25 | | 9.82 |
| F192 | 1 | 0 | 0.00 | 10 | 2 | 10.00 | | 10.00 |
| F069b | 17 | 2 | 5.88 | 170 | 18 | 5.29 | | 11.18 |
| F021b | 18 | 3 | 8.33 | 180 | 11 | 3.06 | | 11.39 |
| F032g | 16 | 2 | 6.25 | 160 | 22 | 6.88 | | 13.13 |
| F060b | 1 | 0 | 0.00 | 10 | 3 | 15.00 | | 15.00 |
| F015 | 26 | 7 | 13.46 | 260 | 24 | 4.62 | | 18.08 |
| F144 | 11 | 0 | 0.00 | 110 | 45 | 20.45 | | 20.45 |
| F183 | 26 | 6 | 11.54 | 260 | 48 | 9.23 | | 20.77 |
| F069 | 22 | 7 | 15.91 | 220 | 22 | 5.00 | | 20.91 |
| F312 | 26 | 4 | 7.69 | 260 | 80 | 15.38 | | 23.08 |
| F158 | 24 | 10 | 20.83 | 240 | 13 | 2.71 | | 23.54 |
| F042 | 16 | 4 | 12.50 | 160 | 38 | 11.88 | | 24.38 |
| F009 | 24 | 8 | 16.67 | 240 | 55 | 11.46 | | 28.12 |

Laboratory Performance Rating

| Rating | % Score* |
|--------------|-------------|
| Good | 0 - 5 |
| Satisfactory | > 5 - 12.5 |
| Moderate | > 12.5 - 30 |
| Poor | > 30 |

*Sum of Parameters Biased & Results Flagged

Program Name: FPTM

Study Code: 0096

Table 3 Five-Year Historical Laboratory Performance - EC PT for Trace Elements in Water

| LAB CODE | % Score Per Study (Sum of Parameters Biased & Results Flagged) | | | | | | | | | | MEDIAN | RATING |
|----------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------|--------------|
| | 0087 Winter 2005 | 0088 Summer 2006 | 0089 Winter 2006 | 0090 Summer 2007 | 0091 Winter 2007 | 0092 Summer 2008 | 0093 Winter 2008 | 0094 Summer 2009 | 0095 Winter 2009 | 0096 Summer 2010 | | |
| F003 | 8.1 | 3.2 | 0.4 | 1.4 | 0.7 | 0.4 | 0.4 | 0.2 | 4.6 | 1.8 | 1.1 | Good |
| F009 | 7.7 | 16.2 | 17.5 | 20.5 | 30.4 | 22.2 | 13.5 | 16.9 | 9.8 | 28.1 | 17.2 | Moderate |
| F010 | 2.9 | 7.1 | 1.1 | 2.1 | 9.4 | 3.1 | 2.3 | 6.7 | 5.8 | 2.4 | 3.0 | Good |
| F011 | 22.6 | 6.7 | 28.3 | 40.7 | 17.2 | 29.4 | 17.4 | 1.1 | 8.7 | 5.0 | 17.3 | Moderate |
| F015 | 8.7 | 39.0 | 15.0 | 9.4 | 13.5 | 8.1 | 2.3 | 4.4 | 31.4 | 18.1 | 11.4 | Satisfactory |
| F020 | 11.7 | 21.7 | 6.2 | 5.6 | 36.5 | 6.4 | 8.7 | 4.2 | 7.5 | 3.9 | 6.9 | Satisfactory |
| F021 | 17.0 | 14.2 | 9.0 | 11.3 | 11.8 | 36.7 | 2.2 | 9.8 | 9.7 | 0.6 | 10.6 | Satisfactory |
| F021b | | | | | 4.0 | 21.5 | 3.9 | 3.1 | 8.6 | 11.4 | 6.3 | Satisfactory |
| F021c | | | | | | | | 6.7 | 5.8 | 7.8 | 6.7 | Satisfactory |
| F022 | 4.6 | 2.4 | 3.5 | 0.9 | 7.8 | 9.3 | 2.4 | 1.2 | 0.7 | 1.2 | 2.4 | Good |
| F024 | 14.5 | 18.2 | 28.4 | 11.1 | 8.9 | 5.2 | 2.5 | 0.5 | 2.3 | 9.6 | 9.3 | Satisfactory |
| F026 | 5.5 | 3.0 | 1.7 | 1.0 | 0.7 | 5.0 | 0.7 | 1.3 | 5.7 | 1.3 | 1.5 | Good |
| F032 | 16.8 | 1.3 | 5.0 | 6.7 | 21.7 | 13.3 | 10.0 | 38.3 | 15.9 | 3.3 | 11.7 | Satisfactory |
| F032c | | | 3.3 | 8.0 | 16.7 | 6.5 | 0.0 | 2.6 | 0.2 | 0.7 | 3.0 | Good |
| F032d | | | | 33.4 | 4.6 | 0.0 | 2.4 | 0.2 | 0.0 | 4.6 | 2.4 | Good |
| F032g | | | | | | | | 7.0 | | 13.1 | 10.1 | Satisfactory |
| F032h | | | | | | | | | | 9.3 | 9.3 | Satisfactory |
| F042 | 24.1 | 12.3 | 21.8 | 10.0 | | 48.8 | 36.0 | 24.0 | 9.6 | 24.4 | 24.0 | Moderate |
| F060 | 3.8 | 9.6 | 12.4 | 12.2 | 13.9 | 8.7 | 11.9 | 1.9 | 15.9 | 8.0 | 10.7 | Satisfactory |
| F060b | | | | | | | | | | 15.0 | 15.0 | Moderate |
| F068 | 23.1 | 3.4 | 6.4 | 4.1 | 0.7 | 20.2 | 1.1 | 10.9 | 2.2 | 0.7 | 3.7 | Good |
| F069 | | 20.2 | | 13.5 | | 11.3 | | 10.4 | | 20.9 | 13.5 | Moderate |
| F069b | | | | | | | | 8.4 | | 11.2 | 9.8 | Satisfactory |
| F139 | 10.0 | 4.4 | 13.8 | 1.1 | 11.1 | 17.6 | 17.9 | 6.6 | | 6.3 | 10.0 | Satisfactory |
| F144 | | | 80.0 | | 25.0 | | 39.6 | 62.8 | 56.7 | 20.5 | 48.2 | Poor |
| F154 | | | | | | | | 23.0 | 20.7 | 9.8 | 20.7 | Moderate |
| F158 | 21.5 | 18.3 | 13.5 | 20.2 | 18.1 | 16.5 | 9.2 | 17.7 | 10.8 | 23.5 | 17.9 | Moderate |

Program Name: FPTM

Study Code: 0096

Table 3 Five-Year Historical Laboratory Performance - EC PT for Trace Elements in Water

| LAB CODE | % Score Per Study (Sum of Parameters Biased & Results Flagged) | | | | | | | | | | MEDIAN | RATING |
|-----------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------|--------------|
| | 0087 Winter 2005 | 0088 Summer 2006 | 0089 Winter 2006 | 0090 Summer 2007 | 0091 Winter 2007 | 0092 Summer 2008 | 0093 Winter 2008 | 0094 Summer 2009 | 0095 Winter 2009 | 0096 Summer 2010 | | |
| F183 | | | 12.8 | | | 8.5 | | 15.7 | 19.6 | 20.8 | 15.7 | Moderate |
| F192 | | 25.0 | | 10.0 | | 20.0 | | | | 10.0 | 15.0 | Moderate |
| F193 | 6.7 | 7.6 | 0.8 | 1.8 | 4.0 | 10.5 | 0.3 | 0.8 | 1.4 | 0.0 | 1.6 | Good |
| F207 | 9.1 | 5.6 | 6.3 | 10.7 | | 8.2 | | 1.7 | 7.2 | 2.2 | 6.8 | Satisfactory |
| F223 | | 17.0 | | 1.8 | | 5.6 | | 1.3 | | 4.3 | 4.3 | Good |
| F247 | | | | | | | 0.0 | | | 2.5 | 1.3 | Good |
| F248 | | | | | 19.5 | 10.2 | 21.0 | 14.5 | 21.0 | 2.3 | 17.0 | Moderate |
| F312 | | | | | | | | | | 23.1 | 23.1 | Moderate |
| Interlab Median | 9.5 | 9.6 | 9.0 | 9.4 | 11.8 | 9.8 | 2.5 | 6.6 | 8.6 | 7.8 | | |

Laboratory Performance Rating

| Rating | % Score |
|--------------|-------------|
| Good | 0 - 5 |
| Satisfactory | > 5 - 12.5 |
| Moderate | > 12.5 - 30 |
| Poor | > 30 |

Program Name: FPTM

2010-09-16

Study Code: 0096

Table 4 Sample Design - EC PT for Trace Elements in Water

| Sample Number | Sample Name | Median |
|---------------|-------------|--------|
| 1 | TMDA-51.4 | 80.7 |
| 2 | TM-28.4 | 6.52 |
| 3 | TM-DWS.2 | 166 |
| 4 | TM-23.4 | 8.46 |
| 5 | TELONG-01 | 17.6 |
| 6 | TM-15.2 | 17.0 |
| 7 | TMDA-52.3 | 193 |
| 8 | TMDA-62.2 | 93.0 |
| 9 | TMDA-64.2 | 270 |
| 10 | TMDA-55D2 | 461 |

Program Name: FPTM

Range of Samples: 1 to 10

2010-09-16

Study Code: 0096

Table 5 Summary of Interlaboratory Median Values - EC PT for Trace Elements in Water

| Parameters | TMDA-51.4 Sample 1 | TM-28.4 Sample 2 | TM-DWS.2 Sample 3 | TM-23.4 Sample 4 | TELONG-01 Sample 5 | TM-15.2 Sample 6 | TMDA-52.3 Sample 7 | TMDA-62.2 Sample 8 | TMDA-64.2 Sample 9 | TMDA-55D2 Sample 10 |
|-------------------|-----------------------|---------------------|----------------------|---------------------|-----------------------|---------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Aluminum (ug/L) | 94.8 | 54.3 | 58.5 | 93.4 | 26.0 | 33.0 | 310 | 117 | 288 | 715 |
| Antimony (ug/L) | 15.00 | 3.42 | 3.12 | 3.24 | 0.0600 | 16.2 | 16.3 | 60.8 | 126 | 254 |
| Arsenic (ug/L) | 16.3 | 6.30 | 4.10 | 8.06 | 1.110 | 15.4 | 25.3 | 57.1 | 163 | 274 |
| Barium (ug/L) | 72.6 | 16.0 | 145 | 14.30 | 17.5 | 13.10 | 147 | 114 | 290 | 468 |
| Beryllium (ug/L) | 10.00 | 3.40 | 13.2 | 2.00 | 0.01000 | 15.4 | 17.8 | 57.1 | 160 | 230 |
| Bismuth (ug/L) | 9.57 | 1.96 | 12.50 | 3.28 | 0.0200 | 10.75 | 11.25 | 43.8 | 121.5 | 126 |
| Boron (ug/L) | 47.0 | 18.5 | 81.2 | 18.6 | 8.40 | 23.3 | 10.60 | 118.5 | 277 | 582 |
| Cadmium (ug/L) | 25.6 | 1.91 | 4.21 | 2.92 | 0.110 | 12.8 | 90.6 | 92.9 | 264 | 268 |
| Chromium (ug/L) | 66.0 | 4.90 | 44.4 | 6.74 | 0.200 | 16.3 | 165 | 94.0 | 288 | 432 |
| Cobalt (ug/L) | 70.4 | 3.51 | 64.4 | 7.04 | 0.0610 | 15.1 | 134 | 95.0 | 253 | 537 |
| Copper (ug/L) | 80.7 | 6.52 | 166 | 8.46 | 17.6 | 17.0 | 193 | 93.0 | 270 | 461 |
| Gallium (ug/L) | 9.17 | 11.9 | 0.0458 | 2.13 | 0.00580 | 0.1000 | 13.4 | 32.8 | 52.8 | 0.0455 |
| Iron (ug/L) | 123 | 17.8 | 221 | 14.6 | 41.4 | 26.6 | 410 | 118 | 306 | 592 |
| Lead (ug/L) | 69.4 | 4.34 | 8.00 | 2.96 | 0.1045 | 11.80 | 358 | 98.4 | 286 | 717 |
| Lithium (ug/L) | 17.7 | 3.50 | 19.7 | 1.96 | 0.510 | 14.9 | 13.4 | 58.3 | 150 | 159 |
| Manganese (ug/L) | 83.3 | 7.00 | 47.4 | 8.63 | 0.774 | 17.8 | 195 | 95.1 | 289 | 398 |
| Molybdenum (ug/L) | 57.3 | 3.82 | 68.0 | 4.21 | 0.160 | 14.10 | 208 | 101.0 | 292 | 352 |
| Nickel (ug/L) | 66.0 | 9.90 | 82.7 | 4.89 | 62.0 | 17.5 | 273 | 96.6 | 260 | 492 |
| Rubidium (ug/L) | 15.6 | 2.35 | 0.419 | 0.763 | 2.10 | 0.736 | 15.6 | 16.0 | 30.8 | 0.158 |
| Selenium (ug/L) | 13.8 | 4.59 | 8.40 | 4.60 | 0.360 | 14.8 | 21.0 | 53.6 | 151 | 296 |
| Silver (ug/L) | 12.15 | 3.85 | 9.97 | 4.76 | 0.0200 | 11.00 | 20.2 | 11.90 | 11.85 | 3.30 |
| Strontium (ug/L) | 116 | 72.0 | 242 | 110.0 | 36.6 | 110 | 281 | 146 | 635 | 376 |
| Thallium (ug/L) | 20.35 | 3.96 | 8.24 | 3.99 | 0.0103 | 18.2 | 18.35 | 51.7 | 146 | 192 |
| Tin (ug/L) | 16.7 | 3.78 | 12.30 | 2.79 | 0.100 | 14.90 | 19.3 | 108.0 | 282 | 166 |
| Titanium (ug/L) | 14.0 | 8.10 | 15.0 | 3.14 | 0.400 | 15.00 | 120 | 58.30 | 128 | 214 |
| Tungsten (ug/L) | 13.10 | 3.90 | 0.061 | 5.00 | 0.026 | 6.90 | 10.20 | 0.080 | 0.080 | 0.034 |
| Uranium (ug/L) | 29.4 | 5.90 | 14.2 | 5.00 | 0.0400 | 15.3 | 22.6 | 55.8 | 142 | 411 |
| Vanadium (ug/L) | 47.6 | 3.20 | 44.8 | 1.92 | 0.1245 | 13.1 | 144 | 115 | 289 | 478 |
| Zinc (ug/L) | 140 | 29.4 | 377 | 2.43 | 8.59 | 36.8 | 261 | 120 | 305 | 698 |

Appendix A

Glossary of Terms and Definitions

Environment Canada Proficiency Testing Program

Glossary of Terms and Definitions

A. Statistics listed in Data Summary (Appendix B)

- | | |
|----------------------|--|
| 1. Assigned Value | The <u>median</u> value of test results for a parameter and sample |
| 2. R-Std Dev | Robust Standard Deviation [1] |
| 3. Acceptable Limits | See 'Limits & Flags' and Table 1 |
| 4. Warning Limits | See 'Limits & Flags' and Table 1 |
| 5. Action Limits | See 'Limits & Flags' and Table 1 |
| 6. N | The number of usable test results for calculating the assigned value |

B. Calculation of Performance Statistics (Appendix B)

Laboratory Bias: Laboratory Bias [2] $D = x - X$, where D is the deviation, x is the test result and X is the assigned value. This deviation is normalized with the robust standard deviation (R-Std Dev) and evaluated by the z-score [3] (see enclosed Z-Score Summary).

Limits & Flags: Acceptable Limits/No Flags: When a test result is within 2 R-Std Dev of the assigned value, flags are not assigned (see Table 1 below).

Warning Limits/Warning Flags: When a test result is between 2 and 3 R-Std Dev, the flags 'WH' or 'WL' indicate a WARNING flag, for a high or low result respectively (see Table 1 below).

Action Limits/Action Flags: When a test result deviates by more than 3 R-Std Dev from the assigned value, the flags 'AH' or 'AL' indicate an ACTION flag, high or low respectively (see Table 1 below).

Table 1 Evaluating test results, determining limits and assigning flags [2]

| Criteria | Limits | Flags |
|---|-------------------|------------------|
| $\text{Assigned value} \pm 2 \sigma^*$ | Acceptable Limits | No Flag |
| $\text{2 } \sigma - 3 \sigma \text{ from assigned value}$ | Warning Limits | Warning Flag (W) |
| $> 3 \sigma \text{ from assigned value}$ | Action Limits | Action Flag (A) |

* σ is the R-Std Dev

Systemic Bias:

Systemic bias is indicated when a laboratory's test results (ranked by the Youden non-parametric analysis [4] for an individual parameter) are consistently higher or lower than the assigned value. Ranks are assigned to each test result for each sample, from 1 for the lowest, to N for the highest, where N is the number of usable test results. These ranks are totalled for each laboratory (Total Rank), and divided by the number of samples ranked (No. Samples Ranked). **Total Rank** and **Average Rank** for each laboratory, are displayed on page 2 of the Data Summary. The **Overall Average Rank** for each parameter is shown at the bottom of the same page. Systemic bias is identified when **Average Rank** falls outside of the 95% confidence interval for the **Overall Average Rank**. Systemic bias may be indicated by the Youden rankings even when the test results have not been flagged (W or A) for deviation from the assigned value.

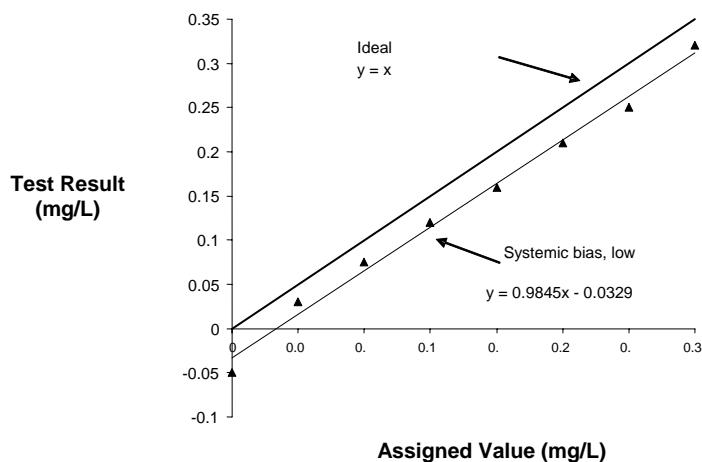
No. Samples Ranked:

This is the number of test results used to calculate systemic bias. A laboratory must report five or more test results (not including '<') and there must be ten or more participating laboratories.

The two measured components of 'systemic' bias are 1) Bias Blank and 2) Bias % Slope. These components are illustrated in Figure 1: Parameter Performance. All 'systemic' biases are correctable with the investigation of the following two analytical components.

- 1) Bias Blank:** The first component is the y-intercept of the linear regression plot (-0.0329 in Figure 1). These bias blanks are stated in the Data Summary and Evaluations for each parameter.
- 2) Bias % Slope:** The second measured component is the % deviation of the laboratory test results versus the assigned values for a parameter. This is calculated as [$(m-1) \times 100$], where 1 is the slope of the "ideal" line (assigned values) and m is the slope of the linear regression plot (laboratory test results). The Bias % Slope in Figure 1 below is minus 1.55 per cent (-1.55%). For most parameters, a Bias % Slope greater than the absolute value of 5 is considered unacceptable and requires action.

Figure 1: Parameter Performance



Bias Statement: Systemic bias is noted with the 'BIASED HIGH' or 'BIASED LOW' notations. An asterisk with the statement indicates that the bias is considered minor, yet worthy of evaluation. The minor biases are not recorded in the database and are not noted in the laboratory proficiency appraisal (see enclosed Laboratory Proficiency Appraisal). In Table 2 of the Final Report (Laboratory Performance Scores), systemic biases are calculated as the equivalent of five flagged values.

Method Coding: Method codes are an important part of quality assurance. These definitions are provided on the Data Reporting Forms to assist with uniform descriptions.

C. Enclosures with the Final Report

1. Laboratory Proficiency Appraisal (see Table 2 in the Final Report for definitions)
2. Z-Score Summary [3]

References:

- [1] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, Annex C, Robust Analysis, Section C.1: Algorithm A, p64.
- [2] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, Calculation of Performance Statistics, Section 7.1.1 and 7.1.2, p18-19.
- [3] ISO 13528:2005(E), Statistical Methods for the use in Proficiency Testing by Interlaboratory Comparisons, z-scores, Section 7.4.1 and 7.4.2, p25-26.
- [4] Ranking Laboratories by Round-Robin Tests, W.J. Youden, Precision Measurement and Calibration, H.H. Ku, Editor, NBS Special Publication 300-Volume 1, U.S. Government Printing Office, Washington, D.C., 1969.

Appendix B

Data Summary

PARAMETER: 13095 Aluminum

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 96.1 | 54.6 | 58.0 | 96.5 | 25.9 | 32.9 | 306. | 117. | 280. | 680. |
| F009 | 104. | 59.0 | 59.3 | 96.7 | 25.2 | 33.6 | 314. | 117. | 274. | 676. |
| F010 | 91. | 54. | 58. | 92. | 26. | 33. | 315. | 117. | 299. | 740. |
| F011 | 98.4 | 55.1 | 59.1 | 97.6 | 26.7 | 35.7 | 326. | 122. | 298. | 726. |
| F015 | 86.1 | 48.8 | 52.2 WL | 84.8 | 23.2 | 30.0 | 261. AL | 106. | 268. | 658. |
| F020 | 86.3 | 50.8 | 56.8 | 86.8 | 25.3 | 31.5 | 291. | 108. | 270. | 649. |
| F021b | 98. | 56. | 59. | 97. | 27. | 34. | 323. | 120. | 294. | 733. |
| F022 | 91.4 | 53.4 | 58.0 | 93.3 | 24.9 | 31.8 | 287. | 109. | 268. | 682. |
| F024 | 91.9 | 50.9 | 54.9 | 90.4 | 24.2 | 31.6 | 307. | 111. | 284. | 690. |
| F026 | 94.0 | 52.9 | 58.4 | 91.8 | 25.6 | 33.6 | 303. | 116. | 282. | 683. |
| F032c | 93.8 | 54.1 | 57.6 | 92.8 | 25.6 | 33.1 | 302. | 115. | 280. | 693. |
| F032d | 90.5 | 51.6 | 55.2 | 89.8 | 24.7 | 31.8 | 295. | 110. | 269. | 697. |
| F032g | 95. | 55. | 59. | 90. | 26. | 33. | 309. | 118. | 260. | 695. |
| F032h | 94. | 53. | 59. | 94. | 24. | 32. | 306. | 116. | 288. | 709. |
| F042 | 117. AH | 62. WH | 65. WH | 107. WH | 32. AH | 40. AH | 310. | 132. WH | 296. | 826. WH |
| F060 | 99. | 58.3 | 60.1 | 98.1 | 29.5 WH | 35.7 | 305. | 121. | 290. | 730. |
| F068 | 99. | 55. | 60. | 98. | 26. | 33. | 320. | 120. | 290. | 710. |
| F069 | 96.9 | 57.4 | 60.8 | 97.1 | 26.5 | 34.4 | 323. | 123. | 299. | 789. |
| F069b | 89.8 | 53.6 | <50.0 AL | 84.6 | <50.0 | <50.0 | 327. | 105. | 305. | 799. |
| F139 | 93. | 50. | 55. | 93. | 25. | 34. | 320. | 108. | 290. | 720. |
| F144 | 130. AH | 50.3 | 79.5 AH | 127. AH | 29.0 | 44.5 AH | 360. AH | 165. AH | 225. AL | 564. AL |
| F154 | 100. | 55.7 | 62.5 | 94.1 | 27.3 | 34.7 | 311. | 125. | 295. | 742. |
| F158 | 97.7 | 55.9 | 60.3 | 99.5 | 28.3 | 34.5 | 320. | 122. | 301. | 753. |
| F183 | 99.9 | 54.3 | 57.9 | 98.6 | 29.5 WH | 37.9 WH | 324. | 121. | 282. | 723. |
| F193 | 94.7 | 54.5 | 58.5 | 92.6 | 26.3 | 32.9 | 303. | 117. | 278. | 705. |
| F207 | 95.1 | 54.3 | 57.1 | 93.4 | 25.7 | 30.5 | 324. | 119. | 301. | 761. |
| F248 | 94.8 | 54.5 | 58.5 | 93.3 | 26.7 | 33.3 | 306. | 119. | 291. | 726. |
| F312 | 70.9 AL | <37.0 AL | 39.0 AL | <37.0 AL | <37.0 | <37.0 | 178. AL | 102. WL | 285. | 444. AL |
| ASSIGNED VALUE * | 94.8 | 54.3 | 58.5 | 93.4 | 26.0 | 33.0 | 310 | 117 | 288 | 715 |
| R-STD DEV * | 5.25 | 2.77 | 2.51 | 4.56 | 1.72 | 1.93 | 14.2 | 7.3 | 13.9 | 44.5 |
| ACCEPTABLE LIMITS(+-) * | 10.50 | 5.54 | 5.02 | 9.12 | 3.44 | 3.86 | 28.4 | 14.6 | 27.8 | 89.0 |
| WARNING LIMITS(+-) * | 10.50- 15.755 | 5.54- 8.31 | 5.02- 7.53 | 9.12- 13.68 | 3.44- 5.16 | 3.86- 5.79 | 28.4- 42.6 | 14.6- 21.9 | 27.8- 41.7 | 89.0- 133.5 |
| ACTION LIMITS(<>) * | 15.75 | 8.31 | 7.53 | 13.68 | 5.16 | 5.79 | 42.6 | 21.9 | 41.7 | 133.5 |
| N * | 28 | 27 | 27 | 27 | 26 | 26 | 28 | 28 | 28 | 28 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | WL | AL | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|------|----|----------------|--------------------|--------------|------------|----------------|
| F003 | 122.5 | 12.2 | | | | | 10 | | | ICP-MS |
| F009 | 155.0 | 15.5 | | | | | 10 | | | ICP-MS |
| F010 | 139.0 | 13.9 | | | | | 10 | | | ICP-MS |
| F011 | 213.0 | 21.3 | | | | | 10 | | | |
| F015 | 21.5 | 2.1 | | | | BIASED LOW | 10 | -7.8 | -2.6203 | ICP-MS |
| F020 | 44.5 | 4.4 | | | | BIASED LOW | 10 | -8.4 | 2.1217 | ICP-MS |
| F021b | 199.5 | 19.9 | | | | | 10 | | | ICP-AES Varian |
| F022 | 69.5 | 6.9 | | | | | 10 | | | ICP-MS |
| F024 | 72.0 | 7.2 | | | | | 10 | | | ICP-MS |
| F026 | 101.0 | 10.1 | | | | | 10 | | | ICP-AES |
| F032c | 97.0 | 9.7 | | | | | 10 | | | ICP-MS-E3473 |
| F032d | 58.5 | 5.8 | | | | BIASED LOW* | 10 | -2.1 | -3.1686 | ICP-MS-E3474 |
| F032g | 123.5 | 12.3 | | | | | 10 | | | ICP-AES-E3386 |
| F032h | 111.0 | 11.1 | | | | | 10 | | | ICP-AES-E3497 |
| F042 | 249.0 | 24.9 | AHWHWHWHAHAH | WH | WH | BIASED HIGH | 10 | 13.6 | -4.0698 | ICP-AES |
| F060 | 207.0 | 20.7 | | WH | | | 10 | | | ICP-MS |
| F068 | 180.5 | 18.0 | | | | | 10 | | | ICP-MS |
| F069 | 220.0 | 22.0 | | | | BIASED HIGH | 10 | 10.7 | -6.8311 | ICP-MS |
| F069b | 99.0 | 14.1 | | AL | | | 7 | | | ICP-AES |
| F139 | 107.0 | 10.7 | | | | | 10 | | | |
| F144 | 193.0 | 19.3 | AH AHAH AHAHAHALAL | | | | 10 | | | GFAAS |
| F154 | 215.0 | 21.5 | | | | | 10 | | | ICP-MS |
| F158 | 225.0 | 22.5 | | | | BIASED HIGH | 10 | 5.9 | -1.6744 | ICP-MS |
| F183 | 193.5 | 19.3 | | WHWH | | | 10 | | | ICP-MS |
| F193 | 118.5 | 11.8 | | | | | 10 | | | ICP-MS |
| F207 | 157.0 | 15.7 | | | | | 10 | | | ICP-AES |
| F248 | 155.0 | 15.5 | | | | | 10 | | | ICP-MS |
| F312 | 19.0 | 3.1 | ALALALAL | ALWL | AL | BIASED LOW | 6 | -39.1 | 26.4116 | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 14.1

