Data Validation Summary Report

Beta/NW Ditch Removal Action

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Acronyms and Abbreviations

ALS	ALS-Paragon Analytics, Inc.
ASTM	American Society for Testing and Materials
CAB	cation/anion balance
CCB	continuing calibration blank
CCV	continuing calibration verification
CFR	code of federal regulations
COC	chain of custody
CVAA	cold vapor atomic absorption
DER	duplicate error ratio
DQO	data quality objective
DOE	U.S. Department of Energy
DVSR	data validation summary report
EC	electrical conductivity
EDD	electronic data deliverable
EMPC	estimated maximum possible concentration
EPA	U.S. Environmental Protection Agency
GC/MS	gas chromatography/mass spectrometer
HASL	Health and Safety Laboratory
ICB	initial calibration blank
ICP	inductively coupled plasma
ICP/MS	inductively coupled plasma/mass spectrometer

LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MD	matrix duplicate
MDA	maximum detectable activity
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
NDEP	Nevada Division of Environmental Protection
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCB	polychlorinated biphenyl
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
RPD	relative percent difference
RRF	relative response factor
SAP	sampling and analysis plan
SDG	sample delivery group
Site	Titanium Metals Corporation Plant Site, Henderson, Nevada
SOP	standard operating procedure
SQL	sample quantitation limit
SVOC	semivolatile organic compound

TA	TestAmerica, Inc.
TDS	total dissolved solid
TIC	tentatively identified compound
TIMET	Titanium Metals Corporation, Inc.
TSS	total suspended solids
VOC	volatile organic compound

1. Introduction

This data validation summary report (DVSR) was prepared to assess the validity (based on data validation) and usability (based on project objectives) of soil analytical data collected August 23 through October 15, 2013 at the Titanium Metals Corporation, Inc. (TIMET) facility in Henderson, Nevada (Site). The results were reported under the job numbers E1301129, E1301166, E1301209, E1301243, E1301286, 1309037, 1309438, 1309221, 1309339, 1308444, and 680-95178-2. A summary of the samples collected follows:

- E1301129/1308444: NW-24, NW-17, NW-8, Duplicate Beta Ditch 1[1]
- E1301166/1309037: NW-9, NW-11, NW-5
- E1301209/1309221: NW-23, Rinsate-Bowl, Rinsate-Spoon
- E1301243: NW-2, NW-20, NW-1, BD-5, BD-13
- E1301286: BD-2, BD-16, BD-17, BD-4, BD-3, BD-1, Duplicate Beta Ditch Duplicate 2[2]
- 1309339: BD-5, BD-13
- 1309438: BD-3, BD-1
- 680-95178-2: TMBD-Wheelwash-01, TMBD-Wheelwash-02, TMBD-Wheelwash-03, TMBD-Wheelwash-DUP[3]

[1] Field duplicate of NW-24

[2] Field duplicate of BD-2

[3] Field duplicate of TMBD-Wheelwash-03

Table 1 lists samples collected at the locations in this reporting period.

1.1 Purpose and Objectives

The purpose of this DVSR is to summarize the validation and usability for chemical soil data collected during this event.

All analyses for soil samples collected during this reporting period were conducted by ALS Environmental (formerly Paragon Analytics, Inc.) (ALS) of Fort Collins, Colorado and Houston Texas and TestAmerica, Inc. of Savannah, Georgia. All data were delivered as hardcopy data packages in sample delivery groups (SDG) and accompanied by electronic

data deliverables (EDD). Hardcopy data deliverables included full data packages (including sample results, quality control [QC] summaries, and all associated sample receipt, preparation, and analytical raw data). EDDs received from the laboratory were loaded into a EQuIS Database™ database and used for reporting. The laboratories reported the sample results in the EDDs, along with applicable laboratory qualifiers. In addition to sample results, associated field and laboratory QC sample results were reported in the EDDs.

The following types of analyses were conducted on soil samples collected during this reporting period and analyzed by ALS:

- Semivolatile organic compounds (SVOC) by gas chromatography/mass spectrometry (GC/MS) by U.S. Environmental Protection Agency (EPA) Method 8270D and revisions (EPA, 2007).
- Total metals by inductively coupled plasma (ICP) by EPA Method 6020A.
- Polychlorinated Biphenyls (PCBs) by EPA method 8082A.
- Chlorinated Biphenyl Congeners by high resolution GC/high resolution MS (HRGC/HRMS) by EPA Method 1668C.
- Polychlorinated dibenzodioxins and polychlorinated dibenzofurans by HRGC/HRMS by EPA Method 8290.

Quantitation limits are critical to the proper evaluation of method sensitivity and non-detect data. Three types of quantitation limits were evaluated for stable chemistries as follows:

- Method detection limit (MDL) – This limit was established by the laboratories according to the requirement in 40 CFR 136, Appendix B, and represents the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. MDLs are established using matrices with little or no interfering species using reagent matrices and are considered the lowest possible reporting limit. Often, the MDL is represented as the instrument detection limit. Because these limits do not reflect sample-specific characteristics and preparation volumes/masses, MDLs were not reported in the hardcopy or EDDs for individual samples. However, MDLs can be indirectly obtained from the limits reported for method blanks, as method blanks were reported to the MDL.
- Sample quantitation limit (SQL) – The SQL is defined as the MDL adjusted to reflect sample-specific actions, such as dilution or use of smaller aliquot sizes, and takes into account sample characteristics, sample preparation, and analytical

adjustments. The SQL represents the sample-specific detection limit and all non-detected results are reported to this level.

- Practical quantitation limit (PQL) – This limit is defined as the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration point for the analyte, and includes the predicted effect of sample matrices with typical interfering species. The PQL is the lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions. PQLs are used to estimate or evaluate the minimum concentration at which the laboratory can be expected to reliably measure a specific chemical contaminant during day-to-day analyses of different sample matrices. Detected results greater than the SQL, but less than the PQL, were qualified by the laboratory as estimated. Further qualification based on this scenario is discussed in Section 2.1.8.

Laboratories consistently reported PQLs and SQLs for all stable chemistries in the EDDs, which were subsequently entered into the TIMET database.

QC data were reviewed in conjunction with sample data. Sample results were received in both hardcopy and electronic formats. The TIMET database includes both sampling information and analytical results. Table 1 presents all sample identification numbers and the analytical groups analyzed during this reporting period. Note that the limits reported by TIMET in the database are consistent with the NDEP Guidance on Unified Chemical Electronic Data Deliverable Format, dated March 5, 2012 (NDEP, 2012b).

1.2 Validation Process

Two levels of validations were conducted on the analytical data collected during this investigation as required by the current NDEP data validation guidance (NDEP, 2009a, 2009b, 2009c, 2009d and 2012a):

- Level 2B – Including verification and validation based on completeness and compliance checks of sample receipt conditions and both sample-related and instrument-related QC results.

- Level 4 - Including verification and validation based on completeness and compliance checks of sample receipt conditions, both sample-related and instrument-related QC results, recalculation checks, and the review of actual instrument outputs.

According to NDEP guidance, at least 10 percent of all samples should undergo Level 4 validation; while the remaining 90 percent may be validated to Level 2B. Table 1 indicates the level of data validation conducted on the results from each sampling location; and shows

that at least 10 percent of the samples/analyses were validated to Level 4 criteria. Table 2 lists the review items associated with each of the two levels of validation. A description of each review item, including instances when results did not meet acceptance criteria, is provided in Section 2.

Stable chemistry sample results were validated in accordance with the following EPA guidance documents:

- "U.S. EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review" (EPA, 2008).
- "U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (EPA, 2004).
- "Region 9 Superfund Data Evaluation/Validation Guidance" (EPA, 2001).
- NDEP data validation guidance and supplements (NDEP, 2009a, 2009b, 2009c, 2009d, and 2012a)

Note that the data in this event were validated using the newest NDEP guidance for qualifying data based on blank contamination (NDEP, 2012a). Additionally, validation was conducted in accordance with the most current NDEP data validation guidance and supplements (NDEP, 2009a, 2009b, 2009c, 2009d, and 2012a).

Based on data validation and review, data qualifiers were placed in the electronic database to signify whether the data were acceptable, acceptable with qualification, or rejected. In addition, for every data validation qualifier, a secondary comment code was entered to indicate the primary reason for qualification. Table 3 provides the definitions for the data validation qualifiers and comment codes used in the database. Validation qualifiers and definitions are based on those used by EPA in the current validation guidelines (EPA, 2004 and 2008). These comment codes include an indication as to the reason for qualification of data, as well as the expected bias, if applicable. Every individual result that has any qualifier (laboratory or validation) has a corresponding code(s) to provide clarity to the usability of the result. The validated results and comments are contained in the TIMET database and provided in electronic format as Appendix A to this document.

The laboratory was also required to submit a detailed case narrative with every data package listing any QC criteria that were not met or any other non-conformance that might affect data quality (for example, initial or continuing calibration problems). In addition to the criteria listed above, each laboratory case narrative was thoroughly reviewed. Results were qualified for any non-conformances listed in the laboratory case narrative that affected data quality.

1.3 Report Organization

After this introductory section, Section 2 summarizes data validation and usability for soil data collected during this reporting period. Section 3 provides general conclusions about the usability of the data sets. The conclusions regarding data usability will be used to prepare data quality objectives (DQO) for future environmental investigations undertaken at TIMET. The references and tables follow the conclusions and recommendations at the end of this document.

2. Data Validation Summary

This section describes the data validation findings and usability with regard to the project-specific objectives. Sections 2.1 and 2.2 summarize the data validation findings, and Section 2.3 summarizes the evaluation of the following quality indicator parameters: precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS).

2.1 Data Validation Findings

This section summarizes items of the validation process and discusses how these findings affect data quality.

2.1.1 Sample Receipt and Holding Times

The condition of the samples upon receipt and holding times are evaluated initially by the laboratory, and then assessed by the reviewer. Non-conformances were not noted.

Holding time refers to the period of time between sample collection and the preparation and/or analysis of the sample. Sample results were reviewed for compliance with the holding times set forth in Table 4 of the approved TIMET Site-Wide Generic SAP (TIMET, 2007). All holding time criteria were met.

2.1.2 Calibration

Instrument calibration data were included in the laboratory hardcopy data packages, but not the EDDs (typical of the industry). Review included the instrument setup, operating conditions, initial calibration verifications, and continuing calibration verifications (CCV).

