

Data Validation Summary Report
July through December 2014
Semi-Annual Remedial Performance Sampling
Nevada Environmental Response Trust (NERT)
Henderson, Nevada

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LIST OF ACRONYMS AND ABBREVIATIONS

CCB	Continuing Calibration Blank
DQO	Data Quality Objectives
DNR	Do Not Report
DUP	Duplicate
DVSR	Data Validation Summary Report
EB	Equipment Blank
FB	Field Blank
FD	Field Duplicate
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
LCS/LCSD	Laboratory Control Sample / Laboratory Control Sample Duplicate
LDC	Laboratory Data Consultants, Inc.
MS/MSD	Matrix Spike / Matrix Spike Duplicate
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
RPD	Relative Percent Difference
SDG	Sample Delivery Group
SQL	Sample Quantitation Limit
TDS	Total Dissolved Solids
TIN	Total Inorganic Nitrogen
TOC	Total Organic Carbon
TOX	Total Organic Halides
USEPA	United States Environmental Protection Agency
ug/L	Micrograms per Liter
mg/L	Milligram per Liter
%D	Percent Difference
%R	Percent Recovery

1.0 INTRODUCTION

This data validation summary report (DVSR) has been prepared by Laboratory Data Consultants, Inc. (LDC) to assess the validity and usability of laboratory analytical data from the Semi-Annual Remedial Performance Sampling conducted at the Nevada Environmental Response Trust (NERT) site in Henderson, Nevada. The assessment was performed by Ramboll Environ, formerly ENVIRON as a part of the *Revised Phase B Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada* dated May 2009 and included the collection and analyses of 459 environmental and quality control (QC) samples. The analyses were performed by the following methods:

Metals by Environmental Protection Agency (EPA) Method 200.7

Wet Chemistry:

Hexavalent Chromium by EPA Method 218.6

Chloride, Nitrate as Nitrogen, Nitrite as Nitrogen, and Sulfate (Anions) by EPA Method 300.0

Chlorate by EPA Method 300.1B

Perchlorate by EPA Method 314.0

Ammonia as Nitrogen by EPA Method 350.1

Nitrate/Nitrite as Nitrogen by EPA Method 353.2

Phenolics by EPA Method 420.1

Total Inorganic Nitrogen (TIN) by Calculation Method

Specific Conductance by Standard Method 2510

Total Dissolved Solids (TDS) by Standard Method 2540C

pH by Standard Method 4500 H+B

Total Organic Carbon (TOC) by Standard Method 5310C

Total Organic Halides (TOX) by EPA SW-846 Method 9020B

Laboratory analytical services were provided by TestAmerica, Inc. The samples were grouped into sample delivery groups (SDGs). The water samples are associated with QA/QC samples designed to document the data quality of the entire SDG or a sub-group of samples within an SDG. Table I is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, matrix, and validation level. Table II is a reference table that identifies the QC elements reviewed for each validation level per method, as applicable.

The laboratory analytical data were validated in accordance with procedures described in the Nevada Division of Environmental Protection (NDEP) *Data Verification and Validation Requirements - Supplement* established for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada, April 13, 2009. Consistent with the NDEP requirements, approximately ninety percent of the analytical data (412 of the 459 samples) were validated according to Stage 2B data validation procedures and ten percent of the analytical data (47 of the 459 samples) were validated according to Stage 4 data validation procedures. The analytical data were evaluated for quality assurance and quality control (QA/QC) based on the following documents: *Basic Remediation Company (BRC) Standard Operating Procedures (SOP) 40 Data Review/Validation*, Revision 4, May 2009; *Revised Phase B Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (QAPP)*, Revision, May 2009; Nevada Department of Environmental Protection (NDEP) *Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas*, January 5 2012; *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004; and the *EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste*, update I, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IV, February 2007.

This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The PARCCS summary report evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCCS criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 5.0 presents a summary of the PARCCS criteria by comparing quantitative parameters with acceptability criteria defined in the project DQO's. Qualitative PARCCS criteria are also summarized in this section.

Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors for sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: equipment blanks (EBs), field blanks (FBs), field duplicates (FDs), method blanks, laboratory control samples/laboratory control sample duplicates (LCS/LCSDs), laboratory duplicates (DUP), and matrix spike/matrix spike duplicates (MS/MSDs).

Before conducting the PARCCS evaluation, the analytical data were validated according to the BRC SOP-40 (July 2007), QAPP (May 2009), Functional Guidelines (USEPA 2004), and EPA SW 846 Test Methods. Samples not meeting the acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

- J- Estimated The associated numerical value is an estimated quantity with a negative bias. The analyte was detected but the reported value may not be accurate or precise.
- J+ Estimated The associated numerical value is an estimated quantity with a positive bias. The analyte was detected but the reported value may not be accurate or precise.
- J Estimated The associated numerical value is an estimated quantity. It is not possible to assess the direction of the potential bias. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits or any result that is detected in an environmental sample and associated blank at less than the required action level, but the exceedance was not sufficient to cause rejection of the data.
- R Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte. The "R" designation is also applied to yield only one complete set of data for a given sample and eliminate redundant data.
- U Nondetected Analyses were performed for the compound or analyte, but it was not detected.

- UJ Estimated/Nondetected Analyses were performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, or other spike recovery.
- DNR Do Not Report A more appropriate result is reported from another analysis or dilution.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

The hierarchy of flags is listed below:

- R > J The R flag will always take precedence over the J qualifier.
- J+ The high bias (J+) flag is applied only to detected results.
- J > J+ or J- A non-biased (J) flag will always supersede biased (J+ or J-) flags since it is not possible to assess the direction of the potential bias.
- J = J+ plus J- Adding biased (J+, J-) flags with opposite signs will result in a non-biased flag (J).
- UJ = U plus J or J- The UJ flag is used when a non-detected (U) flag is added to a biased (J-) or non-biased flag (J).

Table III lists the reason codes used. Reason codes explain why flags have been applied and identify possible limitations of data use. Reason codes are cumulative except when one of the flags is R then only the reason code associated to the R flag will be used.

Table IV presents the overall qualified results after all the flags or validation qualifiers and associated reason codes have been applied.

Once the data are reviewed and qualified according to the BRC SOP-40, QAPP, functional guidelines, and EPA Test Methods, the data set is then evaluated using PARCCS criteria. PARCCS criteria provide an evaluation of overall data usability. The following is a discussion of PARCCS criteria as related to the project DQOs.

Precision is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data. Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

where:

D1 = reported concentration for the sample

D2 = reported concentration for the duplicate

Precision is primarily assessed by calculating an RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD result as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS is similar to an MS/MSD sample in that the LCS is spiked with the same target analytes prior to preparation and analysis. However, the LCS is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS. The LCS measures laboratory efficiency in recovering target analytes from either an aqueous matrix in the absence of matrix interferences.

One primary sample is analyzed and accompanied by an unspiked laboratory duplicate. The data reviewer compares the reported results of the primary analysis and the laboratory duplicate, then calculates RPDs, which are used to assess laboratory precision.

Laboratory and field sampling precision are evaluated by calculating RPDs for aqueous field sample duplicate pairs. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD samples or LCS/LCSD indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate pairs, results maybe reported in either the primary or duplicate samples at levels below the practical quantitation limit (PQL) or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicate pairs do not suggest a significant impact on the data quality.

Accuracy is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, and LCSD. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Accuracy of inorganic analyses is determined using the percent recoveries of MS and LCS analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

where:

A = measured concentration in the spiked sample

B = measured concentration of the spike compound in the unspiked sample

C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples and LCS/LCSD is evaluated with the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blanks, samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, calibration blanks, EBs, and FBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Initial and continuing calibration blanks (ICB/CCBs) consist of acidified laboratory grade water, which are injected at the beginning and at a regular frequency during each 12 - hour sample analysis run. These blanks estimate residual contaminants from the previous sample or standards analysis and measure baseline shifts that commonly occur in emission and absorption spectroscopy.

Equipment blanks consist of analyte-free water poured over or through the sample collection equipment. The water is collected in a sample container for laboratory analysis. These blanks are collected after the sampling equipment is decontaminated and measure efficiency of the decontamination procedure. Equipment blanks were collected and analyzed for all target analytes.

Field blanks consist of analyte-free source water stored at the sample collection site. The water is collected from each source water used during each sampling event. Field blanks were collected and analyzed for all target analytes.

Contaminants found in both the environmental sample and the blank sample are assumed to be laboratory artifacts if both values are less than the PQL or if a sample result and blank contaminant value were greater than the PQL and less than 10 times the blank contaminant value. The blanks and associated samples were evaluated according to the NDEP *BMI Plant Sites and Common Areas Projects, Henderson, Nevada, Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas*, January 5 2012.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedance can cause loss of sample constituents due to biodegradation, precipitation, volatilization, and chemical degradation. In accordance with EPA guidance (USEPA 2004), sample results for analyses that were performed after the method holding time but less than two times the method holding time were qualified as estimated (J- or UJ) and sample results for analyses that were performed after two times the method holding time were qualified as rejected (R), with the exception of specific pH results detailed in Attachment B, Section I. Although the holding time for some pH analyses was exceeded by more than two times the holding time, using professional judgment the associated sample results were qualified as estimated (J/UJ) because the sample condition and integrity was maintained during collection, transport, and storage.

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability is also dependent upon other PARCCS criteria, because only when precision, accuracy, and representativeness are known can data sets be compared with confidence.

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

Percent completeness is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

where:

%C = percent completeness

T = total number of sample results

R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the QAPP, with the number determined above.

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. This capability is established during the planning phase to meet the DQOs. It is important that calibration requirements, detection limits (DLs), and PQLs presented in the QAPP are achieved and that target analytes can be detected at concentrations necessary to support the DQOs. The method detection limits (MDLs) represent the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. Sample quantitation limits (SQLs) are adjusted MDL values that reflect sample specific actions, such as dilutions or varying aliquot sizes. PQLs are the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration point for the analyte. The laboratory is required to report detected analytes down to the MDL for this project. The laboratory uses a formatter that reports estimated values down to the MDL. In addition, sample results are compared to method blank and field blank results to identify potential effects of laboratory background and field procedures on sensitivity.

The following sections present a review of QC data for each analytical method.

2.0 METALS

A total of 276 water samples were analyzed for metals by EPA Method 200.7. All metal data were assessed to be valid since none of the 298 total results were rejected based on holding time and QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

2.1 Precision and Accuracy

2.1.1 Instrument Calibration

Initial and continuing calibration verification results provide a means of evaluating accuracy within a particular SDG. Correlation coefficient (r) and percent recovery (%R) are the two major parameters used to measure the effectiveness of instrument calibration. The correlation coefficient indicates the linearity of the calibration curve. %R is used to verify the ongoing calibration acceptability of the analytical system. The most critical of the two calibration parameters, r, has the potential to affect data accuracy across an SDG when it is outside the acceptable QC limits. %R exceedances suggest more routine instrumental anomalies, which typically impact all sample results for the affected analytes.

The correlation coefficients in the initial calibrations were within the acceptance criteria of ≥ 0.995 and the %Rs in the continuing calibration verifications met the acceptance criteria of 90-110%.

2.1.2 MS/MSD Samples

Due to low MS/MSD %Rs outside of acceptance criteria as stated in the QAPP, the chromium results for twenty samples were qualified as detected estimated (J-) or non-detected estimated (UJ). The details regarding the qualification of results are presented in Attachment A, Section VI.

2.1.3 LCS/LCSD Samples

All LCS/LCSD %Rs and RPDs met acceptance criteria as stated in the QAPP.

2.1.4 ICP Interference Check Sample

All ICP interference check %Rs met acceptance criteria as stated in the QAPP.

2.1.5 FD Samples

The field duplicate samples were evaluated for acceptable precision with RPDs or difference in instances the results were less than five times the reporting limit for the compounds. The field duplicate RPDs or differences were within the acceptance criteria. The field duplicate RPDs or differences are presented in detail in Attachment A, Section XIII.

2.1.6 Analyte Quantitation and Target Identification

Raw data were evaluated for the Stage 4 samples. All analyte quantitation and target identifications were acceptable.

2.2 Representativeness

2.2.1 Sample Preservation and Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All samples met the 180-day analysis holding time criteria for metals.

2.2.2 Blanks

Method blanks, ICB/CCBs, EBs, and FBs were analyzed to evaluate representativeness. The concentration for an individual target compound in any of the types of QA/QC blanks was used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results based on the following criteria.

Results Below the PQL If a sample result and blank contaminant value were less than the PQL, the sample result was amended as estimated (J) at the concentration reported in the sample results.

Results Above the PQL If a sample result and blank contaminant value were greater than the PQL and less than 10 times the blank contaminant value, the sample result was qualified as detected estimated (J+) at the concentration reported in the sample results.

No Action If blank contaminant values were less than the PQL and associated sample results were greater than the PQL, or if blank contaminant values were greater than the PQL and associated sample results were greater than 10 times the blank contaminant value, the result was not amended.

2.2.2.1 Method and Calibration Blanks

No data were qualified due to contaminants detected in the method or calibration blanks for this analysis.

2.2.2.2 EBs and FBs

No data were qualified due to contaminants detected in the equipment or field blanks for this analysis.

2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the SQLs attained were at or below the PQLs. Target compounds detected below the PQLs flagged (J) by the laboratory should be considered estimated. The comparability of the metals data is regarded as acceptable.

2.4 Completeness

The completeness level attained for metal field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

2.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory PQLs met the specified requirements described in the QAPP.

3.0 WET CHEMISTRY

A total of 24 water samples were analyzed for hexavalent chromium by EPA Method 218.6; 6 water samples were analyzed for anions by EPA Method 300.0; 2 water samples were analyzed for chlorate by EPA Method 300.1B, ammonia as nitrogen by EPA Method 350.1, nitrate/nitrite as nitrogen by EPA Method 353.2, and TIN by Calculation Method; 459 water samples were analyzed for perchlorate by EPA Method 314.0; 4 water samples were analyzed for phenolics by EPA Method 420.1, specific conductance by Standard Method 2510, TOC by Standard Method 5310C, and TOX by EPA SW-846 Method 9020B; 453 water samples were analyzed for TDS by Standard Method 2540C; and 276 water samples were analyzed for pH by Standard Method 4500 H+B. All wet chemistry data were assessed to be valid with the exception of one of the 1,252 total results which was rejected based on holding time exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

3.1 Precision and Accuracy

3.1.1 Instrument Calibration

As previously discussed in Section 2.1.1, initial and continuing calibration results provide a means of evaluating accuracy.

Instrument calibrations were evaluated for all wet chemistry methods. The correlation coefficients in the initial calibrations were within the acceptance criteria of ≥ 0.995 and the %Rs in the continuing calibration verifications met the acceptance criteria of 90-110%.

3.1.2 Surrogate

Surrogates were evaluated for chlorate analysis by EPA Method 300.1. All surrogate %Rs met the acceptance criteria as stated in the QAPP.

3.1.3 MS/MSD Samples

MS/MSD samples were evaluated for hexavalent chromium analysis by EPA Method 218.6, anions by EPA Method 300.0, TOC by Standard Method 5310C, and TOX by EPA SW-846 Method 9020B. Due to low MS/MSD %Rs outside of acceptance criteria as stated in the QAPP, the chloride result in sample M-10 (samples on 12/8/14) and the TOX result in sample M-6A (samples on 8/13/14) were qualified as detected estimated (J-). The details regarding the qualification of results are presented in Attachment B, Section V.

3.1.4 DUP Samples

DUP samples were evaluated for TDS by Standard Method 2540C and pH by Standard Method 4500 H+B. All DUP RPDs met the acceptance criteria as stated in the QAPP.

3.1.5 LCS/LCSD Samples

LCS samples were evaluated for all wet chemistry methods. All LCS %Rs and RPDs met the acceptance criteria as stated in the QAPP.

3.1.6 FD Samples

FD samples were evaluated for hexavalent chromium by EPA Method 218.6, perchlorate by EPA Method 314.0, TDS by Standard Method 2540C, and pH by Standard Method 4500 H+B. The field duplicate samples were evaluated for acceptable precision with RPDs or difference in instances the results were less than five times the reporting limit for the compounds. The field duplicate RPDs or differences were within the acceptance criteria. The details regarding the qualification of results are presented in Attachment B, Section X.

3.1.7 Analyte Quantitation and Target Identification

Raw data were evaluated for the Stage 4 samples. All analyte quantitation and target identifications were acceptable.

In instances where data was diluted and reanalyzed due to matrix interferences, the reanalysis confirmed primary analysis results and the data was qualified as not reportable by the validators in order to yield only one complete set of data for a given sample. The details regarding the qualification of results are presented in Attachment B, Section X.

3.2 Representativeness

3.2.1 Sample Preservation and Holding Times

The evaluation of holding times to verify compliance with all wet chemistry methods was conducted. All water samples met the 48-hour analysis holding time criteria for nitrate as nitrogen and nitrite as nitrogen, the 7-day analysis holding time criteria for TDS, and the 28-day analysis holding time criteria for ammonia as nitrogen, chlorate, chloride, sulfate, phenolics, specific conductance, TOC, TOX, and perchlorate.

Due to a severe holding time criteria exceedance (>2X holding time criteria), the hexavalent chromium result for sample FB-1 (sampled on 12/3/14) was qualified as rejected (R). Additionally, 10 results for pH were qualified as detected estimated (J). The analysis holding time criteria for water samples is 24 hours for hexavalent chromium and 48 hours for pH. The details regarding the qualification of results are presented in Attachment B, Section I.

3.2.2 Blanks

As previously discussed in Section 2.2.2, method blanks, ICB/CCBs, EBs, and FBs were analyzed to evaluate representativeness.

3.2.2.1 Method and Calibration Blanks

No data were qualified due to contaminants detected in the calibration blanks for this analysis.

3.2.2.2 EBs and FBs

No data were qualified due to contaminants detected in the equipment or field blanks for this analysis.

3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the SQLs attained were at or below the PQLs. Target compounds detected below the PQLs flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

3.4 Completeness

The completeness level attained for wet chemistry field samples was 99.9 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

3.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory PQLs met the specified requirements described in the QAPP.

4.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted in the laboratory case narratives.

5.0 SUMMARY OF PARCCS CRITERIA

The validation reports present the PARCCS results for all SDGs. Each PARCCS criterion is discussed in detail in the following sections.

5.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, surrogates, MS/MSD, DUP, LCS/LCSD, and field duplicates. The precision and accuracy of the data set were considered acceptable after integration of result qualification.

All calibrations were performed as required and met the acceptance criteria. All surrogate, MS/MSD, DUP, LCS, and field duplicate percent recoveries, RPDs, and difference met acceptance criteria with the exceptions noted in Sections 2.1.2 and 3.1.3. All ICP interference check sample %Rs met acceptance criteria.

5.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable after integration of result qualification.

5.3 Comparability

Sampling frequency requirements were met in obtaining necessary equipment blanks, field blanks and field duplicates. The laboratory used standard analytical methods for the analyses. The analytical results were reported in correct standard units. Sample integrity criteria were met. Sample preservation and holding times were within QC criteria with the exceptions noted in Section 3.2.1. The overall comparability is considered acceptable after integration of result qualification.

5.4 Completeness

Of the 1,550 total analytes reported, one sample result was rejected. The completeness for the SDGs is as follows:

Parameter	Total Analytes	No. of Rejects	% Completeness
Metals	298	0	100
Wet Chemistry	1,252	1	99.9
Total	1,550	1	99.9

The completeness percentage based on rejected data met the 90 percent DQO goal.