PARAMETER: 51095 Antimony

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 14.3 | 3.31 | 2.96 | 3.10 | 0.0522 | 15.5 | 15.5 | 59.2 | 127. | 251. |
| F009 | 14.1 | 3.16 | 2.84 | 3.02 | <1. | 15.1 | 15.9 | 58.7 | 123. | 248. |
| F010 | 14.7 | 3.44 | 3.19 | 3.24 | 0.062 | 16.3 | 16.6 | 60. | 126. | 249. |
| F011 | 15.0 | 3.4 | 3.1 | 3.1 | <0.1 | 15.3 | 13.3 AL | 57.1 | 118. | 231. |
| F015 | 14.7 | 3.35 | 3.05 | 3.19 | 0.059 | 15.9 | 16.3 | 59.6 | 125. | 240. |
| F020 | 15.4 | 3.57 | 3.3 | 3.43 | 0.07 | 16.7 | 16.1 | 63.1 | 128. | 246. |
| F021 | 14.6 | 3.3 | 3.0 | 3.1 | <0.1 | 15.8 | 15.7 | 59.4 | 124. | 248. |
| F021c | 15.5 | 3.83 WH | 3.38 | 3.62 WH | 0.08 | 16.9 | 17.3 | 58.2 | 137. | 259. |
| F022 | 14.7 | 3.46 | 3.18 | 3.25 | 0.0566 | 16.3 | 15.6 | 63.1 | 133. | 254. |
| F024 | 15.5 | 3.56 | 3.19 | 3.34 | <0.2 | 17.0 | 14.0 WL | 64.4 | 133. | 253. |
| F032 | 14.4 | 3.3 | 3.0 | 3.0 | 0.1 AH | 15.6 | 16.2 | 56.8 | 123. | 271. |
| F032c | 14.6 | 3.31 | 3.07 | 3.17 | <0.38 | 15.9 | 16.3 | 59.2 | 124. | 249. |
| F032d | 14.8 | 3.32 | 3.02 | 3.14 | <0.35 | 16.1 | 16.5 | 60.9 | 130. | 257. |
| F060 | 15.4 | 3.75 | 3.15 | 3.29 | <0.2 | 15.5 | 15.9 | 60.6 | 125. | 256. |
| F068 | 14. | 3.5 | 3.1 | 3.3 | 0.06 | 16. | 16. | 60. | 130. | 270. |
| F069 | 15.3 | 3.5 | 3.13 | 3.28 | 0.060 | 16.6 | 17.2 | 64. | 134. | 290. WH |
| F139 | 15.2 | 3.44 | 3.15 | 3.24 | 0.064 | 16.8 | 16.5 | 62.2 | 134. | 280. |
| F144 | 15.5 | 4.03 AH | 3.99 AH | 3.79 AH | <1.5 | 18.2 WH | 20.4 AH | 61.5 | 112. WL | 217. WL |
| F154 | 15.6 | 3.57 | 3.33 | 3.4 | <0.2 | 16.5 | 17.6 | 61.7 | 123. | 273. |
| F158 | 15.2 | 3.4 | 3.0 | 3.3 | <2.0 | 16.4 | 16.4 | 62.4 | 130. | 260. |
| F193 | 15.1 | 3.40 | 3.20 | 3.30 | <0.5 | 16.2 | 16.9 | 62.6 | 126. | 254. |
| F312 | 9.42 AL | 12.9 AH | <8.00 | <8.00 | <8.00 | 10.0 AL | 17.6 | 64.8 | 131. | 257. |
| ASSIGNED VALUE * | 15.00 | 3.42 | 3.12 | 3.24 | 0.0600 | 16.2 | 16.3 | 60.8 | 126 | 254 |
| R-STD DEV * | 0.585 | 0.192 | 0.146 | 0.156 | 0.01078 | 0.69 | 0.88 | 2.56 | 5.4 | 13.6 |
| ACCEPTABLE LIMITS(+-) * | 1.170 | 0.384 | 0.292 | 0.312 | 0.02156 | 1.38 | 1.76 | 5.12 | 10.8 | 27.2 |
| WARNING LIMITS(+-) * | 1.170- 1.755 | 3.84- .576 | .292- .438 | .312- .468 | .02156- .0321 | 3.88- 2.07 | 1.76- 2.64 | 5.12- 7.68 | 10.8- 16.2 | 27.2- 40.8 |
| ACTION LIMITS(<>) * | 1.755 | 0.576 | 0.438 | 0.468 | 0.03234 | 2.07 | 2.64 | 7.68 | 16.2 | 40.8 |
| N * | 22 | 22 | 21 | 21 | 10 | 22 | 22 | 22 | 22 | 22 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL | AVERAGE | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|-------|---------|---------------------|----------------|--------------------|--------------|------------|-------------------|
| F003 | 49.5 | 4.9 | | BIASED LOW* | 10 | -0.9 | -0.2710 | ICP-MS |
| F009 | 29.0 | 3.2 | | BIASED LOW* | 9 | -2.4 | -0.3805 | ICP-MS |
| F010 | 108.5 | 10.8 | | | 10 | | | ICP-MS |
| F011 | 44.5 | 4.9 | AL | BIASED LOW | 9 | -8.8 | 0.4798 | |
| F015 | 73.5 | 7.3 | | | 10 | | | ICP-MS |
| F020 | 142.5 | 14.2 | | | 10 | | | ICP-MS |
| F021 | 48.0 | 5.3 | | BIASED LOW* | 9 | -2.3 | -0.0533 | ICP-MS |
| F021c | 169.0 | 16.9 | WH WH | | 10 | | | ICP-MS Agilent |
| F022 | 115.0 | 11.5 | | | 10 | | | ICP-MS |
| F024 | 141.0 | 15.6 | WL | | 9 | | | ICP-MS |
| F032 | 62.5 | 6.2 | AH | | 10 | | | AAS hydride-E3089 |
| F032c | 65.5 | 7.2 | | | 9 | | | ICP-MS-E3473 |
| F032d | 96.0 | 10.6 | | | 9 | | | ICP-MS-E3474 |
| F060 | 105.5 | 11.7 | | | 9 | | | ICP-MS |
| F068 | 106.0 | 10.6 | | | 10 | | | ICP-MS |
| F069 | 155.5 | 15.5 | WH | | 10 | | | ICP-MS |
| F139 | 145.0 | 14.5 | | | 10 | | | ICP-MS |
| F144 | 142.0 | 15.7 | AHAHAH WHAH WLWL | | 9 | | | AAS hydride |
| F154 | 151.0 | 16.7 | | | 9 | | | ICP-MS |
| F158 | 118.5 | 13.1 | | | 9 | | | ICP-MS |
| F193 | 122.0 | 13.5 | | | 9 | | | ICP-MS |
| F312 | 98.0 | 14.0 | ALAH AL | | 7 | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.1

PARAMETER: 33095 Arsenic

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 16.3 | 6.30 | 4.09 | 8.06 | 1.03 | 15.7 | 25.7 | 57.7 | 164. | 272. |
| F009 | 17.5 | 7.98 AH | 5.79 AH | 9.47 AH | 2.94 AH | 16.8 WH | 25.8 | 55.4 | 154. | 260. |
| F010 | 15.5 | 6.0 | 3.9 | 7.75 | 1.14 | 15.0 | 24.8 | 54. | 151. | 259. |
| F011 | 16.3 | 6.3 | 4.1 | 8.3 | 1.1 | 16.6 | 27.1 | 59.2 | 169. | 284. |
| F015 | 15.9 | 6.2 | 4.1 | 8.1 | 1.0 | 15.2 | 25.2 | 56.5 | 158. | 257. |
| F020 | 15.9 | 6.04 | 4.05 | 7.89 | 1.13 | 15.1 | 24.8 | 54.9 | 157. | 263. |
| F021 | 16.7 | 6.3 | 4.2 | 7.9 | 1.0 | 15.6 | 24.7 | 55.7 | 164. | 273. |
| F021c | 15.9 | 6.05 | 3.95 | 8.04 | 0.84 WL | 15.2 | 25.3 | 56.6 | 159. | 273. |
| F022 | 16.0 | 6.41 | 4.19 | 8.12 | 0.954 | 15.6 | 25.5 | 58.1 | 165. | 274. |
| F024 | 16.0 | 6.16 | 3.98 | 7.99 | 0.95 | 15.0 | 25.1 | 55.3 | 158. | 270. |
| F026 | 17.0 | <15. | <15. | <15. | <15. | 16.0 | 28.9 AH | 63.1 WH | 163. | 277. |
| F032 | 15.4 | 5.9 | 3.8 | 7.5 | 0.6 AL | 14.6 | 23.5 | 53.2 | 152. | 293. |
| F032c | 16.0 | 6.04 | 3.97 | 7.95 | 1.16 | 15.1 | 25.0 | 55.6 | 158. | 266. |
| F032d | 16.3 | 6.23 | 4.07 | 8.02 | 1.17 | 15.4 | 25.3 | 57.1 | 163. | 272. |
| F032h | 22. AH | <8. | <8. | 12. AH | <8. | 27. AH | 23. WL | 59. | 135. AL | 297. |
| F042 | 16.4 | 6.2 | <5. | 6.7 AL | <5. | 17.3 WH | 24.0 | 55.0 | 158. | 275. |
| F060 | 17.4 | 6.97 WH | 4.44 | 8.48 | 1.22 | 16.2 | 26.0 | 59.9 | 164. | 290. |
| F068 | 16. | 6.5 | 4.2 | 8.3 | 1.1 | 15. | 26. | 58. | 160. | 280. |
| F069 | 17.1 | 6.37 | 4.25 | 8.38 | 1.11 | 15.7 | 26.8 | 58.6 | 174. | 313. AH |
| F139 | 16.4 | 6.52 | 4.08 | 8.06 | 1.14 | 15.9 | 25.1 | 58.8 | 171. | 280. |
| F144 | 16.4 | 5.80 WL | 3.89 | 7.40 | <1. | 15.4 | 28.3 WH | 54.2 | 147. WL | 298. |
| F154 | 17. | 6.46 | 4.34 | 8.17 | 1.23 | 15.4 | 26.2 | 58.2 | 163. | 282. |
| F158 | 17.2 | 6.4 | 4.4 | 8.6 | <2.0 | 16.2 | 26.4 | 60.3 | 168. | 283. |
| F183 | 16.8 | 6.60 | 4.31 | 8.45 | 1.13 | 15.9 | 26.4 | 60.0 | 164. | 277. |
| F193 | 16.3 | 6.30 | 4.20 | 8.0 | 1.0 | 15.4 | 25.3 | 57.0 | 159. | 266. |
| F207 | 16.0 | 6.2 | 3.8 | 8.0 | <1.0 | 15.4 | 25.1 | 55.3 | 169. | 264. |
| F248 | 16.5 | 6.40 | 4.20 | 8.30 | 1.20 | 15.3 | 26.1 | 58.4 | 164. | 281. |
| F312 | 12.9 AL | 6.53 | <4.00 | 15.6 AH | <4.00 | 11.3 AL | 22.6 WL | 45.3 AL | 159. | 273. |
| ASSIGNED VALUE * | 16.3 | 6.30 | 4.10 | 8.06 | 1.110 | 15.4 | 25.3 | 57.1 | 163 | 274 |
| R-STD DEV * | 0.67 | 0.247 | 0.210 | 0.379 | 0.1241 | 0.65 | 1.12 | 2.47 | 6.7 | 12.4 |
| ACCEPTABLE LIMITS(+-) * | 1.34 | 0.494 | 0.420 | 0.758 | 0.2482 | 1.30 | 2.24 | 4.94 | 13.4 | 24.8 |
| WARNING LIMITS(+-) * | 1.34- 2.01 | .494- .741 | .420- .630 | .758- 1.137 | .2482- .3723 | 1.30- 1.95 | 2.24- 3.36 | 4.94- 7.41 | 13.4- 20.1 | 24.8- 37.2 |
| ACTION LIMITS(<>) * | 2.01 | 0.741 | 0.630 | 1.137 | 0.3723 | 1.95 | 3.36 | 7.41 | 20.1 | 37.2 |
| N * | 28 | 26 | 24 | 27 | 21 | 28 | 28 | 28 | 28 | 28 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|-------------------|
| F003 | 140.5 | 14.0 | | | 10 | | | ICP-MS |
| F009 | 184.0 | 18.4 | AHAHAHAWH | | 10 | | | ICP-MS |
| F010 | 47.0 | 4.7 | | BIASED LOW | 10 | -6.1 | 0.2488 | ICP-MS |
| F011 | 191.5 | 19.1 | | | 10 | | | |
| F015 | 89.5 | 8.9 | | | 10 | | | ICP-MS |
| F020 | 63.0 | 6.3 | | BIASED LOW* | 10 | -4.2 | 0.2887 | ICP-MS |
| F021 | 126.5 | 12.6 | | | 10 | | | ICP-MS |
| F021c | 89.5 | 8.9 | WL | | 10 | | | ICP-MS Agilent |
| F022 | 149.5 | 14.9 | | | 10 | | | ICP-MS |
| F024 | 72.0 | 7.2 | | | 10 | | | ICP-MS |
| F026 | 133.0 | 22.1 | AHWH | | 6 | | | ICP-AES |
| F032 | 45.5 | 4.5 | AL | BIASED LOW* | 10 | 4.2 | -2.5076 | AAS hydride-E3089 |
| F032c | 82.0 | 8.2 | | | 10 | | | ICP-MS-E3473 |
| F032d | 129.0 | 12.9 | | | 10 | | | ICP-MS-E3474 |
| F032h | 134.0 | 19.1 | AH AHWL AL | | 7 | | | ICP-AES-E3497 |
| F042 | 87.5 | 10.9 | AL WH | | 8 | | | ICP-AES |
| F060 | 228.0 | 22.8 | WH | BIASED HIGH* | 10 | 4.5 | -0.1566 | ICP-MS |
| F068 | 148.0 | 14.8 | | | 10 | | | ICP-MS |
| F069 | 211.5 | 21.1 | | AH | 10 | | | ICP-MS |
| F139 | 175.0 | 17.5 | | | 10 | | | ICP-MS |
| F144 | 96.0 | 10.6 | WL | WH WL | 9 | | | AAS hydride |
| F154 | 191.5 | 19.1 | | | 10 | | | ICP-MS |
| F158 | 208.5 | 23.1 | | BIASED HIGH* | 9 | 3.0 | 0.4460 | ICP-MS |
| F183 | 206.0 | 20.6 | | | 10 | | | ICP-MS |
| F193 | 118.5 | 11.8 | | | 10 | | | ICP-MS |
| F207 | 90.0 | 10.0 | | | 9 | | | GFAAS |
| F248 | 181.0 | 18.1 | | | 10 | | | ICP-MS |
| F312 | 78.0 | 9.7 | AL AH ALWLAL | | 8 | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.8

PARAMETER: 56095 Barium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 73.8 | 16.2 | 147. | 14.6 | 17.8 | 13.4 | 151. | 116. | 302. | 497. |
| F009 | 68.1 | 14.8 | 136. | 13.4 | 16.5 | 12.1 | 141. | 108. | 272. | 444. |
| F010 | 71. | 16.5 | 146. | 14.2 | 17.9 | 13.0 | 153. | 114. | 293. | 471. |
| F011 | 63.4 AL | 15.8 | 143. | 13.5 | 16.5 | 12.1 | 135. WL | 104. WL | 265. | 432. |
| F015 | 68.5 | 15.1 | 138. | 13.6 | 16.4 | 12.7 | 140. | 109. | 270. | 427. WL |
| F020 | 70.1 | 16.5 | 143. | 14.7 | 17.6 | 13.5 | 144. | 110. | 280. | 448. |
| F021b | 74. | 16. | 148. | 15. | 18. | 14. | 152. | 117. | 296. | 482. |
| F022 | 72.4 | 16.1 | 141. | 14.1 | 17.4 | 13.1 | 143. | 110. | 282. | 460. |
| F024 | 71.2 | 15.6 | 140. | 13.7 | 16.7 | 12.8 | 144. | 110. | 285. | 466. |
| F032c | 72.5 | 16.1 | 146. | 14.6 | 17.1 | 13.5 | 148. | 115. | 297. | 467. |
| F032d | 72.3 | 15.6 | 140. | 13.9 | 16.8 | 13.1 | 147. | 114. | 291. | 469. |
| F032g | 72.7 | 15.5 | 145. | 14.4 | 17.5 | 13.3 | 146. | 113. | 302. | 475. |
| F032h | 77.8 | 16.4 | 150. | 14.7 | 17.5 | 13.6 | 156. | 119. | 300. | 480. |
| F060 | 75. | 17.4 | 143. | 14.7 | 17.7 | 12.6 | 147. | 113. | 282. | 480. |
| F068 | 73. | 16. | 140. | 14. | 17. | 13. | 140. | 110. | 290. | 490. |
| F069 | 73.2 | 15.8 | 146. | 14.1 | 17.2 | 13.2 | 148. | 114. | 289. | 514. WH |
| F069b | 75.6 | 16.4 | 149. | 14.9 | 17.5 | 13.4 | 151. | 117. | 296. | 451. |
| F139 | 73.7 | 16.8 | 147. | 14.5 | 18.4 | 13.8 | 146. | 117. | 307. | 488. |
| F154 | 77. | 17. | 155. WH | 15.2 | 18.2 | 13.9 | 156. | 120. | 295. | 468. |
| F158 | 72.4 | 15.7 | 147. | 14.1 | 17.1 | 13.0 | 149. | 114. | 293. | 484. |
| F183 | 71.3 | 14.3 WL | 140. | 13.3 | 17.1 | 12.3 | 147. | 109. | 218. AL | 464. |
| F193 | 72.8 | 16.0 | 146. | 14.3 | 17.5 | 13.0 | 148. | 115. | 278. | 465. |
| F223 | 71.9 | <20. | 144. | <20. | <20. | <20. | 146. | 112. | 288. | 464. |
| F248 | 75.5 | 17.1 | 154. | 15.0 | 18.0 | 13.5 | 150. | 117. | 300. | 490. |
| F312 | 66.5 WL | 11.9 AL | 140. | 9.83 AL | 12.3 AL | 8.94 AL | 139. | 106. | 275. | 457. |
| ASSIGNED VALUE * | 72.6 | 16.0 | 145 | 14.30 | 17.5 | 13.10 | 147 | 114 | 290 | 468 |
| R-STD DEV * | 2.81 | 0.77 | 4.6 | 0.648 | 0.65 | 0.608 | 5.3 | 4.2 | 12.9 | 19.1 |
| ACCEPTABLE LIMITS(+-) * | 5.62 | 1.54 | 9.2 | 1.296 | 1.30 | 1.216 | 10.6 | 8.4 | 25.8 | 38.2 |
| WARNING LIMITS(+-) * | 5.62- 8.43 | 1.54- 2.31 | 9.2- 13.8 | 1.296- 1.944 | 1.30- 1.95 | 1.216- 1.824 | 10.6- 15.9 | 8.4- 12.6 | 25.8- 38.7 | 38.2- 57.3 |
| ACTION LIMITS(<>) * | 8.43 | 2.31 | 13.8 | 1.944 | 1.95 | 1.824 | 15.9 | 12.6 | 38.7 | 57.3 |
| N * | 25 | 24 | 25 | 24 | 24 | 24 | 25 | 25 | 25 | 25 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|---------------|
| F003 | 193.0 | 19.3 | | | 10 | | | ICP-MS |
| F009 | 31.0 | 3.1 | | BIASED LOW | 10 | -5.3 | -0.2607 | ICP-MS |
| F010 | 150.5 | 15.0 | | | 10 | | | ICP-MS |
| F011 | 36.5 | 3.6 | AL | WLWL | BIASED LOW | 10 | -7.8 | 0.4591 |
| F015 | 35.0 | 3.5 | | WL | BIASED LOW | 10 | -8.5 | 2.2781 |
| F020 | 115.5 | 11.5 | | | | 10 | | ICP-MS |
| F021b | 202.0 | 20.2 | | | BIASED HIGH* | 10 | 2.8 | -0.1299 |
| F022 | 97.5 | 9.7 | | | | 10 | | ICP-MS Varian |
| F024 | 72.5 | 7.2 | | | | 10 | | ICP-MS |
| F032c | 153.0 | 15.3 | | | | 10 | | ICP-MS-E3473 |
| F032d | 102.5 | 10.2 | | | | 10 | | ICP-MS-E3474 |
| F032g | 136.5 | 13.6 | | | | 10 | | ICP-AES-E3386 |
| F032h | 207.5 | 20.7 | | | BIASED HIGH* | 10 | 2.7 | 1.2314 |
| F060 | 147.5 | 14.7 | | | | 10 | | ICP-MS |
| F068 | 104.0 | 10.4 | | | | 10 | | ICP-MS |
| F069 | 144.5 | 14.4 | | WH | | 10 | | ICP-MS |
| F069b | 180.0 | 18.0 | | | | 10 | | ICP-AES |
| F139 | 196.5 | 19.6 | | | BIASED HIGH* | 10 | 4.6 | -1.5088 |
| F154 | 220.5 | 22.0 | WH | | BIASED HIGH* | 10 | 0.2 | 3.5561 |
| F158 | 135.0 | 13.5 | | | | 10 | | ICP-MS |
| F183 | 57.0 | 5.7 | WL | AL | BIASED LOW | 10 | -6.3 | -0.9371 |
| F193 | 129.0 | 12.9 | | | | 10 | | ICP-MS |
| F223 | 60.5 | 10.0 | | | | 6 | | ICP-AES |
| F248 | 216.5 | 21.6 | | | BIASED HIGH* | 10 | 4.4 | -0.4652 |
| F312 | 26.0 | 2.6 | WLAL ALALAL | | BIASED LOW* | 10 | -1.9 | -4.5647 |
| | | | | | | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.8

PARAMETER: 04095 Beryllium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 10.0 | 3.39 | 13.0 | 2.03 | 0.00666 | 15.6 | 17.8 | 56.6 | 165. | 232. |
| F009 | 11.3 WH | 3.76 | 14.4 | 2.18 | <1. | 16.4 | 18.1 | 58.7 | 151. | 218. |
| F010 | 9.5 | 3.30 | 12.8 | 1.92 | 0.012 | 15.2 | 17.8 | 57. | 160. | 225. |
| F011 | 10.6 | 3.4 | 13.0 | 2.0 | <0.1 | 16.7 | 18.2 | 57.7 | 162. | 233. |
| F015 | 10.1 | 3.46 | 13.6 | 2.10 | 0.008 | 16.5 | 18.9 | 58.6 | 165. | 236. |
| F020 | 10. | 3.37 | 13.2 | 2.07 | <0.01 | 15.4 | 17.9 | 57.2 | 156. | 230. |
| F021 | 10.4 | 3.4 | 13.9 | 2.2 | <0.1 | 16.3 | 18.6 | 59.1 | 167. | 241. |
| F021b | 10. | 3. | 13. | 2. | <1. | 15. | 18. | 57. | 161. | 232. |
| F021c | 9.45 | 3.18 | 12.0 | 1.84 | 0.01 | 13.6 | 16.3 | 52.7 | 152. | 227. |
| F022 | 10.1 | 3.56 | 13.9 | 1.96 | <0.01 | 15.9 | 18.3 | 58.9 | 167. | 231. |
| F024 | 10.2 | 3.14 | 12.9 | 1.80 | <0.1 | 15.0 | 17.5 | 52.5 | 155. | 222. |
| F032c | 10.0 | 3.26 | 12.7 | 1.96 | <0.52 | 15.1 | 17.2 | 55.4 | 155. | 218. |
| F032d | 9.60 | 3.27 | 13.0 | 1.93 | <0.41 | 14.3 | 17.5 | 54.7 | 148. | 214. |
| F032g | 9.09 | 3.16 | 12.2 | 1.83 | <0.03 | 13.8 | 16.4 | 50.1 WL | 149. | 218. |
| F032h | 10.0 | 3.39 | 13.4 | 1.96 | <0.07 | 15.5 | 17.8 | 57.5 | 160. | 228. |
| F060 | 10.7 | 3.72 | 13.6 | 2.26 | <0.1 | 15.7 | 18.3 | 58.7 | 163. | 241. |
| F068 | 10. | 3.7 | 13. | 2.1 | 0.01 | 16. | 18. | 60. | 160. | 240. |
| F069 | 9.38 | 3.07 | 12.5 | 1.8 | <0.012 | 14. | 16.5 | 53.8 | 155. | 266. WH |
| F069b | 10.2 | 3.43 | 13.3 | 2.03 | <0.20 | 15.2 | 17.7 | 56.7 | 162. | 216. |
| F139 | 10.6 | 3.53 | 13.4 | 2.07 | 0.017 | 15.9 | 17.7 | 58.6 | 167. | 235. |
| F154 | 10.3 | 3.59 | 13.4 | 1.83 | <0.2 | 15.2 | 18.4 | 56.3 | 160. | 217. |
| F158 | 10.0 | 3.5 | 13.7 | 2.1 | <2.0 | 15.5 | 18.4 | 60.2 | 167. | 254. |
| F183 | 11.3 WH | 3.89 WH | 14.5 WH | 2.40 WH | <0.50 | 17.0 | 20.2 AH | 61.5 | 166. | 248. |
| F223 | <20. | <20. | <20. | <20. | <20. | <20. | <20. | 59.1 | 168. | 236. |
| F248 | 9.90 | 3.30 | 13.2 | 2.00 | <0.10 | 14.7 | 17.1 | 56.5 | 162. | 221. |
| F312 | 8.57 WL | <6.00 | 11.3 AL | <6.00 | <6.00 | 13.1 WL | 15.3 AL | 51.9 | 148. | 213. |
| ASSIGNED VALUE * | 10.00 | 3.40 | 13.2 | 2.00 | 0.01000 | 15.4 | 17.8 | 57.1 | 160 | 230 |
| R-STD DEV * | 0.520 | 0.237 | 0.63 | 0.149 | 0.003733 | 1.03 | 0.78 | 2.79 | 7.0 | 12.3 |
| ACCEPTABLE LIMITS(+-) * | 1.040 | 0.474 | 1.26 | 0.298 | 0.007466 | 2.06 | 1.56 | 5.58 | 14.0 | 24.6 |
| WARNING LIMITS(+-) * | 1.040- 1.560 | 0.474- .711 | 1.26- 1.89 | .298- .447 | .007466- .01206- | 3.09 | 1.56- 2.34 | 5.58- 8.37 | 14.0- 21.0 | 24.6- 36.9 |
| ACTION LIMITS(<>) * | 1.560 | 0.711 | 1.89 | 0.447 | 0.011199 | 3.09 | 2.34 | 8.37 | 21.0 | 36.9 |
| N * | 25 | 24 | 25 | 24 | 6 | 25 | 25 | 26 | 26 | 26 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 121.0 | 12.1 | | | 10 | | | ICP-MS |
| F009 | 161.0 | 17.8 | WH | | 9 | | | ICP-MS |
| F010 | 87.5 | 8.7 | | | 10 | | | ICP-MS |
| F011 | 148.0 | 16.4 | | | 9 | | | |
| F015 | 175.5 | 17.5 | | | 10 | | | ICP-MS |
| F020 | 114.0 | 12.6 | | | 9 | | | ICP-MS |
| F021 | 190.5 | 21.1 | | BIASED HIGH* | 9 | 4.1 | -0.0046 | ICP-MS |
| F021b | 99.0 | 11.0 | | | 9 | | | ICP-AES Varian |
| F021c | 43.5 | 4.3 | | BIASED LOW* | 10 | -2.7 | -0.9142 | ICP-MS Agilent |
| F022 | 162.5 | 18.0 | | | 9 | | | ICP-MS |
| F024 | 63.0 | 7.0 | | | 9 | | | ICP-MS |
| F032c | 66.0 | 7.3 | | | 9 | | | ICP-MS-E3473 |
| F032d | 52.0 | 5.7 | | BIASED LOW | 9 | -7.8 | 0.5630 | ICP-MS-E3474 |
| F032g | 28.5 | 3.1 | WL | BIASED LOW | 9 | -6.0 | -0.7134 | ICP-AES-E3386 |
| F032h | 113.5 | 12.6 | | | 9 | | | ICP-AES-E3497 |
| F060 | 184.0 | 20.4 | | BIASED HIGH* | 9 | 3.4 | -0.1318 | ICP-MS |
| F068 | 156.5 | 15.6 | | | 10 | | | ICP-MS |
| F069 | 56.5 | 6.2 | WH | | 9 | | | ICP-MS |
| F069b | 112.5 | 12.5 | | | 9 | | | ICP-AES |
| F139 | 166.0 | 16.6 | | | 10 | | | ICP-MS |
| F154 | 115.5 | 12.8 | | | 9 | | | ICP-MS |
| F158 | 177.5 | 19.7 | | | 9 | | | ICP-MS |
| F183 | 218.5 | 24.2 | WHWHWHWH | AH | BIASED HIGH | 9 | 5.8 | 0.4677 |
| F223 | 68.0 | 22.6 | | | INSUFFICIENT DATA | 3 | | ICP-AES |
| F248 | 85.0 | 9.4 | | | | 9 | | ICP-MS |
| F312 | 8.5 | 1.2 | WL AL WLAL | BIASED LOW | 7 | -7.4 | -0.9923 | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.8