No metals, SVOCs, or PCB congener data were qualified based on calibration non-conformances. For the PCB analysis, percent difference for Aroclor 1016 in one CCV was outside the QC limit of ±20 percent. The associated results for Aroclor 1016, Aroclor 1221, Aroclor 1232, and Aroclor 1242 were qualified as estimated (UJ) and assigned the comment code “c” based on CCV results. For the Dioxin/Furan analysis, percent difference for 123789-HxCDF and 234678-HxCDF in one CCV was outside the QC limit of ±20 percent. The associated results for 123789-HxCDF and 234678-HxCDF were qualified as estimated (J/UJ) and assigned the comment code “c” based on CCV results. Table 4 lists all sample results qualified based on calibration non-conformances during this reporting period.

2.1.3 Blank Samples

Field and laboratory blanks consisting of contaminant-free water were prepared and analyzed as part of standard quality assurance/quality control (QA/QC) procedures to monitor for

potential contamination of field equipment, laboratory process reagents, and sample containers. For this program, two groups of blanks were prepared and analyzed: (1) laboratory blanks (calibration blanks and method blanks), and (2) rinsate blanks. Each blank type is discussed in the following sections (Sections 2.1.3.1 and 2.1.3.2). The assignment of validation qualifiers associated with blank contamination is discussed in Section 2.1.3.3.

2.1.3.1 Laboratory Blanks

Two types of laboratory blanks were prepared and analyzed: calibration blanks and method blanks. Both types were prepared in the laboratory using high-grade, contaminant-free water.

Calibration Blanks – Calibration blanks are comprised of acidified high-grade contaminant-free water analyzed at the beginning (initial calibration blank [ICB]), end (continuing calibration blank [CCB]), and every 10 runs during analysis of metals by ICP, ICP/MS, and CVAA. Their primary function is to initially set the calibration curve (along with calibration standards) and continually monitor the background for possible variations in instrument electronic signal or cross-contamination. ICB and CCB data are included in the ALS hardcopy data packages, but not the EDDs. As such, ICB and CCB data were evaluated based solely on hardcopy data (i.e., these results are not available in the database).

Method Blanks – Method blanks are laboratory QC samples that are prepared and analyzed with each batch of environmental samples. Method blanks are comprised of high-grade contaminant-free water that is carried though all preparation procedures in batches with field samples (including the addition of all reagents and QC monitoring compounds). Method blanks monitor potential contaminants in laboratory processes, reagents, and containers, and were analyzed for each analytical method used on field samples.

The following analytes were detected in one or more method blanks (note that sample results may or may not have been qualified for all listed analytes based on the comparison of blank concentrations to sample concentrations; qualified data are discussed in Section 2.1.3.3):

- PCB Congeners detected in method blanks – PCB 11, PCB 52, PCBs 44+47+65, PCBs 70+61+74+76, PCB 66, PCB 56, PCB 95, PCBs 90+101+113, PCBs 83+99, PCBs 86+87+97+109+119+125, PCBs 110+115, PCB 118, PCB 105, PCB 136, PCBs 135+151, PCBs 147+149, PCB 132, PCB 146, PCBs 153+168, PCB 141, PCBs 129+138+163, PCB 158, PCB 179, PCBs 156+157, PCB 187, PCB 183, PCB 174, PCB 177, PCBs 171+173, PCBs 180+193, PCB 170, PCBs 198+199, PCB 194, PCB 209

2.1.3.2 Field Quality Control Blanks

One set of rinsate blanks (Rinsate-Bowl and Rinsate-Spoon) were collected on 9/13/13. Rinsate blanks monitor for potential cross contamination due to improper cleaning of sampling equipment, as well as monitor for potential contamination of samples during collection and transportation back to the laboratory. These rinsate blank results were used to evaluate possible field contamination for sample NW-23 only. The collection dates of all other field samples differed by more than a week of the rinsate blanks. It is not known whether the rinsate blank contamination results are representative of the remaining sampling dates.

The following analytes were detected in one or more rinsate blanks (note that sample results may or may not have been qualified for the listed analyte based on the comparison of blank concentrations to sample concentrations; qualified data are discussed in Section 2.1.3.3):

- PCB Congeners detected in rinsate blanks – PCB 11, PCB 52, PCBs 44+47+65, PCBs 147+149, PCB 132, PCBs 153+168, PCBs 129+138+163, PCB 209
- Metals detected in rinsate blanks - Niobium
- Dioxin/Furans detected in rinsate blanks - 1,2,3,4,6,7,8-HpCDD, OCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDF, OCDF

2.1.3.3 Qualifications Due to Blank Contamination

The previous subsections describe the types of blanks that were collected and analyzed with field samples and lists analytes detected in the method blanks. This section discusses the procedure for evaluating blank results and applying qualifiers on field data.

According to the revised NDEP guidance for qualifying data based on blank contamination (NDEP, 2012a), no data are censored when associated blanks contain measurable analytes. If associated blanks contain measurable analytes, the associated sample data are merely qualified as estimated (J) and assigned the comment code “b” in the TIMET database. Table 5 presents data that were qualified as estimated (J) based on laboratory blank contamination. Bias (+ or -) for estimated samples was assigned based on the blank value reported by the laboratory. If the blank value was positive, then associated positive sample results may be biased high. If the blank value was negative (only reported for metals), then associated sample results may be biased low. Note that not every compound detected in laboratory blanks resulted in qualification of sample results, because associated results may already be reported as non-detects from the laboratory or sample analyte levels were greater than ten times those detected in the blanks.

As listed in Section 2.1.3.2, Analytes were detected in the rinsate blanks associated with sample NW-23. If associated field blanks contain measurable analytes, the associated sample data are merely qualified as estimated (J) and assigned the comment code "f" in the TIMET database. No data were qualified based on rinsate blank contamination. Note that not every compound detected in the rinsate blanks resulted in qualification of sample results, because associated results may already be reported as non-detects from the laboratory or sample analyte levels were greater than ten times those detected in the blanks.

2.1.4 Spike Samples

Spiked samples are environmental matrices spiked with a subset of target compounds at known concentrations. These QC samples were analyzed with project samples to measure laboratory accuracy and potential interference from the matrix. Two types of spike samples were analyzed with the project samples to monitor for potential interferences during analysis:

- Matrix spike (MS) and matrix spike duplicate (MSD) samples; these samples consist of aliquots of environmental samples spiked with a subset of target compounds. MS/MSD samples monitor potential interference from the site-specific sample matrix and its effect on target compounds.

- Blank spike samples, also known as laboratory control samples (LCS); these samples are an aliquot of reagent soil or water spiked with a subset of target compounds. The LCS monitors laboratory accuracy without the bias of a sample matrix. In some cases, the LCS was analyzed in duplicate (LCSD).

At least one MS/MSD sample and one LCS were prepared and analyzed with each batch of environmental samples. Note that for some SDGs, the laboratory conducted MS and MSD analyses on samples that were not specific to the TIMET site. In those cases, evaluation of the MS and MSD is not conducted because the reviewer has no way to confirm that the matrix chosen is representative of samples from the TIMET facility.

The reviewer evaluated both the spike and duplicate recoveries of the MS and LCS pairs. Data were qualified if either the MS or MSD recovery were outside the QC limits (or either the LCS or LCSD recoveries were outside the QC limits). Data that were qualified based on MS/MSD and/or LCS/LCSD recoveries that were outside the QC limits are presented in Table 6. Analytical bias was determined and qualified data were assigned bias codes (- or +) as necessary. Qualified results were assigned the validation comment code "e" in the TIMET database.

2.1.5 Surrogate Spikes

Surrogate spikes were prepared by adding compounds similar to target compounds of interest to sample aliquots and associated QC samples for organic analyses only. Surrogate spike

recoveries monitor the efficiency of contaminant extraction from the sample medium into the instrument measuring system and measure possible interferences from the sample matrix that may affect the data quality of target compound results.

Surrogate spikes were added to each of the samples submitted for organic analysis to monitor potential interferences from the matrix. Surrogates were added to the sample aliquot during preparation of the sample for analysis, and surrogate recoveries were compared with QC acceptance limits. Surrogate recoveries outside of the acceptable limits indicate interference from the sample matrix for the detection of target compounds. Select surrogate recoveries were above control limits in the PCB analyses. However, as all associated results were nondetect, data was not affected. As such, no data were qualified or rejected based on surrogate recoveries.

2.1.6 Internal Standards

Internal standards were prepared for SVOC and ICP/MS analyses by adding compounds similar to target compounds of interest to sample aliquots. Internal standards are used in the quantitation of target compounds in the sample or sample extract. Internal standard responses and retention times were presented in the data packages. The evaluation of internal standards involved comparing the instrument response and retention time from the internal standard in the sample with the response and retention time of specific internal standards from the continuing calibration. All internal standard criteria were met; no data were qualified or rejected based on these criteria.

2.1.7 Duplicate Samples

Duplicate samples involved the preparation and analysis of an additional aliquot of a field sample. Results from duplicate sample analysis measure laboratory precision as well as homogeneity of contaminants in the field matrix. For this investigation, three types of duplicate analyses were conducted: (1) spiked duplicates such as MSDs and/or LCSDs for organic analyses and total metals, (2) matrix duplicates (MD) for inorganic analyses, and (3) field duplicates for both types of analyses. MSDs and MDs measure laboratory precision and sample homogeneity, while field duplicates are used to evaluate field sampling technique precision, laboratory precision, and homogeneity of the sample matrix.

At least one duplicate analysis (MSD or MD) was performed with each batch of environmental samples processed in the laboratory. The laboratory calculated the relative percent difference (RPD) between the two detected values for MSD and MD analyses of stable chemistries. RPD values within the acceptable limits indicate both laboratory precision and minimal matrix heterogeneity of compounds detected in the samples. Results associated with elevated RPD values were qualified as estimated to indicate the variability in detected concentrations or poor laboratory precision. RPDs for duplicate precision were

within acceptable limits and therefore, no results were qualified based on duplicate precision. The equation for calculating RPD is as follows:

$$RPD = \frac{|A - B|}{(A + B)/2} \quad x \quad 100\%$$

where:

A = First duplicate concentration

B = Second duplicate concentration

Three field duplicate pairs were collected from the following location:

- Duplicate Beta Ditch 1 paired with NW-24
- Duplicate Beta Ditch 2 paired with BD-2
- TMBD-Wheelwash-03 paired with TMBD Wheelwash-DUP

The field duplicate collection frequency of at least one per 10 solid samples was met for this sampling event. According to EPA guidance, there are no specific criteria for evaluating field duplicates (EPA, 2004 and 2008). In the majority of cases, field duplicate precision was less than 50 percent RPD for solid samples for results that exceeded five times the reporting limit and results were within two times the reporting limit for results which were less than five times the reporting limit.

Laboratory duplicates (in the form of MD, MSD and LCSD) were prepared and analyzed at the required frequency of at least one per 20 solid samples.