5.5 Sensitivity

Sensitivity was achieved by the laboratory to support the DQOs. Calibration concentrations and PQLs met the project requirements and low level contamination in the method blanks, calibration blanks, equipment blanks, and field blanks did not affect sensitivity.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The analytical data quality assessment for the water sample laboratory analytical results generated during the Semi-Annual Remedial Performance Sampling at the Nevada Environmental Response Trust (NERT) site in Henderson, Nevada established that the overall project requirements and completeness levels were met. The sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the Stage 2B and Stage 4 data validation all other results are considered valid and usable for all purposes.

7.0 REFERENCES

- NDEP 2009. Data Verification and Validation Requirements - Supplement established for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada. April 13.
- NDEP 2012. Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas. January 5.
- Basic Remediation Company (BRC), 2009. Standard Operating Procedures, SOP-40 Data Review/Validation. Revision 4. May.
- Revised Phase B Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (QAPP), Revision. May 2009.
- Region 9 Superfund Data Evaluation/Validation Guidance, R6QA/006.1, Draft. December 2001.
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- _____.1983. EPA Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Cincinnati, Ohio. March.
- _____.1996. EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste, update I, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IV, February 2007.
- (Eaton et al., 1998) *Standard Method for the Examination of Water and Wastewater* (20th ed.). Washington, DC: American Public Health Association.

TABLE I

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-82280-1	ART-1	440-82280-1	Water	20140701		Stage 2B							X	
440-82280-1	ART-1DUP	440-82280-1DUP	Water	20140701	DUP	Stage 2B								
440-82280-1	ART-2	440-82280-2	Water	20140701		Stage 2B							X	
440-82280-1	ART-3	440-82280-3	Water	20140701		Stage 2B							X	
440-82280-1	ART-4	440-82280-4	Water	20140701		Stage 2B							X	
440-82280-1	ART-6	440-82280-5	Water	20140701		Stage 2B							X	
440-82280-1	ART-7	440-82280-6	Water	20140701		Stage 2B							X	
440-82280-1	ART-8	440-82280-7	Water	20140701		Stage 2B							X	
440-82280-1	ART-9	440-82280-8	Water	20140701		Stage 2B							X	
440-82280-1	PC-99R2/R3	440-82280-9	Water	20140701		Stage 2B							X	
440-82280-1	PC-115R	440-82280-10	Water	20140701		Stage 2B							X	
440-82280-1	PC-116R	440-82280-11	Water	20140701		Stage 2B							X	
440-82280-1	PC-116RDUP	440-82280-11DUP	Water	20140701	DUP	Stage 2B								
440-82280-1	PC-117	440-82280-12	Water	20140701		Stage 2B							X	
440-82280-1	PC-118	440-82280-13	Water	20140701		Stage 2B							X	
440-82280-1	PC-119	440-82280-14	Water	20140701		Stage 2B							X	
440-82280-1	PC-120	440-82280-15	Water	20140701		Stage 2B							X	
440-82280-1	PC-121	440-82280-16	Water	20140701		Stage 2B							X	
440-82280-1	PC-133	440-82280-17	Water	20140701		Stage 2B							X	
440-82772-1	PC-97	440-82772-1	Water	20140708		Stage 2B							X	
440-82772-1	PC-97DUP	440-82772-1DUP	Water	20140708	DUP	Stage 2B								
440-82772-1	PC-90	440-82772-2	Water	20140708		Stage 2B							X	
440-82772-1	PC-91	440-82772-3	Water	20140708		Stage 2B							X	
440-82772-1	PC-58	440-82772-4	Water	20140708		Stage 2B							X	
440-82772-1	PC-56	440-82772-5	Water	20140708		Stage 2B							X	
440-82772-1	PC-60	440-82772-6	Water	20140708		Stage 2B							X	
440-82772-1	PC-59	440-82772-7	Water	20140708		Stage 2B							X	
440-82772-1	PC-62	440-82772-8	Water	20140708		Stage 2B							X	
440-82772-1	PC-68	440-82772-9	Water	20140708		Stage 2B							X	
440-82772-1	ARP-1	440-82772-10	Water	20140708		Stage 2B							X	
440-82772-1	PC-18	440-82772-11	Water	20140708		Stage 2B							X	
440-82772-1	PC-18DUP	440-82772-11DUP	Water	20140708	DUP	Stage 2B								
440-82772-1	EB-1	440-82772-12	Water	20140708	EB	Stage 2B							X	
440-82778-1	PC-122	440-82778-1	Water	20140709		Stage 2B							X	
440-82778-1	PC-122DUP	440-82778-1DUP	Water	20140709	DUP	Stage 2B								

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-82778-1	PC-53	440-82778-2	Water	20140709		Stage 2B							X	
440-82778-1	MW-K5	440-82778-3	Water	20140709		Stage 2B							X	
440-82778-1	ARP-7	440-82778-4	Water	20140709		Stage 2B							X	
440-82778-1	ARP-6B	440-82778-5	Water	20140709		Stage 2B							X	
440-82778-1	ARP-5A	440-82778-6	Water	20140709		Stage 2B							X	
440-82778-1	ARP-4A	440-82778-7	Water	20140709		Stage 2B							X	
440-82778-1	PC-101R	440-82778-8	Water	20140709		Stage 2B							X	
440-82778-1	MW-K4	440-82778-9	Water	20140709		Stage 2B							X	
440-82778-1	ARP-3A	440-82778-10	Water	20140709		Stage 2B							X	
440-82778-1	ARP-2A	440-82778-11	Water	20140709		Stage 2B							X	
440-82778-1	ARP-2ADUP	440-82778-11DUP	Water	20140709	DUP	Stage 2B								
440-82778-1	PC-103	440-82778-12	Water	20140709		Stage 2B							X	
440-82778-1	PC-98R	440-82778-13	Water	20140709		Stage 2B							X	
440-82778-1	M-83	440-82778-14	Water	20140709		Stage 2B							X	
440-82987-1	PC-86	440-82987-1	Water	20140710		Stage 2B							X	
440-82987-1	PC-55	440-82987-2	Water	20140710		Stage 2B							X	
440-84683-1	ART-1	440-84683-1	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-1DUP	440-84683-1DUP	Water	20140804	DUP	Stage 2B								
440-84683-1	ART-2	440-84683-2	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-3	440-84683-3	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-3DUP	440-84683-3DUP	Water	20140804	DUP	Stage 2B								
440-84683-1	ART-4	440-84683-4	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-6	440-84683-5	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-7	440-84683-6	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-7DUP	440-84683-6DUP	Water	20140804	DUP	Stage 2B								
440-84683-1	ART-8	440-84683-7	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-9	440-84683-8	Water	20140804		Stage 2B		X					X	
440-84683-1	ART-9MS	440-84683-8MS	Water	20140804	MS	Stage 2B		X						
440-84683-1	ART-9MSD	440-84683-8MSD	Water	20140804	MSD	Stage 2B		X						
440-84683-1	PC-99R2/R3	440-84683-9	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-115R	440-84683-10	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-116R	440-84683-11	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-116RDUP	440-84683-11DUP	Water	20140804	DUP	Stage 2B								
440-84683-1	PC-117	440-84683-12	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-118	440-84683-13	Water	20140804		Stage 2B		X					X	

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-84683-1	PC-119	440-84683-14	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-120	440-84683-15	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-121	440-84683-16	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-133	440-84683-17	Water	20140804		Stage 2B		X					X	
440-84683-1	PC-133DUP	440-84683-17DUP	Water	20140804	DUP	Stage 2B								
440-84834-1	PC-97	440-84834-1	Water	20140805		Stage 4		X					X	
440-84834-1	PC-90	440-84834-2	Water	20140805		Stage 4		X					X	
440-84834-1	PC-90DUP	440-84834-2DUP	Water	20140805	DUP	Stage 4								
440-84834-1	PC-91	440-84834-3	Water	20140805		Stage 4		X					X	
440-84834-1	PC-91MS	440-84834-3MS	Water	20140805	MS	Stage 4		X						
440-84834-1	PC-91MSD	440-84834-3MSD	Water	20140805	MSD	Stage 4		X						
440-84834-1	PC-94	440-84834-4	Water	20140805		Stage 4		X					X	
440-84834-1	PC-58	440-84834-5	Water	20140805		Stage 4		X					X	
440-84834-1	PC-56	440-84834-6	Water	20140805		Stage 4		X					X	
440-84834-1	PC-60	440-84834-7	Water	20140805		Stage 4		X					X	
440-84834-1	PC-59	440-84834-8	Water	20140805		Stage 4		X					X	
440-84834-1	PC-62	440-84834-9	Water	20140805		Stage 4		X					X	
440-84834-1	PC-68	440-84834-10	Water	20140805		Stage 4		X					X	
440-84834-1	PC-86	440-84834-11	Water	20140805		Stage 4		X					X	
440-84834-1	EB-M1	440-84834-12	Water	20140805	EB	Stage 4							X	
440-85159-1	ART-7B	440-85159-1	Water	20140807		Stage 2B		X					X	
440-85159-1	ART-7BDUP	440-85159-1DUP	Water	20140807	DUP	Stage 2B								
440-85159-1	PC-122	440-85159-2	Water	20140807		Stage 2B		X					X	
440-85159-1	PC-53	440-85159-3	Water	20140807		Stage 2B		X					X	
440-85159-1	MW-K5	440-85159-4	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-7	440-85159-5	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-6B	440-85159-6	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-5A	440-85159-7	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-4A	440-85159-8	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-4AMS	440-85159-8MS	Water	20140807	MS	Stage 2B		X						
440-85159-1	ARP-4AMSD	440-85159-8MSD	Water	20140807	MSD	Stage 2B		X						
440-85159-1	PC-101R	440-85159-9	Water	20140807		Stage 2B		X					X	
440-85159-1	MW-K4	440-85159-10	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-3A	440-85159-11	Water	20140807		Stage 2B		X					X	
440-85159-1	ARP-3ADUP	440-85159-11DUP	Water	20140807	DUP	Stage 2B								

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-85159-1	ARP-2A	440-85159-12	Water	20140807		Stage 2B		X					X	
440-85159-1	PC-103	440-85159-13	Water	20140807		Stage 2B		X					X	
440-85159-1	PC-98R	440-85159-14	Water	20140807		Stage 2B		X					X	
440-85159-1	PC-98RDUP	440-85159-14DUP	Water	20140807	DUP	Stage 2B								
440-85240-1	PC-18	440-85240-1	Water	20140808		Stage 2B		X					X	
440-85240-1	PC-18DUP	440-85240-1DUP	Water	20140808	DUP	Stage 2B								
440-85240-1	ARP-1	440-85240-2	Water	20140808		Stage 2B		X					X	
440-85240-1	PC-55	440-85240-3	Water	20140808		Stage 2B		X					X	
440-85350-1	I-O	440-85350-1	Water	20140811		Stage 2B		X					X	
440-85350-1	I-ODUP	440-85350-1DUP	Water	20140811	DUP	Stage 2B								
440-85350-1	I-W	440-85350-2	Water	20140811		Stage 2B		X					X	
440-85350-1	I-WMS	440-85350-2MS	Water	20140811	MS	Stage 2B		X						
440-85350-1	I-WMSD	440-85350-2MSD	Water	20140811	MSD	Stage 2B		X						
440-85350-1	I-P	440-85350-3	Water	20140811		Stage 2B		X					X	
440-85350-1	I-H	440-85350-4	Water	20140811		Stage 2B		X					X	
440-85350-1	I-U	440-85350-5	Water	20140811		Stage 2B		X					X	
440-85350-1	I-T	440-85350-6	Water	20140811		Stage 2B		X					X	
440-85350-1	I-G	440-85350-7	Water	20140811		Stage 2B		X					X	
440-85350-1	I-Q	440-85350-8	Water	20140811		Stage 2B		X					X	
440-85350-1	I-F	440-85350-9	Water	20140811		Stage 2B		X					X	
440-85350-1	I-X	440-85350-10	Water	20140811		Stage 2B		X					X	
440-85350-1	I-N	440-85350-11	Water	20140811		Stage 2B		X					X	
440-85350-1	I-NDUP	440-85350-11DUP	Water	20140811	DUP	Stage 2B								
440-85350-1	I-E	440-85350-12	Water	20140811		Stage 2B		X					X	
440-85350-1	I-EMS	440-85350-12MS	Water	20140811	MS	Stage 2B		X						
440-85350-1	I-EMSD	440-85350-12MSD	Water	20140811	MSD	Stage 2B		X						
440-85350-1	I-M	440-85350-13	Water	20140811		Stage 2B		X					X	
440-85350-1	I-D	440-85350-14	Water	20140811		Stage 2B		X					X	
440-85350-1	I-C	440-85350-15	Water	20140811		Stage 2B		X					X	
440-85350-1	I-S	440-85350-16	Water	20140811		Stage 2B		X					X	
440-85350-1	I-L	440-85350-17	Water	20140811		Stage 2B		X					X	
440-85350-1	I-Y	440-85350-18	Water	20140811		Stage 2B		X					X	
440-85350-1	I-YDUP	440-85350-18DUP	Water	20140811	DUP	Stage 2B								
440-85350-1	I-R	440-85350-19	Water	20140811		Stage 2B		X					X	
440-85350-1	I-B	440-85350-20	Water	20140811		Stage 2B		X					X	

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440-85350-1	I-AA	440-85350-21	Water	20140811		Stage 2B		X					X	
440-85350-1	I-AADUP	440-85350-21DUP	Water	20140811	DUP	Stage 2B								
440-85350-1	I-AR	440-85350-22	Water	20140811		Stage 2B		X					X	
440-85492-1	M-64	440-85492-1	Water	20140812		Stage 2B		X					X	
440-85492-1	M-64DUP	440-85492-1DUP	Water	20140812	DUP	Stage 2B								
440-85492-1	M-64MS	440-85492-1MS	Water	20140812	MS	Stage 2B		X						
440-85492-1	M-64MSD	440-85492-1MSD	Water	20140812	MSD	Stage 2B		X						
440-85492-1	M-65	440-85492-2	Water	20140812		Stage 2B		X					X	
440-85492-1	M-66	440-85492-3	Water	20140812		Stage 2B		X					X	
440-85492-1	M-79	440-85492-4	Water	20140812		Stage 2B		X					X	
440-85492-1	M-69	440-85492-5	Water	20140812		Stage 2B		X					X	
440-85492-1	M-135	440-85492-6	Water	20140812		Stage 2B		X					X	
440-85492-1	M-131	440-85492-7	Water	20140812		Stage 2B		X					X	
440-85492-1	M-57A	440-85492-8	Water	20140812		Stage 2B		X					X	
440-85492-1	M-70	440-85492-9	Water	20140812		Stage 2B		X					X	
440-85492-1	M-71	440-85492-10	Water	20140812		Stage 2B		X					X	
440-85492-1	M-72	440-85492-11	Water	20140812		Stage 2B		X					X	
440-85492-1	M-72DUP	440-85492-11DUP	Water	20140812	DUP	Stage 2B								
440-85492-1	M-72MS	440-85492-11MS	Water	20140812	MS	Stage 2B		X						
440-85492-1	M-72MSD	440-85492-11MSD	Water	20140812	MSD	Stage 2B		X						
440-85492-1	M-22A	440-85492-12	Water	20140812		Stage 2B		X					X	
440-85492-1	M-14A	440-85492-13	Water	20140812		Stage 2B		X					X	
440-85492-1	M-25	440-85492-14	Water	20140812		Stage 2B		X					X	
440-85492-1	M-37	440-85492-15	Water	20140812		Stage 2B		X	X				X	
440-85492-1	FB-1	440-85492-16	Water	20140812	FB	Stage 2B		X	X				X	
440-85492-1	M-38	440-85492-17	Water	20140812		Stage 2B		X	X				X	
440-85492-1	M-99	440-85492-18	Water	20140812		Stage 2B		X					X	
440-85492-1	M-99DUP	440-85492-18DUP	Water	20140812	DUP	Stage 2B								
440-85496-1	M-5A	440-85496-1	Water	20140812		Stage 2B	X			X			X	
440-85496-1	M-7B	440-85496-2	Water	20140812		Stage 2B	X			X			X	
440-85496-1	M-7BMS	440-85496-2MS	Water	20140812	MS	Stage 2B								
440-85496-1	M-7BMSD	440-85496-2MSD	Water	20140812	MSD	Stage 2B								
440-85653-1	PC-123	440-85653-140	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-123DUP	440-85653-140DUP	Water	20140813	DUP	Stage 2B								
440-85653-1	PC-123MS	440-85653-140MS	Water	20140813	MS	Stage 2B		X						