PARAMETER: 83095 Bismuth

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 12.6 | 2.19 | 16.0 | 3.74 | 0.0112 | 14.6 | 14.6 | 55.5 | 143. | 144. |
| F009 | 9.2 | 1.8 | 10.4 | 3.8 | <2. | 10.2 | 10.2 | 38.4 | 96.2 | 112. |
| F011 | 9.3 | 2.0 | 12.5 | 3.3 | 0.2 | 5.7 | 10.4 | 42.7 | 114. | 112. |
| F015 | 8.09 | 1.54 | 10.3 | 2.73 | 0.02 | 9.83 | 10.2 | 43.9 | 125. | 131. |
| F020 | 12.4 | 2.14 | 16. | 3.64 | 0.01 | 14.6 | 14.7 | 53.7 | 138. | 141. |
| F022 | 5.2 | 1.15 WL | 5.72 | 2.06 WL | <0.05 | 5.96 | 6.03 WL | 35.1 | 118. | 122. |
| F024 | 8.28 | 1.61 | 10.4 | 2.89 | <0.2 | 10.0 | 9.7 | 41.7 | 116. | 119. |
| F032h | <20. | <20. | <20. | <20. | <20. | <20. | <20. | 33. | 88. | 118. |
| F060 | 9.84 | 2.07 | 12.5 | 3.26 | <0.5 | 11.3 | 12.1 | 43.6 | 117. | 125. |
| F139 | 10.7 | 1.93 | 14.3 | 3.25 | 0.07 | 13.0 | 12.9 | 48.7 | 126. | 126. |
| F154 | 12.3 | 2.27 | 16.7 | 3.95 | <0.2 | 14.9 | 12.8 | 47.5 | 133. | 141. |
| F312 | <17.0 | <17.0 | <17.0 | <17.0 | <17.0 | <17.0 | <17.0 | 52.9 | 136. | 135. |
| ASSIGNED VALUE * | 9.57 | 1.96 | 12.50 | 3.28 | 0.0200 | 10.75 | 11.25 | 43.8 | 121.5 | 126 |
| R-STD DEV * | 2.369 | 0.340 | 3.471 | 0.557 | 0.06372 | 3.812 | 2.575 | 8.18 | 17.22 | 12.7 |
| ACCEPTABLE LIMITS(+-) * | 4.738 | 0.680 | 6.942 | 1.114 | - | 7.624 | 5.150 | 16.36 | 34.44 | 25.4 |
| WARNING LIMITS(+-) * | 4.738- | 7.107 | 6.680- | 1.020 | 6.942- | 10.411 | 11.14- | 1.671 | 7.624- | 11.435 |
| ACTION LIMITS(<>) * | 7.107 | 1.020 | 10.413 | 1.671 | - | 11.436 | 7.725 | 24.54 | 51.66 | 38.1 |
| N * | 10 | 10 | 10 | 10 | 5 | 10 | 10 | 12 | 12 | 12 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|-------------------|--------------------|--------------|------------|---------------|
| F003 | 91.0 | 9.1 | | BIASED HIGH | 10 | 15.4 | 1.3026 | ICP-MS |
| F009 | 35.5 | 3.9 | | | 9 | | | ICP-MS |
| F011 | 43.0 | 4.3 | | | 10 | | | |
| F015 | 39.5 | 3.9 | | | 10 | | | ICP-MS |
| F020 | 84.5 | 8.4 | | | 10 | | | ICP-MS |
| F022 | 20.0 | 2.2 | WL WL WL | BIASED LOW* | 9 | -0.3 | -4.2623 | ICP-MS |
| F024 | 30.5 | 3.3 | | | 9 | | | ICP-MS |
| F032h | 5.0 | 1.6 | | INSUFFICIENT DATA | 3 | | | ICP-AES-E3497 |
| F060 | 52.5 | 5.8 | | | 9 | | | ICP-MS |
| F139 | 66.0 | 6.6 | | | 10 | | | ICP-MS |
| F154 | 82.5 | 9.1 | | BIASED HIGH* | 9 | 9.6 | 1.2357 | ICP-MS |
| F312 | 29.0 | 9.6 | | INSUFFICIENT DATA | 3 | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 10

OVERALL AVERAGE RANK IS 5.7

PARAMETER: 05095 Boron

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 48.1 | 19.0 | 82.2 | 18.8 | 8.49 | 24.0 | 10.7 | 120. | 285. | 603. |
| F009 | 53.7 WH | <40. | 87.0 | <40. | <40. | <40. | <40. | 120. | 268. | 563. |
| F010 | 47. | 18.1 | 81. | 17.5 | 8.1 | 23. | 10.6 | 116. | 280. | 580. |
| F011 | 46.8 | 18.2 | 80.0 | 18.8 | 8.4 | 23.0 | 10.5 | 117. | 272. | 566. |
| F015 | 50. | 20. | 90. WH | 20. | 10. | 40. AH | 20. AH | 130. WH | 290. | 600. |
| F020 | 50. | <50. | 83. | <50. | <50. | <50. | <50. | 121. | 272. | 578. |
| F022 | 46.4 | 18.7 | 82.5 | 18.4 | 8.07 | 24.0 | 10.6 | 120. | 285. | 575. |
| F024 | 47. | 16. | 77. | 17. | <10. | 22. | <10. | 114. | 278. | 566. |
| F026 | 46.2 | 19.0 | 78.4 | 18.8 | <20. | 23.7 | <20. | 115. | 270. | 570. |
| F032c | 46.8 | 18.1 | 80.6 | 18.0 | 8.16 | 30.5 AH | 10.5 | 117. | 265. | 559. |
| F032d | 45.4 | 18.0 | 80.8 | 18.2 | 7.64 | 21.3 | 9.99 | 115. | 262. | 531. |
| F060 | 49. | 20.3 | 81.3 | 20. | 9.5 | 23.6 | 12.3 | 121. | 280. | 588. |
| F069 | 44.1 | 15.9 | 80.8 | 16.1 | 7.11 | 21.1 | 8.75 | 118. | 276. | 612. |
| F069b | 52.5 | 20.7 | 87.6 | 21.2 | 9.7 | 25.5 | 11.5 | 129. WH | 302. WH | 605. |
| F154 | 43. | 14. WL | 76. | 14. AL | <10. | 19. WL | <10. | 113. | 276. | 613. |
| F158 | 48.1 | 18.9 | 83.5 | 18.7 | 8.9 | 23.9 | 10.8 | 127. | 290. | 618. |
| F183 | 49.6 | 19.6 | 83.6 | 18.6 | 8.32 | 24.1 | 9.85 | 118. | 280. | 607. |
| F193 | 45.8 | 18.3 | 78.6 | 17.5 | 8.90 | 22.9 | 11.1 | 119. | 269. | 585. |
| F312 | 32.7 AL | <30.0 | 49.6 AL | <30.0 | <30.0 | <30.0 | <30.0 | 79.5 AL | 140. AL | 285. AL |
| ASSIGNED VALUE * | 47.0 | 18.5 | 81.2 | 18.6 | 8.40 | 23.3 | 10.60 | 118.5 | 277 | 582 |
| R-STD DEV * | 2.92 | 1.64 | 3.96 | 1.41 | 0.905 | 1.94 | 0.923 | 4.60 | 10.8 | 26.3 |
| ACCEPTABLE LIMITS(+-) * | 5.84 | 3.28 | 7.92 | 2.82 | 1.810 | 3.88 | 1.846 | 9.20 | 21.6 | 52.6 |
| WARNING LIMITS(+-) * | 5.84- 8.76 | 3.28- 4.92 | 7.92- 11.88 | 2.82- 4.23 | 1.810- 2.715 | 3.88- 5.82 | 1.846- 2.769 | 9.20- 13.80 | 21.6- 32.4 | 52.6- 78.9 |
| ACTION LIMITS(<>) * | 8.76 | 4.92 | 11.88 | 4.23 | 2.715 | 5.82 | 2.769 | 13.80 | 32.4 | 78.9 |
| N * | 19 | 16 | 19 | 16 | 13 | 16 | 13 | 19 | 19 | 19 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|---------------|
| F003 | 118.0 | 11.8 | | | 10 | | | ICP-MS |
| F009 | 57.0 | 11.4 | WH | | 5 | | | ICP-MS |
| F010 | 76.5 | 7.6 | | | 10 | | | ICP-MS |
| F011 | 72.0 | 7.2 | | | 10 | | | |
| F015 | 155.5 | 15.5 | WH | AHAHWH | BIASED HIGH* | 10 | 2.6 | 5.6991 |
| F020 | 62.5 | 12.5 | | | 5 | | | ICP-MS |
| F022 | 94.5 | 9.4 | | | 10 | | | ICP-MS |
| F024 | 43.0 | 5.3 | | | 8 | | | ICP-MS |
| F026 | 60.0 | 7.5 | | | 8 | | | ICP-AES |
| F032c | 65.0 | 6.5 | AH | | 10 | | | ICP-MS-E3473 |
| F032d | 40.0 | 4.0 | | | 10 | -8.2 | 2.4144 | ICP-MS-E3474 |
| F060 | 126.0 | 12.6 | | | 10 | | | ICP-MS |
| F069 | 55.5 | 5.5 | | | 10 | | | ICP-MS |
| F069b | 157.0 | 15.7 | W H W H | | BIASED HIGH* | 10 | 4.8 | 2.6859 |
| F154 | 36.5 | 4.5 | WL AL WL | | BIASED LOW | 8 | 6.3 | -8.5233 |
| F158 | 129.5 | 12.9 | | | 10 | | | ICP-MS |
| F183 | 112.5 | 11.2 | | | 10 | | | ICP-MS |
| F193 | 74.0 | 7.4 | | | 10 | | | ICP-MS |
| F312 | 5.0 | 1.0 | AL AL | ALALAL | BIASED LOW | 5 | -53.5 | 14.7780 |
| | | | | | | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 9.1

PARAMETER: 48095 Cadmium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 25.2 | 1.88 | 4.13 | 2.90 | 0.104 | 12.7 | 88.7 | 91.9 | 274. | 277. |
| F009 | 23.9 | 1.82 | 3.71 WL | 2.70 | <1. | 11.8 | 84.9 | 86.5 | 246. | 249. |
| F010 | 25.0 | 1.90 | 4.35 | 2.84 | 0.112 | 12.9 | 91. | 92. | 264. | 266. |
| F011 | 25.4 | 1.86 | 4.20 | 2.84 | 0.11 | 12.3 | 86.1 | 87.7 | 252. | 253. |
| F015 | 26.4 | 1.93 | 4.21 | 2.97 | 0.10 | 12.9 | 92.2 | 93.8 | 256. | 279. |
| F020 | 26.2 | 1.9 | 4.24 | 2.94 | 0.123 | 13.2 | 95.3 | 95.5 | 273. | 275. |
| F021 | 25.0 | 1.8 | 4.2 | 2.8 | <0.1 | 12.7 | 89.9 | 91.3 | 254. | 264. |
| F021b | 26. | <3. | 4. | 3. | <3. | 13. | 92. | 94. | 270. | 277. |
| F021c | 24.6 | 1.85 | 3.91 | 2.84 | 0.07 AL | 12.5 | 91.4 | 92.0 | 263. | 274. |
| F022 | 25.5 | 1.99 | 4.29 | 3. | 0.109 | 12.8 | 90.6 | 97.2 | 279. | 268. |
| F024 | 25.1 | 1.94 | 4.08 | 2.78 | 0.13 WH | 12.1 | 88.2 | 88.3 | 257. | 262. |
| F026 | 26.3 | 1.92 | 4.21 | 3.01 | <1. | 13.2 | 89.0 | 92.9 | 262. | 267. |
| F032c | 25.0 | 1.84 | 4.21 | 2.86 | <0.27 | 12.5 | 88.8 | 90.2 | 255. | 262. |
| F032d | 25.4 | 1.90 | 4.30 | 2.91 | <0.28 | 12.9 | 90.4 | 91.6 | 264. | 269. |
| F032g | 23.0 WL | 2.0 | 4.1 | 2.8 | <0.8 | 11.7 | 84.1 | 84.1 WL | 260. | 263. |
| F032h | 26.7 | 2.1 WH | 4.4 | 3.0 | <0.6 | 13.3 | 91.4 | 96.0 | 272. | 278. |
| F042 | 28.0 WH | 2.07 WH | 3.90 | 3.14 | <0.50 | 13.9 | 95.0 | 100. | 278. | 287. |
| F060 | 25.1 | 2. | 3.98 | 2.74 | 0.11 | 11.7 | 85.3 | 87.1 | 248. | 253. |
| F068 | 26. | 1.9 | 4.3 | 3. | 0.12 | 12. | 92. | 92. | 270. | 270. |
| F069 | 27.4 | 2. | 4.56 | 3.13 | 0.115 | 13.6 | 97.3 | 98.3 | 283. | 309. AH |
| F069b | 26.3 | 1.4 AL | 4.04 | 2.4 AL | <0.60 | 12.7 | 93.4 | 96.4 | 275. | 267. |
| F139 | 25.2 | 1.92 | 4.31 | 2.83 | 0.113 | 13.0 | 88.2 | 92.9 | 274. | 272. |
| F144 | 24.4 | 1.64 AL | 3.68 WL | 2.53 WL | <0.15 | 12.3 | 97.2 | 85.7 | 279. | 258. |
| F154 | 26.3 | 1.9 | 4.35 | 2.96 | 0.11 | 13.3 | 90.9 | 93.1 | 242. | 250. |
| F158 | 26.9 | 2.0 | 4.4 | 3.1 | <1.0 | 13.7 | 95.6 | 97.9 | 285. | 291. |
| F183 | 28.6 WH | 1.96 | 4.35 | 2.97 | 0.116 | 13.6 | 98.1 | 100. | 284. | 295. WH |
| F193 | 25.5 | 1.90 | 4.20 | 2.90 | <0.4 | 12.8 | 89.8 | 91.5 | 260. | 268. |
| F207 | 25.6 | 1.9 | 4.3 | 3.0 | 0.1 | 13.1 | 86.8 | 93.2 | 261. | 281. |
| F223 | 26.3 | <20. | <20. | <20. | <20. | <20. | 91.8 | 94.8 | 277. | 278. |
| F248 | 25.8 | 2.00 | 4.20 | 3.00 | 0.10 | 12.8 | 90.2 | 94.4 | 266. | 274. |
| F312 | 21.8 AL | <5.00 | <5.00 | <5.00 | <5.00 | 10.5 AL | 86.8 | 90.7 | 257. | 264. |
| ASSIGNED VALUE * | 25.6 | 1.91 | 4.21 | 2.92 | 0.110 | 12.8 | 90.6 | 92.9 | 264 | 268 |
| R-STD DEV * | 1.04 | 0.083 | 0.185 | 0.138 | 0.0097 | 0.67 | 3.89 | 4.20 | 12.8 | 12.2 |
| ACCEPTABLE LIMITS(+-) * | 2.08 | 0.166 | 0.370 | 0.276 | 0.0194 | 1.34 | 7.78 | 8.40 | 25.6 | 24.4 |
| WARNING LIMITS(+-) * | 2.08- 3.12 | .166- .249 | .370- .555 | .276- .414 | .0194- .0291 | 1.34- 2.01 | 7.78- 11.67 | 8.40- 12.60 | 25.6- 38.4 | 24.4- 36.6 |
| ACTION LIMITS(<>) * | 3.12 | 0.249 | 0.555 | 0.414 | 0.0291 | 2.01 | 11.67 | 12.60 | 38.4 | 36.6 |
| N * | 31 | 28 | 29 | 29 | 16 | 30 | 31 | 31 | 31 | 31 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 126.0 | 12.6 | | | 10 | | | ICP-MS |
| F009 | 24.0 | 2.6 | WL | BIASED LOW | 9 | -7.1 | 0.1010 | ICP-MS |
| F010 | 140.5 | 14.0 | | | 10 | | | ICP-MS |
| F011 | 75.0 | 7.5 | | | 10 | | | |
| F015 | 176.5 | 17.6 | | | 10 | | | ICP-MS |
| F020 | 198.5 | 19.8 | | | 10 | | | ICP-MS |
| F021 | 77.5 | 8.6 | | | 9 | | | ICP-MS |
| F021b | 153.0 | 19.1 | | | 8 | | | ICP-AES Varian |
| F021c | 102.5 | 10.2 | AL | | 10 | | | ICP-MS Agilent |
| F022 | 184.0 | 18.4 | | | 10 | | | ICP-MS |
| F024 | 92.0 | 9.2 | WH | | 10 | | | ICP-MS |
| F026 | 158.5 | 17.6 | | | 9 | | | ICP-AES |
| F032c | 79.0 | 8.7 | | | 9 | | | ICP-MS-E3473 |
| F032d | 137.0 | 15.2 | | | 9 | | | ICP-MS-E3474 |
| F032g | 64.5 | 7.1 | WL | WL | 9 | | | ICP-AES-E3386 |
| F032h | 219.5 | 24.3 | WH | BIASED HIGH* | 9 | 3.1 | -0.0940 | ICP-AES-E3497 |
| F042 | 229.5 | 25.5 | W H W H | BIASED HIGH | 9 | 6.0 | 0.1746 | ICP-AES |
| F060 | 66.5 | 6.6 | | BIASED LOW | 10 | -6.1 | 0.1385 | ICP-MS |
| F068 | 166.0 | 16.6 | | | 10 | | | ICP-MS |
| F069 | 268.5 | 26.8 | | AH | BIASED HIGH | 10 | 11.1 | -1.0344 |
| F069b | 132.0 | 14.6 | AL AL | | 9 | | | ICP-AES |
| F139 | 155.0 | 15.5 | | | 10 | | | ICP-MS |
| F144 | 80.0 | 8.8 | ALWLWL | | 9 | | | GFAAS |
| F154 | 149.0 | 14.9 | | | 10 | | | ICP-MS |
| F158 | 251.5 | 27.9 | | BIASED HIGH | 9 | 8.1 | -0.6821 | ICP-MS |
| F183 | 256.5 | 25.6 | WH | WH | BIASED HIGH | 10 | 8.6 | -0.1210 |
| F193 | 115.5 | 12.8 | | | 9 | | | ICP-MS |
| F207 | 161.0 | 16.1 | | | 10 | | | GFAAS |
| F223 | 117.0 | 23.4 | | | 5 | | | ICP-AES |
| F248 | 167.5 | 16.7 | | | 10 | | | ICP-MS |
| F312 | 33.5 | 5.5 | AL | AL | BIASED LOW* | 6 | -1.3 | -2.3560 |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.1

PARAMETER: 24095 Chromium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 67.0 | 4.86 | 45.1 | 6.80 | 0.168 | 16.7 | 167. | 96.3 | 297. | 432. |
| F009 | 76.9 AH | 5.58 AH | 49.5 WH | 7.16 | <1. | 18.3 WH | 174. | 99.8 | 279. | 419. |
| F010 | 66. | 5.04 | 45. | 6.85 | 0.19 | 17.0 | 170. | 94. | 299. | 443. |
| F011 | 67.1 | 5.1 | 46.7 | 7.0 | 0.2 | 17.7 | 159. | 92.1 | 275. | 402. WL |
| F015 | 63.9 | 4.9 | 43.3 | 6.7 | 0.2 | 16.1 | 155. | 91.2 | 270. | 407. |
| F020 | 65.3 | 4.8 | 43.9 | 6.5 | 0.2 | 16.1 | 165. | 91.4 | 288. | 409. |
| F021 | 66.8 | 4.9 | 45.4 | 6.8 | <0.4 | 16.7 | 165. | 95.2 | 290. | 437. |
| F021b | 68. | 5. | 46. | 7. | <2. | 17. | 172. | 97. | 299. | 449. |
| F021c | 67.1 | 4.71 | 42.3 | 6.41 | 0.16 | 15.6 | 166. | 93.0 | 285. | 447. |
| F022 | 65.0 | 5.07 | 44.8 | 6.98 | 0.528 AH | 16.5 | 164. | 96.1 | 289. | 427. |
| F024 | 63.3 | 4.45 | 42.3 | 6.23 | <0.5 | 15.4 | 161. | 89.4 | 284. | 416. |
| F026 | 66.3 | 4.85 | 44.7 | 66.9 AH | <1. | 16.4 | 165. | 93.9 | 286. | 428. |
| F032c | 66.5 | 4.96 | 44.4 | 6.98 | <0.71 | 16.7 | 166. | 94.3 | 294. | 426. |
| F032d | 65.0 | 4.90 | 43.5 | 6.71 | <0.35 | 16.3 | 165. | 92.6 | 287. | 437. |
| F032g | 65. | 4. AL | 44. | 6. WL | <1. | 16. | 164. | 94. | 303. | 434. |
| F032h | 59. AL | 4. AL | 40. WL | 6. WL | <2. | 14. WL | 156. | 86. WL | 269. | 411. |
| F042 | 65. | 5. | 43. | 7. | <2. | 16. | 156. | 89. | 274. | 443. |
| F060 | 67.6 | 4.99 | 43.2 | 6.39 | <0.5 | 16.0 | 162. | 94.5 | 283. | 435. |
| F068 | 68. | 5.2 | 44. | 6.8 | <0.4 | 15. | 160. | 94. | 290. | 440. |
| F069 | 65.2 | 4.7 | 43.3 | 6.52 | 0.199 | 15.8 | 166. | 93.5 | 380. AH | 426. |
| F069b | 69.8 | 4.92 | 47. | 7.07 | <1.20 | 17. | 174. | 99.1 | 308. | 433. |
| F139 | 66.9 | 4.98 | 45.2 | 6.76 | 0.206 | 16.6 | 171. | 95.5 | 296. | 441. |
| F144 | 78.4 AH | 4.83 | 45.5 | 6.64 | <3. | 17.1 | 172. | 89.3 | 273. | 440. |
| F154 | 66.6 | 4.98 | 46.6 | 6.85 | <0.2 | 16.6 | 152. WL | 89.7 | 280. | 435. |
| F158 | 65.6 | 4.8 | 44.2 | 6.7 | <2.0 | 16.3 | 168. | 94.4 | 304. | 460. |
| F183 | 72.3 WH | 3.42 AL | 64.9 AH | 6.83 | 0.203 | 15.2 | 132. AL | 95.6 | 231. AL | 542. AH |
| F193 | 65.9 | 4.80 | 44.5 | 6.60 | <1.0 | 16.2 | 165. | 94.0 | 288. | 431. |
| F207 | 68.9 | 6.4 AH | 46.2 | 8.0 AH | <1.0 | 17.6 | 169. | 96.5 | 295. | 439. |
| F223 | 65.9 | <20. | 45.2 | <20. | <20. | <20. | 165. | 93.7 | 289. | 423. |
| F247 | 64.1 | 5.0 | 43.2 | 6.7 | 0.1 AL | 15.7 | 162. | 90.3 | 282. | 422. |
| F248 | 63.3 | 4.60 | 43.1 | 6.30 | <0.30 | 15.3 | 159. | 92.0 | 278. | 418. |
| F312 | 59.6 WL | <7.00 | 40.0 WL | <7.00 | <7.00 | 11.6 AL | 163. | 89.1 | 289. | 427. |
| ASSIGNED VALUE * | 66.0 | 4.90 | 44.4 | 6.74 | 0.200 | 16.3 | 165 | 94.0 | 288 | 432 |
| R-STD DEV * | 2.26 | 0.223 | 1.75 | 0.327 | 0.0251 | 0.85 | 6.2 | 3.05 | 12.1 | 13.9 |
| ACCEPTABLE LIMITS(+-) * | 4.52 | 0.446 | 3.50 | 0.654 | 0.0502 | 1.70 | 12.4 | 6.10 | 24.2 | 27.8 |
| WARNING LIMITS(+-) * | 4.52- 6.78 | .446- .669 | 3.50- 5.25 | .654- .981 | .0502- .0753 | 1.70- 2.55 | 12.4- 18.6 | 6.10- 9.15 | 24.2- 36.3 | 27.8- 41.7 |
| ACTION LIMITS(<>) * | 6.78 | 0.669 | 5.25 | 0.981 | 0.0753 | 2.55 | 18.6 | 9.15 | 36.3 | 41.7 |
| N * | 32 | 30 | 32 | 30 | 11 | 31 | 32 | 32 | 32 | 32 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 193.0 | 19.3 | | | 10 | | | ICP-MS |
| F009 | 228.5 | 25.3 | AHAWWH | WH | 9 | -4.0 | 6.1462 | ICP-MS |
| F010 | 212.0 | 21.2 | | | 10 | | | ICP-MS |
| F011 | 166.0 | 16.6 | | WL | 10 | | | |
| F015 | 78.0 | 7.8 | | | 10 | | | ICP-MS |
| F020 | 106.5 | 10.6 | | | 10 | | | ICP-MS |
| F021 | 183.5 | 20.3 | | | 9 | | | ICP-MS |
| F021b | 243.5 | 27.0 | | BIASED HIGH* | 9 | 3.8 | -0.1171 | ICP-AES Varian |
| F021c | 126.0 | 12.6 | | | 10 | | | ICP-MS Agilent |
| F022 | 178.0 | 17.8 | AH | | 10 | | | ICP-MS |
| F024 | 51.0 | 5.6 | | BIASED LOW* | 9 | -3.1 | -0.2362 | ICP-MS |
| F026 | 156.5 | 17.3 | AH | | 9 | | | ICP-AES |
| F032c | 174.0 | 19.3 | | | 9 | | | ICP-MS-E3473 |
| F032d | 131.0 | 14.5 | | | 9 | | | ICP-MS-E3474 |
| F032g | 116.0 | 12.8 | AL WL | | 9 | | | ICP-AES-E3386 |
| F032h | 20.0 | 2.2 | ALALWLWL | WL WL | BIASED LOW | 9 | -5.1 | -1.9049 |
| F042 | 111.5 | 12.3 | | | 9 | | | ICP-AES |
| F060 | 133.5 | 14.8 | | | 9 | | | ICP-MS |
| F068 | 160.5 | 17.8 | | | 9 | | | ICP-MS |
| F069 | 127.0 | 12.7 | AH | | 10 | | | ICP-MS |
| F069b | 239.5 | 26.6 | | BIASED HIGH* | 9 | 1.7 | 2.4625 | ICP-AES |
| F139 | 212.5 | 21.2 | | | 10 | | | ICP-MS |
| F144 | 168.0 | 18.6 | AH | | 9 | | | GFAAS |
| F154 | 144.0 | 16.0 | | WL | 9 | | | ICP-MS |
| F158 | 173.5 | 19.2 | | | 9 | | | ICP-MS |
| F183 | 155.0 | 15.5 | WHALAH | AL ALAH | 10 | | | ICP-MS |
| F193 | 132.0 | 14.6 | | | 9 | | | ICP-MS |
| F207 | 245.0 | 27.2 | AH AH | | BIASED HIGH* | 9 | 1.3 | 1.4393 |
| F223 | 97.5 | 16.2 | | | 6 | | | ICP-AES |
| F247 | 93.0 | 9.3 | AL | | 10 | | | |
| F248 | 53.0 | 5.8 | | BIASED LOW* | 9 | -3.4 | -0.0805 | ICP-MS |
| F312 | 51.0 | 7.2 | WL WL | AL | | 7 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.8