Data that were qualified based on MS/MSD, LCS/LCSD, or field duplicate RPDs that were outside the QC limits are presented in Table 7. Analytical bias is indeterminate. Qualified results were assigned the validation comment code “d” in the TIMET database.

2.1.8 Labeled Standards

In the analysis of dioxins and furans and PCB congeners by HRGC/HRMS, labeled standards were added to each field and QC sample. The recoveries for labeled standards in select dioxin/furan samples were outside of the acceptance limits. Data that were qualified based on labeled standard recoveries outside the QC limits are presented in Table 8. Qualified results were assigned the validation comment code “a” in the TIMET database.

2.1.9 Estimated Maximum Possible Concentration

In the analysis of dioxins and furans and PCB congeners by HRGC/HRMS, if the analyte has an acceptable signal-to-noise ratio, but does not meet the abundance criteria for the two primary quantitation ions, the laboratory reports the result as an estimated maximum possible concentration (EMPC). Results where the identification criterion was not met were qualified as estimated (J) and assigned the comment code "r" in the TIMET database. These qualified results are reported in Table 9.

2.1.10 Other Qualifications

This section addresses the following qualification scenarios and comment codes that were not addressed above:

- Positive results for stable chemistries above the SQL, but less than the PQL (comment code "g") are reported in Table 10.
- Other stable chemistry qualifications including ICP serial dilution non-conformances, compound interference, positive results above the calibration range, estimation of total result based on the individual components included as comment code "j," are reported in Table 11.

Quantitation less than the practical quantitation limit for stable chemistries – The laboratory evaluated the SQL and PQL for each sample result. In cases where sample results were greater than the SQL, but less than the PQL, the laboratory qualified the results as estimated. Specifically, results with this scenario were qualified by the laboratory as "B" for metals and "J" for all other stable chemistry tests. During data validation, positive results less than the PQL but greater than or equal to the SQL were qualified as estimated (J). Qualitatively, the results are acceptable; however, these results were considered estimated, because as the value approaches the SQL, the accuracy of the measurement is less certain. In these cases, bias cannot be determined. All results qualified as estimated (J) for this reason are presented in Table 10 and were assigned the validation comment code "g" in the TIMET database.

Other stable chemistries qualifications – This category includes other non-conformances that may affect data quality and for which qualifiers have been assigned. During this reporting period, the percent difference between the original analysis and the required ICP serial dilution exceeded the QC limit for certain total metals by ICP/MS. As such, total metals results in affected batches were qualified as estimated (J). A bias was assigned to results when the serial dilution clearly indicated that the initial reported result was higher or lower than the serial dilution result. This indicates the possibility that matrix interference (chemical or spectral) may be enhancing or suppressing the signal in the undiluted reported result. A summary of qualified results (niobium in sample NW-11) due to ICP serial dilution

non-conformance is included in Table 11. Results were assigned the validation comment code "j" in the TIMET database.

In the dioxin and furan analysis, the laboratory noted that the presence of chlorodiphenyl ether, at the retention time of select target compounds, interfered with compound quantitation. The following results were affected: 12378-PeCDF in samples MW-24 and Duplicate BetaDitch 1, 123678-HxCDF in samples MW-23, NW-9, and NW-24, 123789-HxCDF in samples BD-16, BD-4, and Duplicate BetaDitch 2, and 234678-HxCDF in samples BD-2, BD-16, BD-17, and Duplicate BetaDitch 2. These qualifications are included in Table 11. Results were assigned the validation comment code "j" in the TIMET database.

In the PCB congener analysis, although the result for PCB 209 in sample NW-11 exceeded the calibration range, as the peak was not saturated, the laboratory did not reanalyze the sample at a dilution. This qualification is included in Table 11. Results were assigned the validation comment code "j" in the TIMET database.

In the dioxin and furan analysis, total results were estimated as all compounds reported in each homolog series were quantitated with a single response factor. These qualifications are included in Table 11. Results were assigned the validation comment code "j" in the TIMET database.

2.1.11 Summary of Rejected Soil Data

Based on the review summarized above, no results were rejected. All data were usable and meet project objectives with the qualifications discussed in the sections above.

2.2 Evaluation of PARCCS Parameters

Overall data quality was acceptable based on the critical indicator parameters, except for data specifically rejected and qualified as such (R). PARCCS parameters were reviewed for laboratory analytical results obtained during the soil collection conducted during this reporting period. The sections below discuss the results of the evaluation for each indicated parameter.

2.2.1 Precision

Precision is the measure of the variability associated with an entire sampling and analysis process. It is the comparison among independent measurements as the result of repeated application of the same process under similar conditions. It is determined by analyzing field duplicate pairs, spike sample pairs (MS/MSD and LCS/LCSD), and MD pairs. Precision is expressed as the RPD of a pair of values (or results) for stable chemistries. Table 7 presents all analytical data qualified due to precision non-conformances.

Field duplicate pairs were collected, analyzed, and evaluated for each analysis performed on every sample matrix. The precision for soil samples was acceptable in most cases. Select results were qualified based on field duplicate precision.

The frequency criterion for MS/MSD or MD pairs is 5 percent of the samples collected (per matrix) or one per each analytical batch of 20 or less per matrix. MS/MSD or MD samples were collected, analyzed, and evaluated for each analysis performed on every sample matrix. The frequencies in which MS/MSDs or MDs were prepared and analyzed by the laboratory met the frequency requirement as stated above. The precision for soil samples was acceptable in most cases. Select results were qualified based on laboratory duplicate precision.

2.2.2 Accuracy

Accuracy is the degree to which a measurement agrees with its true value and is expressed as percent recovery. Accuracy is assessed by evaluating instrument calibrations and comparing MS, MSD, LCS, LCSD, and surrogate recoveries with associated QC limits.

Instrument calibrations were evaluated against acceptable QC limits. During this reporting period select PCB and dioxin/furan results were estimated due to continuing calibration nonconformances. Table 4 presents all analytical data qualified due to calibration non-conformances.

Labeled standard recoveries were evaluated against acceptable QC limits. During this reporting period select dioxin/furan results were estimated due to these nonconformances. Table 8 presents all analytical data qualified due to these non-conformances.

The frequency criterion for MS/MSD and LCS/LCSD is 5 percent of the samples per matrix or one per each analytical batch of 20 samples or less per matrix. MS/MSD and LCS/LCSD samples were prepared, analyzed, and evaluated for each analysis performed at the proper frequency. The criteria for MS/MSD and LCS/LCSD accuracy are based on recommended QC limits provided in EPA validation guidelines and on laboratory historical QC limits for those analytes not presented in validation guidelines. Table 6 presents soil data that were qualified or during this reporting period based on spiked sample recoveries.

Positive or negative signs were assigned to qualifiers to indicate the expected bias, as indicated by the QC result. In some cases, the MS and MSD had different biases for the same sample; in which case no bias could be assigned.

In addition, matrix interferences that may result in inaccurate results were identified from serial dilutions conducted during ICP analysis. Table 11 contains results that were qualified based on serial dilution results.

2.2.3 Representativeness

Representativeness is a qualitative parameter and is defined by the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or a process or environmental condition. Sample results were evaluated for representativeness by examining items related to sample collection, including COC documentation, sample labeling, collection dates, and condition of the samples upon receipt at the laboratory. Laboratory procedures also were examined, including anomalies reported by the laboratory, either upon receipt of the samples at the laboratory or during analytical processes, adherence to recommended holding times of samples prior to analysis, calibration of laboratory instruments, adherence to analytical methods, and completeness of data package documentation. Non-conformances were not observed during sample receipt at the laboratory. All holding time criteria were met.

In addition to the non-conformances discussed above, representativeness is evaluated by reviewing blanks (laboratory method blanks and field blanks). Laboratory and field QC blanks contained detectable amounts of metals, dioxins and furans, and PCB congeners (listed in Section 2.1.3). Generally, concentrations detected in the blanks were considerably less than reported results for the field samples; therefore, these concentrations did not affect overall data quality. Sample results qualified based on laboratory blanks are presented in Table 5. The affected data were qualified as estimated. Further evaluation of the effect of blank contamination on sample results will be presented in a formal data usability document when these results are statistically evaluated and applied to a specific decision-making agenda.

2.2.4 Completeness

Completeness is defined as the percentage of measurements judged to be valid. The validity of sample results is determined through the data validation process. All rejected sample results are considered to be incomplete. Data that are qualified as undetected (U), undetected at estimated reporting limits (UJ), and estimated (J) are considered to be valid and usable. The number of valid results divided by the number of possible individual analyte results, expressed as a percentage, determines the completeness of the data set.

For the solid data collected during this reporting period, no results were rejected (R). The total number of reportable results in the NDEP EDD is 3964 (contained in the table “EDD_ Results” in the TIMET analytical database found in Appendix A). Reportable sample results do not include any results qualified with an “X” and not reported. If no results were rejected from a total of 3964 reportable validated results, then the number of valid results is 3964. The percent complete (valid and not rejected) is 100 percent. This meets the completeness goal of 90 percent for this event.

2.2.5 Comparability

Comparability of the data is a qualitative parameter that expresses the confidence with which one data set may be compared with another. Comparability of the data is achieved by using standard methods for sampling and analysis, reporting data in standard units, normalizing results to standard conditions, and using standardized reporting formats and data validation procedures. Data were reported by ALS and TestAmerica, Inc. using comparable methods. Since comparable methods were used between the two laboratories, the data are comparable.

2.2.6 Sensitivity

Sensitivity is the measure of the signal from an instrument that represents an actual deflection or response above instrument noise. Analytical sensitivity is measured by the MDL and is reported with the necessary dilution factors, preparation factors, and dry-weight factors of an individual sample as the SQL. The sensitivity requirements were based on the laboratory's ability to detect and report consistent and reliable limits.

It is expected that when a direct comparison to approved applicable screening levels is conducted, some SQLs will exceed the corresponding levels. For the purposes of site characterization and remedy selection, non-detects with reporting limits that exceed screening levels will be compared to screening levels and plotted as "U" qualified data that exceed the screening level (with the notation that the results are non-detected above the screening level). Recommendations to supplement the data or confirm the absence/presence of the analyte with additional data collection will be made for both purposes. Usability for other scenarios will be determined on a case-by-case basis. Procedures for handling non-detects (whether above the screening level or not) will be addressed in future risk assessment work plans.

Scenarios involving dilutions, high moisture content, and matrix interference affect the SQL by raising it according to the dilution factor or percent moisture content. Dilutions were required for several metal, PCB Congener, Dioxins/Furans, and SVOC analyses because of high concentrations. Whenever the concentration exceeded the linear range of the instrumentation, dilutions were analyzed. All reportable dilution results have been provided.