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440-85653-1	PC-123MSD	440-85653-140MSD	Water	20140813	MSD	Stage 2B		X						
440-85653-1	PC-128	440-85653-141	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-129	440-85653-142	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-129DUP	440-85653-142DUP	Water	20140813	DUP	Stage 2B								
440-85653-1	PC-130	440-85653-143	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-132	440-85653-144	Water	20140813	FD1	Stage 2B		X					X	
440-85653-1	PC-131	440-85653-145	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-124	440-85653-146	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-126	440-85653-147	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-125	440-85653-148	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-125DUP	440-85653-148DUP	Water	20140813	DUP	Stage 2B								
440-85653-1	PC-127	440-85653-149	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-54	440-85653-150	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-54MS	440-85653-150MS	Water	20140813	MS	Stage 2B		X						
440-85653-1	PC-54MSD	440-85653-150MSD	Water	20140813	MSD	Stage 2B		X						
440-85653-1	M-48A	440-85653-151	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-71	440-85653-152	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-72	440-85653-153	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-73	440-85653-154	Water	20140813		Stage 2B		X					X	
440-85653-1	M-23	440-85653-155	Water	20140813		Stage 2B		X					X	
440-85653-1	M-95	440-85653-156	Water	20140813		Stage 2B		X	X				X	
440-85653-1	M-44	440-85653-157	Water	20140813		Stage 2B		X	X				X	
440-85653-1	M-44DUP	440-85653-157DUP	Water	20140813	DUP	Stage 2B								
440-85653-1	DUP-1	440-85653-158	Water	20140813	FD1	Stage 2B		X					X	
440-85653-1	DUP-1DUP	440-85653-158DUP	Water	20140813	DUP	Stage 2B								
440-85653-1	EB-1	440-85653-159	Water	20140813	EB	Stage 2B		X	X				X	
440-85653-1	PC-37	440-85653-160	Water	20140813		Stage 2B		X					X	
440-85653-1	PC-37DUP	440-85653-160DUP	Water	20140813	DUP	Stage 2B								
440-85655-1	H-28A	440-85655-1	Water	20140813		Stage 2B	X			X			X	
440-85655-1	H-28AMS	440-85655-1MS	Water	20140813	MS	Stage 2B	X							
440-85655-1	H-28AMSD	440-85655-1MSD	Water	20140813	MSD	Stage 2B	X							
440-85655-1	M-6A	440-85655-2	Water	20140813		Stage 2B	X			X			X	
440-85655-1	M-6AMS	440-85655-2MS	Water	20140813	MS	Stage 2B								
440-85655-1	M-6AMSD	440-85655-2MSD	Water	20140813	MSD	Stage 2B								
440-85776-1	M-31A	440-85776-1	Water	20140814		Stage 2B		X					X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-85776-1	M-31ADUP	440-85776-1DUP	Water	20140814	DUP	Stage 2B								
440-85776-1	M-31AMS	440-85776-1MS	Water	20140814	MS	Stage 2B		X						
440-85776-1	M-31AMSD	440-85776-1MSD	Water	20140814	MSD	Stage 2B		X						
440-85776-1	M-52	440-85776-2	Water	20140814		Stage 2B		X					X	
440-85776-1	M-35	440-85776-3	Water	20140814		Stage 2B		X					X	
440-85776-1	M-19	440-85776-4	Water	20140814		Stage 2B		X					X	
440-85776-1	M-68	440-85776-5	Water	20140814		Stage 2B		X					X	
440-85776-1	M-67	440-85776-6	Water	20140814		Stage 2B		X					X	
440-85776-1	M-74	440-85776-7	Water	20140814		Stage 2B		X					X	
440-85776-1	M-73	440-85776-8	Water	20140814		Stage 2B		X					X	
440-85776-1	I-K	440-85776-9	Water	20140814		Stage 2B		X					X	
440-85776-1	I-J	440-85776-10	Water	20140814		Stage 2B		X					X	
440-85776-1	I-Z	440-85776-11	Water	20140814		Stage 2B		X					X	
440-85776-1	I-ZDUP	440-85776-11DUP	Water	20140814	DUP	Stage 2B								
440-85776-1	I-ZMS	440-85776-11MS	Water	20140814	MS	Stage 2B		X						
440-85776-1	I-ZMSD	440-85776-11MSD	Water	20140814	MSD	Stage 2B		X						
440-85776-1	I-I	440-85776-12	Water	20140814		Stage 2B		X					X	
440-85776-1	I-V	440-85776-13	Water	20140814		Stage 2B		X					X	
440-85776-1	I-AD	440-85776-14	Water	20140814		Stage 2B		X					X	
440-85776-1	M-80	440-85776-15	Water	20140814		Stage 2B		X					X	
440-85776-1	M-81A	440-85776-16	Water	20140814		Stage 2B		X					X	
440-85776-1	M-83	440-85776-17	Water	20140814		Stage 2B		X					X	
440-85776-1	M-12A	440-85776-18	Water	20140814	FD2	Stage 2B		X	X				X	
440-85776-1	M-12ADUP	440-85776-18DUP	Water	20140814	DUP	Stage 2B								
440-85776-1	EB-2	440-85776-19	Water	20140814	EB	Stage 2B		X	X				X	
440-85776-1	DUP-3	440-85776-20	Water	20140814	FD2	Stage 2B		X	X				X	
440-85889-1	M-10	440-85889-1	Water	20140815		Stage 2B	X		X	X	X	X	X	X
440-85889-1	M-10DUP	440-85889-1DUP	Water	20140815	DUP	Stage 2B								
440-85889-1	M-10MS	440-85889-1MS	Water	20140815	MS	Stage 2B				X				
440-85889-1	M-10MSD	440-85889-1MSD	Water	20140815	MSD	Stage 2B				X				
440-85890-1	PC-148	440-85890-1	Water	20140815		Stage 2B		X					X	
440-85890-1	PC-148DUP	440-85890-1DUP	Water	20140815	DUP	Stage 2B								
440-85890-1	PC-149	440-85890-2	Water	20140815		Stage 2B		X					X	
440-85890-1	PC-150	440-85890-3	Water	20140815	FD3	Stage 2B		X					X	
440-85890-1	PC-136	440-85890-4	Water	20140815		Stage 2B		X					X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-85890-1	PC-136MS	440-85890-4MS	Water	20140815	MS	Stage 2B		X						
440-85890-1	PC-136MSD	440-85890-4MSD	Water	20140815	MSD	Stage 2B		X						
440-85890-1	PC-144	440-85890-5	Water	20140815		Stage 2B		X					X	
440-85890-1	PC-135A	440-85890-6	Water	20140815		Stage 2B		X					X	
440-85890-1	M-11	440-85890-7	Water	20140815	FD4	Stage 2B		X	X				X	
440-85890-1	DUP-2	440-85890-8	Water	20140815	FD3	Stage 2B		X					X	
440-85890-1	DUP-4	440-85890-9	Water	20140815	FD4	Stage 2B		X	X				X	
440-87226-1	ART-1	440-87226-1	Water	20140903		Stage 4							X	
440-87226-1	ART-1DUP	440-87226-1DUP	Water	20140903	DUP	Stage 4								
440-87226-1	ART-2	440-87226-2	Water	20140903		Stage 4							X	
440-87226-1	ART-3	440-87226-3	Water	20140903		Stage 4							X	
440-87226-1	ART-4	440-87226-4	Water	20140903		Stage 4							X	
440-87226-1	ART-6	440-87226-5	Water	20140903		Stage 4							X	
440-87226-1	ART-7	440-87226-6	Water	20140903		Stage 4							X	
440-87226-1	ART-8	440-87226-7	Water	20140903		Stage 4							X	
440-87226-1	ART-9	440-87226-8	Water	20140903		Stage 4							X	
440-87226-1	PC-99R2/R3	440-87226-9	Water	20140903		Stage 4							X	
440-87226-1	PC-115R	440-87226-10	Water	20140903		Stage 4							X	
440-87226-1	PC-116R	440-87226-11	Water	20140903		Stage 4							X	
440-87226-1	PC-116RDUP	440-87226-11DUP	Water	20140903	DUP	Stage 4								
440-87226-1	PC-117	440-87226-12	Water	20140903		Stage 4							X	
440-87226-1	PC-118	440-87226-13	Water	20140903		Stage 4							X	
440-87226-1	PC-119	440-87226-14	Water	20140903		Stage 4							X	
440-87226-1	PC-120	440-87226-15	Water	20140903		Stage 4							X	
440-87226-1	PC-121	440-87226-16	Water	20140903		Stage 4							X	
440-87226-1	PC-133	440-87226-17	Water	20140903		Stage 4							X	
440-87925-1	PC-97	440-87925-1	Water	20140910		Stage 2B							X	
440-87925-1	PC-97DUP	440-87925-1DUP	Water	20140910	DUP	Stage 2B								
440-87925-1	PC-90	440-87925-2	Water	20140910		Stage 2B							X	
440-87925-1	PC-91	440-87925-3	Water	20140910		Stage 2B							X	
440-87925-1	PC-58	440-87925-4	Water	20140910		Stage 2B							X	
440-87925-1	PC-56	440-87925-5	Water	20140910		Stage 2B							X	
440-87925-1	PC-60	440-87925-6	Water	20140910		Stage 2B							X	
440-87925-1	PC-59	440-87925-7	Water	20140910		Stage 2B							X	
440-87925-1	PC-62	440-87925-8	Water	20140910		Stage 2B							X	

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-87925-1	PC-68	440-87925-9	Water	20140910		Stage 2B							X	
440-87925-1	PC-86	440-87925-10	Water	20140910		Stage 2B							X	
440-87925-1	PC-18	440-87925-11	Water	20140910		Stage 2B							X	
440-87925-1	PC-18DUP	440-87925-11DUP	Water	20140910	DUP	Stage 2B								
440-87925-1	ARP-1	440-87925-12	Water	20140910		Stage 2B							X	
440-87966-1	M-83	440-87966-1	Water	20140911		Stage 2B							X	
440-87966-1	M-83DUP	440-87966-1DUP	Water	20140911	DUP	Stage 2B								
440-87966-1	PC-53	440-87966-2	Water	20140911		Stage 2B							X	
440-87966-1	MW-K5	440-87966-3	Water	20140911		Stage 2B							X	
440-87966-1	ARP-7	440-87966-4	Water	20140911		Stage 2B							X	
440-87966-1	ARP-6B	440-87966-5	Water	20140911		Stage 2B							X	
440-87966-1	ARP-5A	440-87966-6	Water	20140911		Stage 2B							X	
440-87966-1	ARP-4A	440-87966-7	Water	20140911		Stage 2B							X	
440-87966-1	PC-101R	440-87966-8	Water	20140911		Stage 2B							X	
440-87966-1	MW-K4	440-87966-9	Water	20140911		Stage 2B							X	
440-87966-1	MEB-1	440-87966-10	Water	20140911	EB	Stage 2B							X	
440-87966-1	ARP-3A	440-87966-11	Water	20140911		Stage 2B							X	
440-87966-1	ARP-2A	440-87966-12	Water	20140911		Stage 2B							X	
440-87966-1	ARP-2ADUP	440-87966-12DUP	Water	20140911	DUP	Stage 2B								
440-87966-1	PC-103	440-87966-13	Water	20140911		Stage 2B							X	
440-87966-1	PC-98R	440-87966-14	Water	20140911		Stage 2B							X	
440-88032-1	PC-122	440-88032-1	Water	20140912		Stage 2B							X	
440-88032-1	PC-55	440-88032-2	Water	20140912		Stage 2B							X	
440-90069-1	ART-1	440-90069-1	Water	20141007		Stage 2B							X	
440-90069-1	ART-1DUP	440-90069-1DUP	Water	20141007	DUP	Stage 2B								
440-90069-1	ART-2	440-90069-2	Water	20141007		Stage 2B							X	
440-90069-1	ART-3	440-90069-3	Water	20141007		Stage 2B							X	
440-90069-1	ART-4	440-90069-4	Water	20141007		Stage 2B							X	
440-90069-1	ART-6	440-90069-5	Water	20141008		Stage 2B							X	
440-90069-1	ART-7	440-90069-6	Water	20141007		Stage 2B							X	
440-90069-1	ART-8	440-90069-7	Water	20141007		Stage 2B							X	
440-90069-1	ART-9	440-90069-8	Water	20141007		Stage 2B							X	
440-90069-1	PC-99R2/R3	440-90069-9	Water	20141007		Stage 2B							X	
440-90069-1	PC-115R	440-90069-10	Water	20141007		Stage 2B							X	
440-90069-1	PC-116R	440-90069-11	Water	20141007		Stage 2B							X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-90069-1	PC-116RDUP	440-90069-11DUP	Water	20141007	DUP	Stage 2B								
440-90069-1	PC-117	440-90069-12	Water	20141007		Stage 2B							X	
440-90069-1	PC-118	440-90069-13	Water	20141007		Stage 2B							X	
440-90069-1	PC-119	440-90069-14	Water	20141007		Stage 2B							X	
440-90069-1	PC-120	440-90069-15	Water	20141007		Stage 2B							X	
440-90069-1	PC-121	440-90069-16	Water	20141007		Stage 2B							X	
440-90069-1	PC-133	440-90069-17	Water	20141007		Stage 2B							X	
440-90694-1	M-83	440-90694-1	Water	20141014		Stage 2B							X	
440-90694-1	PC-97	440-90694-2	Water	20141014		Stage 2B							X	
440-90694-1	PC-97DUP	440-90694-2DUP	Water	20141014	DUP	Stage 2B								
440-90694-1	PC-90	440-90694-3	Water	20141014		Stage 2B							X	
440-90694-1	PC-91	440-90694-4	Water	20141014		Stage 2B							X	
440-90694-1	PC-58	440-90694-5	Water	20141014		Stage 2B							X	
440-90694-1	PC-56	440-90694-6	Water	20141014		Stage 2B							X	
440-90694-1	PC-60	440-90694-7	Water	20141014		Stage 2B							X	
440-90694-1	PC-59	440-90694-8	Water	20141014		Stage 2B							X	
440-90694-1	PC-62	440-90694-9	Water	20141014		Stage 2B							X	
440-90694-1	PC-68	440-90694-10	Water	20141014		Stage 2B							X	
440-90694-1	PC-86	440-90694-11	Water	20141014		Stage 2B							X	
440-90694-1	EB-1	440-90694-12	Water	20141014	EB	Stage 2B							X	
440-90694-1	PC-18	440-90694-13	Water	20141014		Stage 2B							X	
440-90694-1	PC-18DUP	440-90694-13DUP	Water	20141014	DUP	Stage 2B								
440-90694-1	ARP-1	440-90694-14	Water	20141014		Stage 2B							X	
440-90694-1	PC-122	440-90694-15	Water	20141015		Stage 2B							X	
440-90694-1	PC-53	440-90694-16	Water	20141015		Stage 2B							X	
440-90694-1	MW-K5	440-90694-17	Water	20141015		Stage 2B							X	
440-90694-1	ARP-7	440-90694-18	Water	20141015		Stage 2B							X	
440-90694-1	ARP-6B	440-90694-19	Water	20141015		Stage 2B							X	
440-90694-1	ARP-5A	440-90694-20	Water	20141015		Stage 2B							X	
440-90694-1	ARP-4A	440-90694-21	Water	20141015		Stage 2B							X	
440-90694-1	PC-101R	440-90694-22	Water	20141015		Stage 2B							X	
440-90694-1	MW-K4	440-90694-23	Water	20141015		Stage 2B							X	
440-90694-1	MW-K4DUP	440-90694-23DUP	Water	20141015	DUP	Stage 2B								
440-90694-1	ARP-3A	440-90694-24	Water	20141015		Stage 2B							X	
440-90694-1	ARP-2A	440-90694-25	Water	20141015		Stage 2B							X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-90694-1	PC-103	440-90694-26	Water	20141015		Stage 2B							X	
440-90694-1	PC-98R	440-90694-27	Water	20141015		Stage 2B							X	
440-90694-1	PC-55	440-90694-28	Water	20141015		Stage 2B							X	
440-92039-1	ART-1	440-92039-1	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-1DUP	440-92039-1DUP	Water	20141103	DUP	Stage 2B								
440-92039-1	ART-1MS	440-92039-1MS	Water	20141103	MS	Stage 2B		X						
440-92039-1	ART-1MSD	440-92039-1MSD	Water	20141103	MSD	Stage 2B		X						
440-92039-1	ART-2	440-92039-2	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-3	440-92039-3	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-3MS	440-92039-3MS	Water	20141103	MS	Stage 2B		X						
440-92039-1	ART-3MSD	440-92039-3MSD	Water	20141103	MSD	Stage 2B		X						
440-92039-1	ART-4	440-92039-4	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-6	440-92039-5	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-7B	440-92039-6	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-8	440-92039-7	Water	20141103		Stage 2B		X					X	
440-92039-1	ART-9	440-92039-8	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-99R2/R3	440-92039-9	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-115R	440-92039-10	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-116R	440-92039-11	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-116RDUP	440-92039-11DUP	Water	20141103	DUP	Stage 2B								
440-92039-1	PC-117	440-92039-12	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-118	440-92039-13	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-119	440-92039-14	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-120	440-92039-15	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-121	440-92039-16	Water	20141103		Stage 2B		X					X	
440-92039-1	PC-121DUP	440-92039-16DUP	Water	20141103	DUP	Stage 2B								
440-92039-1	PC-133	440-92039-17	Water	20141103		Stage 2B		X					X	
440-93300-1	PC-150	440-93300-1	Water	20141113		Stage 2B		X					X	
440-93300-1	PC-150DUP	440-93300-1DUP	Water	20141113	DUP	Stage 2B								
440-94207-1	M-83	440-94207-1	Water	20141124		Stage 2B		X					X	
440-94207-1	M-83DUP	440-94207-1DUP	Water	20141124	DUP	Stage 2B								
440-94207-1	M-83MS	440-94207-1MS	Water	20141124	MS	Stage 2B		X						
440-94207-1	M-83MSD	440-94207-1MSD	Water	20141124	MSD	Stage 2B		X						
440-94207-1	PC-97	440-94207-2	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-90	440-94207-3	Water	20141124		Stage 2B		X					X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-94207-1	PC-91	440-94207-4	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-58	440-94207-5	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-56	440-94207-6	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-60	440-94207-7	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-59	440-94207-8	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-62	440-94207-9	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-68	440-94207-10	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-86	440-94207-11	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-86DUP	440-94207-11DUP	Water	20141124	DUP	Stage 2B								
440-94207-1	PC-86MS	440-94207-11MS	Water	20141124	MS	Stage 2B		X						
440-94207-1	PC-86MSD	440-94207-11MSD	Water	20141124	MSD	Stage 2B		X						
440-94207-1	PC-18	440-94207-12	Water	20141124		Stage 2B		X					X	
440-94207-1	PC-18DUP	440-94207-12DUP	Water	20141124	DUP	Stage 2B								
440-94339-1	PC-53	440-94339-1	Water	20141125		Stage 2B		X					X	
440-94339-1	PC-53DUP	440-94339-1DUP	Water	20141125	DUP	Stage 2B								
440-94339-1	PC-53MS	440-94339-1MS	Water	20141125	MS	Stage 2B		X						
440-94339-1	PC-53MSD	440-94339-1MSD	Water	20141125	MSD	Stage 2B		X						
440-94339-1	MW-K5	440-94339-2	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-7	440-94339-3	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-6B	440-94339-4	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-5A	440-94339-5	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-4A	440-94339-6	Water	20141125		Stage 2B		X					X	
440-94339-1	PC-144	440-94339-7	Water	20141125		Stage 2B		X					X	
440-94339-1	PC-101R	440-94339-8	Water	20141125		Stage 2B		X					X	
440-94339-1	MW-K4	440-94339-9	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-3A	440-94339-10	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-2A	440-94339-11	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-2ADUP	440-94339-11DUP	Water	20141125	DUP	Stage 2B								
440-94339-1	ARP-2AMS	440-94339-11MS	Water	20141125	MS	Stage 2B		X						
440-94339-1	ARP-2AMSD	440-94339-11MSD	Water	20141125	MSD	Stage 2B		X						
440-94339-1	MEB-1	440-94339-12	Water	20141125	EB	Stage 2B							X	
440-94339-1	PC-103	440-94339-13	Water	20141125		Stage 2B		X					X	
440-94339-1	PC-98R	440-94339-14	Water	20141125		Stage 2B		X					X	
440-94339-1	ARP-1	440-94339-15	Water	20141125		Stage 2B		X					X	
440-94339-1	PC-55	440-94339-16	Water	20141125		Stage 2B		X					X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-94339-1	PC-55DUP	440-94339-16DUP	Water	20141125	DUP	Stage 2B								
440-94662-1	I-M	440-94662-1	Water	20141201		Stage 2B		X					X	
440-94662-1	I-MDUP	440-94662-1DUP	Water	20141201	DUP	Stage 2B								
440-94662-1	I-MMS	440-94662-1MS	Water	20141201	MS	Stage 2B		X						
440-94662-1	I-MMSD	440-94662-1MSD	Water	20141201	MSD	Stage 2B		X						
440-94662-1	I-D	440-94662-2	Water	20141201		Stage 2B		X					X	
440-94662-1	I-C	440-94662-3	Water	20141201		Stage 2B		X					X	
440-94662-1	I-S	440-94662-4	Water	20141201		Stage 2B		X					X	
440-94662-1	I-L	440-94662-5	Water	20141201		Stage 2B		X					X	
440-94662-1	I-LDUP	440-94662-5DUP	Water	20141201	DUP	Stage 2B								
440-94662-1	I-Y	440-94662-6	Water	20141201		Stage 2B		X					X	
440-94662-1	I-R	440-94662-7	Water	20141201		Stage 2B		X					X	
440-94662-1	I-B	440-94662-8	Water	20141201		Stage 2B		X					X	
440-94662-1	I-AB	440-94662-9	Water	20141201		Stage 2B		X					X	
440-94662-1	I-AA	440-94662-10	Water	20141201		Stage 2B		X					X	
440-94662-1	I-AR	440-94662-11	Water	20141201		Stage 2B		X					X	
440-94662-1	I-ARDUP	440-94662-11DUP	Water	20141201	DUP	Stage 2B								
440-94662-1	I-ARMS	440-94662-11MS	Water	20141201	MS	Stage 2B		X						
440-94662-1	I-ARMSD	440-94662-11MSD	Water	20141201	MSD	Stage 2B		X						
440-94662-1	I-O	440-94662-12	Water	20141201		Stage 2B		X					X	
440-94662-1	I-W	440-94662-13	Water	20141201		Stage 2B		X					X	
440-94662-1	I-P	440-94662-14	Water	20141201		Stage 2B		X					X	
440-94662-1	I-H	440-94662-15	Water	20141201		Stage 2B		X					X	
440-94662-1	I-U	440-94662-16	Water	20141201		Stage 2B		X					X	
440-94662-1	I-T	440-94662-17	Water	20141201		Stage 2B		X					X	
440-94662-1	I-G	440-94662-18	Water	20141201		Stage 2B		X					X	
440-94662-1	I-Q	440-94662-19	Water	20141201		Stage 2B		X					X	
440-94662-1	I-F	440-94662-20	Water	20141201		Stage 2B		X					X	
440-94662-1	I-X	440-94662-21	Water	20141201		Stage 2B		X					X	
440-94662-1	I-N	440-94662-22	Water	20141201		Stage 2B		X					X	
440-94662-1	I-E	440-94662-23	Water	20141201		Stage 2B		X					X	
440-94662-1	I-EDUP	440-94662-23DUP	Water	20141201	DUP	Stage 2B								
440-94669-1	ART-1	440-94669-1	Water	20141201		Stage 2B							X	
440-94669-1	ART-2	440-94669-2	Water	20141201		Stage 2B							X	
440-94669-1	ART-3	440-94669-3	Water	20141201		Stage 2B							X	