PARAMETER: 27095 Cobalt

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 69.9 | 3.46 | 63.7 | 6.94 | 0.0431 | 14.9 | 136. | 95.5 | 257. | 528. |
| F009 | 79.9 AH | 3.96 | 68.8 | 7.42 | <1. | 16.3 | 137. | 97.3 | 240. | 508. |
| F010 | 71. | 3.56 | 65.5 | 6.99 | 0.065 | 15.1 | 140. | 97. | 256. | 542. |
| F011 | 73.0 | 3.6 | 66.0 | 7.1 | <0.1 | 15.6 | 133. | 94.8 | 242. | 502. |
| F015 | 69.7 | 3.54 | 64.2 | 7.17 | 0.061 | 15.1 | 130. | 94.1 | 235. | 537. |
| F020 | 70.9 | 3.56 | 64.2 | 7.15 | 0.049 | 14.9 | 134. | 93.3 | 250. | 497. |
| F021 | 68.5 | 3.5 | 65.7 | 7.0 | <0.1 | 14.8 | 133. | 92.2 | 255. | 514. |
| F021b | 73. | <5. | 66. | 7. | <5. | 17. WH | 142. | 99. | 262. | 566. |
| F021c | 71.9 | 3.39 | 59.8 | 6.67 | 0.05 | 13.9 | 133. | 91.9 | 248. | 550. |
| F022 | 69.7 | 3.53 | 64.3 | 7.02 | 0.0671 | 15.1 | 133. | 96.8 | 258. | 531. |
| F024 | 67.4 | 3.35 | 61.1 | 6.76 | <0.1 | 14.3 | 129. | 89.8 | 242. | 511. |
| F026 | 71.8 | 3.92 | 65.3 | 7.45 | <1. | 15.4 | 137. | 96.8 | 254. | 534. |
| F032c | 70.7 | 3.41 | 62.9 | 7.05 | <0.37 | 14.5 | 134. | 93.9 | 253. | 513. |
| F032d | 69.4 | 3.43 | 63.3 | 7.06 | <0.22 | 14.9 | 135. | 93.6 | 249. | 528. |
| F032g | 67.9 | 3.5 | 61.7 | 7.0 | <1.5 | 14.7 | 132. | 90.9 | 248. | 538. |
| F032h | 71.1 | 3.2 | 65.1 | 6.8 | <0.5 | 15.2 | 136. | 96.9 | 258. | 543. |
| F042 | 65. WL | <5. | 60. | 6. AL | <5. | 13. WL | 124. WL | 85. AL | 227. WL | 542. |
| F060 | 69.8 | 3.83 | 609. AH | 7.27 | <0.1 | 15.4 | 132. | 94.1 | 248. | 543. |
| F068 | 70. | 3.3 | 64. | 6.6 | 0.06 | 14. | 140. | 99. | 260. | 540. |
| F069 | 69.1 | 3.39 | 62.2 | 6.83 | 0.070 | 14.3 | 134. | 93.5 | 261. | 519. |
| F069b | 72.4 | 2.95 WL | 64.4 | 7.12 | <1.60 | 14.9 | 137. | 96.5 | 256. | 507. |
| F139 | 73.1 | 3.72 | 66.2 | 7.21 | 0.074 | 16.1 | 135. | 102. WH | 267. | 579. |
| F154 | 75.1 | 3.73 | 68.9 | 7.45 | <0.2 | 15.8 | 130. | 95.2 | 250. | 552. |
| F158 | 72.3 | 3.6 | 66.4 | 7.2 | <2.0 | 15.4 | 140. | 97.6 | 277. WH | 603. WH |
| F183 | 68.9 | 4.76 AH | 44.0 AL | 6.46 | <2.5 | 16.1 | 169. AH | 92.3 | 280. WH | 442. AL |
| F193 | 72.1 | 3.70 | 65.9 | 7.40 | <1.0 | 15.9 | 136. | 93.4 | 241. | 519. |
| F223 | 72.5 | <20. | 65.4 | <20. | <20. | <20. | 138. | 95.9 | 261. | 554. |
| F248 | 70.1 | 3.50 | 65.0 | 7.00 | <0.10 | 14.6 | 134. | 95.4 | 253. | 545. |
| F312 | 64.7 WL | <8.00 | 59.0 | <8.00 | <8.00 | 11.6 AL | 130. | 89.9 | 249. | 537. |
| ASSIGNED VALUE * | 70.4 | 3.51 | 64.4 | 7.04 | 0.0610 | 15.1 | 134 | 95.0 | 253 | 537 |
| R-STD DEV * | 2.26 | 0.223 | 2.80 | 0.287 | 0.01189 | 0.84 | 4.0 | 3.05 | 9.8 | 22.9 |
| ACCEPTABLE LIMITS(+-) * | 4.52 | 0.446 | 5.60 | 0.574 | 0.02378 | 1.68 | 8.0 | 6.10 | 19.6 | 45.8 |
| WARNING LIMITS(+-) * | 4.52- 6.78 | .446- .669 | 5.60- 8.40 | .574- .861 | .02378- .0351 | 1.68- 2.52 | 8.0- 12.0 | 6.10- 9.15 | 19.6- 29.4 | 45.8- 68.7 |
| ACTION LIMITS(<>) * | 6.78 | 0.669 | 8.40 | 0.861 | 0.03567 | 2.52 | 12.0 | 9.15 | 29.4 | 68.7 |
| N * | 29 | 25 | 29 | 27 | 9 | 28 | 29 | 29 | 29 | 29 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING | |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|---------|
| F003 | 121.0 | 12.1 | | | 10 | | | ICP-MS | |
| F009 | 187.0 | 20.7 | AH | | 9 | | | ICP-MS | |
| F010 | 171.5 | 17.1 | | | 10 | | | ICP-MS | |
| F011 | 138.5 | 15.3 | | | 9 | | | | |
| F015 | 112.0 | 11.2 | | | 10 | | | ICP-MS | |
| F020 | 113.5 | 11.3 | | | 10 | | | ICP-MS | |
| F021 | 99.0 | 11.0 | | | 9 | | | ICP-MS | |
| F021b | 197.0 | 24.6 | WH | BIASED HIGH | 8 | 5.3 | -0.7329 | ICP-AES Varian | |
| F021c | 85.0 | 8.5 | | | 10 | | | ICP-MS Agilent | |
| F022 | 139.0 | 13.9 | | | 10 | | | ICP-MS | |
| F024 | 38.0 | 4.2 | | BIASED LOW* | 9 | -4.8 | 0.1708 | ICP-MS | |
| F026 | 180.0 | 20.0 | | | 9 | | | ICP-AES | |
| F032c | 99.0 | 11.0 | | | 9 | | | ICP-MS-E3473 | |
| F032d | 103.0 | 11.4 | | | 9 | | | ICP-MS-E3474 | |
| F032g | 77.0 | 8.5 | | | 9 | | | ICP-AES-E3386 | |
| F032h | 146.0 | 16.2 | | | 9 | | | ICP-AES-E3497 | |
| F042 | 31.5 | 3.9 | WL AL WLWLALWL | BIASED LOW* | 8 | 0.5 | -7.4482 | ICP-AES | |
| F060 | 154.5 | 17.1 | AH | | 9 | | | ICP-MS | |
| F068 | 132.5 | 13.2 | | | 10 | | | ICP-MS | |
| F069 | 97.5 | 9.7 | | | 10 | | | ICP-MS | |
| F069b | 134.0 | 14.8 | WL | | 9 | | | ICP-AES | |
| F139 | 229.0 | 22.9 | | WH | BIASED HIGH | 10 | 7.6 | -1.9754 | ICP-MS |
| F154 | 184.0 | 20.4 | | | 9 | | | ICP-MS | |
| F158 | 215.5 | 23.9 | | WWWH | BIASED HIGH | 9 | 12.5 | -4.9619 | ICP-MS |
| F183 | 125.5 | 13.9 | AHAL | AH WHAL | | | | ICP-MS | |
| F193 | 151.5 | 16.8 | | | 9 | | | ICP-MS | |
| F223 | 136.5 | 22.7 | | | 6 | | | ICP-AES | |
| F248 | 128.5 | 14.2 | | | 9 | | | ICP-MS | |
| F312 | 37.0 | 5.2 | WL | AL | BIASED LOW* | 7 | 0.9 | -5.5019 | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 14.3

PARAMETER: 29095 Copper

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 80.5 | 6.25 | 164. | 8.19 | 17.3 | 17.1 | 198. | 93.4 | 284. | 471. |
| F009 | 91.1 WH | 7.39 | 177. | 8.98 | 18.5 | 18.5 | 200. | 95.4 | 264. | 448. |
| F010 | 81. | 6.38 | 171. | 8.48 | 17.3 | 17.3 | 199. | 92. | 275. | 460. |
| F011 | 82.5 | 6.6 | 169. | 8.6 | 18.0 | 17.9 | 192. | 92.7 | 262. | 431. |
| F015 | 77.3 | 6.42 | 164. | 8.45 | 17.2 | 16.8 | 194. | 90.0 | 255. | 432. |
| F020 | 78.1 | 6.33 | 159. | 8.22 | 17.3 | 16.7 | 188. | 88.9 | 259. | 421. |
| F021 | 84.3 | 7.0 | 176. | 8.9 | 18.3 | 18.4 | 198. | 97.5 | 282. | 469. |
| F021b | 86. | 7. | 178. | 10. AH | 19. | 19. WH | 209. | 101. | 294. | 497. |
| F021c | 83.0 | 6.62 | 173. | 8.74 | 18.0 | 16.9 | 208. | 96.6 | 283. | 494. |
| F022 | 79.1 | 6.46 | 167. | 8.34 | 17.4 | 17.0 | 193. | 95.9 | 275. | 452. |
| F024 | 76.3 | 6.01 | 156. | 7.81 | 16.6 | 16.0 | 184. | 86.8 | 256. | 438. |
| F026 | 80.9 | 6.63 | 168. | 8.64 | 17.6 | 17.1 | 197. | 94.0 | 269. | 453. |
| F032c | 77.4 | 6.16 | 159. | 8.30 | 16.7 | 16.4 | 186. | 89.1 | 259. | 438. |
| F032d | 79.3 | 6.53 | 165. | 8.49 | 17.6 | 17.0 | 191. | 91.9 | 268. | 450. |
| F032g | 72. WL | 7. | 145. WL | 10. AH | 18. | 17. | 177. | 85. | 247. | 459. |
| F032h | 83. | 6. | 170. | 9. | 18. | 18. | 200. | 95. | 282. | 460. |
| F060 | 81. | 6.9 | 156. | 8.68 | 18.4 | 17.1 | 188. | 92.5 | 256. | 454. |
| F068 | 79. | 7. | 160. | 8. | 17. | 16. | 190. | 92. | 270. | 470. |
| F069 | 70.1 WL | 5.59 WL | 152. | 7.37 WL | 15.2 WL | 14.9 WL | 175. | 81.4 WL | 254. | 499. |
| F069b | 88.2 | 6.11 | 180. | 8.36 | 18.2 | 17.8 | 211. | 102. | 299. | 495. |
| F139 | 83.7 | 6.64 | 170. | 8.93 | 18.3 | 18.2 | 201. | 95.3 | 284. | 474. |
| F144 | 89.6 WH | 5.38 WL | 170. | 8.19 | 16.4 | 15.2 | 236. AH | 105. WH | 331. AH | 493. |
| F154 | 81.9 | 6.77 | 166. | 8.69 | 18.2 | 17.4 | 186. | 92.9 | 298. | 502. |
| F158 | 83.5 | 6.8 | 176. | 9.1 | 18.6 | 18.1 | 207. | 99.0 | 305. WH | 523. WH |
| F183 | 80.2 | 6.34 | 165. | 8.10 | 17.9 | 16.8 | 202. | 96.1 | 264. | 475. |
| F193 | 80.7 | 6.50 | 158. | 8.40 | 17.7 | 17.1 | 185. | 93.7 | 260. | 472. |
| F207 | 79.5 | 5.6 WL | 165. | 7.8 | 16.9 | 16.4 | 192. | 91.6 | 271. | 447. |
| F223 | 80.7 | <20. | 166. | <20. | <20. | <20. | 199. | 93.0 | 276. | 480. |
| F248 | 79.2 | 6.60 | 165. | 8.50 | 17.3 | 16.8 | 189. | 92.9 | 270. | 462. |
| F312 | 75.1 | <6.00 | 158. | 6.08 AL | 14.0 AL | 13.0 AL | 184. | 86.5 | 258. | 443. |
| ASSIGNED VALUE * | 80.7 | 6.52 | 166 | 8.46 | 17.6 | 17.0 | 193 | 93.0 | 270 | 461 |
| R-STD DEV * | 3.82 | 0.440 | 8.3 | 0.490 | 0.80 | 0.97 | 10.2 | 4.54 | 16.9 | 26.0 |
| ACCEPTABLE LIMITS(+-) * | 7.64 | 0.880 | 16.6 | 0.980 | 1.60 | 1.94 | 20.4 | 9.08 | 33.8 | 52.0 |
| WARNING LIMITS(+-) * | 7.64- | 11.46 | .880- | 1.320 | 16.6- | 24.9 | .980- | 1.470 | 1.60- | 2.40 |
| ACTION LIMITS(<>) * | 11.46 | 1.320 | 24.9 | 1.470 | 2.40 | 2.91 | 30.6 | 13.62 | 50.7 | 78.0 |
| N * | 30 | 28 | 30 | 29 | 29 | 29 | 30 | 30 | 30 | 30 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 147.0 | 14.7 | | | 10 | | | ICP-MS |
| F009 | 230.0 | 23.0 | WH | | 10 | | | ICP-MS |
| F010 | 163.0 | 16.3 | | | 10 | | | ICP-MS |
| F011 | 156.5 | 15.6 | | | 10 | | | |
| F015 | 88.5 | 8.8 | | | 10 | | | ICP-MS |
| F020 | 73.0 | 7.3 | | | 10 | | | ICP-MS |
| F021 | 235.5 | 23.5 | | BIASED HIGH* | 10 | 2.2 | 1.6688 | ICP-MS |
| F021b | 277.0 | 27.7 | AH WH | BIASED HIGH | 10 | 7.9 | 0.1694 | ICP-AES Varian |
| F021c | 219.0 | 21.9 | | | 10 | | | ICP-MS Agilent |
| F022 | 144.5 | 14.4 | | | 10 | | | ICP-MS |
| F024 | 41.5 | 4.1 | | BIASED LOW | 10 | -5.0 | -0.5281 | ICP-MS |
| F026 | 167.0 | 16.7 | | | 10 | | | ICP-AES |
| F032c | 66.5 | 6.6 | | BIASED LOW* | 10 | -4.8 | 0.4789 | ICP-MS-E3473 |
| F032d | 127.0 | 12.7 | | | 10 | | | ICP-MS-E3474 |
| F032g | 108.5 | 10.8 | WL WLAH | | 10 | | | ICP-AES-E3386 |
| F032h | 196.5 | 19.6 | | | 10 | | | ICP-AES-E3497 |
| F060 | 145.5 | 14.5 | | | 10 | | | ICP-MS |
| F068 | 114.0 | 11.4 | | | 10 | | | ICP-MS |
| F069 | 43.0 | 4.3 | WLWL WLWLWL WL | BIASED LOW | 10 | 5.4 | -11.0176 | ICP-MS |
| F069b | 232.5 | 23.2 | | | 10 | | | ICP-AES |
| F139 | 232.0 | 23.2 | | | 10 | | | ICP-MS |
| F144 | 179.5 | 17.9 | WHWL AHWHAH | | 10 | | | GFAAS |
| F154 | 199.0 | 19.9 | | | 10 | | | ICP-MS |
| F158 | 264.5 | 26.4 | | WHWH | BIASED HIGH | 10 | 13.3 | -4.2664 |
| F183 | 152.0 | 15.2 | | | 10 | | | ICP-MS |
| F193 | 133.5 | 13.3 | | | 10 | | | ICP-MS |
| F207 | 89.5 | 8.9 | WL | | 10 | | | ICP-AES |
| F223 | 111.5 | 18.5 | | | 6 | | | ICP-AES |
| F248 | 133.5 | 13.3 | | | 10 | | | ICP-MS |
| F312 | 30.0 | 3.3 | ALALAL | BIASED LOW* | 9 | -3.3 | -2.9885 | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.2

PARAMETER: 31095 Gallium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|-------------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|
| F003 | 9.22 | 12.1 | 0.0445 | 2.15 | 0.00359 | 0.0994 | 13.7 | 33.5 | 53.2 | 0.0186 |
| F022 | 9.01 | 11.8 | 0.047 | 2.06 | <0.01 | 0.1 | 13.4 | 32.8 | 52.4 | 0.0455 |
| F024 | 8.8 | 11.3 | <0.1 | 1.93 | <0.1 | 0.10 | 13.2 | 31.0 | 50.4 | <0.1 |
| F139 | 9.17 | 12.1 | 0.048 | 2.14 | 0.008 | 0.112 | 13.3 | 33.3 | 56.1 | 0.091 |
| F183 | 9.47 | 11.9 | 0.036 | 2.13 | <0.010 | 0.102 | 13.9 | 32.8 | 52.8 | <0.010 |
| ASSIGNED VALUE * | 9.17 | 11.9 | 0.0458 | 2.13 | 0.00580 | 0.1000 | 13.4 | 32.8 | 52.8 | 0.0455 |
| R-STD DEV * | 0.283 | 0.37 | 0.00618 | 0.095 | - | 0.00265 | 0.33 | 0.98 | 2.32 | 0.04150 |
| ACCEPTABLE LIMITS(+-) * | - | - | - | - | - | - | - | - | - | - |
| WARNING LIMITS(+-) * | - | - | - | - | - | - | - | - | - | - |
| ACTION LIMITS(<>) * | - | - | - | - | - | - | - | - | - | - |
| N * | 5 | 5 | 4 | 5 | 2 | 5 | 5 | 5 | 5 | 3 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|---------------|
| F003 | 31.5 | 3.1 | | | 10 | | | ICP-MS |
| F022 | 21.0 | 2.3 | | | 9 | | | ICP-MS |
| F024 | 8.5 | 1.2 | | | 7 | | | ICP-MS |
| F139 | 36.5 | 3.6 | | | 10 | | | ICP-MS |
| F183 | 26.5 | 3.3 | | | 8 | | | ICP-MS |

NOTE: BIAS WAS NOT ASSESSED BECAUSE STATISTICS

FOR FEWER THAN 10 LABS WERE AVAILABLE

OVERALL AVERAGE RANK IS 2.8

PARAMETER: 26095 Iron

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 124. | 17.8 | 226. | 14.9 | 41.9 | 26.6 | 410. | 120. | 305. | 590. |
| F009 | 124. | 20.3 | 217. | 15.2 | 39.2 | 26.9 | 382. | 111. | 266. WL | 534. WL |
| F010 | 119. | 18. | 211. | 14.8 | 43. | 28. | 420. | 123. | 307. | 607. |
| F011 | 130. | 20.6 | 234. | 16.3 | 46.1 | 28.9 | 412. | 122. | 305. | 578. |
| F015 | 130. | 19. | 236. | 15. | 44. | 28. | 450. WH | 127. | 328. | 500. AL |
| F020 | 121. | 19. | 222. | 16. | 43. | 27. | 384. | 118. | 295. | 575. |
| F021b | 120. | <20. | 230. | <20. | 40. | 30. | 420. | 120. | 310. | 610. |
| F022 | 119. | 17. | 221. | 14. | 41. | 27. | 411. | 117. | 300. | 583. |
| F024 | 115. | 16.1 | 210. | 13.4 | 39.2 | 24.1 | 395. | 109. | 288. | 561. |
| F026 | 123. | 17.9 | 234. | 14.9 | 43.4 | 26.9 | 411. | 120. | 299. | 591. |
| F032c | 128. | <38.9 | 223. | <38.9 | 44.0 | <38.9 | 417. | 123. | 313. | 581. |
| F032d | 129. | <25.1 | 227. | <25.1 | 44.5 | 31.3 | 418. | 119. | 315. | 611. |
| F032g | 119. | 17. | 221. | 14. | 41. | 24. | 409. | 115. | 341. WH | 594. |
| F032h | 116. | 16. | 218. | 14. | 36. | 23. | 401. | 115. | 278. | 583. |
| F042 | 120. | 17. | 216. | 13. | 40. | 24. | 430. | 111. | 319. | 620. |
| F060 | 117. | 17.8 | 215. | 13.8 | 37.1 | 23.3 | 405. | 115. | 302. | 595. |
| F060b | 106. WL | <20. | 213. | <20. | 35.3 | <20. WL | 404. | 101. WL | 295. | 602. |
| F068 | 120. | 18. | 220. | 15. | 41. | 23. | 390. | 110. | 310. | 570. |
| F069b | 103. AL | 14.9 | 198. WL | 14.1 | 38.1 | 20.8 WL | 376. | 109. | 294. | 570. |
| F139 | 125. | 18.5 | 225. | 14.6 | 44.4 | 26.6 | 421. | 118. | 316. | 609. |
| F144 | 193. AH | 15.6 | 141. AL | 14.4 | 33.7 WL | 22.8 | 345. AL | 147. AH | 301. | 597. |
| F154 | 102. AL | <10. AL | 213. | <10. AL | 34. WL | <10. AL | 373. | 94. AL | 261. AL | 574. |
| F158 | 123. | <50.0 | 228. | <50.0 | <50.0 | <50.0 | 433. | 116. | 316. | 635. WH |
| F183 | 125. | 17.7 | 219. | 14.9 | 42.6 | 30.5 | 405. | 122. | 285. | 617. |
| F192 | 127. | 15.7 | 215. | 19.4 AH | 54.8 AH | 24.7 | 404. | 122. | 316. | 596. |
| F193 | 126. | 18.2 | 228. | 14.5 | 41.7 | 26.1 | 398. | 118. | 297. | 587. |
| F207 | 124. | 18.0 | 228. | 14.8 | 43.2 | 26.9 | 420. | 120. | 310. | 598. |
| F223 | 118. | <20. | 216. | <20. | 39.7 | 24.8 | 438. | 114. | 319. | 635. WH |
| F247 | 124. | 17.7 | 227. | 14.6 | 42.2 | 26.3 | 418. | 118. | 308. | 600. |
| F248 | 123. | 23. AH | 228. | 21. AH | 43. | 30. | 409. | 138. AH | 308. | 590. |
| F312 | 120. | <68.0 | 215. | <68.0 | <68.0 | <68.0 | 394. | 112. | 290. | 575. |
| ASSIGNED VALUE * | 123 | 17.8 | 221 | 14.6 | 41.4 | 26.6 | 410 | 118 | 306 | 592 |
| R-STD DEV * | 5.7 | 1.57 | 8.8 | 0.92 | 3.43 | 2.87 | 18.6 | 6.4 | 14.1 | 20.8 |
| ACCEPTABLE LIMITS(+-) * | 11.4 | 3.14 | 17.6 | 1.84 | 6.86 | 5.74 | 37.2 | 12.8 | 28.2 | 41.6 |
| WARNING LIMITS(+-) * | 11.4- 17.1 | 3.14- 4.71 | 17.6- 26.4 | 1.84- 2.76 | 6.86- 10.29 | 5.74- 8.61 | 37.2- 55.8 | 12.8- 19.2 | 28.2- 42.3 | 41.6- 62.4 |
| ACTION LIMITS(<>) * | 17.1 | 4.71 | 26.4 | 2.76 | 10.29 | 8.61 | 55.8 | 19.2 | 42.3 | 62.4 |
| N * | 31 | 23 | 31 | 23 | 29 | 26 | 31 | 31 | 31 | 31 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 166.0 | 16.6 | | | 10 | | | ICP-MS |
| F009 | 110.5 | 11.0 | | WLWL | 10 | | | ICP-MS |
| F010 | 174.5 | 17.4 | | | 10 | | | ICP-MS |
| F011 | 221.5 | 22.1 | | | 10 | | | |
| F015 | 233.5 | 23.3 | | WH AL | BIASED HIGH | 10 | -7.7 | 15.2936 |
| F020 | 148.5 | 14.8 | | | 10 | | | ICP-MS |
| F021b | 168.0 | 21.0 | | | 8 | | | ICP-AES Varian |
| F022 | 125.0 | 12.5 | | | 10 | | | ICP-MS |
| F024 | 49.0 | 4.9 | | | BIASED LOW* | 10 | -4.5 | -1.3962 |
| F026 | 180.5 | 18.0 | | | 10 | | | ICP-AES |
| F032c | 152.0 | 21.7 | | | 7 | | | ICP-MS-E3473 |
| F032d | 196.0 | 24.5 | | | 8 | 2.7 | 1.1881 | ICP-MS-E3474 |
| F032g | 131.5 | 13.1 | WH | | 10 | | | ICP-AES-E3386 |
| F032h | 70.0 | 7.0 | | | BIASED LOW* | 10 | -1.7 | -3.6141 |
| F042 | 140.0 | 14.0 | | | 10 | | | ICP-AES |
| F060 | 95.0 | 9.5 | | | 10 | | | ICP-AES |
| F060b | 56.5 | 8.0 | WL | WL WL | | | | ICP-MS |
| F068 | 113.0 | 11.3 | | | 7 | | | ICP-MS |
| F069b | 37.0 | 3.7 | AL WL | WL | BIASED LOW* | 10 | -4.1 | -5.3702 |
| F139 | 206.0 | 20.6 | | | 10 | | | ICP-MS |
| F144 | 110.0 | 11.0 | AH AL | WL ALAH | | | | GFAAS |
| F154 | 18.5 | 2.6 | ALAL | ALWLAL ALAL | BIASED LOW* | 7 | -2.2 | -16.7668 |
| F158 | 141.0 | 23.5 | | WH | | | | ICP-MS |
| F183 | 175.5 | 17.5 | | | 6 | | | ICP-MS |
| F192 | 178.5 | 17.8 | AH | AH | | | | Colorimetry |
| F193 | 151.0 | 15.1 | | | 10 | | | ICP-MS |
| F207 | 200.0 | 20.0 | | | 10 | | | |
| F223 | 134.5 | 16.8 | | WH | | | | ICP-AES |
| F247 | 171.5 | 17.1 | | | 8 | | | |
| F248 | 210.5 | 21.0 | AH AH | AH | | | | ICP-MS |
| F312 | 49.0 | 8.1 | | | 10 | | | ICP-AES |
| | | | | | 6 | | | |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.0