3. Conclusions and Recommendations

This section summarizes the conclusions and recommendations regarding usability of the data for the project objectives. Based on the evaluation of each data set, greater than 90 percent of the solid data obtained during this reporting period are valid (that is, not rejected) and acceptable for their intended use. Biased data will be used as follows:

- Biased high results, based on spike recoveries, surrogate recoveries, and blank contamination will be used as the upper limit of concentration for the analyte, recognizing that the actual value may be lower.

- Biased low results, based on spike surrogate recoveries and negative blank values, will be used as the lower limit of concentration for the analyte, recognizing that the actual value may be higher.

All validated data points may be considered for use in other purposes that extend beyond the original project objectives, including evaluation against screening levels and risk assessment with the appended qualifiers noted in this document.

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Tables

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYSIS
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Location	Date Sampled	Event	SDG	Lab Name Code	Lab ID	Sample Matrix	Validation Level	EPA 1668C	SW 6020A	SW 8082A	SW 8270D	SW 8290
RINSATE - BOWL_09/13/13	9/13/2013	BetaDitchExv_2013	1309221	ALS-FC	1309221-2	W	LEVEL 4	--	X	--	X	--
RINSATE - BOWL_09/13/13	9/13/2013	BetaDitchExv_2013	E1301209	CAS	E1301209-002	W	LEVEL 4	X	--	--	--	X
RINSATE - SPOON_09/13/13	9/13/2013	BetaDitchExv_2013	1309221	ALS-FC	1309221-3	W	LEVEL 2B	--	X	--	X	--
RINSATE - SPOON_09/13/13	9/13/2013	BetaDitchExv_2013	E1301209	CAS	E1301209-003	W	LEVEL 2B	X	--	--	--	X
BD-1	9/25/2013	BetaDitchExv_2013	1309438	ALS-FC	1309438-2	SO	LEVEL 2B	--	--	--	X	--
BD-1	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-006	SO	LEVEL 2B	X	--	--	--	--
BD-13	9/23/2013	BetaDitchExv_2013	1309339	ALS-FC	1309339-2	SO	LEVEL 2B	--	--	--	X	--
BD-13	9/23/2013	BetaDitchExv_2013	E1301243	CAS	E1301243-005	SO	LEVEL 2B	X	--	--	--	X
BD-16	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-002	SO	LEVEL 2B	X	--	--	--	X
BD-17	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-003	SO	LEVEL 2B	X	--	--	--	X
BD-2	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-007	SO	LEVEL 2B	X	--	--	--	X
BD-2	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-001	SO	LEVEL 2B	X	--	--	--	X
BD-3	9/25/2013	BetaDitchExv_2013	1309438	ALS-FC	1309438-1	SO	LEVEL 2B	--	--	--	X	--
BD-3	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-005	SO	LEVEL 2B	X	--	--	--	X
BD-4	9/25/2013	BetaDitchExv_2013	E1301286	CAS	E1301286-004	SO	LEVEL 2B	X	--	--	--	X
BD-5	9/23/2013	BetaDitchExv_2013	1309339	ALS-FC	1309339-1	SO	LEVEL 2B	--	--	--	X	--
BD-5	9/23/2013	BetaDitchExv_2013	E1301243	CAS	E1301243-004	SO	LEVEL 2B	X	--	--	--	X
NW-1	9/23/2013	BetaDitchExv_2013	E1301243	CAS	E1301243-003	SO	LEVEL 2B	X	--	--	--	--
NW-11	9/4/2013	BetaDitchExv_2013	1309037	ALS-FC	1309037-1	SO	LEVEL 2B	--	X	--	--	--
NW-11	9/4/2013	BetaDitchExv_2013	E1301166	CAS	E1301166-002	SO	LEVEL 2B	X	--	--	--	--
NW-17	8/23/2013	BetaDitchExv_2013	E1301129	CAS	E1301129-002	SO	LEVEL 2B	X	--	--	--	--
NW-2	9/23/2013	BetaDitchExv_2013	E1301243	CAS	E1301243-001	SO	LEVEL 4	X	--	--	--	X
NW-20	9/23/2013	BetaDitchExv_2013	E1301243	CAS	E1301243-002	SO	LEVEL 2B	--	--	--	--	X
NW-23	9/12/2013	BetaDitchExv_2013	1309221	ALS-FC	1309221-1	SO	LEVEL 2B	--	--	--	X	--
NW-23	9/12/2013	BetaDitchExv_2013	E1301209	CAS	E1301209-001	SO	LEVEL 2B	X	--	--	--	X
NW-24	8/23/2013	BetaDitchExv_2013	1308444	ALS-FC	1308444-3	SO	LEVEL 4	--	X	--	X	--
NW-24	8/23/2013	BetaDitchExv_2013	E1301129	CAS	E1301129-004	SO	LEVEL 4	X	--	--	--	X
NW-24	8/23/2013	BetaDitchExv_2013	1308444	ALS-FC	1308444-1	SO	LEVEL 4	--	X	--	X	--
NW-24	8/23/2013	BetaDitchExv_2013	E1301129	CAS	E1301129-001	SO	LEVEL 4	X	--	--	--	X
NW-5	9/4/2013	BetaDitchExv_2013	1309037	ALS-FC	1309037-2	SO	LEVEL 2B	--	--	--	X	--
NW-5	9/4/2013	BetaDitchExv_2013	E1301166	CAS	E1301166-003	SO	LEVEL 2B	X	--	--	--	X
NW-8	8/23/2013	BetaDitchExv_2013	1308444	ALS-FC	1308444-2	SO	LEVEL 2B	--	X	--	X	--
NW-8	8/23/2013	BetaDitchExv_2013	E1301129	CAS	E1301129-003	SO	LEVEL 2B	--	--	--	--	X
NW-9	9/4/2013	BetaDitchExv_2013	E1301166	CAS	E1301166-001	SO	LEVEL 2B	--	--	--	--	X
Wheel Wash -02	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SAC	680-95178-9	SO	LEVEL 2B	--	--	--	--	X
Wheel Wash -02	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SLO	680-95178-9	SO	LEVEL 2B	--	X	X	X	--
Wheel Wash -03	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SAC	680-95178-10	SO	LEVEL 2B	--	--	--	--	X
Wheel Wash -03	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SLO	680-95178-10	SO	LEVEL 2B	--	X	X	X	--
Wheel Wash -03	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SAC	680-95178-11	SO	LEVEL 2B	--	--	--	--	X
Wheel Wash -03	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SLO	680-95178-11	SO	LEVEL 2B	--	X	X	X	--
Wheel Wash-01	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SAC	680-95178-8	SO	LEVEL 4	--	--	--	--	X
Wheel Wash-01	10/15/2013	BetaDitchExv_2013	680-95178-2	TA-SLO	680-95178-8	SO	LEVEL 4	--	X	X	X	--

Notes:

--	No analysis conducted
X	Analysis conducted
EPA 1668C	PCB Congeners analysis
SW 6020A	ICP/MS Metals analysis (Niobium only)
SW 8082A	PCB Aroclor analysis
SW 8270D	Semivolatile Organic analysis (Hexachlorobenzene only)
SW 8290	Dioxins and Furans analysis

TABLE 2
Data Validation Criteria
Beta / NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Inorganics Validation Criteria	**Level 4**	**Level 2B**
Holding times	X	X
Calibration (initial and continuing)	X	X
Blanks (laboratory and field)	X	X
Inductively coupled plasma (ICP) interference check sample	X	--
Laboratory control sample	X	X
Duplicate sample analysis	X	X
Matrix spike analysis	X	X
ICP serial dilution	X	X
Tracer yield (radionuclide analysis only)	X	X
Sample results verification	X	--
Field duplicate	X	X
Overall assessment of data set	X	X
Organics Validation Criteria		
Holding times	X	X
Gas chromatography/mass spectrometry (GC/MS) instrument performance check	X	X
Calibration (initial and continuing)	X	X
Blanks (laboratory and field)	X	X
Surrogate recovery	X	X
Laboratory control sample	X	X
Duplicate sample analysis	X	X
Matrix spike/matrix spike duplicate analysis	X	X
Field duplicate	X	X
Internal standard performance	X	X
Target compound identification	X	--
Tentatively identified compounds	X	--
System performance	X	--
Overall assessment of data set	X	X

Notes:
-- Criterion not evaluated
X Criterion evaluated

TABLE 3
Data Validation Qualifiers and Comment Codes
Beta / NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Validation Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ	The analyte was analyzed for, but was not detected. The reported sample quantitation limit is approximate and may be inaccurate or imprecise.
J	The result is an estimated quantity. The associated numerical value is an approximate concentration of the analyte in the sample.
R	The sample result is rejected and unusable due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
+	Estimated results are possibly biased high based on associated quality control
–	Estimated results are possibly biased low based on associated quality control
X	Result is not used for reporting because a more accurate and precise result is reported in its place.
Comment Code	**Definition**
a	Surrogate/Tracer recovery exceeded
b	Laboratory method blank and common blank contamination
c	Calibration criteria exceeded
d	Duplicate precision criteria exceeded
e	Matrix spike or laboratory control sample recovery exceeded
f	Field blank contamination
g	Quantification below practical quantitation limit for stable chemistries
h	Holding time exceeded or other sample receipt issues
i	Internal standard criteria exceeded
j	Other stable chemistry qualification
k	Radiochemistry quantitation issue
l	Duplicate result from a less sensitive analytical method (for example, ICP versus ICP-MS)
m	Duplicate result from a less sensitive analytical run (for example, surrogate recoveries exceeding control limits or dilution analysis)
n	Radiochemistry tracer yield criteria exceeded
o	Other radiochemistry qualification
p	Qualification of anions or TDS if either the CAB or TDS balance is unacceptable, but not both
q	Qualification of both anions and TDS when *both* the CAB and TDS balance are unacceptable.
r	Qualification of dioxin/furan results when the concentrations are represented by an "estimated maximum possible concentration" (EMPC).
s	Indicates that the analyte was undetected in the sample and was reported by the laboratory as undetected (U); below the SQL

Notes:

CAB	Cation/anion balance
EMPC	Estimated maximum possible concentration
ICP	Inductively coupled plasma
ICP/MS	Inductively coupled plasma/mass spectrometer
SQL	Sample quantitation limit
TDS	Total dissolved solids
TIMET	Titanium Metals Corporation

TABLE 4
QUALIFICATION BASED ON CALIBRATION CRITERIA
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
CCAL 10/23/13 21.5%D (Acceptance Limits 20%D)										
SW 8082A	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	Aroclor 1016	35	9.3	9.3 U	UJ	s, c	ug/kg
SW 8082A	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	Aroclor 1221	35	9.3	9.3 U	UJ	s, c	ug/kg
SW 8082A	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	Aroclor 1232	35	9.3	9.3 U	UJ	s, c	ug/kg
SW 8082A	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	Aroclor 1242	35	9.3	9.3 U	UJ	s, c	ug/kg
CCAL 07/31/13 20.6%D (Acceptance Limits 20%D)										
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.1	0.16	6.1	J	c	pg/g
CCAL 07/31/13 21.6%D (Acceptance Limits 20%D)										
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.1	0.14	12	J	c	pg/g

Notes:

%D	Percent difference
ug/kg	Micrograms per kilogram
CCAL	Continuing calibration
ICAL	Initial calibration
PQL	Practical quantitation limit
QC	Quality Control
RRF	Relative response factor
SDG	Sample delivery group
SQL	Sample quantitation limit

[1] Result field includes the numerical concentration and the laboratory qualifier or code.