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-94669-1	ART-4	440-94669-4	Water	20141201		Stage 2B							X	
440-94669-1	ART-6	440-94669-5	Water	20141201		Stage 2B							X	
440-94669-1	ART-7	440-94669-6	Water	20141201		Stage 2B							X	
440-94669-1	ART-8	440-94669-7	Water	20141201		Stage 2B							X	
440-94669-1	ART-8DUP	440-94669-7DUP	Water	20141201	DUP	Stage 2B								
440-94669-1	ART-9	440-94669-8	Water	20141201		Stage 2B							X	
440-94669-1	PC-99R2/R3	440-94669-9	Water	20141201		Stage 2B							X	
440-94669-1	PC-115R	440-94669-10	Water	20141201		Stage 2B							X	
440-94669-1	PC-116R	440-94669-11	Water	20141201		Stage 2B							X	
440-94669-1	PC-117	440-94669-12	Water	20141201		Stage 2B							X	
440-94669-1	PC-118	440-94669-13	Water	20141201		Stage 2B							X	
440-94669-1	PC-119	440-94669-14	Water	20141201		Stage 2B							X	
440-94669-1	PC-120	440-94669-15	Water	20141201		Stage 2B							X	
440-94669-1	PC-121	440-94669-16	Water	20141201		Stage 2B							X	
440-94669-1	PC-133	440-94669-17	Water	20141201		Stage 2B							X	
440-94669-1	PC-133DUP	440-94669-17DUP	Water	20141201	DUP	Stage 2B								
440-94669-1	PC-150	440-94669-18	Water	20141201		Stage 2B							X	
440-94868-1	I-AD	440-94868-1	Water	20141202		Stage 2B		X					X	
440-94868-1	I-ADDUP	440-94868-1DUP	Water	20141202	DUP	Stage 2B								
440-94868-1	I-AC	440-94868-2	Water	20141202		Stage 2B		X					X	
440-94868-1	I-K	440-94868-3	Water	20141202		Stage 2B		X					X	
440-94868-1	I-KMS	440-94868-3MS	Water	20141202	MS	Stage 2B		X						
440-94868-1	I-KMSD	440-94868-3MSD	Water	20141202	MSD	Stage 2B		X						
440-94868-1	I-J	440-94868-4	Water	20141202		Stage 2B		X					X	
440-94868-1	I-Z	440-94868-5	Water	20141202		Stage 2B		X					X	
440-94868-1	I-I	440-94868-6	Water	20141202		Stage 2B		X					X	
440-94868-1	I-V	440-94868-7	Water	20141202		Stage 2B		X					X	
440-94868-1	I-VMS	440-94868-7MS	Water	20141202	MS	Stage 2B		X						
440-94868-1	I-VMSD	440-94868-7MSD	Water	20141202	MSD	Stage 2B		X						
440-95199-1	PC-123	440-95199-1	Water	20141204		Stage 4		X					X	
440-95199-1	PC-123DUP	440-95199-1DUP	Water	20141204	DUP	Stage 4								
440-95199-1	PC-123MS	440-95199-1MS	Water	20141204	MS	Stage 4		X						
440-95199-1	PC-123MSD	440-95199-1MSD	Water	20141204	MSD	Stage 4		X						
440-95199-1	PC-128	440-95199-2	Water	20141204		Stage 4		X					X	
440-95199-1	PC-129	440-95199-3	Water	20141204		Stage 4		X					X	

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-95199-1	PC-130	440-95199-4	Water	20141204		Stage 4		X					X	
440-95199-1	PC-131	440-95199-5	Water	20141204		Stage 4		X					X	
440-95199-1	PC-132	440-95199-6	Water	20141204		Stage 4		X					X	
440-95199-1	PC-124	440-95199-7	Water	20141204		Stage 4		X					X	
440-95199-1	PC-125	440-95199-8	Water	20141204		Stage 4		X					X	
440-95199-1	PC-126	440-95199-9	Water	20141204		Stage 4		X					X	
440-95199-1	PC-127	440-95199-10	Water	20141204		Stage 4		X					X	
440-95199-1	EB-1	440-95199-11	Water	20141204	EB	Stage 4		X	X				X	
440-95199-1	EB-1DUP	440-95199-11DUP	Water	20141204	DUP	Stage 4								
440-95199-1	EB-1MS	440-95199-11MS	Water	20141204	MS	Stage 4		X						
440-95199-1	EB-1MSD	440-95199-11MSD	Water	20141204	MSD	Stage 4		X						
440-95199-1	PC-54	440-95199-12	Water	20141204		Stage 4		X					X	
440-95199-1	M-48A	440-95199-13	Water	20141204		Stage 4		X					X	
440-95199-1	M-44	440-95199-14	Water	20141204		Stage 4		X	X				X	
440-95199-1	PC-71	440-95199-15	Water	20141204		Stage 4		X					X	
440-95199-1	PC-71DUP	440-95199-15DUP	Water	20141204	DUP	Stage 4								
440-95199-1	PC-72	440-95199-16	Water	20141204		Stage 4		X					X	
440-95199-1	PC-73	440-95199-17	Water	20141204		Stage 4		X					X	
440-95253-1	M-64	440-95253-1	Water	20141203		Stage 2B		X					X	
440-95253-1	M-65	440-95253-2	Water	20141203		Stage 2B		X					X	
440-95253-1	M-66	440-95253-3	Water	20141203		Stage 2B		X					X	
440-95253-1	FB-1	440-95253-4	Water	20141203	FB	Stage 2B		X	X				X	
440-95253-1	M-79	440-95253-5	Water	20141203		Stage 2B		X					X	
440-95253-1	M-131	440-95253-6	Water	20141203	FD5	Stage 2B		X					X	
440-95253-1	DUP-2	440-95253-7	Water	20141203	FD5	Stage 2B		X					X	
440-95437-1	M-94	440-95437-1	Water	20141205		Stage 2B		X					X	
440-95437-1	M-94DUP	440-95437-1DUP	Water	20141205	DUP	Stage 2B								
440-95437-1	M-94MS	440-95437-1MS	Water	20141205	MS	Stage 2B		X						
440-95437-1	M-94MSD	440-95437-1MSD	Water	20141205	MSD	Stage 2B		X						
440-95437-1	PC-148	440-95437-2	Water	20141205		Stage 2B		X					X	
440-95437-1	PC-149	440-95437-3	Water	20141205		Stage 2B		X					X	
440-95437-1	PC-136	440-95437-4	Water	20141205		Stage 2B		X					X	
440-95437-1	PC-135A	440-95437-5	Water	20141205		Stage 2B		X					X	
440-95437-1	PC-135ADUP	440-95437-5DUP	Water	20141205	DUP	Stage 2B								
440-95437-1	PC-37	440-95437-6	Water	20141205		Stage 2B		X					X	

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-95437-1	M-23	440-95437-7	Water	20141205	FD6	Stage 2B		X					X	
440-95437-1	M-95	440-95437-8	Water	20141205		Stage 2B		X	X				X	
440-95437-1	EB-2	440-95437-9	Water	20141205	EB	Stage 2B		X	X				X	
440-95437-1	DUP-1	440-95437-10	Water	20141205	FD6	Stage 2B		X					X	
440-95437-1	M-57A	440-95437-11	Water	20141205		Stage 2B		X					X	
440-95437-1	M-57AMS	440-95437-11MS	Water	20141205	MS	Stage 2B		X						
440-95437-1	M-57AMSD	440-95437-11MSD	Water	20141205	MSD	Stage 2B		X						
440-95437-1	M-37	440-95437-12	Water	20141205		Stage 2B		X	X				X	
440-95437-1	M-37MS	440-95437-12MS	Water	20141205	MS	Stage 2B			X					
440-95437-1	M-37MSD	440-95437-12MSD	Water	20141205	MSD	Stage 2B			X					
440-95800-1	M-14A	440-95800-1	Water	20141208		Stage 2B		X					X	
440-95800-1	M-14AMS	440-95800-1MS	Water	20141208	MS	Stage 2B		X						
440-95800-1	M-14AMSD	440-95800-1MSD	Water	20141208	MSD	Stage 2B		X						
440-95800-1	M-25	440-95800-2	Water	20141208		Stage 2B		X					X	
440-95800-1	M-22A	440-95800-3	Water	20141208		Stage 2B		X					X	
440-95800-1	M-70	440-95800-4	Water	20141208		Stage 2B		X					X	
440-95800-1	M-71	440-95800-5	Water	20141208		Stage 2B		X					X	
440-95800-1	M-72	440-95800-6	Water	20141208		Stage 2B		X					X	
440-95800-1	M-72DUP	440-95800-6DUP	Water	20141208	DUP	Stage 2B								
440-95800-1	M-99	440-95800-7	Water	20141208		Stage 2B		X					X	
440-95800-1	M-68	440-95800-8	Water	20141208		Stage 2B		X					X	
440-95800-1	M-67	440-95800-9	Water	20141208		Stage 2B		X					X	
440-95800-1	M-67DUP	440-95800-9DUP	Water	20141208	DUP	Stage 2B								
440-95800-1	M-38	440-95800-10	Water	20141208	FD7	Stage 2B		X	X				X	
440-95800-1	DUP-3	440-95800-11	Water	20141208	FD7	Stage 2B		X	X				X	
440-95800-1	DUP-3MS	440-95800-11MS	Water	20141208	MS	Stage 2B		X						
440-95800-1	DUP-3MSD	440-95800-11MSD	Water	20141208	MSD	Stage 2B		X						
440-95801-1	M-10	440-95801-1	Water	20141208		Stage 4	X		X	X	X	X	X	X
440-95801-1	M-10DL	440-95801-1DL	Water	20141208	DL	Stage 4				X				
440-95801-1	M-10MS	440-95801-1MS	Water	20141208	MS	Stage 4			X	X				
440-95801-1	M-10MSD	440-95801-1MSD	Water	20141208	MSD	Stage 4			X	X				
440-96212-1	M-69	440-96212-1	Water	20141209		Stage 2B		X					X	
440-96212-1	M-69DUP	440-96212-1DUP	Water	20141209	DUP	Stage 2B								
440-96212-1	M-135	440-96212-2	Water	20141209		Stage 2B		X					X	
440-96212-1	M-31A	440-96212-3	Water	20141209		Stage 2B		X					X	

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SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-96212-1	M-31ADUP	440-96212-3DUP	Water	20141209	DUP	Stage 2B								
440-96212-1	M-52	440-96212-4	Water	20141209		Stage 2B		X					X	
440-96212-1	M-73	440-96212-5	Water	20141209		Stage 2B		X					X	
440-97242-1	M-81A	440-97242-1	Water	20141218		Stage 2B		X					X	
440-97242-1	M-81AMS	440-97242-1MS	Water	20141218	MS	Stage 2B		X						
440-97242-1	M-81AMSD	440-97242-1MSD	Water	20141218	MSD	Stage 2B		X						
440-97242-1	M-80	440-97242-2	Water	20141218		Stage 2B		X					X	
440-97242-1	M-74	440-97242-3	Water	20141218		Stage 2B		X					X	
440-97242-1	M-35	440-97242-4	Water	20141218		Stage 2B		X					X	
440-97242-1	M-19	440-97242-5	Water	20141218		Stage 2B		X					X	
440-97242-1	M-12A	440-97242-6	Water	20141218	FD8	Stage 2B		X	X				X	
440-97242-1	M-11	440-97242-7	Water	20141218		Stage 2B		X	X				X	
440-97242-1	DUP-4	440-97242-8	Water	20141218	FD8	Stage 2B		X	X				X	
440-97242-1	DUP-4DUP	440-97242-8DUP	Water	20141218	DUP	Stage 2B								
440-97504-1	PC-97	440-97504-1	Water	20141222		Stage 2B							X	
440-97504-1	PC-97DUP	440-97504-1DUP	Water	20141222	DUP	Stage 2B								
440-97504-1	PC-90	440-97504-2	Water	20141222		Stage 2B							X	
440-97504-1	PC-91	440-97504-3	Water	20141222		Stage 2B							X	
440-97504-1	PC-58	440-97504-4	Water	20141222		Stage 2B							X	
440-97504-1	PC-56	440-97504-5	Water	20141222		Stage 2B							X	
440-97504-1	PC-60	440-97504-6	Water	20141222		Stage 2B							X	
440-97504-1	PC-59	440-97504-7	Water	20141222		Stage 2B							X	
440-97504-1	PC-62	440-97504-8	Water	20141222		Stage 2B							X	
440-97504-1	PC-68	440-97504-9	Water	20141222		Stage 2B							X	
440-97504-1	PC-86	440-97504-10	Water	20141222		Stage 2B							X	
440-97504-1	MEB-1	440-97504-11	Water	20141222	EB	Stage 2B							X	
440-97847-1	PC-53	440-97847-1	Water	20141229		Stage 2B							X	
440-97847-1	PC-53DUP	440-97847-1DUP	Water	20141229	DUP	Stage 2B								
440-97847-1	MW-K5	440-97847-2	Water	20141229		Stage 2B							X	
440-97847-1	ARP-7	440-97847-3	Water	20141229		Stage 2B							X	
440-97847-1	ARP-6B	440-97847-4	Water	20141229		Stage 2B							X	
440-97847-1	ARP-5A	440-97847-5	Water	20141229		Stage 2B							X	
440-97847-1	ARP-4A	440-97847-6	Water	20141229		Stage 2B							X	
440-97847-1	PC-101R	440-97847-7	Water	20141229		Stage 2B							X	
440-97847-1	MW-K4	440-97847-8	Water	20141229		Stage 2B							X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Metals (200.7)	Cr (200.7)	Cr ⁶⁺ (218.6)	Cl,SO ₄ ,NO ₃ -N,NO ₂ -N (300.0)	NO ₃ /NO ₂ -N (353.2)	ClO ₃ (300.1)	ClO ₄ (314.0)	NH ₃ -N (350.1)
440-97847-1	ARP-3A	440-97847-9	Water	20141229		Stage 2B							X	
440-97847-1	ARP-2A	440-97847-10	Water	20141229		Stage 2B							X	
440-98043-1	M-83	440-98043-1	Water	20141230		Stage 2B							X	
440-98043-1	PC-18	440-98043-2	Water	20141230		Stage 2B							X	
440-98043-1	ARP-1	440-98043-3	Water	20141230		Stage 2B							X	
440-98043-1	PC-103	440-98043-4	Water	20141230		Stage 2B							X	
440-98043-1	PC-103DUP	440-98043-4DUP	Water	20141230	DUP	Stage 2B								
440-98043-1	PC-98R	440-98043-5	Water	20141230		Stage 2B							X	
440-98043-1	PC-55	440-98043-6	Water	20141230		Stage 2B							X	
440-98043-1	PC-122	440-98043-7	Water	20141230		Stage 2B							X	