PARAMETER: 82095 Lead

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 70.0 | 4.35 | 8.07 | 2.96 | 0.0962 | 11.6 | 362. | 98.9 | 291. | 732. |
| F009 | 63.4 | 4.25 | 7.80 | 2.83 | <1. | 11.2 | 339. | 94.5 | 270. | 672. |
| F010 | 69. | 4.31 | 7.9 | 2.90 | 0.20 | 11.7 | 360. | 97. | 286. | 717. |
| F011 | 72.8 | 4.5 | 8.3 | 3.1 | 0.1 | 11.9 | 348. | 99.6 | 286. | 698. |
| F015 | 66.8 | 4.27 | 7.81 | 2.96 | 0.08 | 11.8 | 347. | 96.8 | 275. | 689. |
| F020 | 69. | 4.31 | 7.98 | 2.96 | 0.087 | 11.6 | 344. | 95.3 | 269. | 663. |
| F021 | 69.8 | 4.4 | 8.0 | 2.9 | <0.1 | 12.3 | 354. | 100. | 302. | 723. |
| F021b | 72. | <20. | <20. | <20. | <20. | <20. | 372. | 93. | 289. | 757. |
| F021c | 74.3 | 4.80 WH | 8.57 WH | 3.33 | 0.12 | 12.0 | 380. | 99.8 | 281. | 706. |
| F022 | 67.4 | 4.34 | 7.90 | 2.93 | <0.01 | 11.5 | 351. | 97.2 | 286. | 705. |
| F024 | 65.0 | 3.92 WL | 7.27 WL | 2.72 | <0.1 | 10.6 | 338. | 91.6 | 273. | 677. |
| F026 | 71.0 | 4.2 | 7.8 | 2.5 WL | <2. | 12.7 | 357. | 100. | 286. | 727. |
| F032c | 68.0 | 4.33 | 7.85 | 2.90 | <0.34 | 11.3 | 344. | 93.0 | 277. | 704. |
| F032d | 69.9 | 4.38 | 8.02 | 3.00 | <0.23 | 11.7 | 352. | 95.6 | 283. | 707. |
| F032g | 68. | <11. | <11. | <11. | <11. | <11. | 356. | 98. | 291. | 723. |
| F032h | 76. WH | <5. | 8. | <5. | <5. | 13. | 366. | 107. WH | 304. | 732. |
| F042 | 72. | 5. AH | 9. AH | 4. AH | <2. | 12. | 363. | 99. | 289. | 726. |
| F060 | 64.7 | 4.1 | 7.51 | 2.73 | <0.1 | 10.7 | 344. | 88.9 WL | 281. | 697. |
| F068 | 71. | 4.4 | 8. | 3.1 | 0.2 | 11. | 380. | 100. | 290. | 730. |
| F139 | 71.2 | 4.39 | 8.12 | 2.98 | 0.109 | 11.8 | 371. | 100. | 296. | 735. |
| F144 | 65.7 | 3.73 AL | 6.91 AL | 2.64 | <3. | 9.78 WL | 373. | 94.4 | 277. | 732. |
| F154 | 67. | 4.55 | 8.39 | 3.14 | <0.09 | 11.9 | 324. WL | 89.1 WL | 263. | 704. |
| F158 | 71.8 | 4.5 | 8.2 | 3.1 | <2.0 | 11.9 | 394. WH | 100. | 319. WH | 808. AH |
| F183 | 67.0 | 4.24 | 7.94 | 2.84 | <0.50 | 11.8 | 358. | 99.5 | 274. | 694. |
| F193 | 70.0 | 4.30 | 8.30 | 2.90 | <0.9 | 11.9 | 367. | 99.6 | 287. | 752. |
| F207 | 67.4 | 4.5 | 8.1 | 3.1 | <0.8 | 12.3 | 396. WH | 95.9 | 288. | 731. |
| F248 | 66.9 | 4.40 | 8.00 | 3.10 | <0.20 | 11.0 | 345. | 98.7 | 271. | 680. |
| F312 | 71.3 | <6.00 | 7.91 | 10.8 AH | <6.00 | 9.04 AL | 367. | 100. | 301. | 750. |
| ASSIGNED VALUE * | 69.4 | 4.34 | 8.00 | 2.96 | 0.1045 | 11.80 | 358 | 98.4 | 286 | 717 |
| R-STD DEV * | 3.05 | 0.162 | 0.264 | 0.199 | 0.05497 | 0.656 | 16.1 | 3.36 | 11.9 | 28.2 |
| ACCEPTABLE LIMITS(+-) * | 6.10 | 0.324 | 0.528 | 0.398 | 0.10994 | 1.312 | 32.2 | 6.72 | 23.8 | 56.4 |
| WARNING LIMITS(+-) * | 6.10- 9.15 | .324- .486 | .528- .792 | .398- .597 | .10994- .1641 | 312- 1.96832.2- 48.3 | 6.72- 10.08 | 23.8- 35.7 | 56.4- 84.6 | |
| ACTION LIMITS(<>) * | 9.15 | 0.486 | 0.792 | 0.597 | 0.16491 | 1.968 | 48.3 | 10.08 | 35.7 | 84.6 |
| N * | 28 | 24 | 26 | 25 | 8 | 26 | 28 | 28 | 28 | 28 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL | AVERAGE | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|-------|---------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 152.5 | 15.2 | | | 10 | | | ICP-MS |
| F009 | 38.5 | 4.2 | | BIASED LOW | 9 | -6.4 | 0.7307 | ICP-MS |
| F010 | 116.5 | 11.6 | | | 10 | | | ICP-MS |
| F011 | 161.0 | 16.1 | | | 10 | | | |
| F015 | 78.0 | 7.8 | | | 10 | | | ICP-MS |
| F020 | 76.5 | 7.6 | | | 10 | | | ICP-MS |
| F021 | 156.5 | 17.3 | | | 9 | | | ICP-MS |
| F021b | 98.5 | 19.7 | | | 5 | | | ICP-AES Varian |
| F021c | 194.5 | 19.4 | WHHH | | 10 | | | ICP-MS Agilent |
| F022 | 98.5 | 10.9 | | | 9 | | | ICP-MS |
| F024 | 26.0 | 2.8 | WLWL | BIASED LOW | 9 | -5.8 | 0.0189 | ICP-MS |
| F026 | 125.0 | 13.8 | WL | | 9 | | | ICP-AES |
| F032c | 73.5 | 8.1 | | | 9 | | | ICP-MS-E3473 |
| F032d | 120.5 | 13.3 | | | 9 | | | ICP-MS-E3474 |
| F032g | 76.5 | 15.3 | | | 5 | | | ICP-AES-E3386 |
| F032h | 164.5 | 23.5 | WH | WH | BIASED HIGH* | 7 | 1.5 | ICP-AES-E3497 |
| F042 | 191.5 | 21.2 | AHAHAH | | BIASED HIGH* | 9 | 0.8 | 0.8700 |
| F060 | 39.5 | 4.3 | | WL | BIASED LOW* | 9 | -3.0 | ICP-MS |
| F068 | 173.0 | 17.3 | | | 10 | | | ICP-MS |
| F139 | 185.5 | 18.5 | | | 10 | | | ICP-MS |
| F144 | 70.5 | 7.8 | ALAL | WL | | 9 | | GFAAS |
| F154 | 107.5 | 11.9 | | WLWL | | 9 | | ICP-MS |
| F158 | 209.0 | 23.2 | | WH WHAH | BIASED HIGH | 9 | 12.3 | ICP-MS |
| F183 | 89.5 | 9.9 | | | | 9 | | ICP-MS |
| F193 | 158.0 | 17.5 | | | | 9 | | ICP-MS |
| F207 | 167.0 | 18.5 | | WH | | 9 | | GFAAS |
| F248 | 92.0 | 10.2 | | | | 9 | | ICP-MS |
| F312 | 153.0 | 19.1 | AH AL | | | 8 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.6

PARAMETER: 03095 Lithium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 17.4 | 3.43 | 19.9 | 1.96 | 0.531 | 14.6 | 13.8 | 59.7 | 149. | 158. |
| F011 | 17.7 | 3.5 | 19.4 | 1.9 | 0.5 | 14.2 | 13.4 | 55.6 | 146. | 155. |
| F015 | 15.2 AL | 2.99 | 16.8 AL | 1.73 | 0.49 | 12.9 | 12.0 | 50.1 WL | 136. | 148. |
| F020 | 18.8 | 3.5 | 20.4 | 2.1 | 0.6 | 15.5 | 14.7 | 58.9 | 150. | 164. |
| F022 | 17.3 | 3.47 | 19.8 | 2.48 WH | 0.839 AH | 15.1 | 13.4 | 58.3 | 151. | 154. |
| F024 | 17.3 | 3.20 | 18.9 | 1.89 | 0.51 | 13.4 | 13.1 | 54.1 | 143. | 154. |
| F032h | 17. | 5. AH | 19. | <5. | <5. | 17. | 13. | 59. | 152. | 156. |
| F060 | 18. | 3.64 | 19.3 | 2.01 | <1. | 15.9 | 14.0 | 58.4 | 150. | 160. |
| F069 | 18.1 | 3.01 | 20.8 | 1.72 | 0.48 | 13.1 | 12.3 | 59.9 | 157. | 180. |
| F069b | 21.3 AH | 3.9 | 22.2 WH | 2.41 | 0.666 | 17.4 | 15.4 | 68.4 AH | 181. AH | 193. WH |
| F139 | 17.7 | 3.64 | 19.6 | 2.06 | 0.616 | 15.6 | 13.3 | 58.3 | 162. | 166. |
| F154 | 18.1 | 3.7 | 19.4 | <2. | <2. | 14.8 | 14.9 | 56.3 | 153. | 178. |
| F183 | 18.2 | 3.59 | 20.5 | 1.96 | 0.509 | 14.9 | 14.3 | 56.6 | 155. | 162. |
| F312 | <22.0 | <22.0 | <22.0 | <22.0 | <22.0 | <22.0 | <22.0 | 53.2 | 141. | 148. |
| ASSIGNED VALUE * | 17.7 | 3.50 | 19.7 | 1.96 | 0.510 | 14.9 | 13.4 | 58.3 | 150 | 159 |
| R-STD DEV * | 0.75 | 0.346 | 0.89 | 0.243 | 0.0878 | 1.53 | 1.11 | 3.06 | 8.1 | 12.4 |
| ACCEPTABLE LIMITS(+-) * | 1.50 | 0.692 | 1.78 | 0.486 | 0.1756 | 3.06 | 2.22 | 6.12 | 16.2 | 24.8 |
| WARNING LIMITS(+-) * | 1.50- 2.25 | .692- 1.038 | 1.78- 2.67 | .486- .729 | .1756- .2634 | 3.06- 4.59 | 2.22- 3.33 | 6.12- 9.18 | 16.2- 24.3 | 24.8- 37.2 |
| ACTION LIMITS(<>) * | 2.25 | 1.038 | 2.67 | 0.729 | 0.2634 | 4.59 | 3.33 | 9.18 | 24.3 | 37.2 |
| N * | 13 | 13 | 13 | 11 | 10 | 13 | 13 | 14 | 14 | 14 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|---------------|
| F003 | 66.5 | 6.6 | | | 10 | | | ICP-MS |
| F011 | 49.0 | 4.9 | | | 10 | | | |
| F015 | 12.5 | 1.2 | AL AL | WL | BIASED LOW | 10 | -8.2 | ICP-MS |
| F020 | 91.0 | 9.1 | | | 10 | | | ICP-MS |
| F022 | 71.0 | 7.1 | | WHAH | | 10 | | ICP-MS |
| F024 | 33.0 | 3.3 | | | BIASED LOW* | 10 | -4.2 | ICP-MS |
| F032h | 59.0 | 7.3 | AH | | | 8 | | ICP-AES-E3497 |
| F060 | 72.0 | 8.0 | | | | 9 | | ICP-MS |
| F069 | 67.5 | 6.7 | | | | 10 | | ICP-MS |
| F069b | 125.0 | 12.5 | AH WH | AHAWH | BIASED HIGH | 10 | 20.9 | -0.5920 |
| F139 | 85.5 | 8.5 | | | | 10 | | ICP-MS |
| F154 | 71.0 | 8.8 | | | | 8 | | ICP-MS |
| F183 | 82.5 | 8.2 | | | | 10 | | ICP-MS |
| F312 | 5.5 | 1.8 | | | INSUFFICIENT DATA | 3 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
 PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 6.9

PARAMETER: 25095 Manganese

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 85.6 | 7.04 | 47.4 | 8.87 | 0.777 | 18.1 | 198. | 95.8 | 295. | 405. |
| F009 | 95.4 AH | 7.91 AH | 50.8 WH | 9.27 | 0.68 | 19.6 WH | 198. | 95.8 | 277. | 380. |
| F010 | 84. | 7.01 | 48. | 8.70 | 0.78 | 18.1 | 204. | 94. | 296. | 406. |
| F011 | 82.7 | 7.0 | 48.2 | 8.8 | 0.8 | 18.8 | 190. | 94.0 | 275. | 373. |
| F015 | 76.4 WL | 6.84 | 46.1 | 8.56 | 0.794 | 17.5 | 182. | 87.0 WL | 269. | 365. |
| F020 | 82.9 | 6.8 | 46.2 | 8.55 | 0.74 | 17.6 | 194. | 91.3 | 287. | 380. |
| F021b | 87. | 7. | 48. | 9. | <2. | 19. | 204. | 98. | 305. | 418. |
| F022 | 83.3 | 6.94 | 47.0 | 8.71 | 0.754 | 17.9 | 195. | 95.1 | 290. | 394. |
| F024 | 82.3 | 6.79 | 46.0 | 8.48 | 0.72 | 17.5 | 192. | 91.2 | 285. | 388. |
| F026 | 84.7 | 7.16 | 47.6 | 9.00 | <2. | 18.4 | 195. | 95.5 | 290. | 395. |
| F032c | 82.5 | 6.83 | 46.5 | 8.63 | 0.881 WH | 17.8 | 193. | 94.1 | 291. | 397. |
| F032d | 82.2 | 6.72 | 46.1 | 8.59 | 0.76 | 17.6 | 191. | 92.2 | 288. | 398. |
| F032g | 75.7 WL | 6.0 AL | 42.2 AL | 7.5 AL | 0.6 AL | 16.0 WL | 181. | 84.8 AL | 284. | 369. |
| F032h | 80.9 | 6.7 | 44.9 | 8.3 | 0.7 | 17.5 | 190. | 91.8 | 286. | 392. |
| F042 | 82. | 7. | 47. | 8. | <5. | 17. | 200. | 95. | 290. | 414. |
| F060 | 88.1 | 7.6 WH | 49.5 | 8.5 | <5. | 17.6 | 206. | 99.9 | 310. | 418. |
| F068 | 87. | 7. | 46. | 8.1 | 0.8 | 18. | 210. | 98. | 300. | 400. |
| F069 | 82.1 | 6.65 | 46.1 | 8.39 | 0.735 | 17.3 | 194. | 92.8 | 289. | 422. |
| F069b | 86.6 | 7.23 | 48.3 | 9.02 | 0.79 | 18.1 | 200. | 96.1 | 298. | 382. |
| F139 | 87.9 | 7.1 | 48.7 | 9.2 | | 19.8 WH | 211. | 96.2 | 306. | 429. |
| F144 | 80.4 | 7.17 | 44.6 | 8.92 | <3. | 17.3 | 193. | 97.8 | 244. AL | 360. |
| F154 | 81.1 | 7.01 | 48. | 8.6 | 0.77 | 17.6 | 180. | 87.8 WL | 268. | 385. |
| F158 | 88.0 | 7.1 | 48.7 | 8.9 | <2.0 | 18.7 | 208. | 97.5 | 306. | 418. |
| F183 | 86.2 | 6.63 | 48.0 | 8.39 | 0.726 | 17.5 | 201. | 95.8 | 277. | 410. |
| F193 | 85.0 | 7.0 | 47.5 | 8.60 | 0.80 | 17.9 | 195. | 95.4 | 288. | 406. |
| F223 | 83.3 | <20. | 47.2 | <20. | <20. | <20. | 194. | 93.1 | 286. | 403. |
| F248 | 85.0 | 7.10 | 48.4 | 8.80 | 0.80 | 17.9 | 197. | 96.5 | 295. | 410. |
| F312 | 76.9 | <9.00 | 41.3 AL | <9.00 | <9.00 | 13.6 AL | 186. | 88.4 | 281. | 384. |
| ASSIGNED VALUE * | 83.3 | 7.00 | 47.4 | 8.63 | 0.774 | 17.8 | 195 | 95.1 | 289 | 398 |
| R-STD DEV * | 3.38 | 0.227 | 1.59 | 0.340 | 0.0477 | 0.68 | 8.4 | 3.30 | 12.2 | 19.6 |
| ACCEPTABLE LIMITS(+-) * | 6.76 | 0.454 | 3.18 | 0.680 | 0.0954 | 1.36 | 16.8 | 6.60 | 24.4 | 39.2 |
| WARNING LIMITS(+-) * | 6.76- 10.14 .454- .681 | 3.18- 4.77 | .680- 1.020 | .0954- .1431 | 1.36- 2.04 | 16.8- 25.2 | 6.60- 9.90 | 24.4- 36.6 | 39.2- 58.8 | |
| ACTION LIMITS(<>) * | 10.14 | 0.681 | 4.77 | 1.020 | 0.1431 | 2.04 | 25.2 | 9.90 | 36.6 | 58.8 |
| N * | 28 | 26 | 28 | 26 | 19 | 27 | 28 | 28 | 28 | 28 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----|----------------|--------------------|--------------|------------|----------------|
| F003 | 179.0 | 17.9 | | | | 10 | | | ICP-MS |
| F009 | 184.5 | 18.4 | AHAHWH | WH | | 10 | | | ICP-MS |
| F010 | 175.5 | 17.5 | | | | 10 | | | ICP-MS |
| F011 | 130.0 | 13.0 | | | | 10 | | | |
| F015 | 60.5 | 6.0 | WL | WL | BIASED LOW | 10 | -8.0 | 0.8365 | ICP-MS |
| F020 | 93.0 | 9.3 | | | | 10 | | | ICP-MS |
| F021b | 203.5 | 22.6 | | | BIASED HIGH | 9 | 5.3 | -0.7260 | ICP-AES Varian |
| F022 | 136.0 | 13.6 | | | | 10 | | | ICP-MS |
| F024 | 72.0 | 7.2 | | | | 10 | | | ICP-MS |
| F026 | 162.5 | 18.0 | | | | 9 | | | ICP-AES |
| F032c | 132.5 | 13.2 | WH | | | 10 | | | ICP-MS-E3473 |
| F032d | 97.0 | 9.7 | | | | 10 | | | ICP-MS-E3474 |
| F032g | 22.0 | 2.2 | WLALALALALWL | AL | BIASED LOW | 10 | -5.4 | -1.3690 | ICP-AES-E3386 |
| F032h | 61.5 | 6.1 | | | BIASED LOW* | 10 | -1.3 | -0.7946 | ICP-AES-E3497 |
| F042 | 112.0 | 12.4 | | | | 9 | | | ICP-AES |
| F060 | 204.5 | 22.7 | WH | | BIASED HIGH | 9 | 5.9 | -0.3010 | ICP-AES |
| F068 | 173.0 | 17.3 | | | | 10 | | | ICP-MS |
| F069 | 98.0 | 9.8 | | | | 10 | | | ICP-MS |
| F069b | 197.5 | 19.7 | | | | 10 | | | ICP-AES |
| F139 | 227.0 | 25.2 | WH | | BIASED HIGH | 9 | 7.5 | -1.3669 | ICP-MS |
| F144 | 92.0 | 10.2 | | AL | | 9 | | | GFAAS |
| F154 | 91.0 | 9.1 | WL | | | 10 | | | ICP-MS |
| F158 | 216.0 | 24.0 | | | BIASED HIGH | 9 | 5.5 | -0.3870 | ICP-MS |
| F183 | 128.5 | 12.8 | | | | 10 | | | ICP-MS |
| F193 | 156.5 | 15.6 | | | | 10 | | | ICP-MS |
| F223 | 78.0 | 13.0 | | | | 6 | | | ICP-AES |
| F248 | 194.5 | 19.4 | | | | 10 | | | ICP-MS |
| F312 | 28.0 | 4.0 | AL | AL | BIASED LOW* | 7 | -2.1 | -4.4228 | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.9

PARAMETER: 42095 Molybdenum

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 58.0 | 3.76 | 68.1 | 4.20 | 0.134 | 14.3 | 210. | 102. | 303. | 359. |
| F009 | 47.8 AL | 3.47 | 57.3 AL | 4.03 | <1. | 11.8 WL | 184. AL | 90.2 AL | 263. AL | 321. WL |
| F010 | 57. | 3.7 | 68. | 4.3 | 0.15 | 14.3 | 206. | 97. | 286. | 343. |
| F011 | 57.9 | 3.9 | 67.9 | 4.2 | <0.1 | 13.0 | 199. | 101. | 286. | 340. |
| F015 | 62.3 WH | 4.64 | 71.5 | 5.31 AH | 0.55 WH | 14.8 | 215. | 106. | 292. | 362. |
| F020 | 60.5 | 3.64 | 70.9 | 4.18 | 0.14 | 14.1 | 214. | 104. | 291. | 345. |
| F021 | 58.7 | 4.1 | 70.5 | 4.5 | 0.3 | 14.7 | 212. | 102. | 303. | 363. |
| F021b | 58. | <5. | 68. | 5. WH | <5. | 16. WH | 209. | 102. | 295. | 354. |
| F021c | 55.6 | 4.6 | 72.3 | 4.9 | 0.4 | 15.1 | 216. | 105. | 308. | 377. |
| F022 | 56.6 | 3.72 | 68.6 | 4.14 | 0.162 | 13.9 | 208. | 103. | 278. | 339. |
| F024 | 52.2 WL | 4.10 | 60.3 AL | 4.50 | 0.46 | 12.6 | 187. WL | 91.7 WL | 265. WL | 322. WL |
| F026 | 57.3 | <5. | 67.8 | 4.7 | <5. | 14.2 | 203. | 101. | 283. | 344. |
| F032c | 57.7 | 3.75 | 68.1 | 4.22 | <0.31 | 14.4 | 206. | 100. | 290. | 347. |
| F032d | 58.2 | 3.74 | 68.2 | 4.18 | <0.25 | 14.5 | 209. | 102. | 295. | 353. |
| F032g | 58.2 | 4.7 | 67.5 | 4.9 | <1.5 | 14.3 | 196. | 100. | 299. | 356. |
| F032h | 57. | 9. AH | 67. | 10. AH | 4. AH | 18. AH | 214. | 100. | 294. | 363. |
| F060 | 53.5 | 4.03 | 61.9 WL | 4.25 | <1. | 12.8 | 187. WL | 94.7 | 291. | 344. |
| F068 | 58. | 3.8 | 68. | 4.2 | 0.16 | 14. | 200. | 100. | 290. | 360. |
| F069 | 57.1 | 3.69 | 66.4 | 4.06 | 0.149 | 14. | 204. | 101. | 287. | 370. |
| F069b | 56.4 | 4.57 | 66.7 | <4.40 | <4.40 | 13.6 | 204. | 102. | 292. | 334. |
| F139 | 60.4 | 3.87 | 69.9 | 4.45 | 0.201 | 14.9 | 214. | 106. | 310. WH | 364. |
| F154 | 58.5 | 3.73 | 67.7 | 4.2 | 0.15 | 14.7 | 208. | 106. | 297. | 352. |
| F158 | 55.7 | <10.0 | 65.7 | <10.0 | <10.0 | 13.6 | 204. | 98.5 | 286. | 351. |
| F183 | 61.1 | 3.84 | 69.8 | 4.31 | 0.151 | 13.9 | 214. | 103. | 294. | 353. |
| F193 | 56.3 | 3.70 | 66.2 | 4.0 | <0.5 | 13.9 | 211. | 104. | 289. | 334. |
| F223 | 56.7 | <20. | 68.2 | <20. | <20. | <20. | 212. | 101. | 297. | 354. |
| F248 | 54.9 | 4.4 | 66.0 | 4.2 | <1.0 | 13.5 | 198. | 100. | 290. | 351. |
| F312 | 51.8 WL | <6.00 | 64.7 | <6.00 | <6.00 | 7.82 AL | 214. | 99.6 | 305. | 367. |
| ASSIGNED VALUE * | 57.3 | 3.82 | 68.0 | 4.21 | 0.160 | 14.10 | 208 | 101.0 | 292 | 352 |
| R-STD DEV * | 2.35 | 0.435 | 2.28 | 0.355 | 0.1528 | 0.896 | 7.8 | 3.13 | 8.9 | 13.1 |
| ACCEPTABLE LIMITS(+-) * | 4.70 | 0.870 | 4.56 | 0.710 | 0.3056 | 1.792 | 15.6 | 6.26 | 17.8 | 26.2 |
| WARNING LIMITS(+-) * | 4.70- 7.05 | .870- 1.305 | 4.56- 6.84 | .710- 1.065 | .3056- .4584 | 1.792- 2.688 | 15.6- 23.4 | 6.26- 9.39 | 17.8- 26.7 | 26.2- 39.3 |
| ACTION LIMITS(<>) * | 7.05 | 1.305 | 6.84 | 1.065 | 0.4584 | 2.688 | 23.4 | 9.39 | 26.7 | 39.3 |
| N * | 28 | 23 | 28 | 24 | 14 | 27 | 28 | 28 | 28 | 28 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | | | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|--------|------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 155.0 | 15.5 | | | | | 10 | | | ICP-MS |
| F009 | 11.0 | 1.2 | AL | AL | WLALALALWL | BIASED LOW | 9 | -9.2 | -1.9048 | ICP-MS |
| F010 | 98.0 | 9.8 | | | | | 10 | | | ICP-MS |
| F011 | 90.5 | 10.0 | | | | | 9 | | | |
| F015 | 226.5 | 22.6 | WH | AHWH | | BIASED HIGH* | 10 | 1.4 | 1.7177 | ICP-MS |
| F020 | 146.5 | 14.6 | | | | | 10 | | | ICP-MS |
| F021 | 201.0 | 20.1 | | | | | 10 | | | ICP-MS |
| F021b | 154.5 | 19.3 | | WH | WH | | 8 | | | ICP-AES Varian |
| F021c | 218.5 | 21.8 | | | | BIASED HIGH | 10 | 6.1 | -0.9498 | ICP-MS Agilent |
| F022 | 104.0 | 10.4 | | | | | 10 | | | ICP-MS |
| F024 | 62.5 | 6.2 | WL | AL | WLWLWLWL | BIASED LOW | 10 | -9.2 | -0.0685 | ICP-MS |
| F026 | 96.0 | 12.0 | | | | | 8 | | | ICP-AES |
| F032c | 118.0 | 13.1 | | | | | 9 | | | ICP-MS-E3473 |
| F032d | 145.0 | 16.1 | | | | | 9 | | | ICP-MS-E3474 |
| F032g | 147.0 | 16.3 | | | | | 9 | | | ICP-AES-E3386 |
| F032h | 184.5 | 18.4 | AH | AHAHAH | | | 10 | | | ICP-AES-E3497 |
| F060 | 66.5 | 7.3 | WL | WL | | | 9 | | | ICP-MS |
| F068 | 122.5 | 12.2 | | | | | 10 | | | ICP-MS |
| F069 | 102.0 | 10.2 | | | | | 10 | | | ICP-MS |
| F069b | 91.5 | 11.4 | | | | | 8 | | | ICP-AES |
| F139 | 215.0 | 21.5 | | WH | | BIASED HIGH* | 10 | 4.1 | 0.1223 | ICP-MS |
| F154 | 154.0 | 15.4 | | | | | 10 | | | ICP-MS |
| F158 | 53.0 | 7.5 | | | | | 7 | | | ICP-MS |
| F183 | 171.5 | 17.1 | | | | | 10 | | | ICP-MS |
| F193 | 85.5 | 9.5 | | | | | 9 | | | ICP-MS |
| F223 | 104.5 | 17.4 | | | | | 6 | | | ICP-AES |
| F248 | 81.5 | 9.0 | | | | | 9 | | | ICP-AES |
| F312 | 89.0 | 12.7 | WL | AL | | | 7 | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.6