Qualifiers/Comments:

c	Comment code for calibration qualification
J	Estimated value
s	Comment code for non-detects
UJ	Undetected at an estimated SQL

TABLE 5
QUALIFICATION BASED ON BLANK CONTAMINATION
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Blank Value	Blank Type	Unit
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	3,3'-Dichlorobiphenyl (PCB 11)	107	107	70.2 BJ	J+	b, g	13.5 J	MB	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	3,3'-Dichlorobiphenyl (PCB 11)	102	102	51.9 BJ	J+	b, g	13.5 J	MB	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	3,3'-Dichlorobiphenyl (PCB 11)	98.9	98.9	74.1 BJ	J+	b, g	13.5 J	MB	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,3'-Dichlorobiphenyl (PCB 11)	103	103	24.1 BJ	J+	b, g	27.5 J	MB	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 147/149	103	103	25.2 BJ	J+	b, g	3.0 J	MB	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 44/47/65	103	103	45.9 BJ	J+	b, g	7.94 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	52.4	52.4	26.3 BJ	J+	b, g	15.3 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5,6'-Heptachlorobiphenyl (PCB 174)	52.4	52.4	26.9 BJ	J+	b, g	17.5 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	52.4	52.4	19.3 BJ	J+	b, g	10.1 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132)	52.4	52.4	23.4 BJ	J+	b, g	15.8 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179)	52.4	52.4	14.5 BJ	J+	b, g	8.53 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136)	52.4	52.4	7.96 BJK	J+	b, g, r	8.85 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	105	105	40.3 BJ	J+	b, g	15.2 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	52.4	52.4	31.7 BJK	J+	b, g, r	14.7 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	52.4	52.4	18.9 BJK	J+	b, g, r	13.0 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)	52.4	52.4	39 BJ	J+	b, g	6.15 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,5',6-Pentachlorobiphenyl (PCB 95)	210	210	30.6 BJK	J+	b, g, r	27.7 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	52.4	52.4	18.3 BJ	J+	b, g	14.9 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	52.4	52.4	18.8 BJK	J+	b, g, r	4.65 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	52.4	52.4	33 BJ	J+	b, g	18.1 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4'-Tetrachlorobiphenyl (PCB 56)	52.4	52.4	15.9 BJ	J+	b, g	2.66 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	105	105	68.6 BJ	J+	b, e, g	34.1 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	52.4	52.4	24.1 BJ	J+	b, g	5.86 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3'-Dichlorobiphenyl (PCB 11)	105	105	31.2 BJ	J+	b, g	18.9 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 110/115	105	105	94.7 BJ	J+	b, g	27.7 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 129/138/163	210	210	69.4 BJK	J+	b, g, r	45.7 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 147/149	105	105	40.7 BJ	J+	b, g	49.0 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 153/168	105	105	46.3 BJ	J+	b, g	43.0 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 180/193	105	105	84.1 BJ	J+	b, g	30.4 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 44/47/65	105	105	32.3 BJ	J+	b, g	21.0 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 61/70/74/76	210	210	59.7 BJ	J+	b, g	17.6 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 83/99	105	105	30.6 BJ	J+	b, g	12.1 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 90/101/113	210	210	71.2 BJ	J+	b, g	30.9 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 135/151	105	105	27.5 BJK	J+	b, g, r	22.2 J	MB	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 86/87/97/109/119/125	210	210	78.1 BJ	J+	b, g	19.0 J	MB	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	3,3'-Dichlorobiphenyl (PCB 11)	19.3	19.3	147 B	J+	b	17.4 J	MB	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,3'-Dichlorobiphenyl (PCB 11)	21.6	21.6	88.9 B	J+	b	15.3 J	MB	ng/kg

Notes

ng/kg	Nanograms per kilogram
CCB	Continuing calibration blank
ICB	Initial calibration blank
MB	Method blank
NA	Not applicable
PQL	Practical quantitaion limit
SDG	Sample delivery group
SQL	Sample quantitation limit

Qualifiers/Comments

+/-	Result may be biased high/low, respectively
b	Comment code for blank contamination
B	Indicates detected result less than PQL
g	Comment code for less than PQL
J	Estimated value
K	Result represents the EMPC
r	Comment code for EMPC

1 The PQL is Result field includes the numerical concentration and the laboratory qualifier or code.
2 Result field includes the numerical concentration and the laboratory qualifier or code

TABLE 6
QUALIFICATION BASED ON SPIKE RECOVERY
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
LCS EQ1300561 PCB 37 136%R (QC Limit 60-135 %R)										
LCSD EQ1300561 PCB 1 958 %R, PCB 3 408 %R, PCB 4 544 %R, PCB 15 166 %R, PCB 37 172 %R, PCB 118 148 %R, PCB 114 136 %R, PCB 206 138 %R (QC Limit 60-135%R)										
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206)	52.4	52.4	395	J+	e	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2'-Dichlorobiphenyl (PCB 4)	52.4	52.4	9.29 J	J+	d, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	52.4	52.4	14 JK	J+	e, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	105	105	68.6 BJ	J+	b, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2-Chlorobiphenyl (PCB 1)	21.0	21.0	7.83 J	J+	d, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,4,4'-Trichlorobiphenyl (PCB 37)	21.0	21.0	23.7 K	J+	e, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	4,4'-Dichlorobiphenyl (PCB 15)	52.4	52.4	106	J+	e	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	4-Chlorobiphenyl (PCB 3)	52.4	52.4	10.9 JK	J+	d, e, g, r	ng/kg
LCSD EQ1300622 PCB 37 143 %R (QC Limit 60-135%R)										
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	3,4,4'-Trichlorobiphenyl (PCB 37)	80.1	80.1	6060	J+	e	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	3,4,4'-Trichlorobiphenyl (PCB 37)	51.4	51.4	2510	J+	e	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	3,4,4'-Trichlorobiphenyl (PCB 37)	49.2	49.2	7180	J+	e	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	3,4,4'-Trichlorobiphenyl (PCB 37)	20.2	20.2	2170	J+	e	ng/kg
LCSD EQ1300686 PCB 1 143 %R, PCB 3 137 %R, PCB 118 140%R (QC Limit 60-135%R)										
EPA 1668C	E1301286	E1301286-005	BD-3_20130925	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	240	240	15000	J+	e	ng/kg
EPA 1668C	E1301286	E1301286-005	BD-3_20130925	2-Chlorobiphenyl (PCB 1)	41.0	41.0	11600	J+	e	ng/kg
EPA 1668C	E1301286	E1301286-005	BD-3_20130925	4-Chlorobiphenyl (PCB 3)	45.4	45.4	33400	J+	e	ng/kg
LCSD EQ1300622 PCB 37 143 %R (QC Limit 60-135%R)										
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,4,4'-Trichlorobiphenyl (PCB 37)	73.4	73.4	195	J+	e	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,4,4'-Trichlorobiphenyl (PCB 37)	28.4	28.4	4720	J+	e	ng/kg
TMBD-Wheelwash-01 MS/MSD 43/43 %R (QC Limit 75-125 %R)										
SW 6020A	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	Niobium	12	1.9	1.9 U	UJ-	s, e	mg/kg
SW 6020A	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	Niobium	12	1.8	1.8 U	UJ-	s, e	mg/kg
SW 6020A	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	Niobium	13	1.9	1.9 U	UJ-	s, e	mg/kg
SW 6020A	680-95178-2	680-95178-9	TMBD-WHEELWASH-02_10/15/13	Niobium	13	2.0	16	J-	e	mg/kg
BD-5 MS 179 %R (QC Limit 60-105%R)										
SW 8270D	1309339	1309339-1	BD-5_09/23/13	Hexachlorobenzene	350	350	490	J+	d, e	ug/kg
TMBD-Wheelwash-01 MS/MSD 48/50 %R (QC Limit 68-129 %R)										
SW 8290	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.2	0.52	370	J-	e	pg/g
TMBD-Wheelwash-01 MS/MSD 63/-28 %R (QC Limit 74-128 %R)										
SW 8290	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.2	0.66	400	J-	e	pg/g
TMBD-Wheelwash-01 MS/MSD 65/16 %R (QC Limit 67-140 %R)										
SW 8290	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2	0.055	20	J-	e	pg/g
TMBD-Wheelwash-01 MSD 51 %R (QC Limit 69-134 %R)										
SW 8290	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	5.2	0.46	160	J-	e	pg/g
TMBD-Wheelwash-01 MSD 65 %R (QC Limit70-131 %R)										
SW 8290	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.2	0.47	84	J-	e	pg/g
NW-24 MS/MSD 291/322 %R (QC Limit 70-130 %R)										
SW 8290	E1301129	E1301129-001	NW-24_08/23/13	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.81	3.81	199	J+	e	ng/kg
NW-9 MSD 53 %R (QC Limit 70-130 %R)										
SW 8290	E1301166	E1301166-001	NW-9_20130904	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.40	5.40	700	J-	e	ng/kg
NW-9 MSD 63 %R (QC Limit 70-130 %R)										
SW 8290	E1301166	E1301166-001	NW-9_20130904	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	121	121	275	J-	e	ng/kg
NW-23 MS/MSD 419/259 %R (QC Limit 70-130 %R)										
SW 8290	E1301209	E1301209-001	NW-23_09/12/13	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	0.559	0.559	56.1	J+	e	ng/kg
BD-2 MSD 162 %R (QC Limit 70-130 %R)										
SW 8290	E1301286	E1301286-001	BD-2_20130925	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.78	4.78	335	J+	e	ng/kg

Notes:

%R	Percent Recovery
ng/kg	Nanograms per kilogram
ug/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
pg/g	Picograms per gram
CAB	Cation/anion balance
LCS	Laboratory control sample
MS	Matrix spike
MSD	Matrix spike duplicate
PQL	Practical quantitation limit
QC	Quality control
SDG	Sample delivery group
SQL	Sample quantitation limit
TDS	Total dissolved solids