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-82280-1	ART-1	440-82280-1	Water	20140701		Stage 2B				X			
440-82280-1	ART-1DUP	440-82280-1DUP	Water	20140701	DUP	Stage 2B				X			
440-82280-1	ART-2	440-82280-2	Water	20140701		Stage 2B				X			
440-82280-1	ART-3	440-82280-3	Water	20140701		Stage 2B				X			
440-82280-1	ART-4	440-82280-4	Water	20140701		Stage 2B				X			
440-82280-1	ART-6	440-82280-5	Water	20140701		Stage 2B				X			
440-82280-1	ART-7	440-82280-6	Water	20140701		Stage 2B				X			
440-82280-1	ART-8	440-82280-7	Water	20140701		Stage 2B				X			
440-82280-1	ART-9	440-82280-8	Water	20140701		Stage 2B				X			
440-82280-1	PC-99R2/R3	440-82280-9	Water	20140701		Stage 2B				X			
440-82280-1	PC-115R	440-82280-10	Water	20140701		Stage 2B				X			
440-82280-1	PC-116R	440-82280-11	Water	20140701		Stage 2B				X			
440-82280-1	PC-116RDUP	440-82280-11DUP	Water	20140701	DUP	Stage 2B				X			
440-82280-1	PC-117	440-82280-12	Water	20140701		Stage 2B				X			
440-82280-1	PC-118	440-82280-13	Water	20140701		Stage 2B				X			
440-82280-1	PC-119	440-82280-14	Water	20140701		Stage 2B				X			
440-82280-1	PC-120	440-82280-15	Water	20140701		Stage 2B				X			
440-82280-1	PC-121	440-82280-16	Water	20140701		Stage 2B				X			
440-82280-1	PC-133	440-82280-17	Water	20140701		Stage 2B				X			
440-82772-1	PC-97	440-82772-1	Water	20140708		Stage 2B				X			
440-82772-1	PC-97DUP	440-82772-1DUP	Water	20140708	DUP	Stage 2B				X			
440-82772-1	PC-90	440-82772-2	Water	20140708		Stage 2B				X			
440-82772-1	PC-91	440-82772-3	Water	20140708		Stage 2B				X			
440-82772-1	PC-58	440-82772-4	Water	20140708		Stage 2B				X			
440-82772-1	PC-56	440-82772-5	Water	20140708		Stage 2B				X			
440-82772-1	PC-60	440-82772-6	Water	20140708		Stage 2B				X			
440-82772-1	PC-59	440-82772-7	Water	20140708		Stage 2B				X			
440-82772-1	PC-62	440-82772-8	Water	20140708		Stage 2B				X			
440-82772-1	PC-68	440-82772-9	Water	20140708		Stage 2B				X			
440-82772-1	ARP-1	440-82772-10	Water	20140708		Stage 2B				X			
440-82772-1	PC-18	440-82772-11	Water	20140708		Stage 2B				X			
440-82772-1	PC-18DUP	440-82772-11DUP	Water	20140708	DUP	Stage 2B				X			
440-82772-1	EB-1	440-82772-12	Water	20140708	EB	Stage 2B							
440-82778-1	PC-122	440-82778-1	Water	20140709		Stage 2B				X			
440-82778-1	PC-122DUP	440-82778-1DUP	Water	20140709	DUP	Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-82778-1	PC-53	440-82778-2	Water	20140709		Stage 2B				X			
440-82778-1	MW-K5	440-82778-3	Water	20140709		Stage 2B				X			
440-82778-1	ARP-7	440-82778-4	Water	20140709		Stage 2B				X			
440-82778-1	ARP-6B	440-82778-5	Water	20140709		Stage 2B				X			
440-82778-1	ARP-5A	440-82778-6	Water	20140709		Stage 2B				X			
440-82778-1	ARP-4A	440-82778-7	Water	20140709		Stage 2B				X			
440-82778-1	PC-101R	440-82778-8	Water	20140709		Stage 2B				X			
440-82778-1	MW-K4	440-82778-9	Water	20140709		Stage 2B				X			
440-82778-1	ARP-3A	440-82778-10	Water	20140709		Stage 2B				X			
440-82778-1	ARP-2A	440-82778-11	Water	20140709		Stage 2B				X			
440-82778-1	ARP-2ADUP	440-82778-11DUP	Water	20140709	DUP	Stage 2B				X			
440-82778-1	PC-103	440-82778-12	Water	20140709		Stage 2B				X			
440-82778-1	PC-98R	440-82778-13	Water	20140709		Stage 2B				X			
440-82778-1	M-83	440-82778-14	Water	20140709		Stage 2B				X			
440-82987-1	PC-86	440-82987-1	Water	20140710		Stage 2B				X			
440-82987-1	PC-55	440-82987-2	Water	20140710		Stage 2B				X			
440-84683-1	ART-1	440-84683-1	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-1DUP	440-84683-1DUP	Water	20140804	DUP	Stage 2B				X			
440-84683-1	ART-2	440-84683-2	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-3	440-84683-3	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-3DUP	440-84683-3DUP	Water	20140804	DUP	Stage 2B					X		
440-84683-1	ART-4	440-84683-4	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-6	440-84683-5	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-7	440-84683-6	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-7DUP	440-84683-6DUP	Water	20140804	DUP	Stage 2B					X		
440-84683-1	ART-8	440-84683-7	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-9	440-84683-8	Water	20140804		Stage 2B				X	X		
440-84683-1	ART-9MS	440-84683-8MS	Water	20140804	MS	Stage 2B							
440-84683-1	ART-9MSD	440-84683-8MSD	Water	20140804	MSD	Stage 2B							
440-84683-1	PC-99R2/R3	440-84683-9	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-115R	440-84683-10	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-116R	440-84683-11	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-116RDUP	440-84683-11DUP	Water	20140804	DUP	Stage 2B				X			
440-84683-1	PC-117	440-84683-12	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-118	440-84683-13	Water	20140804		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-84683-1	PC-119	440-84683-14	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-120	440-84683-15	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-121	440-84683-16	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-133	440-84683-17	Water	20140804		Stage 2B				X	X		
440-84683-1	PC-133DUP	440-84683-17DUP	Water	20140804	DUP	Stage 2B					X		
440-84834-1	PC-97	440-84834-1	Water	20140805		Stage 4				X	X		
440-84834-1	PC-90	440-84834-2	Water	20140805		Stage 4				X	X		
440-84834-1	PC-90DUP	440-84834-2DUP	Water	20140805	DUP	Stage 4				X			
440-84834-1	PC-91	440-84834-3	Water	20140805		Stage 4				X	X		
440-84834-1	PC-91MS	440-84834-3MS	Water	20140805	MS	Stage 4							
440-84834-1	PC-91MSD	440-84834-3MSD	Water	20140805	MSD	Stage 4							
440-84834-1	PC-94	440-84834-4	Water	20140805		Stage 4				X	X		
440-84834-1	PC-58	440-84834-5	Water	20140805		Stage 4				X	X		
440-84834-1	PC-56	440-84834-6	Water	20140805		Stage 4				X	X		
440-84834-1	PC-60	440-84834-7	Water	20140805		Stage 4				X	X		
440-84834-1	PC-59	440-84834-8	Water	20140805		Stage 4				X	X		
440-84834-1	PC-62	440-84834-9	Water	20140805		Stage 4				X	X		
440-84834-1	PC-68	440-84834-10	Water	20140805		Stage 4				X	X		
440-84834-1	PC-86	440-84834-11	Water	20140805		Stage 4				X	X		
440-84834-1	EB-M1	440-84834-12	Water	20140805	EB	Stage 4							
440-85159-1	ART-7B	440-85159-1	Water	20140807		Stage 2B				X	X		
440-85159-1	ART-7BDUP	440-85159-1DUP	Water	20140807	DUP	Stage 2B				X	X		
440-85159-1	PC-122	440-85159-2	Water	20140807		Stage 2B				X	X		
440-85159-1	PC-53	440-85159-3	Water	20140807		Stage 2B				X	X		
440-85159-1	MW-K5	440-85159-4	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-7	440-85159-5	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-6B	440-85159-6	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-5A	440-85159-7	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-4A	440-85159-8	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-4AMS	440-85159-8MS	Water	20140807	MS	Stage 2B							
440-85159-1	ARP-4AMSD	440-85159-8MSD	Water	20140807	MSD	Stage 2B							
440-85159-1	PC-101R	440-85159-9	Water	20140807		Stage 2B				X	X		
440-85159-1	MW-K4	440-85159-10	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-3A	440-85159-11	Water	20140807		Stage 2B				X	X		
440-85159-1	ARP-3ADUP	440-85159-11DUP	Water	20140807	DUP	Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-85159-1	ARP-2A	440-85159-12	Water	20140807		Stage 2B				X	X		
440-85159-1	PC-103	440-85159-13	Water	20140807		Stage 2B				X	X		
440-85159-1	PC-98R	440-85159-14	Water	20140807		Stage 2B				X	X		
440-85159-1	PC-98RDUP	440-85159-14DUP	Water	20140807	DUP	Stage 2B					X		
440-85240-1	PC-18	440-85240-1	Water	20140808		Stage 2B				X	X		
440-85240-1	PC-18DUP	440-85240-1DUP	Water	20140808	DUP	Stage 2B					X		
440-85240-1	ARP-1	440-85240-2	Water	20140808		Stage 2B				X	X		
440-85240-1	PC-55	440-85240-3	Water	20140808		Stage 2B				X	X		
440-85350-1	I-O	440-85350-1	Water	20140811		Stage 2B				X	X		
440-85350-1	I-ODUP	440-85350-1DUP	Water	20140811	DUP	Stage 2B				X	X		
440-85350-1	I-W	440-85350-2	Water	20140811		Stage 2B				X	X		
440-85350-1	I-WMS	440-85350-2MS	Water	20140811	MS	Stage 2B							
440-85350-1	I-WMSD	440-85350-2MSD	Water	20140811	MSD	Stage 2B							
440-85350-1	I-P	440-85350-3	Water	20140811		Stage 2B				X	X		
440-85350-1	I-H	440-85350-4	Water	20140811		Stage 2B				X	X		
440-85350-1	I-U	440-85350-5	Water	20140811		Stage 2B				X	X		
440-85350-1	I-T	440-85350-6	Water	20140811		Stage 2B				X	X		
440-85350-1	I-G	440-85350-7	Water	20140811		Stage 2B				X	X		
440-85350-1	I-Q	440-85350-8	Water	20140811		Stage 2B				X	X		
440-85350-1	I-F	440-85350-9	Water	20140811		Stage 2B				X	X		
440-85350-1	I-X	440-85350-10	Water	20140811		Stage 2B				X	X		
440-85350-1	I-N	440-85350-11	Water	20140811		Stage 2B				X	X		
440-85350-1	I-NDUP	440-85350-11DUP	Water	20140811	DUP	Stage 2B				X			
440-85350-1	I-E	440-85350-12	Water	20140811		Stage 2B				X	X		
440-85350-1	I-EMS	440-85350-12MS	Water	20140811	MS	Stage 2B							
440-85350-1	I-EMSD	440-85350-12MSD	Water	20140811	MSD	Stage 2B							
440-85350-1	I-M	440-85350-13	Water	20140811		Stage 2B				X	X		
440-85350-1	I-D	440-85350-14	Water	20140811		Stage 2B				X	X		
440-85350-1	I-C	440-85350-15	Water	20140811		Stage 2B				X	X		
440-85350-1	I-S	440-85350-16	Water	20140811		Stage 2B				X	X		
440-85350-1	I-L	440-85350-17	Water	20140811		Stage 2B				X	X		
440-85350-1	I-Y	440-85350-18	Water	20140811		Stage 2B				X	X		
440-85350-1	I-YDUP	440-85350-18DUP	Water	20140811	DUP	Stage 2B					X		
440-85350-1	I-R	440-85350-19	Water	20140811		Stage 2B				X	X		
440-85350-1	I-B	440-85350-20	Water	20140811		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-85350-1	I-AA	440-85350-21	Water	20140811		Stage 2B				X	X		
440-85350-1	I-AADUP	440-85350-21DUP	Water	20140811	DUP	Stage 2B					X		
440-85350-1	I-AR	440-85350-22	Water	20140811		Stage 2B				X	X		
440-85492-1	M-64	440-85492-1	Water	20140812		Stage 2B				X	X		
440-85492-1	M-64DUP	440-85492-1DUP	Water	20140812	DUP	Stage 2B				X			
440-85492-1	M-64MS	440-85492-1MS	Water	20140812	MS	Stage 2B							
440-85492-1	M-64MSD	440-85492-1MSD	Water	20140812	MSD	Stage 2B							
440-85492-1	M-65	440-85492-2	Water	20140812		Stage 2B				X	X		
440-85492-1	M-66	440-85492-3	Water	20140812		Stage 2B				X	X		
440-85492-1	M-79	440-85492-4	Water	20140812		Stage 2B				X	X		
440-85492-1	M-69	440-85492-5	Water	20140812		Stage 2B				X	X		
440-85492-1	M-135	440-85492-6	Water	20140812		Stage 2B				X	X		
440-85492-1	M-131	440-85492-7	Water	20140812		Stage 2B				X	X		
440-85492-1	M-57A	440-85492-8	Water	20140812		Stage 2B				X	X		
440-85492-1	M-70	440-85492-9	Water	20140812		Stage 2B				X	X		
440-85492-1	M-71	440-85492-10	Water	20140812		Stage 2B				X	X		
440-85492-1	M-72	440-85492-11	Water	20140812		Stage 2B				X	X		
440-85492-1	M-72DUP	440-85492-11DUP	Water	20140812	DUP	Stage 2B				X			
440-85492-1	M-72MS	440-85492-11MS	Water	20140812	MS	Stage 2B							
440-85492-1	M-72MSD	440-85492-11MSD	Water	20140812	MSD	Stage 2B							
440-85492-1	M-22A	440-85492-12	Water	20140812		Stage 2B				X	X		
440-85492-1	M-14A	440-85492-13	Water	20140812		Stage 2B				X	X		
440-85492-1	M-25	440-85492-14	Water	20140812		Stage 2B				X	X		
440-85492-1	M-37	440-85492-15	Water	20140812		Stage 2B				X	X		
440-85492-1	FB-1	440-85492-16	Water	20140812	FB	Stage 2B				X	X		
440-85492-1	M-38	440-85492-17	Water	20140812		Stage 2B				X	X		
440-85492-1	M-99	440-85492-18	Water	20140812		Stage 2B				X	X		
440-85492-1	M-99DUP	440-85492-18DUP	Water	20140812	DUP	Stage 2B					X		
440-85496-1	M-5A	440-85496-1	Water	20140812		Stage 2B	X		X	X	X	X	X
440-85496-1	M-7B	440-85496-2	Water	20140812		Stage 2B	X		X	X	X	X	X
440-85496-1	M-7BMS	440-85496-2MS	Water	20140812	MS	Stage 2B							X
440-85496-1	M-7BMSD	440-85496-2MSD	Water	20140812	MSD	Stage 2B							X
440-85653-1	PC-123	440-85653-140	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-123DUP	440-85653-140DUP	Water	20140813	DUP	Stage 2B					X		
440-85653-1	PC-123MS	440-85653-140MS	Water	20140813	MS	Stage 2B							