PARAMETER: 28095 Nickel

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 66.1 | 10.0 | 82.2 | 4.96 | 61.6 | 17.8 | 273. | 98.7 | 266. | 492. |
| F009 | 71.4 WH | 10.9 WH | 85.1 | 5.06 | 65.3 | 18.5 | 267. | 96.9 | 243. | 462. |
| F010 | 67.5 | 10.2 | 86. | 4.92 | 65.5 | 18.4 | 282. | 99. | 276. | 508. |
| F011 | 67.3 | 9.9 | 83.8 | 5.0 | 63.2 | 18.5 | 263. | 96.4 | 252. | 457. |
| F015 | 64.1 | 10.0 | 81.0 | 5.54 WH | 59.8 | 17.9 | 273. | 94.6 | 251. | 459. |
| F020 | 65. | 9.45 | 80.8 | 4.77 | 61.3 | 17.2 | 267. | 93.8 | 255. | 462. |
| F021 | 67.2 | 10.3 | 86.6 | 5.1 | 59.8 | 18.2 | 287. | 100. | 278. | 512. |
| F021b | 65. | 7. AL | 84. | <6. | 62. | 16. | 287. | 98. | 275. | 521. |
| F021c | 66.0 | 8.97 WL | 81.1 | 4.45 | 56.0 WL | 15.7 | 261. | 92.5 | 252. | 493. |
| F022 | 64.9 | 9.87 | 82.5 | 4.84 | 59.9 | 17.5 | 270. | 99.6 | 261. | 485. |
| F024 | 62.7 | 9.37 | 78.4 | 4.67 | 59.2 | 16.9 | 260. | 91.9 | 249. | 468. |
| F026 | 67.6 | 9.92 | 84.3 | 4.73 | 63.8 | 18.1 | 278. | 101. | 268. | 503. |
| F032c | 64.9 | 9.85 | 81.3 | 4.92 | 60.6 | 17.3 | 269. | 96.9 | 255. | 487. |
| F032d | 63.1 | 9.64 | 80.9 | 4.75 | 60.0 | 17.2 | 262. | 94.5 | 253. | 469. |
| F032g | 65.5 | 9.3 | 80.5 | 4.6 | 63.2 | 16.9 | 277. | 95.3 | 257. | 495. |
| F032h | 68. | 11. WH | 84. | 5. | 62. | 20. WH | 275. | 102. | 271. | 495. |
| F042 | 67.6 | <10.0 | 84.8 | <10.0 | 64.2 | 19.4 | 286. | 103. | 278. | 516. |
| F060 | 65.6 | 9.94 | 78.2 | 4.79 | 62.3 | 17.0 | 257. | 96.0 | 248. | 478. |
| F068 | 65. | 9.8 | 82. | 5.1 | 61. | 17. | 280. | 96. | 260. | 500. |
| F069 | 65. | 9.74 | 80.3 | 5.02 | 60.4 | 17.4 | 278. | 96.3 | 274. | 500. |
| F069b | 68.2 | 10. | 84.4 | 4.27 WL | 62.8 | 17.5 | 279. | 101. | 272. | 476. |
| F139 | 67.3 | 10.2 | 84. | 5.08 | 64.7 | 18.2 | 270. | 102. | 275. | 504. |
| F144 | 53.6 AL | 9.30 | 85.2 | 3.70 AL | 68.3 WH | 16.9 | 327. AH | 118. AH | 308. AH | 438. WL |
| F154 | 67.3 | 10. | 84.2 | 4.89 | 64. | 17.6 | 253. | 94.8 | 239. | 449. |
| F158 | 68.0 | 10.3 | 84.8 | 5.4 | 64.0 | 18.7 | 296. | 100. | 285. | 542. WH |
| F183 | 66.3 | 9.34 | 81.1 | 4.34 | 63.7 | 16.2 | 288. | 94.6 | 255. | 470. |
| F193 | 66.3 | 9.90 | 82.9 | 4.80 | 62.1 | 17.7 | 268. | 97.9 | 258. | 496. |
| F223 | 64.4 | <20. | 80.9 | <20. | 60.8 | <20. | 274. | 96.6 | 267. | 500. |
| F248 | 64.3 | 9.50 | 82.9 | 4.80 | 59.7 | 17.2 | 265. | 96.5 | 260. | 495. |
| F312 | 62.1 | <7.00 AL | 76.5 WL | <7.00 | 56.1 WL | 13.0 AL | 266. | 90.9 | 257. | 488. |
| ASSIGNED VALUE * | 66.0 | 9.90 | 82.7 | 4.89 | 62.0 | 17.5 | 273 | 96.6 | 260 | 492 |
| R-STD DEV * | 1.97 | 0.440 | 2.40 | 0.273 | 2.41 | 0.95 | 11.4 | 3.56 | 13.3 | 23.3 |
| ACCEPTABLE LIMITS(+-) * | 3.94 | 0.880 | 4.80 | 0.546 | 4.82 | 1.90 | 22.8 | 7.12 | 26.6 | 46.6 |
| WARNING LIMITS(+-) * | 3.94- 5.91 | .880- 1.320 | 4.80- 7.20 | .546- .819 | 4.82- 7.23 | 1.90- 2.85 | 22.8- 34.2 | 7.12- 10.68 | 26.6- 39.9 | 46.6- 69.9 |
| ACTION LIMITS(<>) * | 5.91 | 1.320 | 7.20 | 0.819 | 7.23 | 2.85 | 34.2 | 10.68 | 39.9 | 69.9 |
| N * | 30 | 27 | 30 | 26 | 30 | 29 | 30 | 30 | 30 | 30 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 169.0 | 16.9 | | | 10 | | | ICP-MS |
| F009 | 191.0 | 19.1 | WHWH | | 10 | | | ICP-MS |
| F010 | 241.0 | 24.1 | | BIASED HIGH* | 10 | 3.5 | 0.4591 | ICP-MS |
| F011 | 147.5 | 14.7 | | | 10 | | | |
| F015 | 116.0 | 11.6 | WH | | 10 | | | ICP-MS |
| F020 | 86.5 | 8.6 | | | 10 | | | ICP-MS |
| F021 | 230.5 | 23.0 | | | 10 | | | ICP-MS |
| F021b | 150.0 | 16.6 | AL | | 9 | | | ICP-AES Varian |
| F021c | 65.0 | 6.5 | WL | WL | BIASED LOW* | 10 | -0.7 | -2.5398 |
| F022 | 136.5 | 13.6 | | | 10 | | | ICP-MS Agilent |
| F024 | 43.0 | 4.3 | | BIASED LOW* | 10 | -4.9 | 0.1918 | ICP-MS |
| F026 | 205.5 | 20.5 | | | 10 | | | ICP-AES |
| F032c | 122.5 | 12.2 | | | 10 | | | ICP-MS-E3473 |
| F032d | 73.5 | 7.3 | | | 10 | | | ICP-MS-E3474 |
| F032g | 112.5 | 11.2 | | | 10 | | | ICP-AES-E3386 |
| F032h | 222.0 | 22.2 | WH | WH | BIASED HIGH | 10 | | ICP-AES-E3497 |
| F042 | 214.5 | 26.8 | | | 8 | 5.0 | 0.0592 | ICP-AES |
| F060 | 97.0 | 9.7 | | | 10 | | | ICP-MS |
| F068 | 150.5 | 15.0 | | | 10 | | | ICP-MS |
| F069 | 146.0 | 14.6 | | | 10 | | | ICP-MS |
| F069b | 188.5 | 18.8 | WL | | 10 | | | ICP-AES |
| F139 | 226.5 | 22.6 | | | 10 | | | ICP-MS |
| F144 | 160.5 | 16.0 | AL | ALWH AHAHAHWL | | | | GFAAS |
| F154 | 131.0 | 13.1 | | | 10 | | | ICP-MS |
| F158 | 265.5 | 26.5 | | WH | BIASED HIGH | 10 | 10.2 | -3.1168 |
| F183 | 116.5 | 11.6 | | | 10 | | | ICP-MS |
| F193 | 159.0 | 15.9 | | | 10 | | | ICP-MS |
| F223 | 98.5 | 14.0 | | | 7 | | | ICP-AES |
| F248 | 111.5 | 11.1 | | | 10 | | | ICP-MS |
| F312 | 41.5 | 5.1 | ALWL WLAL | | BIASED LOW* | 8 | 0.0 | -5.1767 |
| | | | | | | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.1

PARAMETER: 37095 Rubidium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 15.7 | 2.40 | 0.433 | 0.766 | 2.14 | 0.736 | 15.8 | 16.1 | 31.2 | 0.159 |
| F011 | 15.5 | 2.3 | 0.4 | 0.8 | 2.1 | 0.7 | 15.7 | 15.8 | 30.8 | 0.2 |
| F020 | 15.5 | 2.4 | 0.38 | 0.72 | 2.06 | 0.66 | 15.4 | 15.6 | 30.5 | 0.12 |
| F022 | 15.5 | 2.39 | 0.419 | 0.757 | 2.07 | 0.756 | 15.7 | 16.1 | 31.2 | 0.158 |
| F024 | 15.6 | 2.34 | 0.39 | 0.79 | 2.02 | 0.71 | 15.4 | 15.3 | 29.9 | 0.14 |
| F060 | 14.8 WL | 2.32 | 0.42 | 0.72 | 2.02 | 0.74 | 15.2 | 15.2 | 27.9 | 0.18 |
| F139 | 16.0 | 2.45 | 0.433 | 0.772 | 2.15 | 0.81 | 15.6 | 16.2 | 32.9 | 0.183 |
| F154 | 15.8 | 2.35 | 0.42 | 0.76 | 2.13 | 0.78 | 16.8 AH | 16.9 | 34.4 WH | <0.2 |
| F183 | 15.9 | 2.34 | 0.374 | 0.511 AL | 2.10 | 0.730 | 15.8 | 16.0 | 30.7 | 0.125 |
| ASSIGNED VALUE * | 15.6 | 2.35 | 0.419 | 0.763 | 2.10 | 0.736 | 15.6 | 16.0 | 30.8 | 0.158 |
| R-STD DEV * | 0.27 | 0.052 | 0.0253 | 0.0399 | 0.055 | 0.0497 | 0.30 | 0.53 | 1.68 | 0.0324 |
| ACCEPTABLE LIMITS(+-) * | 0.54 | 0.104 | 0.0506 | 0.0798 | 0.110 | 0.0994 | 0.60 | 1.06 | 3.36 | 0.0648 |
| WARNING LIMITS(+-) * | .54- .81 | .104- .156 | .0506- .0759 | .0798- .1197 | .110- .165 | .0994- .1491 | .60- .90 | 1.06- 1.59 | 3.36- 5.04 | .0648- .0972 |
| ACTION LIMITS(<>) * | 0.81 | 0.156 | 0.0759 | 0.1197 | 0.165 | 0.1491 | 0.90 | 1.59 | 5.04 | 0.0972 |
| N * | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 8 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|---------------|
| F003 | 66.5 | 6.6 | | | 10 | | | ICP-MS |
| F011 | 47.0 | 4.7 | | | 10 | | | ICP-MS |
| F020 | 28.5 | 2.8 | | | 10 | | | ICP-MS |
| F022 | 51.5 | 5.1 | | | 10 | | | ICP-MS |
| F024 | 33.5 | 3.3 | | | 10 | | | ICP-MS |
| F060 | 28.5 | 2.8 | WL | | 10 | | | ICP-MS |
| F139 | 78.5 | 7.8 | | | 10 | | | ICP-MS |
| F154 | 65.5 | 7.2 | | AH WH | 9 | | | ICP-MS |
| F183 | 41.5 | 4.1 | AL | | 10 | | | ICP-MS |

NOTE: BIAS WAS NOT ASSESSED BECAUSE STATISTICS

FOR FEWER THAN 10 LABS WERE AVAILABLE

OVERALL AVERAGE RANK IS 4.9

PARAMETER: 34095 Selenium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|-------------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|
| F003 | 13.3 | 4.34 | 8.13 | 4.42 | 0.278 | 14.5 | 20.4 | 52.8 | 153. | 290. |
| F009 | 14.0 | 4.68 | 8.53 | 4.32 | <1. | 14.9 | 20.9 | 53.0 | 153. | 292. |
| F010 | 13.1 | 4.4 | 8.3 | 4.3 | 0.5 | 14.4 | 20.8 | 48. | 150. | 280. |
| F011 | 13.5 | 4.7 | 8.4 | 4.7 | 0.6 WH | 16.1 | 21.7 | 55.4 | 155. | 294. |
| F015 | 13.8 | 4.7 | 8.5 | 4.9 | 0.4 | 15.4 | 21.3 | 54.9 | 156. | 286. |
| F020 | 13.2 | 4.41 | 8.39 | 4.3 | 0.32 | 14.3 | 19.3 | 52.6 | 149. | 298. |
| F021 | 13.8 | 4.3 | 8.0 | 4.6 | 0.4 | 14.9 | 18.7 | 50.2 | 150. | 285. |
| F021c | 11.9 | 4.17 | 7.89 | 4.17 | 0.27 | 13.8 | 19.4 | 48.9 | 146. | 285. |
| F022 | 13.1 | 4.67 | 8.32 | 4.99 | <0.5 | 14.8 | 20.4 | 51.2 | 145. | 275. |
| F024 | 14.0 | 4.20 | 8.42 | 4.50 | 0.36 | 14.3 | 21.4 | 53.5 | 155. | 299. |
| F026 | 15.8 | <15. | <15. | <15. | <15. | <15. | 21.3 | 59.2 | 149. | 325. |
| F032 | 13.1 | 4.5 | 8.2 | 4.6 | 0.4 | 14.4 | 20.2 | 51.1 | 144. | 299. |
| F032c | 13.4 | 4.27 | 8.49 | 4.58 | <1.06 | 14.5 | 20.5 | 52.6 | 150. | 289. |
| F032d | 13.4 | 4.47 | 8.23 | 4.45 | 1.01 AH | 14.4 | 20.2 | 52.5 | 150. | 278. |
| F060 | 15.1 | 4.9 | 8.61 | 4.67 | 0.27 | 15.5 | 21.9 | 58.1 | 162. | 326. |
| F068 | 14. | 4.6 | 9.4 | 4.8 | 0.3 | 15. | 23. | 56. | 150. | 310. |
| F069 | 15.3 | 5.12 | 9.63 WH | 5.13 | 0.377 | 16.5 | 24.7 WH | 61.3 | 191. AH | 385. AH |
| F139 | 14.0 | 4.58 | 8.37 | 4.52 | 0.34 | 15.7 | 20.8 | 54.2 | 162. | 296. |
| F154 | 14.7 | 4.7 | 9.3 | 4.6 | <1. | 15.2 | 22.3 | 56.1 | 159. | 322. |
| F158 | 15.3 | 4.6 | 9.5 WH | 5.1 | <2.0 | 16.6 WH | 23.1 | 60.2 | 168. WH | 312. |
| F183 | 15.9 | 5.24 WH | 9.60 WH | 5.22 | <1.00 | 16.9 WH | 24.0 WH | 61.5 | 170. WH | 324. |
| F193 | 13.2 | 4.30 | 8.30 | 4.40 | <0.5 | 14.8 | 21.0 | 53.6 | 151. | 299. |
| F248 | 13.7 | 4.60 | 8.60 | 4.60 | <0.50 | 14.4 | 21.2 | 54.5 | 157. | 317. |
| F312 | 17.5 AH | 6.06 AH | 7.08 WL | 10.9 AH | <4.00 | 13.0 WL | 16.7 WL | 49.7 | 147. | 273. |
| ASSIGNED VALUE * | 13.8 | 4.59 | 8.40 | 4.60 | 0.360 | 14.8 | 21.0 | 53.6 | 151 | 296 |
| R-STD DEV * | 1.09 | 0.284 | 0.513 | 0.337 | 0.1037 | 0.88 | 1.48 | 3.99 | 7.2 | 19.7 |
| ACCEPTABLE LIMITS(+-) * | 2.18 | 0.568 | 1.026 | 0.674 | 0.2074 | 1.76 | 2.96 | 7.98 | 14.4 | 39.4 |
| WARNING LIMITS(+-) * | 2.18- 3.27 | .568- .852 | 1.026- 1.539 | 0.674- 1.011 | .2074- .3111 | 1.76- 2.64 | 2.96- 4.44 | 7.98- 11.97 | 14.4- 21.6 | 39.4- 59.1 |
| ACTION LIMITS(<>) * | 3.27 | 0.852 | 1.539 | 1.011 | 0.3111 | 2.64 | 4.44 | 11.97 | 21.6 | 59.1 |
| N * | 24 | 23 | 23 | 23 | 14 | 23 | 24 | 24 | 24 | 24 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|-------------------|
| F003 | 75.5 | 7.5 | | | 10 | | | ICP-MS |
| F009 | 111.5 | 12.3 | | | 9 | | | ICP-MS |
| F010 | 63.0 | 6.3 | | | 10 | | | ICP-MS |
| F011 | 150.5 | 15.0 | WH | | 10 | | | |
| F015 | 146.0 | 14.6 | | | 10 | | | ICP-MS |
| F020 | 65.5 | 6.5 | | | 10 | | | ICP-MS |
| F021 | 76.5 | 7.6 | | | 10 | | | ICP-MS |
| F021c | 23.0 | 2.3 | | BIASED LOW* | 10 | -3.8 | -0.6755 | ICP-MS Agilent |
| F022 | 75.0 | 8.3 | | | 9 | | | ICP-MS |
| F024 | 108.5 | 10.8 | | | 10 | | | ICP-MS |
| F026 | 86.0 | 17.2 | | | 5 | | | ICP-AES |
| F032 | 73.5 | 7.3 | | | 10 | | | AAS hydride-E3089 |
| F032c | 79.5 | 8.8 | | | 9 | | | ICP-MS-E3473 |
| F032d | 75.5 | 7.5 | AH | | 10 | | | ICP-MS-E3474 |
| F060 | 174.0 | 17.4 | | | 10 | | | ICP-MS |
| F068 | 149.5 | 14.9 | | | 10 | | | ICP-MS |
| F069 | 209.5 | 20.9 | WH | WH AHAH | BIASED HIGH | 10 | 29.5 | -2.4536 |
| F139 | 127.5 | 12.7 | | | 10 | | | ICP-MS |
| F154 | 161.5 | 17.9 | | | 9 | | | ICP-MS |
| F158 | 180.5 | 20.0 | WH | WH WH | BIASED HIGH | 9 | 5.7 | 1.3366 |
| F183 | 203.0 | 22.5 | WHWH | WHWH WH | BIASED HIGH | 9 | 9.3 | 1.0610 |
| F193 | 87.0 | 9.6 | | | 9 | | | ICP-MS |
| F248 | 126.0 | 14.0 | | | 9 | | | ICP-MS |
| F312 | 81.0 | 9.0 | AHAHWAH | WLWL | | 9 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.9

PARAMETER: 47095 Silver

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 12.4 | 3.91 | 10.0 | 4.94 | 0.0126 | 11.5 | 20.7 | 12.2 | 12.2 | 3.32 |
| F009 | 12.2 | 3.79 | 9.64 | 4.73 | <1. | 10.9 | 20.5 | 11.8 | 11.8 | 3.27 |
| F010 | 12.2 | 3.85 | 9.97 | 4.72 | 0.017 | 11.2 | 20.5 | 12.0 | 11.9 | 3.33 |
| F011 | 12.0 | 3.7 | 9.8 | 4.5 | <0.1 | 10.4 | 19.6 | 11.4 | 11.4 | 3.0 |
| F015 | 13.4 | 4.17 | 10.7 | 5.12 | <0.02 | 11.8 | 21.8 | 12.8 | 12.6 | 3.57 |
| F020 | 12.8 | 3.74 | 10.5 | 4.89 | <0.005 | 11.6 | 21.4 | 12.4 | 12.3 | 3.25 |
| F021 | 12.6 | 3.8 | 10.2 | 4.8 | <0.1 | 11.3 | 20.2 | 12.3 | 12.3 | 3.4 |
| F021b | 12. | 3. AL | 10. | 4. WL | <2. | 11. | 21. | 12. | 12. | 5. AH |
| F021c | 11.1 | 3.53 | 8.79 WL | 4.28 | 0.02 | 10.1 | 20.3 | 11.0 | 11.0 | 3.10 |
| F022 | 12.0 | 3.85 | 9.97 | 4.72 | 0.0354 | 11.1 | 20.0 | 12.0 | 12.0 | 3.30 |
| F024 | 11.6 | 3.61 | 9.35 | 4.51 | <0.01 | 10.5 | 19.2 | 11.3 | 11.2 | 3.10 |
| F032c | 11.9 | 3.73 | 9.73 | 4.75 | <0.36 | 10.8 | 19.9 | 11.5 | 11.5 | 3.18 |
| F032d | 12.0 | 3.79 | 9.67 | 4.67 | <0.25 | 11.0 | 20.1 | 11.7 | 11.7 | 3.33 |
| F032h | 13. | 4. | 9. | 5. | <2. | 10. | 19. | 11. | 11. | 4. WH |
| F042 | 13. | 4. | 10. | 5. | <2. | 11. | 20. | 12. | 12. | 3. |
| F060 | 12.3 | 4.09 | 9.7 | 4.76 | 0.02 | 10.5 | 19.7 | 11.7 | 12.0 | 3.42 |
| F068 | 12. | 3.9 | 9.7 | 4.8 | <0.03 | 11. | 20. | 11. | 11. | 3.2 |
| F069 | 10.9 | 3.39 | 8.89 WL | 4.22 | 0.016 | 9.97 | 18.6 | 10.8 | 10.7 | 3.2 |
| F069b | 12.9 | 4.1 | 10.3 | 4.9 | <4.0 | 11.4 | 20.7 | 12.7 | 12.5 | <4.0 |
| F139 | 11.2 | 3.54 | 9.2 | 4.38 | 0.025 | 10.7 | 18.3 | 11.1 | 11.1 | 3.14 |
| F154 | 13. | 4.05 | 10.3 | 4.99 | <0.1 | 11.8 | 22.4 WH | 13.3 WH | 13.8 WH | 3.92 WH |
| F158 | 12.4 | 3.9 | 10.1 | 4.9 | <2.0 | 11.4 | 20.9 | 12.3 | 12.1 | 3.5 |
| F183 | 11.9 | 3.59 | 10.0 | 4.68 | 0.335 AH | 10.6 | 20.4 | 11.7 | 10.9 | 1.91 AL |
| F248 | 12.1 | 3.90 | 10.0 | 4.80 | <0.10 | 10.8 | 19.8 | 12.1 | 11.7 | 3.40 |
| F312 | <9.00 AL | <9.00 | 16. AH | 9. AH | <9.00 | 16. AH | 11.1 AL | <9.00 AL | <9.00 AL | <9.00 |
| ASSIGNED VALUE * | 12.15 | 3.85 | 9.97 | 4.76 | 0.0200 | 11.00 | 20.2 | 11.90 | 11.85 | 3.30 |
| R-STD DEV * | 0.644 | 0.231 | 0.509 | 0.269 | 0.01081 | 0.607 | 0.96 | 0.670 | 0.659 | 0.242 |
| ACCEPTABLE LIMITS(+-) * | 1.288 | 0.462 | 1.018 | 0.538 | 0.02162 | 1.214 | 1.92 | 1.340 | 1.318 | 0.484 |
| WARNING LIMITS(+-) * | 1.288- 1.932 | 4.462- .693 | 1.018- 1.527 | 5.538- .807 | .02162- .0321 | 2.14- 1.821 | 11.92- 2.88 | 1.340- 2.010 | 1.318- 1.977 | 4.84- .726 |
| ACTION LIMITS(<>) * | 1.932 | 0.693 | 1.527 | 0.807 | 0.03243 | 1.821 | 2.88 | 2.010 | 1.977 | 0.726 |
| N * | 24 | 24 | 25 | 25 | 8 | 25 | 25 | 24 | 24 | 23 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 162.0 | 16.2 | | | 10 | | | ICP-MS |
| F009 | 104.5 | 11.6 | | | 9 | | | ICP-MS |
| F010 | 128.5 | 12.8 | | | 10 | | | ICP-MS |
| F011 | 59.5 | 6.6 | | | 9 | | | |
| F015 | 209.5 | 23.2 | | BIASED HIGH | 9 | 8.4 | -0.0380 | ICP-MS |
| F020 | 164.5 | 18.2 | | | 9 | | | ICP-MS |
| F021 | 153.5 | 17.0 | | | 9 | | | ICP-MS |
| F021b | 115.5 | 12.8 | AL WL | AH | 9 | | | ICP-AES Varian |
| F021c | 43.0 | 4.3 | WL | | BIASED LOW* | 10 | -1.6 | -0.4245 |
| F022 | 120.5 | 12.0 | | | 10 | | | ICP-MS |
| F024 | 49.0 | 5.4 | | BIASED LOW* | 9 | -4.3 | -0.0750 | ICP-MS |
| F032c | 78.0 | 8.6 | | | 9 | | | ICP-MS-E3473 |
| F032d | 95.0 | 10.5 | | | 9 | | | ICP-MS-E3474 |
| F032h | 102.0 | 11.3 | | WH | 9 | | | ICP-AES-E3497 |
| F042 | 137.0 | 15.2 | | | 9 | | | ICP-AES |
| F060 | 119.0 | 11.9 | | | 10 | | | ICP-MS |
| F068 | 88.5 | 9.8 | | | 9 | | | ICP-MS |
| F069 | 23.5 | 2.3 | WL | | BIASED LOW | 10 | -8.3 | -0.0820 |
| F069b | 166.0 | 20.7 | | | BIASED HIGH* | 8 | 3.2 | 0.1500 |
| F139 | 48.0 | 4.8 | | | BIASED LOW | 10 | -8.2 | 0.1060 |
| F154 | 203.0 | 22.5 | | WHWHWHWH | BIASED HIGH | 9 | 11.8 | -0.1965 |
| F158 | 167.0 | 18.5 | | | | 9 | | ICP-MS |
| F183 | 78.5 | 7.8 | AH | AL | | 10 | | ICP-MS |
| F248 | 120.5 | 13.3 | | | | 9 | | ICP-MS |
| F312 | 76.0 | 19.0 | AL AHAH AHALALAL | | INSUFFICIENT DATA | 4 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 12.3