Qualifiers/Comments:

+/-	Result may be biased high/low
d	Comment code for duplicate precision criteria issues
e	Comment code for MS or LCS recovery issue
g	Comment code for SQL below PQL for stable chemistries
J	Estimated Value
r	Comment code for EMPC
s	Comment code for non-detects
U	Undetected
UJ	Undetected at an estimated SQL

1 Result field includes the numerical concentration and the laboratory qualifier or code

TABLE 7
QUALIFICATION BASED ON DUPLICATE PRECISION
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
Field duplicate pair NW-24/Duplicate Beta Ditch: PCB 1 69%, PCB 3 65%, PCB 48 70%, PCB 44/47/65 200%, PCB 59/62/75 172%, PCB 123 200%, PCB 106 200% (QC Limit 50%RPD)										
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',4,5-Tetrachlorobiphenyl (PCB 48)	53.6	53.6	162	J	d	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3,3',4,5-Pentachlorobiphenyl (PCB 106)	109	109	550	J	d	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',4,4',5'-Pentachlorobiphenyl (PCB 123)	111	111	375	J	d	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2-Chlorobiphenyl (PCB 1)	21.4	21.4	159	J	d	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	4-Chlorobiphenyl (PCB 3)	53.6	53.6	142	J	d	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCB 44/47/65	107	107	107 U	UJ	d, s	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCB 59/62/75	107	107	1210	J	d	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',4,5-Tetrachlorobiphenyl (PCB 48)	49.4	49.4	78.3 K	J	d, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3,3',4,5-Pentachlorobiphenyl (PCB 106)	87.4	87.4	87.4 U	UJ	d, s	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',4,4',5'-Pentachlorobiphenyl (PCB 123)	98.0	98.0	98 U	UJ	d, s	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2-Chlorobiphenyl (PCB 1)	19.8	19.8	328	J	d	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	4-Chlorobiphenyl (PCB 3)	49.4	49.4	278	J	d	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCB 44/47/65	98.9	98.9	1280 B	J	d	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCB 59/62/75	98.9	98.9	92.9 J	J	d, g	ng/kg
LCS/LCSD EQ1300561: PCB 1 155%, PCB 3 108%, PCB 4 136% (QC Limit 50% RPD)										
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2'-Dichlorobiphenyl (PCB 4)	52.4	52.4	9.29 J	J+	d, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2-Chlorobiphenyl (PCB 1)	21.0	21.0	7.83 J	J+	d, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	4-Chlorobiphenyl (PCB 3)	52.4	52.4	10.9 JK	J+	d, e, g, r	ng/kg
Field duplicate pair BD-2/Duplicate Beta Ditch 2: PCB 68 55%, PCB 57 72%, PCB 58 100%, PCB 67 80%, PCB 63 101%, PCB 80 59%, PCB 84 50%, PCB 108/124 53%, PCB 131 200%, PCB 165 200%, PCB 137 200%, PCB 164 73%, PCB 169 200% (QC Limit 50% RPD)										
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,2',3,3',4,6-Hexachlorobiphenyl (PCB 131)	37.1	37.1	37.1 U	UJ	d, s	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,2',3,3',6-Pentachlorobiphenyl (PCB 84)	4.36	4.36	1110	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137)	39.9	39.9	39.9 U	UJ	d, s	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	32.7	32.7	2450	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,3',5,5',6-Hexachlorobiphenyl (PCB 165)	32.5	32.5	32.5 U	UJ	d, s	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,3',5-Tetrachlorobiphenyl (PCB 57)	10.9	10.9	468	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	10.9	10.9	285	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,4',5-Tetrachlorobiphenyl (PCB 63)	10.9	10.9	636	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3',4,5-Tetrachlorobiphenyl (PCB 67)	10.9	10.9	462	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	10.9	10.9	544	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	32.1	32.1	32.1 U	UJ	d, s	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	3,3',5,5'-Tetrachlorobiphenyl (PCB 80)	21.4	21.4	409	J	d	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	PCB 108/124	23.5	23.5	875	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,2',3,3',4,6-Hexachlorobiphenyl (PCB 131)	48.7	48.7	209	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,2',3,3',6-Pentachlorobiphenyl (PCB 84)	7.68	7.68	664	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137)	52.4	52.4	754	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	42.9	42.9	1140	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3,3',5,5',6-Hexachlorobiphenyl (PCB 165)	42.7	42.7	436	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3,3',5-Tetrachlorobiphenyl (PCB 57)	10.6	10.6	221	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	10.6	10.6	95.1	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3,4',5-Tetrachlorobiphenyl (PCB 63)	10.6	10.6	209	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3',4,5-Tetrachlorobiphenyl (PCB 67)	10.6	10.6	197	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	10.6	10.6	308	J	d	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	40.7	40.7	341 K	J	d, r	ng/kg

TABLE 7
QUALIFICATION BASED ON DUPLICATE PRECISION
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,3',5,5'-Tetrachlorobiphenyl (PCB 80)	24.0	24.0	224 K	J	d, r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	PCB 108/124	34.1	34.1	507	J	d	ng/kg
NW-11 Duplicate Niobium 151 %RPD (QC Limit 35% RPD)										
SW 6020A	1309037	1309037-1	NW-11_09/04/13	Niobium	1.0	1.0	34	J+	d, j	mg/kg
BD-5 MS/MSD 77% RPD (QC Limit 20% RPD)										
SW 8270D	1309339	1309339-1	BD-5_09/23/13	Hexachlorobenzene	350	350	490	J+	d, e	ug/kg

Notes:

%R	Percent Recovery
ng/kg	Nanograms per kilogram
ug/kg	Micrograms per kilogram
mg/kg	Milligrams per kilogram
LCS	Laboratory control sample
LCSD	Laboratory control sample duplicate
MS	Matrix spike
MSD	Matrix spike duplicate
PQL	Practical quantitation limit
QC	Quality control
SDG	Sample delivery group
SQL	Sample quantitation limit

Qualifiers/Comments:

+/-	Result may be biased high/low
d	Comment code for duplicate precision criteria issues
e	Comment code for MS or LCS recovery issue
g	Comment code for SQL below PQL for stable chemistries
J	Estimated Value
j	Comment code for other qualification
r	Comment code for EMPC
s	Comment code for non-detects
UJ	Undetected at an estimated SQL

1 Result field includes the numerical concentration and the laboratory qualifier or code

TABLE 8
QUALIFICATION BASED ON LABELED STANDARD RECOVERY
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
NW-20 37Cl-2,3,7,8-TCDD 167% R (QC Limit 40-135% R)										
SW 8290	E1301243	E1301243-002	NW-20_20130923	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.36	1.36	379	J	a	ng/kg
BD-3 37Cl-2,3,7,8-TCDD 148% R (QC Limit 40-135% R)										
SW 8290	E1301286	E1301286-005	BD-3_20130925	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4.20	4.20	1800	J+	a	ng/kg

Notes:

%R	Percent Recovery
ng/kg	Nanograms per kilogram
PQL	Practical quantitation limit
QC	Quality control
SDG	Sample delivery group
SQL	Sample quantitation limit

Qualifiers/Comments:

+/-	Result may be biased high/low
a	Comment code for surrogate/tracer recovery issue
J	Estimated Value

1 Result field includes the numerical concentration and the laboratory qualifier or code

TABLE 9
QUALIFICATION BASED ON ESTIMATED MAXIMUM POSSIBLE CONCENTRATION
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	53.6	53.6	118 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	53.6	53.6	20 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	53.6	53.6	30.2 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94)	53.6	53.6	10.7 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',6-Trichlorobiphenyl (PCB 19)	21.4	21.4	8.83 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	53.6	53.6	432 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',4-Trichlorobiphenyl (PCB 25)	21.4	21.4	13.7 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',6-Trichlorobiphenyl (PCB 27)	21.4	21.4	7.91 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	3,3',5-Trichlorobiphenyl (PCB 36)	21.4	21.4	23.4 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	3,4',5-Trichlorobiphenyl (PCB 39)	21.4	21.4	28.9 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCB 45/51	53.6	53.6	12.5 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',3,4,4',5,6'-Heptachlorobiphenyl (PCB 182)	50.8	50.8	219 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148)	50.8	50.8	102 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',4,5-Tetrachlorobiphenyl (PCB 48)	50.8	50.8	294 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',4-Trichlorobiphenyl (PCB 17)	20.3	20.3	19.8 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',6-Trichlorobiphenyl (PCB 19)	20.3	20.3	7.53 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,3',4,4',5'-Pentachlorobiphenyl (PCB 123)	155	155	679 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,3,6-Trichlorobiphenyl (PCB 24)	20.3	20.3	8.02 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,4',6-Trichlorobiphenyl (PCB 32)	20.3	20.3	26.1 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	49.4	49.4	96.7 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	49.4	49.4	21.6 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94)	49.4	49.4	28.1 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',4,5-Tetrachlorobiphenyl (PCB 48)	49.4	49.4	78.3 K	J	d, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3,3',4',5'-Pentachlorobiphenyl (PCB 122)	102	102	211 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	97.8	97.8	334 K	J	r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	49.4	49.4	40.3 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3,5-Trichlorobiphenyl (PCB 23)	19.8	19.8	9.04 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	3,4,5-Trichlorobiphenyl (PCB 38)	19.8	19.8	14.9 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCB 45/51	49.4	49.4	37.9 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCBs 93/100	198	198	92.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	439	439	1160 K	J	r	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192)	363	363	848 K	J	r	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	2,3,3',4-Tetrachlorobiphenyl (PCB 55)	53.0	53.0	156 K	J	r	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	2,3,3',5,5'-Pentachlorobiphenyl (PCB 111)	98.2	98.2	678 K	J	r	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	297	297	917 K	J	r	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127)	250	250	540 K	J	r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	51.4	51.4	26.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	51.4	51.4	15.1 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132)	51.4	51.4	13.8 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	51.4	51.4	13.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (PCB 202)	103	103	17 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',6-Pentachlorobiphenyl (PCB 84)	20.6	20.6	15.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	51.4	51.4	11.1 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186)	51.4	51.4	3.04 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,5',6-Hexachlorobiphenyl (PCB 144)	51.4	51.4	5.69 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148)	51.4	51.4	7.86 JK	J	g, r	ng/kg