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-85653-1	PC-123MSD	440-85653-140MSD	Water	20140813	MSD	Stage 2B							
440-85653-1	PC-128	440-85653-141	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-129	440-85653-142	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-129DUP	440-85653-142DUP	Water	20140813	DUP	Stage 2B				X			
440-85653-1	PC-130	440-85653-143	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-132	440-85653-144	Water	20140813	FD1	Stage 2B				X	X		
440-85653-1	PC-131	440-85653-145	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-124	440-85653-146	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-126	440-85653-147	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-125	440-85653-148	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-125DUP	440-85653-148DUP	Water	20140813	DUP	Stage 2B				X			
440-85653-1	PC-127	440-85653-149	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-54	440-85653-150	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-54MS	440-85653-150MS	Water	20140813	MS	Stage 2B							
440-85653-1	PC-54MSD	440-85653-150MSD	Water	20140813	MSD	Stage 2B							
440-85653-1	M-48A	440-85653-151	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-71	440-85653-152	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-72	440-85653-153	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-73	440-85653-154	Water	20140813		Stage 2B				X	X		
440-85653-1	M-23	440-85653-155	Water	20140813		Stage 2B				X	X		
440-85653-1	M-95	440-85653-156	Water	20140813		Stage 2B				X	X		
440-85653-1	M-44	440-85653-157	Water	20140813		Stage 2B				X	X		
440-85653-1	M-44DUP	440-85653-157DUP	Water	20140813	DUP	Stage 2B					X		
440-85653-1	DUP-1	440-85653-158	Water	20140813	FD1	Stage 2B				X	X		
440-85653-1	DUP-1DUP	440-85653-158DUP	Water	20140813	DUP	Stage 2B				X			
440-85653-1	EB-1	440-85653-159	Water	20140813	EB	Stage 2B				X	X		
440-85653-1	PC-37	440-85653-160	Water	20140813		Stage 2B				X	X		
440-85653-1	PC-37DUP	440-85653-160DUP	Water	20140813	DUP	Stage 2B					X		
440-85655-1	H-28A	440-85655-1	Water	20140813		Stage 2B	X		X	X	X	X	X
440-85655-1	H-28AMS	440-85655-1MS	Water	20140813	MS	Stage 2B						X	
440-85655-1	H-28AMSD	440-85655-1MSD	Water	20140813	MSD	Stage 2B						X	
440-85655-1	M-6A	440-85655-2	Water	20140813		Stage 2B	X		X	X	X	X	X
440-85655-1	M-6AMS	440-85655-2MS	Water	20140813	MS	Stage 2B							X
440-85655-1	M-6AMSD	440-85655-2MSD	Water	20140813	MSD	Stage 2B							X
440-85776-1	M-31A	440-85776-1	Water	20140814		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-85776-1	M-31ADUP	440-85776-1DUP	Water	20140814	DUP	Stage 2B				X	X		
440-85776-1	M-31AMS	440-85776-1MS	Water	20140814	MS	Stage 2B							
440-85776-1	M-31AMSD	440-85776-1MSD	Water	20140814	MSD	Stage 2B							
440-85776-1	M-52	440-85776-2	Water	20140814		Stage 2B				X	X		
440-85776-1	M-35	440-85776-3	Water	20140814		Stage 2B				X	X		
440-85776-1	M-19	440-85776-4	Water	20140814		Stage 2B				X	X		
440-85776-1	M-68	440-85776-5	Water	20140814		Stage 2B				X	X		
440-85776-1	M-67	440-85776-6	Water	20140814		Stage 2B				X	X		
440-85776-1	M-74	440-85776-7	Water	20140814		Stage 2B				X	X		
440-85776-1	M-73	440-85776-8	Water	20140814		Stage 2B				X	X		
440-85776-1	I-K	440-85776-9	Water	20140814		Stage 2B				X	X		
440-85776-1	I-J	440-85776-10	Water	20140814		Stage 2B				X	X		
440-85776-1	I-Z	440-85776-11	Water	20140814		Stage 2B				X	X		
440-85776-1	I-ZDUP	440-85776-11DUP	Water	20140814	DUP	Stage 2B				X			
440-85776-1	I-ZMS	440-85776-11MS	Water	20140814	MS	Stage 2B							
440-85776-1	I-ZMSD	440-85776-11MSD	Water	20140814	MSD	Stage 2B							
440-85776-1	I-I	440-85776-12	Water	20140814		Stage 2B				X	X		
440-85776-1	I-V	440-85776-13	Water	20140814		Stage 2B				X	X		
440-85776-1	I-AD	440-85776-14	Water	20140814		Stage 2B				X	X		
440-85776-1	M-80	440-85776-15	Water	20140814		Stage 2B				X	X		
440-85776-1	M-81A	440-85776-16	Water	20140814		Stage 2B				X	X		
440-85776-1	M-83	440-85776-17	Water	20140814		Stage 2B				X	X		
440-85776-1	M-12A	440-85776-18	Water	20140814	FD2	Stage 2B				X	X		
440-85776-1	M-12ADUP	440-85776-18DUP	Water	20140814	DUP	Stage 2B					X		
440-85776-1	EB-2	440-85776-19	Water	20140814	EB	Stage 2B				X	X		
440-85776-1	DUP-3	440-85776-20	Water	20140814	FD2	Stage 2B				X	X		
440-85889-1	M-10	440-85889-1	Water	20140815		Stage 2B		X		X	X		
440-85889-1	M-10DUP	440-85889-1DUP	Water	20140815	DUP	Stage 2B					X		
440-85889-1	M-10MS	440-85889-1MS	Water	20140815	MS	Stage 2B							
440-85889-1	M-10MSD	440-85889-1MSD	Water	20140815	MSD	Stage 2B							
440-85890-1	PC-148	440-85890-1	Water	20140815		Stage 2B				X	X		
440-85890-1	PC-148DUP	440-85890-1DUP	Water	20140815	DUP	Stage 2B				X			
440-85890-1	PC-149	440-85890-2	Water	20140815		Stage 2B				X	X		
440-85890-1	PC-150	440-85890-3	Water	20140815	FD3	Stage 2B				X	X		
440-85890-1	PC-136	440-85890-4	Water	20140815		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-85890-1	PC-136MS	440-85890-4MS	Water	20140815	MS	Stage 2B							
440-85890-1	PC-136MSD	440-85890-4MSD	Water	20140815	MSD	Stage 2B							
440-85890-1	PC-144	440-85890-5	Water	20140815		Stage 2B				X	X		
440-85890-1	PC-135A	440-85890-6	Water	20140815		Stage 2B				X	X		
440-85890-1	M-11	440-85890-7	Water	20140815	FD4	Stage 2B				X	X		
440-85890-1	DUP-2	440-85890-8	Water	20140815	FD3	Stage 2B				X	X		
440-85890-1	DUP-4	440-85890-9	Water	20140815	FD4	Stage 2B				X	X		
440-87226-1	ART-1	440-87226-1	Water	20140903		Stage 4				X			
440-87226-1	ART-1DUP	440-87226-1DUP	Water	20140903	DUP	Stage 4				X			
440-87226-1	ART-2	440-87226-2	Water	20140903		Stage 4				X			
440-87226-1	ART-3	440-87226-3	Water	20140903		Stage 4				X			
440-87226-1	ART-4	440-87226-4	Water	20140903		Stage 4				X			
440-87226-1	ART-6	440-87226-5	Water	20140903		Stage 4				X			
440-87226-1	ART-7	440-87226-6	Water	20140903		Stage 4				X			
440-87226-1	ART-8	440-87226-7	Water	20140903		Stage 4				X			
440-87226-1	ART-9	440-87226-8	Water	20140903		Stage 4				X			
440-87226-1	PC-99R2/R3	440-87226-9	Water	20140903		Stage 4				X			
440-87226-1	PC-115R	440-87226-10	Water	20140903		Stage 4				X			
440-87226-1	PC-116R	440-87226-11	Water	20140903		Stage 4				X			
440-87226-1	PC-116RDUP	440-87226-11DUP	Water	20140903	DUP	Stage 4				X			
440-87226-1	PC-117	440-87226-12	Water	20140903		Stage 4				X			
440-87226-1	PC-118	440-87226-13	Water	20140903		Stage 4				X			
440-87226-1	PC-119	440-87226-14	Water	20140903		Stage 4				X			
440-87226-1	PC-120	440-87226-15	Water	20140903		Stage 4				X			
440-87226-1	PC-121	440-87226-16	Water	20140903		Stage 4				X			
440-87226-1	PC-133	440-87226-17	Water	20140903		Stage 4				X			
440-87925-1	PC-97	440-87925-1	Water	20140910		Stage 2B				X			
440-87925-1	PC-97DUP	440-87925-1DUP	Water	20140910	DUP	Stage 2B				X			
440-87925-1	PC-90	440-87925-2	Water	20140910		Stage 2B				X			
440-87925-1	PC-91	440-87925-3	Water	20140910		Stage 2B				X			
440-87925-1	PC-58	440-87925-4	Water	20140910		Stage 2B				X			
440-87925-1	PC-56	440-87925-5	Water	20140910		Stage 2B				X			
440-87925-1	PC-60	440-87925-6	Water	20140910		Stage 2B				X			
440-87925-1	PC-59	440-87925-7	Water	20140910		Stage 2B				X			
440-87925-1	PC-62	440-87925-8	Water	20140910		Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-87925-1	PC-68	440-87925-9	Water	20140910		Stage 2B				X			
440-87925-1	PC-86	440-87925-10	Water	20140910		Stage 2B				X			
440-87925-1	PC-18	440-87925-11	Water	20140910		Stage 2B				X			
440-87925-1	PC-18DUP	440-87925-11DUP	Water	20140910	DUP	Stage 2B				X			
440-87925-1	ARP-1	440-87925-12	Water	20140910		Stage 2B				X			
440-87966-1	M-83	440-87966-1	Water	20140911		Stage 2B				X			
440-87966-1	M-83DUP	440-87966-1DUP	Water	20140911	DUP	Stage 2B				X			
440-87966-1	PC-53	440-87966-2	Water	20140911		Stage 2B				X			
440-87966-1	MW-K5	440-87966-3	Water	20140911		Stage 2B				X			
440-87966-1	ARP-7	440-87966-4	Water	20140911		Stage 2B				X			
440-87966-1	ARP-6B	440-87966-5	Water	20140911		Stage 2B				X			
440-87966-1	ARP-5A	440-87966-6	Water	20140911		Stage 2B				X			
440-87966-1	ARP-4A	440-87966-7	Water	20140911		Stage 2B				X			
440-87966-1	PC-101R	440-87966-8	Water	20140911		Stage 2B				X			
440-87966-1	MW-K4	440-87966-9	Water	20140911		Stage 2B				X			
440-87966-1	MEB-1	440-87966-10	Water	20140911	EB	Stage 2B							
440-87966-1	ARP-3A	440-87966-11	Water	20140911		Stage 2B				X			
440-87966-1	ARP-2A	440-87966-12	Water	20140911		Stage 2B				X			
440-87966-1	ARP-2ADUP	440-87966-12DUP	Water	20140911	DUP	Stage 2B				X			
440-87966-1	PC-103	440-87966-13	Water	20140911		Stage 2B				X			
440-87966-1	PC-98R	440-87966-14	Water	20140911		Stage 2B				X			
440-88032-1	PC-122	440-88032-1	Water	20140912		Stage 2B				X			
440-88032-1	PC-55	440-88032-2	Water	20140912		Stage 2B				X			
440-90069-1	ART-1	440-90069-1	Water	20141007		Stage 2B				X			
440-90069-1	ART-1DUP	440-90069-1DUP	Water	20141007	DUP	Stage 2B				X			
440-90069-1	ART-2	440-90069-2	Water	20141007		Stage 2B				X			
440-90069-1	ART-3	440-90069-3	Water	20141007		Stage 2B				X			
440-90069-1	ART-4	440-90069-4	Water	20141007		Stage 2B				X			
440-90069-1	ART-6	440-90069-5	Water	20141008		Stage 2B				X			
440-90069-1	ART-7	440-90069-6	Water	20141007		Stage 2B				X			
440-90069-1	ART-8	440-90069-7	Water	20141007		Stage 2B				X			
440-90069-1	ART-9	440-90069-8	Water	20141007		Stage 2B				X			
440-90069-1	PC-99R2/R3	440-90069-9	Water	20141007		Stage 2B				X			
440-90069-1	PC-115R	440-90069-10	Water	20141007		Stage 2B				X			
440-90069-1	PC-116R	440-90069-11	Water	20141007		Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-90069-1	PC-116RDUP	440-90069-11DUP	Water	20141007	DUP	Stage 2B				X			
440-90069-1	PC-117	440-90069-12	Water	20141007		Stage 2B				X			
440-90069-1	PC-118	440-90069-13	Water	20141007		Stage 2B				X			
440-90069-1	PC-119	440-90069-14	Water	20141007		Stage 2B				X			
440-90069-1	PC-120	440-90069-15	Water	20141007		Stage 2B				X			
440-90069-1	PC-121	440-90069-16	Water	20141007		Stage 2B				X			
440-90069-1	PC-133	440-90069-17	Water	20141007		Stage 2B				X			
440-90694-1	M-83	440-90694-1	Water	20141014		Stage 2B				X			
440-90694-1	PC-97	440-90694-2	Water	20141014		Stage 2B				X			
440-90694-1	PC-97DUP	440-90694-2DUP	Water	20141014	DUP	Stage 2B				X			
440-90694-1	PC-90	440-90694-3	Water	20141014		Stage 2B				X			
440-90694-1	PC-91	440-90694-4	Water	20141014		Stage 2B				X			
440-90694-1	PC-58	440-90694-5	Water	20141014		Stage 2B				X			
440-90694-1	PC-56	440-90694-6	Water	20141014		Stage 2B				X			
440-90694-1	PC-60	440-90694-7	Water	20141014		Stage 2B				X			
440-90694-1	PC-59	440-90694-8	Water	20141014		Stage 2B				X			
440-90694-1	PC-62	440-90694-9	Water	20141014		Stage 2B				X			
440-90694-1	PC-68	440-90694-10	Water	20141014		Stage 2B				X			
440-90694-1	PC-86	440-90694-11	Water	20141014		Stage 2B				X			
440-90694-1	EB-1	440-90694-12	Water	20141014	EB	Stage 2B							
440-90694-1	PC-18	440-90694-13	Water	20141014		Stage 2B				X			
440-90694-1	PC-18DUP	440-90694-13DUP	Water	20141014	DUP	Stage 2B				X			
440-90694-1	ARP-1	440-90694-14	Water	20141014		Stage 2B				X			
440-90694-1	PC-122	440-90694-15	Water	20141015		Stage 2B				X			
440-90694-1	PC-53	440-90694-16	Water	20141015		Stage 2B				X			
440-90694-1	MW-K5	440-90694-17	Water	20141015		Stage 2B				X			
440-90694-1	ARP-7	440-90694-18	Water	20141015		Stage 2B				X			
440-90694-1	ARP-6B	440-90694-19	Water	20141015		Stage 2B				X			
440-90694-1	ARP-5A	440-90694-20	Water	20141015		Stage 2B				X			
440-90694-1	ARP-4A	440-90694-21	Water	20141015		Stage 2B				X			
440-90694-1	PC-101R	440-90694-22	Water	20141015		Stage 2B				X			
440-90694-1	MW-K4	440-90694-23	Water	20141015		Stage 2B				X			
440-90694-1	MW-K4DUP	440-90694-23DUP	Water	20141015	DUP	Stage 2B				X			
440-90694-1	ARP-3A	440-90694-24	Water	20141015		Stage 2B				X			
440-90694-1	ARP-2A	440-90694-25	Water	20141015		Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-90694-1	PC-103	440-90694-26	Water	20141015		Stage 2B				X			
440-90694-1	PC-98R	440-90694-27	Water	20141015		Stage 2B				X			
440-90694-1	PC-55	440-90694-28	Water	20141015		Stage 2B				X			
440-92039-1	ART-1	440-92039-1	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-1DUP	440-92039-1DUP	Water	20141103	DUP	Stage 2B				X			
440-92039-1	ART-1MS	440-92039-1MS	Water	20141103	MS	Stage 2B							
440-92039-1	ART-1MSD	440-92039-1MSD	Water	20141103	MSD	Stage 2B							
440-92039-1	ART-2	440-92039-2	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-3	440-92039-3	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-3MS	440-92039-3MS	Water	20141103	MS	Stage 2B							
440-92039-1	ART-3MSD	440-92039-3MSD	Water	20141103	MSD	Stage 2B							
440-92039-1	ART-4	440-92039-4	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-6	440-92039-5	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-7B	440-92039-6	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-8	440-92039-7	Water	20141103		Stage 2B				X	X		
440-92039-1	ART-9	440-92039-8	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-99R2/R3	440-92039-9	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-115R	440-92039-10	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-116R	440-92039-11	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-116RDUP	440-92039-11DUP	Water	20141103	DUP	Stage 2B				X			
440-92039-1	PC-117	440-92039-12	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-118	440-92039-13	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-119	440-92039-14	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-120	440-92039-15	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-121	440-92039-16	Water	20141103		Stage 2B				X	X		
440-92039-1	PC-121DUP	440-92039-16DUP	Water	20141103	DUP	Stage 2B					X		
440-92039-1	PC-133	440-92039-17	Water	20141103		Stage 2B				X	X		
440-93300-1	PC-150	440-93300-1	Water	20141113		Stage 2B				X	X		
440-93300-1	PC-150DUP	440-93300-1DUP	Water	20141113	DUP	Stage 2B					X		
440-94207-1	M-83	440-94207-1	Water	20141124		Stage 2B				X	X		
440-94207-1	M-83DUP	440-94207-1DUP	Water	20141124	DUP	Stage 2B				X			
440-94207-1	M-83MS	440-94207-1MS	Water	20141124	MS	Stage 2B							
440-94207-1	M-83MSD	440-94207-1MSD	Water	20141124	MSD	Stage 2B							
440-94207-1	PC-97	440-94207-2	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-90	440-94207-3	Water	20141124		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-94207-1	PC-91	440-94207-4	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-58	440-94207-5	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-56	440-94207-6	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-60	440-94207-7	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-59	440-94207-8	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-62	440-94207-9	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-68	440-94207-10	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-86	440-94207-11	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-86DUP	440-94207-11DUP	Water	20141124	DUP	Stage 2B				X			
440-94207-1	PC-86MS	440-94207-11MS	Water	20141124	MS	Stage 2B							
440-94207-1	PC-86MSD	440-94207-11MSD	Water	20141124	MSD	Stage 2B							
440-94207-1	PC-18	440-94207-12	Water	20141124		Stage 2B				X	X		
440-94207-1	PC-18DUP	440-94207-12DUP	Water	20141124	DUP	Stage 2B					X		
440-94339-1	PC-53	440-94339-1	Water	20141125		Stage 2B				X	X		
440-94339-1	PC-53DUP	440-94339-1DUP	Water	20141125	DUP	Stage 2B					X		
440-94339-1	PC-53MS	440-94339-1MS	Water	20141125	MS	Stage 2B							
440-94339-1	PC-53MSD	440-94339-1MSD	Water	20141125	MSD	Stage 2B							
440-94339-1	MW-K5	440-94339-2	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-7	440-94339-3	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-6B	440-94339-4	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-5A	440-94339-5	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-4A	440-94339-6	Water	20141125		Stage 2B				X	X		
440-94339-1	PC-144	440-94339-7	Water	20141125		Stage 2B				X	X		
440-94339-1	PC-101R	440-94339-8	Water	20141125		Stage 2B				X	X		
440-94339-1	MW-K4	440-94339-9	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-3A	440-94339-10	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-2A	440-94339-11	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-2ADUP	440-94339-11DUP	Water	20141125	DUP	Stage 2B				X			
440-94339-1	ARP-2AMS	440-94339-11MS	Water	20141125	MS	Stage 2B							
440-94339-1	ARP-2AMSD	440-94339-11MSD	Water	20141125	MSD	Stage 2B							
440-94339-1	MEB-1	440-94339-12	Water	20141125	EB	Stage 2B							
440-94339-1	PC-103	440-94339-13	Water	20141125		Stage 2B				X	X		
440-94339-1	PC-98R	440-94339-14	Water	20141125		Stage 2B				X	X		
440-94339-1	ARP-1	440-94339-15	Water	20141125		Stage 2B				X	X		
440-94339-1	PC-55	440-94339-16	Water	20141125		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-94339-1	PC-55DUP	440-94339-16DUP	Water	20141125	DUP	Stage 2B					X		
440-94662-1	I-M	440-94662-1	Water	20141201		Stage 2B				X	X		
440-94662-1	I-MDUP	440-94662-1DUP	Water	20141201	DUP	Stage 2B				X			
440-94662-1	I-MMS	440-94662-1MS	Water	20141201	MS	Stage 2B							
440-94662-1	I-MMSD	440-94662-1MSD	Water	20141201	MSD	Stage 2B							
440-94662-1	I-D	440-94662-2	Water	20141201		Stage 2B				X	X		
440-94662-1	I-C	440-94662-3	Water	20141201		Stage 2B				X	X		
440-94662-1	I-S	440-94662-4	Water	20141201		Stage 2B				X	X		
440-94662-1	I-L	440-94662-5	Water	20141201		Stage 2B				X	X		
440-94662-1	I-LDUP	440-94662-5DUP	Water	20141201	DUP	Stage 2B					X		
440-94662-1	I-Y	440-94662-6	Water	20141201		Stage 2B				X	X		
440-94662-1	I-R	440-94662-7	Water	20141201		Stage 2B				X	X		
440-94662-1	I-B	440-94662-8	Water	20141201		Stage 2B				X	X		
440-94662-1	I-AB	440-94662-9	Water	20141201		Stage 2B				X	X		
440-94662-1	I-AA	440-94662-10	Water	20141201		Stage 2B				X	X		
440-94662-1	I-AR	440-94662-11	Water	20141201		Stage 2B				X	X		
440-94662-1	I-ARDUP	440-94662-11DUP	Water	20141201	DUP	Stage 2B				X			
440-94662-1	I-ARMS	440-94662-11MS	Water	20141201	MS	Stage 2B							
440-94662-1	I-ARMSD	440-94662-11MSD	Water	20141201	MSD	Stage 2B							
440-94662-1	I-O	440-94662-12	Water	20141201		Stage 2B				X	X		
440-94662-1	I-W	440-94662-13	Water	20141201		Stage 2B				X	X		
440-94662-1	I-P	440-94662-14	Water	20141201		Stage 2B				X	X		
440-94662-1	I-H	440-94662-15	Water	20141201		Stage 2B				X	X		
440-94662-1	I-U	440-94662-16	Water	20141201		Stage 2B				X	X		
440-94662-1	I-T	440-94662-17	Water	20141201		Stage 2B				X	X		
440-94662-1	I-G	440-94662-18	Water	20141201		Stage 2B				X	X		
440-94662-1	I-Q	440-94662-19	Water	20141201		Stage 2B				X	X		
440-94662-1	I-F	440-94662-20	Water	20141201		Stage 2B				X	X		
440-94662-1	I-X	440-94662-21	Water	20141201		Stage 2B				X	X		
440-94662-1	I-N	440-94662-22	Water	20141201		Stage 2B				X	X		
440-94662-1	I-E	440-94662-23	Water	20141201		Stage 2B				X	X		
440-94662-1	I-EDUP	440-94662-23DUP	Water	20141201	DUP	Stage 2B					X		
440-94669-1	ART-1	440-94669-1	Water	20141201		Stage 2B				X			
440-94669-1	ART-2	440-94669-2	Water	20141201		Stage 2B				X			
440-94669-1	ART-3	440-94669-3	Water	20141201		Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-94669-1	ART-4	440-94669-4	Water	20141201		Stage 2B				X			
440-94669-1	ART-6	440-94669-5	Water	20141201		Stage 2B				X			
440-94669-1	ART-7	440-94669-6	Water	20141201		Stage 2B				X			
440-94669-1	ART-8	440-94669-7	Water	20141201		Stage 2B				X			
440-94669-1	ART-8DUP	440-94669-7DUP	Water	20141201	DUP	Stage 2B				X			
440-94669-1	ART-9	440-94669-8	Water	20141201		Stage 2B				X			
440-94669-1	PC-99R2/R3	440-94669-9	Water	20141201		Stage 2B				X			
440-94669-1	PC-115R	440-94669-10	Water	20141201		Stage 2B				X			
440-94669-1	PC-116R	440-94669-11	Water	20141201		Stage 2B				X			
440-94669-1	PC-117	440-94669-12	Water	20141201		Stage 2B				X			
440-94669-1	PC-118	440-94669-13	Water	20141201		Stage 2B				X			
440-94669-1	PC-119	440-94669-14	Water	20141201		Stage 2B				X			
440-94669-1	PC-120	440-94669-15	Water	20141201		Stage 2B				X			
440-94669-1	PC-121	440-94669-16	Water	20141201		Stage 2B				X			
440-94669-1	PC-133	440-94669-17	Water	20141201		Stage 2B				X			
440-94669-1	PC-133DUP	440-94669-17DUP	Water	20141201	DUP	Stage 2B				X			
440-94669-1	PC-150	440-94669-18	Water	20141201		Stage 2B				X			
440-94868-1	I-AD	440-94868-1	Water	20141202		Stage 2B				X	X		
440-94868-1	I-ADDUP	440-94868-1DUP	Water	20141202	DUP	Stage 2B				X			
440-94868-1	I-AC	440-94868-2	Water	20141202		Stage 2B				X	X		
440-94868-1	I-K	440-94868-3	Water	20141202		Stage 2B				X	X		
440-94868-1	I-KMS	440-94868-3MS	Water	20141202	MS	Stage 2B							
440-94868-1	I-KMSD	440-94868-3MSD	Water	20141202	MSD	Stage 2B							
440-94868-1	I-J	440-94868-4	Water	20141202		Stage 2B				X	X		
440-94868-1	I-Z	440-94868-5	Water	20141202		Stage 2B				X	X		
440-94868-1	I-I	440-94868-6	Water	20141202		Stage 2B				X	X		
440-94868-1	I-V	440-94868-7	Water	20141202		Stage 2B				X	X		
440-94868-1	I-VMS	440-94868-7MS	Water	20141202	MS	Stage 2B							
440-94868-1	I-VMSD	440-94868-7MSD	Water	20141202	MSD	Stage 2B							
440-95199-1	PC-123	440-95199-1	Water	20141204		Stage 4				X	X		
440-95199-1	PC-123DUP	440-95199-1DUP	Water	20141204	DUP	Stage 4				X			
440-95199-1	PC-123MS	440-95199-1MS	Water	20141204	MS	Stage 4							
440-95199-1	PC-123MSD	440-95199-1MSD	Water	20141204	MSD	Stage 4							
440-95199-1	PC-128	440-95199-2	Water	20141204		Stage 4				X	X		
440-95199-1	PC-129	440-95199-3	Water	20141204		Stage 4				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-95199-1	PC-130	440-95199-4	Water	20141204		Stage 4				X	X		
440-95199-1	PC-131	440-95199-5	Water	20141204		Stage 4				X	X		
440-95199-1	PC-132	440-95199-6	Water	20141204		Stage 4				X	X		
440-95199-1	PC-124	440-95199-7	Water	20141204		Stage 4				X	X		
440-95199-1	PC-125	440-95199-8	Water	20141204		Stage 4				X	X		
440-95199-1	PC-126	440-95199-9	Water	20141204		Stage 4				X	X		
440-95199-1	PC-127	440-95199-10	Water	20141204		Stage 4				X	X		
440-95199-1	EB-1	440-95199-11	Water	20141204	EB	Stage 4				X	X		
440-95199-1	EB-1DUP	440-95199-11DUP	Water	20141204	DUP	Stage 4				X			
440-95199-1	EB-1MS	440-95199-11MS	Water	20141204	MS	Stage 4							
440-95199-1	EB-1MSD	440-95199-11MSD	Water	20141204	MSD	Stage 4							
440-95199-1	PC-54	440-95199-12	Water	20141204		Stage 4				X	X		
440-95199-1	M-48A	440-95199-13	Water	20141204		Stage 4				X	X		
440-95199-1	M-44	440-95199-14	Water	20141204		Stage 4				X	X		
440-95199-1	PC-71	440-95199-15	Water	20141204		Stage 4				X	X		
440-95199-1	PC-71DUP	440-95199-15DUP	Water	20141204	DUP	Stage 4					X		
440-95199-1	PC-72	440-95199-16	Water	20141204		Stage 4				X	X		
440-95199-1	PC-73	440-95199-17	Water	20141204		Stage 4				X	X		
440-95253-1	M-64	440-95253-1	Water	20141203		Stage 2B				X	X		
440-95253-1	M-65	440-95253-2	Water	20141203		Stage 2B				X	X		
440-95253-1	M-66	440-95253-3	Water	20141203		Stage 2B				X	X		
440-95253-1	FB-1	440-95253-4	Water	20141203	FB	Stage 2B				X	X		
440-95253-1	M-79	440-95253-5	Water	20141203		Stage 2B				X	X		
440-95253-1	M-131	440-95253-6	Water	20141203	FD5	Stage 2B				X	X		
440-95253-1	DUP-2	440-95253-7	Water	20141203	FD5	Stage 2B				X	X		
440-95437-1	M-94	440-95437-1	Water	20141205		Stage 2B				X	X		
440-95437-1	M-94DUP	440-95437-1DUP	Water	20141205	DUP	Stage 2B					X		
440-95437-1	M-94MS	440-95437-1MS	Water	20141205	MS	Stage 2B							
440-95437-1	M-94MSD	440-95437-1MSD	Water	20141205	MSD	Stage 2B							
440-95437-1	PC-148	440-95437-2	Water	20141205		Stage 2B				X	X		
440-95437-1	PC-149	440-95437-3	Water	20141205		Stage 2B				X	X		
440-95437-1	PC-136	440-95437-4	Water	20141205		Stage 2B				X	X		
440-95437-1	PC-135A	440-95437-5	Water	20141205		Stage 2B				X	X		
440-95437-1	PC-135ADUP	440-95437-5DUP	Water	20141205	DUP	Stage 2B				X			
440-95437-1	PC-37	440-95437-6	Water	20141205		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-95437-1	M-23	440-95437-7	Water	20141205	FD6	Stage 2B				X	X		
440-95437-1	M-95	440-95437-8	Water	20141205		Stage 2B				X	X		
440-95437-1	EB-2	440-95437-9	Water	20141205	EB	Stage 2B				X	X		
440-95437-1	DUP-1	440-95437-10	Water	20141205	FD6	Stage 2B				X	X		
440-95437-1	M-57A	440-95437-11	Water	20141205		Stage 2B				X	X		
440-95437-1	M-57AMS	440-95437-11MS	Water	20141205	MS	Stage 2B							
440-95437-1	M-57AMSD	440-95437-11MSD	Water	20141205	MSD	Stage 2B							
440-95437-1	M-37	440-95437-12	Water	20141205		Stage 2B				X	X		
440-95437-1	M-37MS	440-95437-12MS	Water	20141205	MS	Stage 2B							
440-95437-1	M-37MSD	440-95437-12MSD	Water	20141205	MSD	Stage 2B							
440-95800-1	M-14A	440-95800-1	Water	20141208		Stage 2B				X	X		
440-95800-1	M-14AMS	440-95800-1MS	Water	20141208	MS	Stage 2B							
440-95800-1	M-14AMSD	440-95800-1MSD	Water	20141208	MSD	Stage 2B							
440-95800-1	M-25	440-95800-2	Water	20141208		Stage 2B				X	X		
440-95800-1	M-22A	440-95800-3	Water	20141208		Stage 2B				X	X		
440-95800-1	M-70	440-95800-4	Water	20141208		Stage 2B				X	X		
440-95800-1	M-71	440-95800-5	Water	20141208		Stage 2B				X	X		
440-95800-1	M-72	440-95800-6	Water	20141208		Stage 2B				X	X		
440-95800-1	M-72DUP	440-95800-6DUP	Water	20141208	DUP	Stage 2B				X			
440-95800-1	M-99	440-95800-7	Water	20141208		Stage 2B				X	X		
440-95800-1	M-68	440-95800-8	Water	20141208		Stage 2B				X	X		
440-95800-1	M-67	440-95800-9	Water	20141208		Stage 2B				X	X		
440-95800-1	M-67DUP	440-95800-9DUP	Water	20141208	DUP	Stage 2B					X		
440-95800-1	M-38	440-95800-10	Water	20141208	FD7	Stage 2B				X	X		
440-95800-1	DUP-3	440-95800-11	Water	20141208	FD7	Stage 2B				X	X		
440-95800-1	DUP-3MS	440-95800-11MS	Water	20141208	MS	Stage 2B							
440-95800-1	DUP-3MSD	440-95800-11MSD	Water	20141208	MSD	Stage 2B							
440-95801-1	M-10	440-95801-1	Water	20141208		Stage 4		X		X	X		
440-95801-1	M-10DL	440-95801-1DL	Water	20141208	DL	Stage 4							
440-95801-1	M-10MS	440-95801-1MS	Water	20141208	MS	Stage 4							
440-95801-1	M-10MSD	440-95801-1MSD	Water	20141208	MSD	Stage 4							
440-96212-1	M-69	440-96212-1	Water	20141209		Stage 2B				X	X		
440-96212-1	M-69DUP	440-96212-1DUP	Water	20141209	DUP	Stage 2B					X		
440-96212-1	M-135	440-96212-2	Water	20141209		Stage 2B				X	X		
440-96212-1	M-31A	440-96212-3	Water	20141209		Stage 2B				X	X		