PARAMETER: 38095 Strontium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 117. | 72.4 | 244. | 109. | 35.9 | 111. | 284. | 146. | 647. | 376. |
| F009 | 110. | 67.5 | 222. WL | 102. WL | 34.5 | 103. | 264. | 137. | 583. WL | 345. WL |
| F010 | 117. | 72. | 248. | 112. | 37. | 113. | 298. | 153. | 658. | 393. |
| F011 | 121. | 76.3 | 247. | 113. | 38.4 | 114. | 286. | 151. | 637. | 375. |
| F015 | 110. | 70.3 | 233. | 110. | 37.4 | 109. | 283. | 147. | 604. | 375. |
| F020 | 115. | 71.1 | 243. | 110. | 36.8 | 110. | 282. | 143. | 633. | 360. |
| F021b | 119. | 75. | 248. | 114. | 37. | 114. | 293. | 152. | 653. | 388. |
| F022 | 117. | 74.0 | 235. | 112. | 36.3 | 112. | 279. | 144. | 618. | 367. |
| F024 | 116. | 71.9 | 238. | 109. | 35.8 | 109. | 281. | 142. | 642. | 374. |
| F026 | 118. | 73.9 | 241. | 112. | 37.2 | 111. | 281. | 146. | 620. | 369. |
| F032c | 118. | 71.9 | 244. | 113. | 36.3 | 111. | 287. | 149. | 638. | 377. |
| F032d | 118. | 73.1 | 244. | 112. | 36.7 | 111. | 288. | 149. | 641. | 377. |
| F032g | 115. | 71.9 | 238. | 109. | 36.2 | 110. | 278. | 144. | 623. | 374. |
| F032h | 112. | 73.3 | 239. | 107. | 36.6 | 107. | 277. | 138. | 617. | 368. |
| F042 | 124. | 79.1 AH | 256. | 119. WH | 40.5 AH | 116. | 301. | 155. | 1000. AH | 397. |
| F060 | 113. | 73.6 | 230. | 108. | 37.1 | 106. | 275. | 143. | 621. | 386. |
| F068 | 120. | 74. | 260. | 110. | 34. WL | 110. | 280. | 150. | 640. | 380. |
| F069 | 113. | 71.2 | 230. | 108. | 35.5 | 106. | 276. | 142. | 606. | 395. |
| F069b | 123. | 76.1 | 255. | 118. WH | 38.2 | 111. | 299. | 152. | 676. | 379. |
| F139 | 116. | 71.5 | 242. | 109. | 36.9 | 115. | 275. | 144. | 662. | 381. |
| F154 | 106. WL | 64.6 AL | 215. WL | 99.6 WL | 37.2 | 101. WL | 267. | 140. | 625. | 375. |
| F158 | 116. | 71.9 | 249. | 110. | 35.6 | 110. | 295. | 147. | 671. | 392. |
| F183 | 123. | 73.2 | 244. | 113. | 36.1 | 112. | 299. | 149. | 656. | 383. |
| F207 | 114. | 71.1 | 239. | 105. | 35.4 | 108. | 277. | 143. | 618. | 365. |
| F312 | 109. | 68.9 | 230. | 100. WL | 31.7 AL | 105. | 279. | 139. | 608. | 361. |
| ASSIGNED VALUE * | 116 | 72.0 | 242 | 110.0 | 36.6 | 110 | 281 | 146 | 635 | 376 |
| R-STD DEV * | 4.8 | 2.34 | 9.8 | 3.76 | 1.16 | 3.6 | 10.6 | 5.4 | 25.4 | 12.0 |
| ACCEPTABLE LIMITS(+-) * | 9.6 | 4.68 | 19.6 | 7.52 | 2.32 | 7.2 | 21.2 | 10.8 | 50.8 | 24.0 |
| WARNING LIMITS(+-) * | 9.6- 14.4 | 4.68- 7.02 | 19.6- 29.4 | 7.52- 11.28 | 2.32- 3.48 | 7.2- 10.8 | 21.2- 31.8 | 10.8- 16.2 | 50.8- 76.2 | 24.0- 36.0 |
| ACTION LIMITS(<>) * | 14.4 | 7.02 | 29.4 | 11.28 | 3.48 | 10.8 | 31.8 | 16.2 | 76.2 | 36.0 |
| N * | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 139.5 | 13.9 | | | 10 | | | ICP-MS |
| F009 | 19.5 | 1.9 | WLWL | WLWL | BIASED LOW | 10 | -8.7 | ICP-MS |
| F010 | 194.5 | 19.4 | | | 10 | | | ICP-MS |
| F011 | 194.5 | 19.4 | | | 10 | | | |
| F015 | 101.0 | 10.1 | | | 10 | | | ICP-MS |
| F020 | 105.0 | 10.5 | | | 10 | | | ICP-MS |
| F021b | 208.0 | 20.8 | | BIASED HIGH* | 10 | 2.6 | 1.1137 | ICP-AES Varian |
| F022 | 123.0 | 12.3 | | | 10 | | | ICP-MS |
| F024 | 99.5 | 9.9 | | | 10 | | | ICP-MS |
| F026 | 144.0 | 14.4 | | | 10 | | | ICP-AES |
| F032c | 158.0 | 15.8 | | | 10 | | | ICP-MS-E3473 |
| F032d | 164.5 | 16.4 | | | 10 | | | ICP-MS-E3474 |
| F032g | 97.0 | 9.7 | | | 10 | | | ICP-AES-E3386 |
| F032h | 76.0 | 7.6 | | | 10 | | | ICP-AES-E3497 |
| F042 | 249.0 | 24.9 | AH WHAH | AH | BIASED HIGH | 10 | 51.9 | -64.2868 |
| F060 | 99.0 | 9.9 | | | 10 | | | ICP-MS |
| F068 | 156.5 | 15.6 | WL | | 10 | | | ICP-MS |
| F069 | 71.0 | 7.1 | | | 10 | | | ICP-MS |
| F069b | 218.5 | 21.8 | WH | | BIASED HIGH | 10 | 5.3 | -1.2024 |
| F139 | 137.0 | 13.7 | | | 10 | | | ICP-MS |
| F154 | 53.5 | 5.3 | WLALWLWL | WL | BIASED LOW* | 10 | -0.9 | -7.6849 |
| F158 | 157.0 | 15.7 | | | 10 | | | ICP-MS |
| F183 | 186.0 | 18.6 | | | 10 | | | ICP-MS |
| F207 | 64.0 | 6.4 | | | 10 | | | ICP-AES |
| F312 | 34.5 | 3.4 | WLAL | | BIASED LOW* | 10 | -3.8 | -1.4605 |
| | | | | | | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.0

PARAMETER: 81095 Thallium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 20.4 | 3.93 | 8.24 | 3.94 | 0.0103 | 18.2 | 18.4 | 52.4 | 148. | 195. |
| F009 | 16.1 AL | <10. | <10. | <10. | 15.6 WL | 16.1 WL | 43.8 WL | 121. AL | 159. AL | |
| F011 | 19.9 | 3.8 | 8.1 | 3.9 | <0.1 | 17.4 | 17.2 | 48.9 | 145. | 188. |
| F015 | 20.7 | 4.01 | 8.46 | 4.09 | <0.002 | 19.0 | 19.2 | 52.3 | 144. | 192. |
| F020 | 20.6 | 3.89 | 8.31 | 4. | 0.008 | 18.2 | 18.4 | 51.2 | 148. | 196. |
| F021 | 19.3 | 3.8 | 7.7 | 3.7 | <0.1 | 18.4 | 18.3 | 51.4 | 146. | 193. |
| F021b | 26. AH | <25. | <25. | <25. | <25. | 28. AH | <25. | 55. | 151. | 194. |
| F021c | 19.4 | 3.23 AL | 6.54 AL | 3.19 AL | 0.01 | 16.8 | 17.1 | 47.1 | 141. | 189. |
| F022 | 19.7 | 3.94 | 8.17 | 3.91 | <0.01 | 18.0 | 17.7 | 51.8 | 146. | 190. |
| F024 | 20.2 | 3.85 | 8.05 | 3.89 | <0.2 | 17.9 | 18.1 | 50.6 | 145. | 189. |
| F032c | 20.3 | 3.96 | 8.28 | 3.88 | <0.24 | 17.7 | 17.9 | 49.5 | 143. | 194. |
| F032d | 21.0 | 4.04 | 8.47 | 4.08 | <0.20 | 18.6 | 18.4 | 51.7 | 150. | 198. |
| F042 | 27. AH | 10. AH | 15. AH | 10. AH | 6. AH | 22. AH | 24. AH | 55. | 144. | 190. |
| F060 | 20.1 | 3.96 | 8.1 | 3.7 | <0.05 | 17.2 | 17.8 | 48.6 | 135. | 188. |
| F068 | 18. | 3.5 AL | 7.5 | 3.6 | 0.1 | 16. | 16. WL | 49. | 140. | 180. |
| F069 | 21.2 | 4.02 | 8.45 | 4. | <0.020 | 18.5 | 18.9 | 53.5 | 155. | 217. AH |
| F139 | 20.9 | 4.06 | 8.42 | 3.99 | 0.0182 | 18.4 | 18.5 | 54.5 | 151. | 204. |
| F154 | 22.2 | 4.29 WH | 9.23 WH | 4.38 | <0.1 | 19.2 | 20.1 | 53.4 | 149. | 203. |
| F158 | 21.0 | 4.0 | 8.4 | 4.1 | <2.0 | 18.6 | 18.6 | 53.0 | 154. | 203. |
| F183 | 20.6 | 3.88 | 8.23 | 4.11 | <0.01 | 18.4 | 18.8 | 51.6 | 138. | 189. |
| F248 | 19.3 | 4.00 | 8.10 | 4.10 | <0.20 | 16.9 | | 51.9 | 138. | 107. AL |
| F312 | 9.74 AL | <8.00 | 9.98 AH | <8.00 | <8.00 | 10.4 AL | <8.00 AL | 35.4 AL | 152. | 190. |
| ASSIGNED VALUE * | 20.35 | 3.96 | 8.24 | 3.99 | 0.0103 | 18.2 | 18.35 | 51.7 | 146 | 192 |
| R-STD DEV * | 1.357 | 0.139 | 0.403 | 0.223 | 0.05489 | 1.23 | 0.992 | 2.82 | 6.4 | 8.3 |
| ACCEPTABLE LIMITS(+-) * | 2.714 | 0.278 | 0.806 | 0.446 | 0.10978 | 2.46 | 1.984 | 5.64 | 12.8 | 16.6 |
| WARNING LIMITS(+-) * | 2.714- 4.071.278- .417 | .806- 1.209 | .446- .669 | .10978- .1642.46- 3.69 | 1.984- 2.9765.64- 8.46 | 12.8- 19.2 | 16.6- 24.9 | | | |
| ACTION LIMITS(<>) * | 4.071 | 0.417 | 1.209 | 0.669 | 0.16467 | 3.69 | 2.976 | 8.46 | 19.2 | 24.9 |
| N * | 22 | 19 | 20 | 19 | 6 | 22 | 19 | 22 | 22 | 22 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|------------------------|
| F003 | 111.0 | 11.1 | | | 10 | | | ICP-MS |
| F009 | 11.0 | 1.8 | AL | WLWLWLALAL | BIASED LOW | 6 | -17.0 | 0.3098 ICP-MS |
| F011 | 55.5 | 6.1 | | | 9 | | | ICP-MS |
| F015 | 130.5 | 14.5 | | | 9 | | | ICP-MS |
| F020 | 108.0 | 10.8 | | | 10 | | | ICP-MS |
| F021 | 73.0 | 8.1 | | | 9 | | | ICP-MS |
| F021b | 97.5 | 19.5 | AH | AH | BIASED HIGH* | 5 | -2.1 | 7.1444 ICP-AES Varian |
| F021c | 34.0 | 3.4 | ALALAL | | BIASED LOW* | 10 | -1.4 | -1.1813 ICP-MS Agilent |
| F022 | 82.5 | 9.1 | | | 9 | | | ICP-MS |
| F024 | 67.5 | 7.5 | | | 9 | | | ICP-MS |
| F032c | 81.0 | 9.0 | | | 9 | | | ICP-MS-E3473 |
| F032d | 139.0 | 15.4 | | | 9 | | | ICP-MS-E3474 |
| F042 | 166.0 | 16.6 | AHAHAHAHAHAHAH | | BIASED HIGH* | 10 | -4.5 | 6.1753 ICP-AES |
| F060 | 51.5 | 5.7 | | | 9 | | | ICP-MS |
| F068 | 32.0 | 3.2 | AL | WL | BIASED LOW* | 10 | -4.9 | -0.5757 ICP-MS |
| F069 | 155.5 | 17.2 | | AH | BIASED HIGH | 9 | 11.6 | -1.6760 ICP-MS |
| F139 | 147.5 | 14.7 | | | 10 | | | ICP-MS |
| F154 | 165.5 | 18.3 | WHHW | | BIASED HIGH* | 9 | 4.6 | 0.1979 ICP-MS |
| F158 | 147.5 | 16.3 | | | 9 | | | ICP-MS |
| F183 | 96.0 | 10.6 | | | 9 | | | ICP-MS |
| F248 | 62.0 | 7.7 | | AL | | 8 | | ICP-MS |
| F312 | 52.0 | 8.6 | AL AH | ALALAL | | 6 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 10

OVERALL AVERAGE RANK IS 10.7

PARAMETER: 50095 Tin

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 16.7 | 3.68 | 12.1 | 2.70 | <0.005 | 15.2 | 19.6 | 110. | 298. | 169. |
| F009 | 8.6 AL | <5. | 7.20 AL | <5. | <5. | 7.66 AL | 12.9 AL | 71.7 AL | 216. WL | 130. WL |
| F011 | 17.4 | 3.9 | 12.4 | 2.9 | <0.1 | 13.2 | 18.5 | 105. | 277. | 159. |
| F015 | 15.2 | 3.53 | 11.1 | 2.63 | 0.10 | 13.9 | 18.1 | 101. | 221. WL | 138. WL |
| F020 | 16.5 | 3.75 | 12.5 | 2.79 | <0.01 | 15. | 19.5 | 108. | 277. | 159. |
| F021 | 16.8 | 3.8 | 12.1 | 2.8 | 0.1 | 14.5 | 19.1 | 109. | 283. | 171. |
| F021c | 17.7 | 4.3 WH | 13.0 | 3.2 WH | <0.3 | 16.1 | 20.3 | 112. | 290. | 180. |
| F022 | 16.2 | 3.73 | 12.3 | 2.74 | <0.01 | 14.9 | 19.2 | 112. | 282. | 167. |
| F024 | 13.4 WL | 3.16 WL | 10.0 WL | 2.39 WL | <0.1 | 12.1 | 16.4 | 91.1 | 254. | 150. |
| F042 | <10. AL | <10. | <10. WL | <10. | <10. | <10. AL | <10. AL | 94. | 279. | 158. |
| F060 | 16.2 | 3.77 | 11.4 | 2.64 | <1. | 13.4 | 19.0 | 98.0 | 276. | 158. |
| F068 | 17. | 3.9 | 12. | 2.9 | <0.2 | 15. | 19. | 100. | 290. | 170. |
| F139 | 17.8 | 3.96 | 12.7 | 2.86 | 0.023 | 15.9 | 20.0 | 115. | 326. | 177. |
| F154 | 17.9 | 3.89 | 12.8 | 2.94 | <0.2 | 15.9 | 21.7 | 106. | 322. | 168. |
| F158 | 16.4 | 3.6 | 12.0 | 2.7 | <2.0 | 14.9 | 19.3 | 110. | 299. | 170. |
| F183 | 16.9 | 3.99 | 12.5 | 2.79 | <1.00 | 15.2 | 19.8 | 110. | 281. | 169. |
| F223 | <40. | <40. | <40. | <40. | <40. | <40. | <40. | 108. | 293. | 165. |
| F248 | 14.7 | 4.9 AH | 13.8 | 3.4 AH | 1.4 | 12.2 | 21.3 | 93.5 | 370. AH | 139. |
| F312 | <20.0 | <20.0 | <20.0 | <20.0 | <20.0 | <20.0 | <20.0 | 55.2 AH | 109. | 315. |
| ASSIGNED VALUE * | 16.7 | 3.78 | 12.30 | 2.79 | 0.100 | 14.90 | 19.3 | 108.0 | 282 | 166 |
| R-STD DEV * | 1.31 | 0.238 | 0.848 | 0.173 | 0.2414 | 1.561 | 1.50 | 8.53 | 27.1 | 14.0 |
| ACCEPTABLE LIMITS(+-) * | 2.62 | 0.476 | 1.696 | 0.346 | - | 3.122 | 3.00 | 17.06 | 54.2 | 28.0 |
| WARNING LIMITS(+-) * | 2.62- 3.93 | .476- .714 | 1.696- 2.544 | 346- .519 | - | 3.122- 4.683 | 3.00- 4.50 | 17.06- 25.595 | 42- 81.3 | 28.0- 42.0 |
| ACTION LIMITS(<>) * | 3.93 | 0.714 | 2.544 | 0.519 | - | 4.683 | 4.50 | 25.59 | 81.3 | 42.0 |
| N * | 16 | 15 | 16 | 15 | 4 | 16 | 17 | 19 | 19 | 19 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|-------------------|--------------------|--------------|------------|----------------|
| F003 | 90.0 | 10.0 | | | 9 | | | ICP-MS |
| F009 | 7.0 | 1.0 | AL AL ALALALWLWL | BIASED LOW | 7 | -22.4 | -3.9927 | ICP-MS |
| F011 | 74.0 | 8.2 | | | 9 | | | |
| F015 | 33.5 | 3.3 | | WLWL | BIASED LOW | 10 | -20.6 | 2.6200 ICP-MS |
| F020 | 77.0 | 8.5 | | | 9 | | | ICP-MS |
| F021 | 89.5 | 8.9 | | | 10 | | | ICP-MS |
| F021c | 134.0 | 14.8 | WH WH | BIASED HIGH* | 9 | 3.4 | 0.8397 | ICP-MS Agilent |
| F022 | 78.5 | 8.7 | | | 9 | | | ICP-MS |
| F024 | 19.0 | 2.1 | WLWLWLWL | BIASED LOW | 9 | -10.2 | -1.2488 | ICP-MS |
| F042 | 16.5 | 5.5 | AL WL ALAL | INSUFFICIENT DATA | 3 | | | ICP-AES |
| F060 | 44.5 | 4.9 | | | 9 | | | ICP-MS |
| F068 | 87.5 | 9.7 | | | 9 | | | ICP-MS |
| F139 | 132.5 | 13.2 | | | 10 | | | ICP-MS |
| F154 | 119.5 | 13.2 | | | 9 | | | ICP-MS |
| F158 | 82.0 | 9.1 | | | 9 | | | ICP-MS |
| F183 | 103.0 | 11.4 | | | 9 | | | ICP-MS |
| F223 | 32.5 | 10.8 | | INSUFFICIENT DATA | 3 | | | ICP-AES |
| F248 | 96.0 | 9.6 | AH AH AH | | 10 | | | ICP-MS |
| F312 | 64.5 | 16.1 | AH AH | INSUFFICIENT DATA | 4 | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 10

OVERALL AVERAGE RANK IS 8.8

PARAMETER: 22095 Titanium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|-------------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|
| F003 | 14.2 | 8.16 | 15.0 | 3.19 | 0.348 | 14.4 | 120. | 59.3 | 127. | 211. |
| F011 | 13.8 | 7.9 | 14.6 | 3.2 | 0.2 | 15.0 | 117. | 56.5 | 122. | 205. |
| F015 | 14. | 8. | 15. | 3. | <2. | 15. | 122. | 58. | 129. | 222. |
| F020 | 13.7 | 7.3 WL | 14.3 | 2.8 | <0.5 | 13.9 | 117. | 54. WL | 121. | 198. |
| F021 | 14.6 | 8.4 | 15.4 | 3.4 | 0.4 | 15.1 | 121. | 59.8 | 129. | 220. |
| F021b | 14. | 8. | 15. | 3. | <1. | 15. | 124. | 60. | 130. | 222. |
| F021c | 14.9 | 8.7 | 15.2 | 3.1 | <0.3 | 13.3 WL | 119. | 57.9 | 127. | 212. |
| F022 | 14.9 | 8.26 | 15.4 | 3.86 AH | 0.722 | 15.4 | 117. | 59.4 | 124. | 209. |
| F024 | 13.7 | 7.80 | 15.3 | 3.27 | 0.24 | 14.2 | 116. | 55.8 | 125. | 210. |
| F032c | 14.6 | 8.40 | 15.6 | 3.74 WH | 0.601 | 15.4 | 122. | 60.0 | 131. | 215. |
| F032d | 14.0 | 8.06 | 14.6 | 3.14 | 0.48 | 14.4 | 119. | 57.3 | 127. | 214. |
| F032g | 13.9 | 7.9 | 14.7 | 3.0 | <0.3 | 14.3 | 120. | 57.5 | 128. | 210. |
| F032h | 14. | 8. | 15. | 3. | <2. | 15. | 118. | 57. | 124. | 212. |
| F042 | 14. | 8. | 15. | 3. | <2. | 14. | 123. | 61. | 130. | 222. |
| F060 | 14.9 | 8.77 WH | 15. | 3.48 | 0.53 | 15.0 | 120. | 60.2 | 129. | 218. |
| F068 | 14. | 8.1 | 15. | 3.2 | <0.5 | 14. | 120. | 58. | 130. | 210. |
| F139 | 14.4 | 8.48 | 15.5 | 3.14 | 0.25 | 15.6 | 116. | 59.9 | 137. WH | 226. |
| F154 | 14.8 | 8.52 | 16. WH | 3.11 | 0.3 | 15. | 123. | 58.7 | 131. | 233. WH |
| F158 | 14.2 | 8.1 | 14.9 | 3.2 | <2.0 | 14.6 | 121. | 58.3 | 127. | 219. |
| F183 | 15.8 AH | 8.16 | 15.4 | 3.02 | 0.983 WH | <0.20 AL | 127. WH | <0.20 AL | 126. | 219. |
| F223 | <20. | <20. | <20. | <20. | <20. | <20. | 120. | 58.5 | 128. | 213. |
| F312 | <20.0 | <20.0 | <20.0 | <20.0 | <20.0 | <20.0 | 116. | 55.4 | 122. | 203. |
| ASSIGNED VALUE * | 14.0 | 8.10 | 15.0 | 3.14 | 0.400 | 15.00 | 120 | 58.30 | 128 | 214 |
| R-STD DEV * | 0.50 | 0.304 | 0.38 | 0.200 | 0.2247 | 0.635 | 2.9 | 1.833 | 3.5 | 7.8 |
| ACCEPTABLE LIMITS(+-) * | 1.00 | 0.608 | 0.76 | 0.400 | 0.4494 | 1.270 | 5.8 | 3.666 | 7.0 | 15.6 |
| WARNING LIMITS(+-) * | 1.00- 1.50 | .608- .912 | .76- 1.14 | .400- .600 | .4494- .6741 | 1.270- 1.905 | 5.8- 8.7 | 3.666- 5.499 | 7.0- 10.5 | 15.6- 23.4 |
| ACTION LIMITS(<>) * | 1.50 | 0.912 | 1.14 | 0.600 | 0.6741 | 1.905 | 8.7 | 5.499 | 10.5 | 23.4 |
| N * | 20 | 20 | 20 | 20 | 11 | 19 | 22 | 21 | 22 | 22 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL | AVERAGE | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|-------|---------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 101.0 | 10.1 | | | 10 | | | ICP-MS |
| F011 | 51.0 | 5.1 | | BIASED LOW* | 10 | -4.1 | 0.3042 | |
| F015 | 100.5 | 11.1 | | | 9 | | | ICP-AES |
| F020 | 14.5 | 1.6 | WL | WL | BIASED LOW | 9 | -6.4 | 0.3711 |
| F021 | 148.5 | 14.8 | | | 10 | | | ICP-MS |
| F021b | 116.0 | 12.8 | | | 9 | | | ICP-AES Varian |
| F021c | 94.5 | 10.5 | | WL | | 9 | | ICP-MS Agilent |
| F022 | 124.0 | 12.4 | AH | | | 10 | | ICP-MS |
| F024 | 57.5 | 5.7 | | | | 10 | | ICP-MS |
| F032c | 164.0 | 16.4 | WH | | BIASED HIGH* | 10 | 0.8 | 0.5814 |
| F032d | 80.0 | 8.0 | | | | 10 | | ICP-MS-E3473 |
| F032g | 59.0 | 6.5 | | | | 9 | | ICP-MS-E3474 |
| F032h | 65.5 | 7.2 | | | | 9 | | ICP-AES-E3386 |
| F042 | 108.0 | 12.0 | | | | 9 | | ICP-AES-E3497 |
| F060 | 146.5 | 14.6 | WH | | | 10 | | ICP-AES |
| F068 | 90.0 | 10.0 | | | | 9 | | ICP-MS |
| F139 | 142.5 | 14.2 | | WH | | 10 | | ICP-MS |
| F154 | 154.5 | 15.4 | WH | WH | | 10 | | ICP-MS |
| F158 | 101.5 | 11.2 | | | | 9 | | ICP-MS |
| F183 | 111.0 | 13.8 | AH | WHALWHAL | | 8 | | ICP-MS |
| F223 | 47.5 | 11.8 | | | INSUFFICIENT DATA | 4 | | ICP-AES |
| F312 | 8.5 | 2.1 | | | INSUFFICIENT DATA | 4 | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 10.5