TABLE 9
QUALIFICATION BASED ON ESTIMATED MAXIMUM POSSIBLE CONCENTRATION
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',6,6'-Hexachlorobiphenyl (PCB 150)	51.4	51.4	4 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,5',6-Pentachlorobiphenyl (PCB 95)	206	206	39.8 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,6'-Tetrachlorobiphenyl (PCB 46)	20.6	20.6	5.58 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	103	103	6.46 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	51.4	51.4	10.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	51.4	51.4	13.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	51.4	51.4	24.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192)	51.4	51.4	8.61 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	51.4	51.4	13.4 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',5,5'-Pentachlorobiphenyl (PCB 111)	51.4	51.4	5.37 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	51.4	51.4	17.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	51.4	51.4	3.76 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,4',5-Trichlorobiphenyl (PCB 31)	51.4	51.4	16.5 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,3',4-Trichlorobiphenyl (PCB 35)	20.6	20.6	10.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,4',5-Trichlorobiphenyl (PCB 39)	20.6	20.6	10.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 128/166	103	103	11.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 59/62/75	103	103	13.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCBs 135/151	103	103	18.5 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCBs 93/100	206	206	7.8 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	52.4	52.4	50.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	52.4	52.4	14.5 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172)	52.4	52.4	40.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5'-Hexachlorobiphenyl (PCB 130)	52.4	52.4	20.6 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	52.4	52.4	16.1 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136)	52.4	52.4	7.96 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)	52.4	52.4	49.7 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	52.4	52.4	11.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	52.4	52.4	31.7 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	52.4	52.4	18.9 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,6,6'-Heptachlorobiphenyl (PCB 188)	52.4	52.4	16.6 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148)	52.4	52.4	8.9 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	52.4	52.4	17.5 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	52.4	52.4	2.87 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,5',6-Pentachlorobiphenyl (PCB 95)	210	210	30.6 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	105	105	7.3 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	52.4	52.4	18.8 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	210	210	11.1 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5',6-Hexachlorobiphenyl (PCB 161)	52.4	52.4	9.34 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	52.4	52.4	27.7 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5-Pentachlorobiphenyl (PCB 106)	52.4	52.4	39.1 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',5,6-Pentachlorobiphenyl (PCB 112)	52.4	52.4	4.04 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	52.4	52.4	27.3 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	52.4	52.4	14 JK	J+	e, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,4',6-Trichlorobiphenyl (PCB 32)	21.0	21.0	3.92 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	52.4	52.4	11.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4,5'-Tetrachlorobiphenyl (PCB 79)	52.4	52.4	7.8 JK	J	g, r	ng/kg

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Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,4,4'-Trichlorobiphenyl (PCB 37)	21.0	21.0	23.7 K	J+	e, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	4-Chlorobiphenyl (PCB 3)	52.4	52.4	10.9 JK	J+	d, e, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 129/138/163	210	210	69.4 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 40/41/71	105	105	21.3 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 135/151	105	105	27.5 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 93/100	210	210	9.78 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 98/102	210	210	5.67 JK	J	g, r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	63.0	63.0	1460 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,2',3,3',4,5'-Hexachlorobiphenyl (PCB 130)	105	105	1580 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137)	85.7	85.7	839 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	91.8	91.8	1080 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,2',6,6'-Tetrachlorobiphenyl (PCB 54)	4.03	4.03	51.6 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4,4',5,6-Heptachlorobiphenyl (PCB 190)	46.3	46.3	2930 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	45.0	45.0	1870 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	62.2	62.2	1000 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	62.4	62.4	571 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4,5',6-Hexachlorobiphenyl (PCB 161)	66.1	66.1	753 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	69.3	69.3	2150 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,3',4-Tetrachlorobiphenyl (PCB 55)	10.1	10.1	225 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	68.8	68.8	1530 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-001	NW-2_20130923	PCB 153/168	69.9	69.9	2230 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-003	NW-1_20130923	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	75.4	75.4	3370 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-003	NW-1_20130923	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96)	10.3	10.3	181 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-003	NW-1_20130923	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	10.3	10.3	231 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-003	NW-1_20130923	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	146	146	1350 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-003	NW-1_20130923	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127)	139	139	493 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	35.3	35.3	873 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (PCB 196)	32.9	32.9	1560 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',3,3',5,6-Hexachlorobiphenyl (PCB 134)	27.1	27.1	48 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)	27.6	27.6	884 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	47.6	47.6	140 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	19.3	19.3	75.7 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',4,5',6-Pentachlorobiphenyl (PCB 103)	9.65	9.65	52.6 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,2',4,6,6'-Pentachlorobiphenyl (PCB 104)	6.88	6.88	13.4 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3,3',4,4',5,6-Heptachlorobiphenyl (PCB 190)	40.9	40.9	420 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	39.8	39.8	235 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3,3',4',5-Pentachlorobiphenyl (PCB 107)	32.1	32.1	386 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3,3',5-Tetrachlorobiphenyl (PCB 57)	9.65	9.65	51.4 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	36.2	36.2	204 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3,4',5-Tetrachlorobiphenyl (PCB 63)	9.65	9.65	40.2 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3',4,5-Tetrachlorobiphenyl (PCB 67)	9.65	9.65	49.3 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	2,3',4-Trichlorobiphenyl (PCB 25)	18.7	18.7	83.5 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	41.9	41.9	186 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	3,3',4,5-Tetrachlorobiphenyl (PCB 78)	16.5	16.5	87.8 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	PCB 18/30	9.65	9.65	83.3 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-004	BD-5_09/23/13	PCB 50/53	19.3	19.3	39.7 K	J	r	ng/kg

TABLE 9
QUALIFICATION BASED ON ESTIMATED MAXIMUM POSSIBLE CONCENTRATION
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Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206)	11.7	11.7	67.4 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	25.6	25.6	56.3 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	27.0	27.0	95.4 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,4',5,6'-Octachlorobiphenyl (PCB 196)	25.1	25.1	326 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (PCB 208)	10.5	10.5	41.8 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	30.5	30.5	133 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',4,6,6'-Heptachlorobiphenyl (PCB 176)	10.4	10.4	33 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178)	12.1	12.1	34 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',5,5'-Hexachlorobiphenyl (PCB 133)	10.4	10.4	24.9 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179)	10.4	10.4	60.5 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,2',3,3',5,6-Hexachlorobiphenyl (PCB 134)	20.8	20.8	71.7 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,3,3',4'-Tetrachlorobiphenyl (PCB 56)	10.4	10.4	30.1 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	16.9	16.9	26.3 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,3,4,4'-Tetrachlorobiphenyl (PCB 60)	10.4	10.4	9.36 JK	J	g, r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	5.23	5.23	12 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	3,3',4,5'-Tetrachlorobiphenyl (PCB 79)	10.4	10.4	25.6 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	PCB 139/140	20.8	20.8	36.4 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	PCB 171/173	31.5	31.5	89.1 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	PCB 198/199	24.4	24.4	91.2 K	J	r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	PCBs 98/102	41.5	41.5	9.4 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)	39.3	39.3	1960 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	43.6	43.6	462 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3,3',4',5'-Pentachlorobiphenyl (PCB 122)	27.4	27.4	251 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	2,3',6-Trichlorobiphenyl (PCB 27)	5.40	5.40	392 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-001	BD-2_20130925	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127)	24.4	24.4	441 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	64.1	64.1	793 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143)	31.4	31.4	176 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,3,3',4,4',5,6-Heptachlorobiphenyl (PCB 190)	42.9	42.9	1460 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192)	44.0	44.0	581 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	10.4	10.4	278 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,3,4',5-Tetrachlorobiphenyl (PCB 63)	10.4	10.4	314 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	2,3',4-Trichlorobiphenyl (PCB 25)	28.4	28.4	405 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-002	BD-16_20130925	PCB 128/166	25.8	25.8	414 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	2,2',3,4,4',5-Hexachlorobiphenyl (PCB 137)	53.0	53.0	1000 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143)	61.2	61.2	185 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	63.2	63.2	2110 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	2,3,3',4',5'-Pentachlorobiphenyl (PCB 122)	66.3	66.3	354 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	2,3,3',5,6-Pentachlorobiphenyl (PCB 112)	19.7	19.7	216 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	64.0	64.0	1030 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	3,4,5-Trichlorobiphenyl (PCB 38)	43.3	43.3	494 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-003	BD-17_20130925	PCB 108/124	56.6	56.6	872 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,2',3,3',4,6-Hexachlorobiphenyl (PCB 131)	78.5	78.5	704 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,2',3,4,5,6-Hexachlorobiphenyl (PCB 142)	97.6	97.6	1030 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143)	97.5	97.5	181 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,2',3,6'-Tetrachlorobiphenyl (PCB 46)	7.87	7.87	152 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3,3',4',5'-Pentachlorobiphenyl (PCB 122)	79.8	79.8	592 K	J	r	ng/kg

TABLE 9
QUALIFICATION BASED ON ESTIMATED MAXIMUM POSSIBLE CONCENTRATION
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Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3,3',4-Tetrachlorobiphenyl (PCB 55)	10.5	10.5	115 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3,3',5-Tetrachlorobiphenyl (PCB 57)	10.5	10.5	216 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	10.5	10.5	165 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3,4',5-Tetrachlorobiphenyl (PCB 63)	10.5	10.5	282 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3',4,5-Tetrachlorobiphenyl (PCB 67)	10.5	10.5	150 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	10.5	10.5	523 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	10.5	10.5	622 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	3,4,5-Trichlorobiphenyl (PCB 38)	17.7	17.7	206 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	PCB 61/70/74/76	41.9	41.9	5320 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-004	BD-4_20130925	PCB 88/91	10.5	10.5	1590 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-005	BD-3_20130925	2,2',3,3',5,6-Hexachlorobiphenyl (PCB 134)	883	883	1030 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-005	BD-3_20130925	2,2',3,4,5,6'-Hexachlorobiphenyl (PCB 143)	1060	1060	1460 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-005	BD-3_20130925	2,3,3',5,5',6-Hexachlorobiphenyl (PCB 165)	768	768	3920 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	10.8	10.8	276 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	11.3	11.3	52.3 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179)	10.8	10.8	114 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	10.8	10.8	48.6 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,4'-Tetrachlorobiphenyl (PCB 42)	21.6	21.6	16.7 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	10.8	10.8	12.4 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94)	10.8	10.8	7.62 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96)	10.8	10.8	5.09 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	21.6	21.6	19.9 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',4,5-Tetrachlorobiphenyl (PCB 48)	10.8	10.8	26.6 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',4,6,6'-Pentachlorobiphenyl (PCB 104)	4.31	4.31	4.78 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',4-Trichlorobiphenyl (PCB 17)	4.98	4.98	26.2 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	10.8	10.8	218 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',6-Trichlorobiphenyl (PCB 19)	4.59	4.59	6.17 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	29.6	29.6	94 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	43.1	43.1	40.3 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	32.8	32.8	103 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,4'-Trichlorobiphenyl (PCB 22)	53.6	53.6	67.5 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	22.5	22.5	59.4 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,3',4,5,5'-Pentachlorobiphenyl (PCB 127)	18.6	18.6	44.9 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,3',4,5-Tetrachlorobiphenyl (PCB 78)	15.8	15.8	26.8 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,3',4,5'-Tetrachlorobiphenyl (PCB 79)	15.0	15.0	48.2 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3,3',5,5'-Tetrachlorobiphenyl (PCB 80)	14.8	14.8	20.2 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	3-Chlorobiphenyl (PCB 2)	4.31	4.31	50.8 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	4-Chlorobiphenyl (PCB 3)	4.31	4.31	78.1 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCB 128/166	38.0	38.0	128 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCB 21/33	47.3	47.3	68.9 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCB 45/51	10.8	10.8	17 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCB 49/69	21.6	21.6	67.3 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCB 59/62/75	21.6	21.6	64.5 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCBs 43/73	10.8	10.8	11.7 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	76.5	76.5	917 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3,3',5,6-Pentachlorobiphenyl (PCB 112)	46.7	46.7	175 K	J	r	ng/kg