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-96212-1	M-31ADUP	440-96212-3DUP	Water	20141209	DUP	Stage 2B				X			
440-96212-1	M-52	440-96212-4	Water	20141209		Stage 2B				X	X		
440-96212-1	M-73	440-96212-5	Water	20141209		Stage 2B				X	X		
440-97242-1	M-81A	440-97242-1	Water	20141218		Stage 2B				X	X		
440-97242-1	M-81AMS	440-97242-1MS	Water	20141218	MS	Stage 2B							
440-97242-1	M-81AMSD	440-97242-1MSD	Water	20141218	MSD	Stage 2B							
440-97242-1	M-80	440-97242-2	Water	20141218		Stage 2B				X	X		
440-97242-1	M-74	440-97242-3	Water	20141218		Stage 2B				X	X		
440-97242-1	M-35	440-97242-4	Water	20141218		Stage 2B				X	X		
440-97242-1	M-19	440-97242-5	Water	20141218		Stage 2B				X	X		
440-97242-1	M-12A	440-97242-6	Water	20141218	FD8	Stage 2B				X	X		
440-97242-1	M-11	440-97242-7	Water	20141218		Stage 2B				X	X		
440-97242-1	DUP-4	440-97242-8	Water	20141218	FD8	Stage 2B				X	X		
440-97242-1	DUP-4DUP	440-97242-8DUP	Water	20141218	DUP	Stage 2B					X		
440-97504-1	PC-97	440-97504-1	Water	20141222		Stage 2B				X			
440-97504-1	PC-97DUP	440-97504-1DUP	Water	20141222	DUP	Stage 2B				X			
440-97504-1	PC-90	440-97504-2	Water	20141222		Stage 2B				X			
440-97504-1	PC-91	440-97504-3	Water	20141222		Stage 2B				X			
440-97504-1	PC-58	440-97504-4	Water	20141222		Stage 2B				X			
440-97504-1	PC-56	440-97504-5	Water	20141222		Stage 2B				X			
440-97504-1	PC-60	440-97504-6	Water	20141222		Stage 2B				X			
440-97504-1	PC-59	440-97504-7	Water	20141222		Stage 2B				X			
440-97504-1	PC-62	440-97504-8	Water	20141222		Stage 2B				X			
440-97504-1	PC-68	440-97504-9	Water	20141222		Stage 2B				X			
440-97504-1	PC-86	440-97504-10	Water	20141222		Stage 2B				X			
440-97504-1	MEB-1	440-97504-11	Water	20141222	EB	Stage 2B							
440-97847-1	PC-53	440-97847-1	Water	20141229		Stage 2B				X			
440-97847-1	PC-53DUP	440-97847-1DUP	Water	20141229	DUP	Stage 2B				X			
440-97847-1	MW-K5	440-97847-2	Water	20141229		Stage 2B				X			
440-97847-1	ARP-7	440-97847-3	Water	20141229		Stage 2B				X			
440-97847-1	ARP-6B	440-97847-4	Water	20141229		Stage 2B				X			
440-97847-1	ARP-5A	440-97847-5	Water	20141229		Stage 2B				X			
440-97847-1	ARP-4A	440-97847-6	Water	20141229		Stage 2B				X			
440-97847-1	PC-101R	440-97847-7	Water	20141229		Stage 2B				X			
440-97847-1	MW-K4	440-97847-8	Water	20141229		Stage 2B				X			

Table I. Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Phenolics (420.1)	TIN (CALC)	Spec. Cond. (SM2510)	TDS (SM2540C)	pH (SM4500-H+B)	TOC (SM5310C)	TOX (9020B)
440-97847-1	ARP-3A	440-97847-9	Water	20141229		Stage 2B				X			
440-97847-1	ARP-2A	440-97847-10	Water	20141229		Stage 2B				X			
440-98043-1	M-83	440-98043-1	Water	20141230		Stage 2B				X			
440-98043-1	PC-18	440-98043-2	Water	20141230		Stage 2B				X			
440-98043-1	ARP-1	440-98043-3	Water	20141230		Stage 2B				X			
440-98043-1	PC-103	440-98043-4	Water	20141230		Stage 2B				X			
440-98043-1	PC-103DUP	440-98043-4DUP	Water	20141230	DUP	Stage 2B				X			
440-98043-1	PC-98R	440-98043-5	Water	20141230		Stage 2B				X			
440-98043-1	PC-55	440-98043-6	Water	20141230		Stage 2B				X			
440-98043-1	PC-122	440-98043-7	Water	20141230		Stage 2B				X			

TABLE II

Table IIa. Stage 2B Validation Elements

Quality Control Elements	Stage 2B	
	Metals	Wet Chemistry
Sample Receipt & Technical Holding Time	√	√
Initial Calibration (ICAL)	√	√
Initial Calibration Verification (ICV)	√	√
Continuing Calibration Verification (CCV)	√	√
Laboratory Blanks	√	√
Initial Calibration Blank and Continuing Calibration Blank (ICB/CCB)	√	√
Field Blanks	√	√
Inductively Coupled Plasma (ICP) Interference Check Sample	√	N/A
Surrogate Spikes	N/A	√
Matrix Spike (MS), Matrix Spike Duplicate (MSD)	√	√
Laboratory Duplicate (DUP)	N/A	√
Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)	√	√
Serial Dilution	√	N/A
Field Duplicate	√	√
Project Quantitation Limits (QL)	√	√
Multiple Results for One Sample	√	√
Sample Result Verification	-	-
Overall Data Usability Assessment	√	√

√ = Reviewed for Stage 2B review

N/A = Not applicable to method or not performed during this sampling event

- = Not applicable for Stage 2B review

¹System performance is a thorough review of the data acquisition that can yield indicators of degrading instrument performance affecting quality of data.

Table IIb. Stage 4 Validation Elements

Quality Control Elements	Stage 4	
	Metals	Wet Chemistry
Sample Receipt & Technical Holding Time	√	√
Initial Calibration (ICAL)	√	√
Initial Calibration Verification (ICV)	√	√
Continuing Calibration Verification (CCV)	√	√
Laboratory Blanks	√	√
Initial Calibration Blank and Continuing Calibration Blank (ICB/CCB)	√	√
Field Blanks	√	√
Inductively Coupled Plasma (ICP) Interference Check Sample	√	N/A
Surrogate Spikes	N/A	√
Matrix Spike (MS), Matrix Spike Duplicate (MSD)	√	√
Laboratory Duplicate (DUP)	N/A	√
Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)	√	√
Serial Dilution	√	N/A
Field Duplicate	√	√
Project Quantitation Limits (QL)	√	√
Multiple Results for One Sample	√	√
Sample Result Verification	√	√
Overall Data Usability Assessment	√	√

√ = Reviewed for Stage 4 review

N/A = Not applicable to method or not performed during this sampling event

¹System performance is a thorough review of the data acquisition that can yield indicators of degrading instrument performance affecting quality of data.

TABLE III

Table III. Qualification Codes and Definitions

Reason Code	Explanation
a	qualified due to low abundance (radiochemical activity)
be	qualified due to equipment blank contamination
bf	qualified due to field blank contamination
bl	qualified due to lab blank contamination
bt	qualified due to trip blank contamination
bp	qualified due to pump blank contamination (wells w/o dedicated pumps, when contamination is detected in the Pump Blk)
br	qualified due to filter blank contamination (aqueous Hexavalent Chromium and Dissolved sample fractions)
c	qualified due to calibration problems
cp	qualified due to insufficient ingrowth (radiochemical only)
dc	duel column confirmation %D exceeded
e	concentration exceeded the calibration range
fd	qualified due to field duplicate imprecision
h	qualified due to holding time exceedance
i	qualified due to internal standard areas
k	qualified as Estimated Maximum Possible Concentrations (dioxins and PCB congeners)
l	qualified due to LCS recoveries
ld	qualified due to lab duplicate imprecision (matrix duplicate, MSD, LCSD)
m	qualified due to matrix spike recoveries
nb	qualified due to negative lab blank contamination (nondetect results only)
nd	qualified due to non-detected target analyte
o	other
p	qualified as a false positive due to contamination during shipping
pH	sample preservation not within acceptance range
q	qualified due to quantitation problem
s	qualified due to surrogate recoveries
sd	serial dilution did not meet control criteria
sp	detected value reported >SQL <PQL
st	sample receipt temperature exceeded
t	qualified due to elevated helium tracer concentrations
vh	volatile headspace detected in aqueous sample containers submitted for VOC analysis
x	qualified due to low % solids
z	qualified due to ICS results

TABLE IV

Table IV. Overall Qualified Results

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
440-84834-1	PC-56	20140805	200.7	7440-47-3	Chromium	0.0027	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-84834-1	PC-90	20140805	200.7	7440-47-3	Chromium	0.0026	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-84834-1	PC-91	20140805	200.7	7440-47-3	Chromium	0.0048	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-84834-1	PC-97	20140805	200.7	7440-47-3	Chromium	0.0036	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-85159-1	ARP-2A	20140807	200.7	7440-47-3	Chromium	0.0054	J	0.010	mg/l	J	sp	Detect <PQL	--	--
440-85159-1	PC-101R	20140807	200.7	7440-47-3	Chromium	0.0092	J	0.010	mg/l	J	sp	Detect <PQL	--	--
440-85240-1	ARP-1	20140808	200.7	7440-47-3	Chromium	0.0048	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-85240-1	PC-55	20140808	200.7	7440-47-3	Chromium	0.0043	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-85653-1	DUP-1	20140813	200.7	7440-47-3	Chromium	0.0083		0.0050	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	EB-1	20140813	200.7	7440-47-3	Chromium	0.0025	U	0.0050	mg/l	UJ	m	Matrix Spike %R	72/71	%
440-85653-1	M-23	20140813	200.7	7440-47-3	Chromium	0.26		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	M-44	20140813	200.7	7440-47-3	Chromium	0.99		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	M-48A	20140813	200.7	7440-47-3	Chromium	1.6		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	M-95	20140813	200.7	7440-47-3	Chromium	0.52		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-123	20140813	200.7	7440-47-3	Chromium	0.99		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-124	20140813	200.7	7440-47-3	Chromium	0.084		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-125	20140813	200.7	7440-47-3	Chromium	0.073		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-126	20140813	200.7	7440-47-3	Chromium	0.15		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-127	20140813	200.7	7440-47-3	Chromium	0.84		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-128	20140813	200.7	7440-47-3	Chromium	0.37		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-129	20140813	200.7	7440-47-3	Chromium	0.72		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-130	20140813	200.7	7440-47-3	Chromium	0.76		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-131	20140813	200.7	7440-47-3	Chromium	0.0097		0.0050	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-132	20140813	200.7	7440-47-3	Chromium	0.0076		0.0050	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-54	20140813	200.7	7440-47-3	Chromium	1.7		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-71	20140813	200.7	7440-47-3	Chromium	0.37		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-72	20140813	200.7	7440-47-3	Chromium	0.14		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-85653-1	PC-73	20140813	200.7	7440-47-3	Chromium	0.39		0.025	mg/l	J-	m	Matrix Spike %R	72/71	%
440-92039-1	ART-1	20141103	200.7	7440-47-3	Chromium	0.0027	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-92039-1	PC-116R	20141103	200.7	7440-47-3	Chromium	0.0025	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-92039-1	PC-99R2/R	20141103	200.7	7440-47-3	Chromium	0.0033	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-94207-1	PC-56	20141124	200.7	7440-47-3	Chromium	0.0032	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-94207-1	PC-60	20141124	200.7	7440-47-3	Chromium	0.0025	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-94207-1	PC-97	20141124	200.7	7440-47-3	Chromium	0.0026	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-94339-1	ARP-4A	20141125	200.7	7440-47-3	Chromium	0.0040	J	0.0050	mg/l	J	SP	Detect <PQL	--	--

Table IV. Overall Qualified Results

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
440-95199-1	PC-131	20141204	200.7	7440-47-3	Chromium	0.0043	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-95253-1	FB-1	20141203	200.7	7440-47-3	Chromium	0.0029	J	0.0050	mg/l	J	sp	Detect <PQL	--	--
440-95253-1	FB-1	20141203	218.6	18540-29-9	Chromium, hexavalent	0.25	UH	1.0	ug/l	R	h	Holding Time	54.5	Hours
440-95437-1	EB-2	20141205	218.6	18540-29-9	Chromium, hexavalent	0.41	JH	1.0	ug/l	J	sp	Detect <PQL	--	--
440-95801-1	M-10	20141208	218.6	18540-29-9	Chromium, hexavalent	0.62	J	1.0	ug/l	J	sp	Detect <PQL	--	--
440-95801-1	M-10	20141208	300.0	16887-00-6	Chloride	200		50	mg/l	J-	m	Matrix Spike %R	72/72	%
440-85776-1	EB-2	20140814	314.0	14797-73-0	Perchlorate	0.53	J	1.0	ug/l	J	sp	Detect <PQL	--	--
440-85889-1	M-10	20140815	350.1	7664-41-7 0	Ammonia (as N)	0.17	J	0.20	mg/l	J	sp	Detect <PQL	--	--
440-85655-1	M-6A	20140813	9020	TOH	TOX Quad	1700		1500	ug/l	J-	m	Matrix Spike %R	61/77	%
440-85492-1	FB-1	20140812	SM4500-H+B	C-006	pH	8.09	HF	0.100	s.u.	J	h	Holding Time	50.25	Hours
440-85492-1	M-37	20140812	SM4500-H+B	C-006	pH	7.24	HF	0.100	s.u.	J	h	Holding Time	50.5	Hours
440-85492-1	M-38	20140812	SM4500-H+B	C-006	pH	7.43	HF	0.100	s.u.	J	h	Holding Time	50	Hours
440-85496-1	M-5A	20140812	SM4500-H+B	C-006	pH	7.17	HF	0.100	s.u.	J	h	Holding Time	51.25	Hours
440-85496-1	M-7B	20140812	SM4500-H+B	C-006	pH	7.42	HF	0.100	s.u.	J	h	Holding Time	49.75	Hours
440-96212-1	M-135	20141209	SM4500-H+B	C-006	pH	7.63	HF	0.100	s.u.	J	h	Holding Time	55	Hours
440-96212-1	M-31A	20141209	SM4500-H+B	C-006	pH	7.48	HF	0.100	s.u.	J	h	Holding Time	54.5	Hours
440-96212-1	M-52	20141209	SM4500-H+B	C-006	pH	7.69	HF	0.100	s.u.	J	h	Holding Time	53.5	Hours
440-96212-1	M-69	20141209	SM4500-H+B	C-006	pH	7.51	HF	0.100	s.u.	J	h	Holding Time	55.25	Hours
440-96212-1	M-73	20141209	SM4500-H+B	C-006	pH	7.42	HF	0.100	s.u.	J	h	Holding Time	53	Hours

ATTACHMENT A

Metals Data Validation Report

Metals by EPA Method 200.7

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. ICPMS Tune

ICP-MS was not utilized in these SDGs.