PARAMETER: 74095 Tungsten

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|-------------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|
| F020 | 13.2 | 3.9 | 0.05 | 5.18 | 0.01 | 6.9 | 10.2 | 0.08 | 0.08 | 0.03 |
| F022 | 11.9 | 3.45 | 0.068 | 4.51 | <0.05 | 6.52 | 9.64 | 0.088 | 0.069 | <0.05 |
| F069 | 8.33 | 3.55 | <0.020 | 4.55 | <0.020 | 4.05 | 7.4 | <0.020 | <0.060 | <0.060 |
| F139 | 14.4 | 4.3 | 0.061 | 5.48 | 0.043 | 7.67 | 11.2 | 0.076 | 0.08 | 0.038 |
| F154 | 13.1 | 3.9 | <1. | 5. | <1. | 6.9 | 10.3 | <1. | <1. | <1. |
| F312 | <6.00 | <6.00 | <6.00 | <6.00 | <6.00 | <6.00 | <6.00 | <6.00 | <6.00 | <6.00 |
| ASSIGNED VALUE * | 13.10 | 3.90 | 0.061 | 5.00 | 0.026 | 6.90 | 10.20 | 0.080 | 0.080 | 0.034 |
| R-STD DEV * | 2.603 | 0.382 | 0.0103 | 0.471 | - | 1.190 | 1.604 | 0.0069 | 0.0000 | - |
| ACCEPTABLE LIMITS(+-) * | - | - | - | - | - | - | - | - | - | - |
| WARNING LIMITS(+-) * | - | - | - | - | - | - | - | - | - | - |
| ACTION LIMITS(<>) * | - | - | - | - | - | - | - | - | - | - |
| N * | 5 | 5 | 3 | 5 | 2 | 5 | 5 | 3 | 3 | 2 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|---------------|
| F020 | 25.5 | 2.5 | | | 10 | | | ICP-MS |
| F022 | 15.0 | 1.8 | | | 8 | | | ICP-MS |
| F069 | 7.0 | 1.4 | | | 5 | | | ICP-MS |
| F139 | 34.5 | 3.4 | | | 10 | | | ICP-MS |
| F154 | 17.0 | 3.4 | | | 5 | | | ICP-MS |
| F312 | 0.0 | 0.0 | | | 0 | | | ICP-AES |

NOTE: BIAS WAS NOT ASSESSED BECAUSE STATISTICS

FOR FEWER THAN 10 LABS WERE AVAILABLE

OVERALL AVERAGE RANK IS 2.6

PARAMETER: 92095 Uranium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 29.0 | 5.72 | 14.0 | 4.87 | 0.0361 | 15.0 | 22.2 | 57.1 | 144. | 419. |
| F009 | 27.7 | 5.40 | 13.3 | 4.49 | <1. | 13.6 WL | 21.3 | 49.1 WL | 124. WL | 360. WL |
| F010 | 28.4 | 5.89 | 14.2 | 5.00 | 0.040 | 15.5 | 22.6 | 55. | 140. | 409. |
| F011 | 30.8 | 6.0 | 14.6 | 5.1 | <0.1 | 15.2 | 22.0 | 55.1 | 140. | 395. |
| F015 | 30.8 | 6.29 | 15.1 | 5.42 | 0.049 | 16.9 WH | 24.9 WH | 59.1 | 150. | 406. |
| F020 | 29.9 | 5.91 | 14.6 | 5.09 | 0.042 | 15.7 | 22.9 | 56.3 | 137. | 394. |
| F021 | 29.8 | 6.0 | 14.6 | 5.0 | <0.1 | 16.2 | 22.9 | 56.6 | 155. | 441. |
| F021c | 28.9 | 4.95 AL | 13.6 | 4.11 WL | 0.03 | 14.9 | 21.8 | 52.4 | 143. | 414. |
| F022 | 28.2 | 5.80 | 13.9 | 4.90 | 0.0374 | 15.4 | 21.7 | 57.0 | 147. | 435. |
| F024 | 29.3 | 5.87 | 14.1 | 5.03 | <0.1 | 15.3 | 22.8 | 55.4 | 142. | 400. |
| F032c | 29.3 | 6.08 | 14.3 | 5.07 | <0.38 | 15.7 | 22.6 | 56.1 | 146. | 434. |
| F032d | 29.4 | 5.90 | 14.2 | 5.09 | <0.34 | 15.3 | 22.6 | 55.2 | 145. | 421. |
| F032h | 31. | 7. AH | 16. WH | 7. AH | 2. AH | 18. AH | 24. | 57. | 143. | 409. |
| F060 | 26.9 | 5.61 | 13.2 | 4.52 | <0.5 | 14.3 | 21.3 | 50.8 | 130. | 399. |
| F068 | 30. | 5.8 | 14. | 5. | 0.04 | 15. | 22. | 60. | 140. | 420. |
| F069 | 30.6 | 5.93 | 14.4 | 5.03 | 0.042 | 15.5 | 23. | 57.8 | 150. | 453. |
| F139 | 19.0 AL | 5.92 | 14.1 | 4.87 | 0.0512 | 15.3 | 22.0 | 54.8 | 141. | 420. |
| F154 | 30.4 | 6.48 WH | 15.6 WH | 5.49 | <0.1 | 16.2 | 23.8 | 51.5 | 132. | 398. |
| F158 | 29.9 | 6.0 | 14.4 | 5.1 | <2.0 | 15.7 | 23.1 | 57.1 | 151. | 441. |
| F183 | 28.7 | 4.73 AL | 13.0 | 4.01 AL | <0.01 AL | 14.3 | 21.4 | 51.7 | 115. AL | 314. AL |
| F193 | 29.8 | 5.90 | 14.0 | 4.80 | <0.7 | 15.1 | 23.2 | 57.1 | 140. | 411. |
| F248 | 26.9 | 5.80 | 13.5 | 4.90 | <0.10 | 13.7 WL | 20.9 | 54.3 | 271. AH | 375. |
| ASSIGNED VALUE * | 29.4 | 5.90 | 14.2 | 5.00 | 0.0400 | 15.3 | 22.6 | 55.8 | 142 | 411 |
| R-STD DEV * | 1.36 | 0.255 | 0.66 | 0.298 | 0.00856 | 0.79 | 0.98 | 2.81 | 8.6 | 24.1 |
| ACCEPTABLE LIMITS(+-) * | 2.72 | 0.510 | 1.32 | 0.596 | 0.01712 | 1.58 | 1.96 | 5.62 | 17.2 | 48.2 |
| WARNING LIMITS(+-) * | 2.72- 4.08 | .510- .765 | 1.32- 1.98 | .596- .894 | .01712- .0251 | 1.58- 2.37 | 1.96- 2.94 | 5.62- 8.43 | 17.2- 25.8 | 48.2- 72.3 |
| ACTION LIMITS(<>) * | 4.08 | 0.765 | 1.98 | 0.894 | 0.02568 | 2.37 | 2.94 | 8.43 | 25.8 | 72.3 |
| N * | 22 | 22 | 22 | 22 | 10 | 22 | 22 | 22 | 22 | 22 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL | AVERAGE | SUMMARY OF FLAGGING | | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|-------|---------|---------------------|------|----------------|--------------------|--------------|------------|----------------|
| F003 | 93.0 | 9.3 | | | | 10 | | | ICP-MS |
| F009 | 21.5 | 2.3 | WL WLWLWL | | BIASED LOW | 9 | -12.5 | 0.5591 | ICP-MS |
| F010 | 96.5 | 9.6 | | | | 10 | | | ICP-MS |
| F011 | 112.5 | 12.5 | | | | 9 | | | |
| F015 | 180.0 | 18.0 | WHWH | | BIASED HIGH* | 10 | -0.9 | 1.9409 | ICP-MS |
| F020 | 124.0 | 12.4 | | | | 10 | | | ICP-MS |
| F021 | 150.0 | 16.6 | | | | 9 | | | ICP-MS |
| F021c | 59.5 | 5.9 | AL WL | | | 10 | | | ICP-MS Agilent |
| F022 | 99.0 | 9.9 | | | | 10 | | | ICP-MS |
| F024 | 98.5 | 10.9 | | | | 9 | | | ICP-MS |
| F032c | 133.5 | 14.8 | | | | 9 | | | ICP-MS-E3473 |
| F032d | 117.5 | 13.0 | | | | 9 | | | ICP-MS-E3474 |
| F032h | 179.5 | 17.9 | AHWHAHAAH | | BIASED HIGH* | 10 | -0.7 | 1.7984 | ICP-AES-E3497 |
| F060 | 30.5 | 3.3 | | | BIASED LOW* | 9 | -2.9 | -1.7012 | ICP-MS |
| F068 | 107.0 | 10.7 | | | | 10 | | | ICP-MS |
| F069 | 161.5 | 16.1 | | | | 10 | | | ICP-MS |
| F139 | 92.5 | 9.2 | AL | | | 10 | | | ICP-MS |
| F154 | 133.5 | 14.8 | WHHH | | | 9 | | | ICP-MS |
| F158 | 160.0 | 17.7 | | | BIASED HIGH | 9 | 7.7 | -1.3141 | ICP-MS |
| F183 | 23.5 | 2.6 | AL ALAL | ALAL | BIASED LOW | 9 | -23.9 | 3.7025 | ICP-MS |
| F193 | 102.5 | 11.3 | | | | 9 | | | ICP-MS |
| F248 | 56.0 | 6.2 | WL AH | | | 9 | | | ICP-MS |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 11.2

PARAMETER: 23095 Vanadium

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 47.7 | 3.12 | 44.7 | 1.92 | 0.0872 | 13.2 | 145. | 115. | 296. | 483. |
| F009 | 55.2 AH | 3.47 | 48.6 WH | 1.76 | <1. | 14.3 | 151. | 122. | 279. | 462. |
| F010 | 47. | 3.27 | 46. | 2.00 | 0.10 | 13.0 | 146. | 114. | 284. | 478. |
| F011 | 49.9 | 3.3 | 46.2 | 2.0 | <0.1 | 14.1 | 143. | 115. | 276. | 448. WL |
| F015 | 48.0 | 3.23 | 44.9 | 1.95 | 0.11 | 13.2 | 134. WL | 107. WL | 275. | 455. |
| F020 | 47.1 | 3. | 43.5 | 1.9 | <0.2 | 12.9 | 142. | 112. | 291. | 463. |
| F021 | 50.0 | 3.4 | 47.6 | 2.1 | 0.3 | 13.8 | 149. | 120. | 295. | 477. |
| F021b | 47. | <4. | 43. | <4. | <4. | 12. | 146. | 115. | 292. | 485. |
| F021c | 47.4 | 2.90 | 42.5 | 1.62 WL | 0.04 | 12.6 | 142. | 114. | 281. | 496. |
| F022 | 47.5 | 3.23 | 45.2 | 1.99 | 0.135 | 13.2 | 143. | 117. | 286. | 469. |
| F024 | 46.7 | 3.04 | 43.2 | 1.81 | <0.1 | 12.9 | 142. | 110. | 282. | 466. |
| F032c | 48.6 | 3.20 | 44.6 | 2.00 | <0.49 | 13.4 | 147. | 118. | 297. | 483. |
| F032d | 47.6 | 3.14 | 43.6 | 1.95 | 0.42 | 13.1 | 145. | 114. | 288. | 478. |
| F032g | 47. | 2. AL | 43. | <1. AL | <1. | 12. | 144. | 113. | 295. | 478. |
| F032h | 48.0 | 3.3 | 43.7 | 2. | <0.9 | 13.5 | 149. | 115. | 292. | 471. |
| F042 | 46. | <5. | 42. | <5. | <5. | 12. | 149. | 118. | 290. | 491. |
| F060 | 50.9 | 3.66 WH | 45.5 | 2.01 | 0.15 | 14.0 | 140. | 116. | 286. | 487. |
| F068 | 49. | 3.1 | 45. | 1.9 | 0.4 | 12. | 140. | 120. | 290. | 490. |
| F069 | 46.9 | 3.06 | 43. | 1.9 | 0.329 | 12.6 | 142. | 142. AH | 297. | 459. |
| F069b | 50.1 | 3.65 WH | 45.8 | 2.57 AH | <0.8 | 13.9 | 151. | 121. | 305. | 480. |
| F139 | 50.7 | 3.32 | 46.2 | 1.96 | 0.114 | 13.9 | 152. | 119. | 302. | 499. |
| F154 | 47.6 | 3.13 | 45.1 | 1.83 | <0.2 | 13. | 131. WL | 107. WL | 265. WL | 460. |
| F158 | 45.8 | 3.0 | 42.4 | <2.0 | <2.0 | 12.4 | 142. | 112. | 293. | 497. |
| F183 | 51.8 WH | 3.30 | 46.8 | 1.91 | 0.085 | 13.7 | 155. WH | 119. | 288. | 492. |
| F193 | 48.6 | 2.90 | 45.1 | 1.70 | <1.0 | 13.4 | 144. | 116. | 284. | 477. |
| F223 | 47.8 | <20. | 44.9 | <20. | <20. | <20. | 145. | 116. | 294. | 482. |
| F248 | 47.2 | 3.10 | 44.4 | 1.80 | <0.20 | 12.6 | 141. | 115. | 282. | 474. |
| F312 | 46.0 | <5.00 | 42.1 | <5.00 | <5.00 | 12.2 | 146. | 113. | 285. | 484. |
| ASSIGNED VALUE * | 47.6 | 3.20 | 44.8 | 1.92 | 0.1245 | 13.1 | 144 | 115 | 289 | 478 |
| R-STD DEV * | 1.75 | 0.209 | 1.73 | 0.119 | 0.15093 | 0.79 | 4.5 | 3.9 | 8.3 | 14.3 |
| ACCEPTABLE LIMITS(+-) * | 3.50 | 0.418 | 3.46 | 0.238 | 0.30186 | 1.58 | 9.0 | 7.8 | 16.6 | 28.6 |
| WARNING LIMITS(+-) * | 3.50- 5.25 | .418- .627 | 3.46- 5.19 | .238- .357 | .30186- .4521 | 1.58- 2.37 | 9.0- 13.5 | 7.8- 11.7 | 16.6- 24.9 | 28.6- 42.9 |
| ACTION LIMITS(<>) * | 5.25 | 0.627 | 5.19 | 0.357 | 0.45279 | 2.37 | 13.5 | 11.7 | 24.9 | 42.9 |
| N * | 28 | 24 | 28 | 22 | 12 | 27 | 28 | 28 | 28 | 28 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 140.5 | 14.0 | | | 10 | | | ICP-MS |
| F009 | 169.5 | 18.8 | AH WH | | 9 | | | ICP-MS |
| F010 | 130.5 | 13.0 | | | 10 | | | ICP-MS |
| F011 | 136.5 | 15.1 | | WL | 9 | | | |
| F015 | 88.5 | 8.8 | | WLWL | 10 | | | ICP-MS |
| F020 | 76.5 | 8.5 | | | 9 | | | ICP-MS |
| F021 | 204.5 | 20.4 | | | 10 | | | ICP-MS |
| F021b | 87.0 | 12.4 | | | 7 | | | ICP-AES Varian |
| F021c | 75.5 | 7.5 | WL | | 10 | | | ICP-MS Agilent |
| F022 | 134.5 | 13.4 | | | 10 | | | ICP-MS |
| F024 | 58.0 | 6.4 | | BIASED LOW* | 9 | -2.5 | -0.2291 | ICP-MS |
| F032c | 167.0 | 18.5 | | | 9 | | | ICP-MS-E3473 |
| F032d | 126.5 | 12.6 | | | 10 | | | ICP-MS-E3474 |
| F032g | 73.0 | 9.1 | AL AL | | 8 | | | ICP-AES-E3386 |
| F032h | 147.5 | 16.3 | | | 9 | | | ICP-AES-E3497 |
| F042 | 89.0 | 12.7 | | | 7 | | | ICP-AES |
| F060 | 178.0 | 17.8 | WH | | 10 | | | ICP-MS |
| F068 | 134.5 | 13.4 | | | 10 | | | ICP-MS |
| F069 | 108.5 | 10.8 | | AH | 10 | | | ICP-MS |
| F069b | 210.0 | 23.3 | WH AH | BIASED HIGH* | 9 | 1.4 | 2.1827 | ICP-AES |
| F139 | 217.5 | 21.7 | | BIASED HIGH* | 10 | 4.4 | 0.0184 | ICP-MS |
| F154 | 69.0 | 7.6 | WLWLWL | | 9 | | | ICP-MS |
| F158 | 74.0 | 9.2 | | | 8 | | | ICP-MS |
| F183 | 193.0 | 19.3 | WH | WH | 10 | | | ICP-MS |
| F193 | 111.5 | 12.3 | | | 9 | | | ICP-MS |
| F223 | 102.5 | 17.0 | | | 6 | | | ICP-AES |
| F248 | 77.0 | 8.5 | | | 9 | | | ICP-MS |
| F312 | 65.0 | 9.2 | | | 7 | | | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 13.6

PARAMETER: 30095 Zinc

ug/L

WATER SCIENCE & TECHNOLOGY
ENVIRONMENT CANADA

EC PT for Trace Elements in Water

| SAMPLE LAB NO | 1= TMDA-51.4 LAB RESULT | 2= TM-28.4 LAB RESULT | 3= TM-DWS.2 LAB RESULT | 4= TM-23.4 LAB RESULT | 5= TELONG-01 LAB RESULT | 6= TM-15.2 LAB RESULT | 7= TMDA-52.3 LAB RESULT | 8= TMDA-62.2 LAB RESULT | 9= TMDA-64.2 LAB RESULT | 10= TMDA-55D2 LAB RESULT |
|-------------------------|----------------------------|--------------------------|---------------------------|--------------------------|----------------------------|--------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| F003 | 140. | 29.3 | 386. | 2.62 | 8.60 | 36.4 | 270. | 120. | 318. | 746. |
| F009 | 162. AH | 34.1 WH | 417. WH | 2.37 | 9.05 | 39.8 | 276. | 127. | 298. | 699. |
| F010 | 138. | 27.5 | 369. | 2.26 | 8.14 | 36. | 260. | 120. | 304. | 675. |
| F011 | 136. | 29.1 | 371. | 2.5 | 8.4 | 39.0 | 259. | 116. | 292. | 653. |
| F015 | 140. | 29.1 | 376. | 2.3 | 8.6 | 35.5 | 259. | 120. | 309. | 732. |
| F020 | 141. | 29.4 | 377. | 2.2 | 8.3 | 35.4 | 262. | 117. | 302. | 692. |
| F021 | 127. WL | 26.0 WL | 354. | 2.6 | 7.8 | 33.8 | 257. | 112. | 308. | 678. |
| F021b | 140. | 29. | 377. | 2. | 9. | 37. | 264. | 121. | 310. | 704. |
| F021c | 135. | 27.8 | 369. | 2.3 | 8.1 | 33.6 | 263. | 117. | 300. | 711. |
| F022 | 141. | 29.4 | 377. | 3.00 | 9.57 | 37.8 | 265. | 122. | 312. | 696. |
| F024 | 137. | 28.8 | 367. | 2.21 | 8.28 | 35.0 | 257. | 115. | 300. | 694. |
| F026 | 141. | 29.8 | 378. | <5. | 9.2 | 37.4 | 262. | 122. | 305. | 695. |
| F032c | 136. | 28.0 | 363. | 2.80 | 8.69 | 36.4 | 253. | 116. | 291. | 732. |
| F032d | 139. | 29.0 | 373. | 2.42 | 8.59 | 36.3 | 256. | 119. | 303. | 708. |
| F032g | 124. WL | 26.3 | 333. WL | 3.2 | 8.4 | 32.3 | 226. AL | 106. WL | 294. | 689. |
| F032h | 143. | 31.1 | 387. | 6.0 AH | 10.1 WH | 40.6 | 269. | 123. | 307. | 686. |
| F042 | 141. | 30. | 125. AL | 1. AL | 8. | 34. | 254. | 116. | 289. | 699. |
| F060 | 152. WH | 34.1 WH | 391. | 2.94 | 10.4 WH | 40.6 | 274. | 130. | 314. | 765. |
| F068 | 140. | 30. | 390. | <3. | 9. | 37. | 270. | 120. | 310. | 740. |
| F069 | 148. | 31.9 | 404. | 2.88 | 8.89 | 37.8 | 291. WH | 126. | 354. AH | 867. AH |
| F069b | 145. | 31.3 | 389. | <4.6 | 9.03 | 37.8 | 269. | 125. | 316. | 668. |
| F139 | 140. | 30.1 | 377. | 3. | 9.5 | 40.7 | 258. | 120. | 314. | 709. |
| F144 | 128. WL | 29.3 | 339. WL | 2.90 | 8.40 | 34.6 | 239. | 113. | 297. | 664. |
| F154 | 141. | 29.3 | 364. | 2.1 | 8.3 | 35.6 | 254. | 119. | 295. | 650. |
| F158 | 142. | 30.3 | 386. | <5.0 | 10.1 WH | 36.6 | 270. | 124. | 316. | 760. |
| F183 | 156. WH | 33.4 WH | 436. AH | 2.43 | 8.29 | 38.1 | 302. AH | 131. WH | 327. | 779. WH |
| F193 | 133. | 29.0 | 363. | 2.30 | 8.40 | 34.1 | 249. | 115. | 291. | 688. |
| F207 | 140. | 29.1 | 373. | <4.0 | 8.4 | 37.8 | 259. | 118. | 307. | 690. |
| F223 | 145. | 30.0 | 395. | <20. | <20. | 39.2 | 275. | 126. | 330. WH | 738. |
| F248 | 138. | 29.6 | 380. | <3.0 | 9.2 | 38.0 | 256. | 120. | 304. | 699. |
| F312 | 116. AL | 36.1 AH | 308. AL | 14.8 AH | 7.84 | 24.7 AL | 206. AL | 101. AL | 253. AL | 598. WL |
| ASSIGNED VALUE * | 140 | 29.4 | 377 | 2.43 | 8.59 | 36.8 | 261 | 120 | 305 | 698 |
| R-STD DEV * | 5.8 | 1.59 | 18.1 | 0.463 | 0.625 | 2.49 | 10.6 | 5.4 | 11.6 | 37.7 |
| ACCEPTABLE LIMITS(+-) * | 11.6 | 3.18 | 36.2 | 0.926 | 1.250 | 4.98 | 21.2 | 10.8 | 23.2 | 75.4 |
| WARNING LIMITS(+-) * | 11.6- 17.4 | 3.18- 4.77 | 36.2- 54.3 | .926- 1.389 | 1.250- 1.875 | 4.98- 7.47 | 21.2- 31.8 | 10.8- 16.2 | 23.2- 34.8 | 75.4- 113.1 |
| ACTION LIMITS(<>) * | 17.4 | 4.77 | 54.3 | 1.389 | 1.875 | 7.47 | 31.8 | 16.2 | 34.8 | 113.1 |
| N * | 31 | 31 | 31 | 24 | 30 | 31 | 31 | 31 | 31 | 31 |

* NOTE: SEE GLOSSARY FOR DEFINITIONS

| LAB NO. | TOTAL RANK | AVERAGE RANK | SUMMARY OF FLAGGING | BIAS STATEMENT | NO. SAMPLES RANKED | BIAS % SLOPE | BIAS BLANK | METHOD CODING |
|---------|------------|--------------|---------------------|----------------|--------------------|--------------|------------|----------------|
| F003 | 195.5 | 19.5 | | | 10 | | | ICP-MS |
| F009 | 235.5 | 23.5 | AHHWHH | | 10 | | | ICP-MS |
| F010 | 101.0 | 10.1 | | | 10 | | | ICP-MS |
| F011 | 111.5 | 11.1 | | | 10 | | | |
| F015 | 151.0 | 15.1 | | | 10 | | | ICP-MS |
| F020 | 128.5 | 12.8 | | | 10 | | | ICP-MS |
| F021 | 67.5 | 6.7 | WLWL | BIASED LOW* | 10 | -2.7 | -1.7511 | ICP-MS |
| F021b | 162.5 | 16.2 | | | 10 | | | ICP-AES Varian |
| F021c | 97.5 | 9.7 | | | 10 | | | ICP-MS Agilent |
| F022 | 205.5 | 20.5 | | | 10 | | | ICP-MS |
| F024 | 82.5 | 8.2 | | | 10 | | | ICP-MS |
| F026 | 173.5 | 19.2 | | | 9 | | | ICP-AES |
| F032c | 107.5 | 10.7 | | | 10 | | | ICP-MS-E3473 |
| F032d | 127.5 | 12.7 | | | 10 | | | ICP-MS-E3474 |
| F032g | 63.0 | 6.3 | WL WL ALWL | BIASED LOW* | 10 | -3.0 | -7.6625 | ICP-AES-E3386 |
| F032h | 227.0 | 22.7 | AHHW | | 10 | | | ICP-AES-E3497 |
| F042 | 85.5 | 8.5 | ALAL | | 10 | | | ICP-AES |
| F060 | 274.5 | 27.4 | WHWH WH | BIASED HIGH | 10 | 7.8 | -1.8508 | ICP-MS |
| F068 | 190.5 | 21.1 | | | 9 | | | ICP-MS |
| F069 | 261.0 | 26.1 | | | 10 | 21.7 | -13.5136 | ICP-MS |
| F069b | 201.0 | 22.3 | | | 9 | | | ICP-AES |
| F139 | 208.5 | 20.8 | | | 10 | | | ICP-MS |
| F144 | 78.0 | 7.8 | WL WL | | 10 | | | AAS |
| F154 | 94.5 | 9.4 | | | 10 | | | ICP-MS |
| F158 | 219.5 | 24.3 | | | 9 | 7.9 | -6.2073 | ICP-MS |
| F183 | 254.0 | 25.4 | WHWHAH | AHHW WH | BIASED HIGH | 10 | 12.1 | -0.5121 |
| F193 | 67.5 | 6.7 | | | BIASED LOW* | 10 | -2.0 | -2.5036 |
| F207 | 128.0 | 14.2 | | | 9 | | | ICP-AES |
| F223 | 213.0 | 26.6 | | | 8 | 5.7 | -0.2292 | ICP-AES |
| F248 | 155.5 | 17.2 | | | 9 | | | ICP-MS |
| F312 | 65.0 | 6.5 | ALAHALAH ALALALALWL | BIASED LOW | 10 | -16.2 | 0.7087 | ICP-AES |

* NOTE: INDICATED BIAS STATEMENT IS FOR CAUTION ONLY AND NOT COUNTED IN STUDY STATISTICS
PERCENT SLOPE USED FOR CAUTION COMPARISON = 5

OVERALL AVERAGE RANK IS 15.6

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