III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the preparation blanks with the following exceptions:

SDG	Method Blank ID	Analyte	Maximum Concentration	Associated Samples
440-85350-1	ICB/CCB	Chromium	0.00520 mg/L	I-O I-W I-P I-H I-U I-T I-G I-Q I-F I-X I-N I-E I-M I-D
440-85496-1	PB (prep blank)	Iron	0.0216 mg/L	All samples in SDG 440-85496-1
440-95801-1	PB (prep blank)	Iron	0.0155 mg/L	All samples in SDG 440-95801-1

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified.

Samples EB-1 (from SDGs 440-85653-1 and 440-95199-1) and EB-2 (from SDGs 440-85776-1 and 440-95437-1) were identified as equipment blanks. No metal contaminants were found.

Sample FB-1 (from SDGs 440-85492-1 and 440-95253-1) was identified as a field blank. No metal contaminants were found with the following exceptions:

SDG	Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
440-95253-1	FB-1	12/3/14	Chromium	0.0029 mg/L	M-64 M-65 M-66 M-79 M-131 DUP-2

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified.

V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

SDG	Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
440-85653-1	PC-123MS/MSD (PC-123 PC-128 PC-129 PC-130 PC-132 PC-131 PC-124 PC-126 PC-125 PC-127 PC-54 M-48A PC-71 PC-72 PC-73 M-23 M-95 M-44 DUP-1 EB-1)	Chromium	72 (75-125)	-	-	J- (all detects) UJ (all nondetects)	A

SDG	Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
440-85653-1	PC-54MS/MSD (PC-123 PC-128 PC-129 PC-130 PC-132 PC-131 PC-124 PC-126 PC-125 PC-127 PC-54 M-48A PC-71 PC-72 PC-73 M-23 M-95 M-44 DUP-1 EB-1)	Chromium	71 (75-125)	-	-	J- (all detects) UJ (all nondetects)	A

For I-WMS/MSD, I-EMS/MSD (both from SDG 440-85350-1), M-72MS/MSD (from SDG 440-85492-1), I-ZMS/MSD (from SDG 440-85776-1), I-MMS/MSD (from SDG 440-94662-1), I-VMS/MSD (from SDG 440-94868-1), DUP-3MS/MSD (from SDG 440-95800-1), no data were qualified for Chromium, and for M-64MS/MSD (from SDG 440-85496-1) and H-28AMS/MSD (from SDG 440-85655-1), no data were qualified for Iron and Sodium percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in these SDGs, and therefore duplicate analyses were not performed for these SDGs.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Internal Standards (ICP-MS)

ICP-MS was not utilized in these SDGs.

X. ICP Serial Dilution

ICP serial dilution was not performed for these SDGs.

XI. Sample Result Verification

All sample result verifications were acceptable for samples on which a Stage 4 review was performed. Raw data were not evaluated for the samples reviewed by Stage 2B criteria.

XII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

XIII. Field Duplicates

Samples PC-132 and DUP-1 (from SDG 440-85653-1), samples M-12A and DUP-3 (from SDG 440-85776-1), samples PC-150 and DUP-2 (from SDG 440-85890-1), samples M-11 and DUP-4 (from SDG 440-85890-1), samples M-131 and DUP-2 (from SDG 440-95253-1), samples M-23 and DUP-1 (from SDG 440-95437-1), samples M-38 and DUP-3 (from SDG 440-95800-1), and samples M-12A and DUP-4 (from SDG 440-97242-1) were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		PC-132	DUP-1				
440-85653-1	Chromium	0.0076	0.0083	-	0.0007 (≤ 0.025)	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-12A	DUP-3				
440-85776-1	Chromium	9.6	9.8	2 (≤ 30)	-	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		PC-150	DUP-2				
440-85890-1	Chromium	0.19	0.20	-	0.01 (≤ 0.025)	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-11	DUP-4				
440-85890-1	Chromium	1.3	1.2	8 (≤ 30)	-	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-131	DUP-2				
440-95253-1	Chromium	0.089	0.081	9 (≤30)	-	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-23	DUP-1				
440-95437-1	Chromium	0.34	0.32	6 (≤30)	-	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-38	DUP-3				
440-95800-1	Chromium	18	18	0 (≤30)	-	-	-

SDG	Analyte	Concentration (mg/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-12A	DUP-4				
440-97242-1	Chromium	11	12	9 (≤30)	-	-	-

**2014 Semi-Annual Remedial Performance Sampling
Metals - Data Qualification Summary - SDGs 440-84834-1, 440-85159-1, 440-85240-1, 440-85350-1, 440-85492-1, 440-85496-1, 440-85653-1, 440-85655-1, 440-85776-1, 440-85889-1, 440-85890-1, 440-94662-1, 440-94868-1, 440-95199-1, 440-95253-1, 440-95437-1, 440-95800-1, 440-95801-1, 440-96212-1, 440-84683-1, 440-92039-1, 440-93300-1, 440-94207-1, 440-97242-1, 440-94339-1**

SDG	Sample	Analyte	Flag	A or P	Reason
440-85653-1	PC-123 PC-128 PC-129 PC-130 PC-132 PC-131 PC-124 PC-126 PC-125 PC-127 PC-54 M-48A PC-71 PC-72 PC-73 M-23 M-95 M-44 DUP-1 EB-1	Chromium	J- (all detects) UJ (all nondetects)	A	Matrix spike/Matrix spike duplicate (%R)

**2014 Semi-Annual Remedial Performance Sampling
Metals - Laboratory Blank Data Qualification Summary – SDGs 440-84834-1, 440-85159-1, 440-85240-1, 440-85350-1, 440-85492-1, 440-85496-1, 440-85653-1, 440-85655-1, 440-85776-1, 440-85889-1, 440-85890-1, 440-94662-1, 440-94868-1, 440-95199-1, 440-95253-1, 440-95437-1, 440-95800-1, 440-95801-1, 440-96212-1, 440-84683-1, 440-92039-1, 440-93300-1, 440-94207-1, 440-97242-1, 440-94339-1**

No Sample Data Qualified in these SDGs

**2014 Semi-Annual Remedial Performance Sampling
Metals - Field Blank Data Qualification Summary – SDGs 440-84834-1, 440-85159-1, 440-85240-1, 440-85350-1, 440-85492-1, 440-85496-1, 440-85653-1, 440-85655-1, 440-85776-1, 440-85889-1, 440-85890-1, 440-94662-1, 440-94868-1, 440-95199-1, 440-95253-1, 440-95437-1, 440-95800-1, 440-95801-1, 440-96212-1, 440-84683-1, 440-92039-1, 440-93300-1, 440-94207-1, 440-97242-1, 440-94339-1**

No Sample Data Qualified in these SDGs

ATTACHMENT B

Wet Chemistry Data Validation Report

Hexavalent Chromium by EPA Method 218.6
Chloride, Nitrate as Nitrogen, Nitrite as Nitrogen, and Sulfate by EPA Method 300.0
Chlorate by EPA Method 300.1B
Perchlorate by EPA Method 314.0
Ammonia as Nitrogen by EPA Method 350.1
Nitrate/Nitrite as Nitrogen by EPA Method 353.2
Phenolics by EPA Method 420.1
Total Inorganic Nitrogen by Calculation Method
Specific Conductance by Standard Method 2510B
Total Dissolved Solids by Standard Method 2540C
pH by Standard Method 4500 H+B
Total Organic Carbon by Standard Method 5310C
Total Organic Halides by EPA SW 846 Method 9020B

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

SDG	Sample	Analyte	Total Time From Sample Collection Until Analysis	Required Holding Time From Sample Collection Until Analysis	Flag	A or P
440-85492-1	M-37	pH	50.5 hours	48 hours	J (all detects)	P
440-85492-1	FB-1	pH	50.25 hours	48 hours	J (all detects)	P
440-85492-1	M-38	pH	50 hours	48 hours	J (all detects)	P
440-85496-1	M-5A	pH	51.25 hours	48 hours	J (all detects)	P
440-85496-1	M-7B	pH	49.75 hours	48 hours	J (all detects)	P
440-95253-1	FB-1	Hexavalent chromium	54.5 hours	24 hours	R (all non-detects)	P
440-96212-1	M-69	pH	55.25 hours	48 hours	J (all detects)	P
440-96212-1	M-135	pH	55 hours	48 hours	J (all detects)	P
440-96212-1	M-31A M-31ADUP	pH	54.5 hours	48 hours	J (all detects)	P
440-96212-1	M-52	pH	53.5 hours	48 hours	J (all detects)	P
440-96212-1	M-73	pH	53 hours	48 hours	J (all detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Initial Calibration

All criteria for the initial calibration of each method were met.

III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

SDG	Method Blank ID	Analyte	Concentration	Associated Samples
440-85496-1	ICB/CCB	Sulfate	0.282 mg/L	All samples in SDG 440-85496-1

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified.

Samples EB-M1 (from SDG 440-84834-1), EB-1 (from SDGs 440-85653-1, 440-95199-1, 440-82772-1, and 440-90694-1), EB-2 (from SDG 440-85776-1 and 440-95437-1), and MEB-1 (from SDGs 440-87966-1, 440-94339-1, and 440-97504-1) were identified as equipment blanks. No contaminant concentrations were found with the following exceptions:

SDG	Blank ID	Sampling Date	Analyte	Concentration	Associated Samples
440-85776-1	EB-2	8/14/14	Perchlorate	0.53 ug/L	M-31A M-52 M-35 M-19 M-68 M-67 M-74 M-73 I-K I-J I-Z I-I I-V I-AD M-80 M-81A M-83 M-12A DUP-3
440-95437-1	EB-2	12/5/14	Hexavalent chromium	0.41 ug/L	M-95 M-37

Sample FB-1 (from SDGs 440-85492-1 and 440-95253-1) was identified as a field blank. No contaminant concentrations were found.

Sample concentrations were compared to concentrations detected in the field blanks as required by the QAPP. No sample data was qualified.

V. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method 300.1B. All surrogate recoveries (%R) were within QC limits.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

SDG	Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Affected Analyte	Flag	A or P
440-85655-1	M-6AMS/MSD (M-6A)	Total organic halides	61 (78-114)	77 (78-114)	-	Total organic halides	J- (all detects)	A
440-85889-1	M-10MS/MSD (All samples in SDG 440-85889-1)	Nitrite as N	155 (75-125)	150 (75-125)	-	Nitrite as N Total inorganic nitrogen	NA	-

SDG	Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Affected Analyte	Flag	A or P
440-95801-1	M-10MS/MSD (M-10)	Chloride	72 (75-125)	72 (75-125)	-	Chloride	J- (all detects)	A

Although the above listed %R flagged "NA" demonstrates a high bias, the affected analyte in the associated samples was non-detected and did not warrant the qualification of the data.

VII. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Sample Result Verification

All sample result verifications were acceptable for samples on which a Stage 4 review was performed. Raw data were not evaluated for the samples reviewed by Stage 2B criteria.

X. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

SDG	Sample	Analyte	Flag	A or P
440-95801-1	M-10DL	Nitrate as N Nitrite as N	DNR	A

Data flags are summarized at the end of this report if data has been qualified.

XI. Field Duplicates

Samples PC-132 and DUP-1 (from SDG 440-85653-1), samples M-12A and DUP-3 (from SDG 440-85776-1), samples PC-150 and DUP-2 (from SDG 440-85890-1), samples M-11 and DUP-4 (from SDG 440-85890-1), samples M-23 and DUP-1 (from SDG 440-95437-1), samples M-38 and DUP-3 (from SDG 440-95800-1), and samples M-12A and DUP-4 (from SDG 440-97242-1) were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		PC-132	DUP-1				
440-85653-1	Total dissolved solids	9100 mg/L	9100 mg/L	0 (≤30)	-	-	-
440-85653-1	pH	7.37 SU	7.49 SU	2 (≤30)	-	-	-
440-85653-1	Perchlorate	680 ug/L	710 ug/L	4 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-12A	DUP-3				
440-85776-1	Total dissolved solids	7200 mg/L	7300 mg/L	1 (≤30)	-	-	-
440-85776-1	Hexavalent chromium	9700 ug/L	9500 ug/L	2 (≤30)	-	-	-
440-85776-1	pH	8.01 SU	8.00 SU	0 (≤30)	-	-	-
440-85776-1	Perchlorate	210000 ug/L	200000 ug/L	5 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		PC-150	DUP-2				
440-85890-1	Total dissolved solids	6600 mg/L	6700 mg/L	2 (≤30)	-	-	-
440-85890-1	pH	7.50 SU	7.52 SU	0 (≤30)	-	-	-
440-85890-1	Perchlorate	160000 ug/L	170000 ug/L	8 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-11	DUP-4				
440-85890-1	Total dissolved solids	2400 mg/L	2600 mg/L	8 (≤30)	-	-	-
440-85890-1	Hexavalent chromium	1200 ug/L	1200 ug/L	0 (≤30)	-	-	-
440-85890-1	pH	7.99 SU	7.98 SU	0 (≤30)	-	-	-
440-85890-1	Perchlorate	20000 ug/L	18000 ug/L	11 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-131	DUP-2				
440-95253-1	Total dissolved solids	3300 mg/L	3300 mg/L	0 (≤30)	-	-	-
440-95253-1	pH	7.66 SU	7.66 SU	0 (≤30)	-	-	-
440-95253-1	Perchlorate	39000 ug/L	42000 ug/L	8 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-23	DUP-1				
440-95437-1	Total dissolved solids	3900 mg/L	4000 mg/L	3 (≤30)	-	-	-
440-95437-1	pH	7.63 SU	7.61 SU	0 (≤30)	-	-	-
440-95437-1	Perchlorate	200000 ug/L	190000 ug/L	8 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-38	DUP-3				
440-95800-1	Total dissolved solids	11000 mg/L	11000 mg/L	0 (≤30)	-	-	-
440-95800-1	Hexavalent chromium	18000 ug/L	18000 ug/L	0 (≤30)	-	-	-
440-95800-1	pH	7.48 SU	7.51 SU	0 (≤30)	-	-	-
440-95800-1	Perchlorate	630000 ug/L	640000 ug/L	2 (≤30)	-	-	-

SDG	Analyte	Concentration		RPD (Limits)	Difference (Limits)	Flag	A or P
		M-12A	DUP-4				
440-97242-1	Perchlorate	220000 ug/L	230000 ug/L	4 (≤30)	-	-	-
440-97242-1	pH	8.25 SU	8.26 SU	0 (≤30)	-	-	-
440-97242-1	Hexavalent chromium	10000 ug/L	10000 ug/L	0 (≤30)	-	-	-
440-97242-1	Total dissolved solids	7200 mg/L	7000 mg/L	3 (≤30)	-	-	-

**2014 Semi-Annual Remedial Performance Sampling
Wet Chemistry - Data Qualification Summary - SDGs 440-84834-1, 440-85159-1, 440-85240-1, 440-85350-1, 440-85492-1, 440-85496-1, 440-85653-1, 440-85655-1, 440-85776-1, 440-85889-1, 440-85890-1, 440-87226-1, 440-87925-1, 440-87966-1, 440-88032-1, 440-90069-1, 440-94662-1, 440-94669-1, 440-94868-1, 440-95199-1, 440-95253-1, 440-95437-1, 440-95800-1, 440-95801-1, 440-96212-1, 440-82772-1, 440-82778-1, 440-82987-1, 440-84683-1, 440-90694-1, 440-92039-1, 440-93300-1, 440-94207-1, 440-97242-1, 440-97847-1, 440-82280-1, 440-94339-1, 440-97504-1, 440-98043-1**

SDG	Sample	Analyte	Flag	A or P	Reason
440-85492-1 440-85496-1 440-96212-1	M-37 FB-1 M-38 M-5A M-7B M-69 M-135 M-31A M-52 M-73	pH	J (all detects)	P	Technical holding time
440-95253-1	FB-1	Hexavalent chromium	R (all non-detects)	P	Technical holding time
440-85655-1	M-6A	Total organic halides	J- (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
440-95801-1	M-10	Chloride	J- (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
440-95801-1	M-10DL	Nitrate as N Nitrite as N	DNR	A	Overall assessment of data

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Wet Chemistry - Laboratory Blank Data Qualification Summary - SDGs 440-84834-1, 440-85159-1, 440-85240-1, 440-85350-1, 440-85492-1, 440-85496-1, 440-85653-1, 440-85655-1, 440-85776-1, 440-85889-1, 440-85890-1, 440-87226-1, 440-87925-1, 440-87966-1, 440-88032-1, 440-90069-1, 440-94662-1, 440-94669-1, 440-94868-1, 440-95199-1, 440-95253-1, 440-95437-1, 440-95800-1, 440-95801-1, 440-96212-1, 440-82772-1, 440-82778-1, 440-82987-1, 440-84683-1, 440-90694-1, 440-92039-1, 440-93300-1, 440-94207-1, 440-97242-1, 440-97847-1, 440-82280-1, 440-94339-1, 440-97504-1, 440-98043-1**

No Sample Data Qualified in these SDGs

**2014 Semi-Annual Remedial Performance Sampling
Wet Chemistry - Field Blank Data Qualification Summary – SDGs 440-84834-1,
440-85159-1, 440-85240-1, 440-85350-1, 440-85492-1, 440-85496-1, 440-85653-1,
440-85655-1, 440-85776-1, 440-85889-1, 440-85890-1, 440-87226-1, 440-87925-1,
440-87966-1, 440-88032-1, 440-90069-1, 440-94662-1, 440-94669-1, 440-94868-1,
440-95199-1, 440-95253-1, 440-95437-1, 440-95800-1, 440-95801-1, 440-96212-1,
440-82772-1, 440-82778-1, 440-82987-1, 440-84683-1, 440-90694-1, 440-92039-1,
440-93300-1, 440-94207-1, 440-97242-1, 440-97847-1, 440-82280-1, 440-94339-1,
440-97504-1, 440-98043-1**

No Sample Data Qualified in these SDGs