TABLE 9
QUALIFICATION BASED ON ESTIMATED MAXIMUM POSSIBLE CONCENTRATION
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3',4-Trichlorobiphenyl (PCB 25)	16.8	16.8	419 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	2,3',5'-Trichlorobiphenyl (PCB 34)	24.2	24.2	642 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	40.7	40.7	341 K	J	d, r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,3',4-Trichlorobiphenyl (PCB 35)	25.0	25.0	697 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,3',5,5'-Tetrachlorobiphenyl (PCB 80)	24.0	24.0	224 K	J	d, r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,3',5-Trichlorobiphenyl (PCB 36)	21.8	21.8	718 K	J	r	ng/kg
EPA 1668C	E1301286	E1301286-007	DUPLICATE BETA DITCH 2_20130925	3,4,5-Trichlorobiphenyl (PCB 38)	24.3	24.3	417 K	J	r	ng/kg
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2	0.047	1.7 Jq	J	g, r	pg/g
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.0	0.024	0.62 Jq	J	g, r	pg/g
SW 8290	E1301129	E1301129-003	NW-8_08/23/13	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	398	398	828 K	J	r	ng/kg
SW 8290	E1301166	E1301166-003	NW-5_09/04/13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.41	5.41	49.3 K	J	r	ng/kg
SW 8290	E1301209	E1301209-001	NW-23_09/12/13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.65	2.65	6.31 K	J	r	ng/kg
SW 8290	E1301209	E1301209-001	NW-23_09/12/13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.65	2.65	12 K	J	r	ng/kg
SW 8290	E1301209	E1301209-001	NW-23_09/12/13	1,2,3,7,8-Pentachlororodibenzo-p-dioxin (PeCDD)	2.65	2.65	8.4 K	J	r	ng/kg
SW 8290	E1301243	E1301243-004	BD-5_09/23/13	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.14	5.14	811 K	J	r	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.64	2.64	0.373 JK	J	g, r	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,7,8-Pentachlororodibenzo-p-dioxin (PeCDD)	2.64	2.64	0.162 JK	J	g, r	ng/kg
SW 8290	E1301286	E1301286-003	BD-17_20130925	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	280	280	4530 K	J	r	ng/kg

Notes:

ng/kg	Nanograms per kilogram
EMPC	Estimated maximum possible concentration
PCB	Polychlorinate biphenyl
PQL	Practical quantitation limit
QC	Quality control
SDG	Sample delivery group
SQL	Sample quantitation limit

Qualifiers/Comments:

+/-	Result may be biased high/low
b	Comment code for blank contamination
d	Comment code for duplicate precision
e	Comment code for spike recovery
g	Comment code for results less than PQL
J	Estimated Value
K	Result represents the EMPC
r	Comment code for EMPC

1 Result field includes the numerical concentration and the laboratory qualifier or code

TABLE 10
QUALIFICATION WHEN RESULTS ARE LESS THAN PQL
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186)	53.6	53.6	32.8 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	53.6	53.6	20 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	53.6	53.6	30.2 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	53.6	53.6	20.5 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94)	53.6	53.6	10.7 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96)	53.6	53.6	27.6 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',3,6'-Tetrachlorobiphenyl (PCB 46)	21.4	21.4	14.2 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155)	53.6	53.6	27.3 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',4,5',6-Pentachlorobiphenyl (PCB 103)	53.6	53.6	50.8 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,2',6-Trichlorobiphenyl (PCB 19)	21.4	21.4	8.83 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',4,5-Tetrachlorobiphenyl (PCB 67)	53.6	53.6	35.5 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	53.6	53.6	29.5 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',4-Trichlorobiphenyl (PCB 25)	21.4	21.4	13.7 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	53.6	53.6	43.7 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3,6-Trichlorobiphenyl (PCB 24)	21.4	21.4	9.63 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	2,3',6-Trichlorobiphenyl (PCB 27)	21.4	21.4	7.91 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	3,3'-Dichlorobiphenyl (PCB 11)	107	107	70.2 BJ	J+	b, g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	3,5-Dichlorobiphenyl (PCB 14)	21.4	21.4	13.1 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCB 45/51	53.6	53.6	12.5 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCB 50/53	107	107	77.6 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCBs 93/100	214	214	73.7 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-001	NW-24_08/23/13	PCBs 98/102	214	214	161 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186)	50.8	50.8	43.3 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	50.8	50.8	33.3 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	50.8	50.8	40.5 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96)	50.8	50.8	46.5 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155)	50.8	50.8	27.9 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',4,5',6-Pentachlorobiphenyl (PCB 103)	50.8	50.8	41.1 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',4-Trichlorobiphenyl (PCB 17)	20.3	20.3	19.8 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2',6-Trichlorobiphenyl (PCB 19)	20.3	20.3	7.53 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,2'-Dichlorobiphenyl (PCB 4)	50.8	50.8	42 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	50.8	50.8	26.6 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	50.8	50.8	43.3 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,3,6-Trichlorobiphenyl (PCB 24)	20.3	20.3	8.02 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,3',6-Trichlorobiphenyl (PCB 27)	20.3	20.3	9.53 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,4-Dichlorobiphenyl (PCB 7)	20.3	20.3	5.48 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	2,5-Dichlorobiphenyl (PCB 9)	20.3	20.3	19.2 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	3,3'-Dichlorobiphenyl (PCB 11)	102	102	51.9 BJ	J+	b, g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	3,5-Dichlorobiphenyl (PCB 14)	20.3	20.3	8.2 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	PCB 45/51	50.8	50.8	32 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	PCB 50/53	102	102	90.4 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-002	NW-17_20130823	PCBs 93/100	203	203	59.6 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186)	49.4	49.4	29 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	49.4	49.4	21.6 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	49.4	49.4	28.1 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	49.4	49.4	19.4 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94)	49.4	49.4	28.1 JK	J	g, r	ng/kg

TABLE 10
QUALIFICATION WHEN RESULTS ARE LESS THAN PQL
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96)	49.4	49.4	26.4 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',3,6'-Tetrachlorobiphenyl (PCB 46)	19.8	19.8	12.2 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155)	49.4	49.4	30.8 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,2',6-Trichlorobiphenyl (PCB 19)	19.8	19.8	7.1 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',4,5-Tetrachlorobiphenyl (PCB 67)	49.4	49.4	33.1 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	49.4	49.4	30.6 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	49.4	49.4	40.3 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3,5-Trichlorobiphenyl (PCB 23)	19.8	19.8	9.04 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',5'-Trichlorobiphenyl (PCB 34)	19.8	19.8	9.13 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3,6-Trichlorobiphenyl (PCB 24)	19.8	19.8	7.52 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,3',6-Trichlorobiphenyl (PCB 27)	19.8	19.8	8.28 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	2,4-Dichlorobiphenyl (PCB 7)	19.8	19.8	16.5 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	3,3'-Dichlorobiphenyl (PCB 11)	98.9	98.9	74.1 BJ	J+	b, g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	3,4,5-Trichlorobiphenyl (PCB 38)	19.8	19.8	14.9 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	3,5-Dichlorobiphenyl (PCB 14)	19.8	19.8	15.3 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCB 45/51	49.4	49.4	37.9 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCB 50/53	98.9	98.9	74.2 J	J	g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCB 59/62/75	98.9	98.9	92.9 J	J	d, g	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCBs 93/100	198	198	92.6 JK	J	g, r	ng/kg
EPA 1668C	E1301129	E1301129-004	DUPLICATE BETA DITCH_08/23/13	PCBs 98/102	198	198	192 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	2,2',6,6'-Tetrachlorobiphenyl (PCB 54)	53.0	53.0	22.9 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-002	NW-11_09/04/13	2,6-Dichlorobiphenyl (PCB 10)	53.0	53.0	22.9 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	51.4	51.4	26.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	51.4	51.4	13.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	51.4	51.4	15.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (PCB 197)	103	103	40.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172)	51.4	51.4	25.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (PCB 200)	103	103	26.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,5,6'-Heptachlorobiphenyl (PCB 174)	51.4	51.4	20.8 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,5',6-Heptachlorobiphenyl (PCB 175)	51.4	51.4	25.1 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	51.4	51.4	15.1 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,6,6'-Heptachlorobiphenyl (PCB 176)	51.4	51.4	15.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132)	51.4	51.4	13.8 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	51.4	51.4	13.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (PCB 202)	103	103	17 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178)	51.4	51.4	17.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179)	51.4	51.4	12.1 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136)	51.4	51.4	6.14 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,3',6-Pentachlorobiphenyl (PCB 84)	20.6	20.6	15.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)	51.4	51.4	27.7 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,4',5,6,6'-Octachlorobiphenyl (PCB 204)	51.4	51.4	36.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	51.4	51.4	10.1 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,4',5,6'-Heptachlorobiphenyl (PCB 182)	51.4	51.4	15.8 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	103	103	43.1 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,4',6,6'-Heptachlorobiphenyl (PCB 184)	51.4	51.4	22.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	51.4	51.4	19.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	51.4	51.4	11.1 JK	J	g, r	ng/kg

TABLE 10
QUALIFICATION WHEN RESULTS ARE LESS THAN PQL
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Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)	51.4	51.4	19.8 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,5,6,6'-Heptachlorobiphenyl (PCB 186)	51.4	51.4	3.04 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',5,6,6'-Heptachlorobiphenyl (PCB 188)	51.4	51.4	14.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,5',6-Hexachlorobiphenyl (PCB 144)	51.4	51.4	5.69 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148)	51.4	51.4	7.86 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	51.4	51.4	2.45 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4',6,6'-Hexachlorobiphenyl (PCB 150)	51.4	51.4	4 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	51.4	51.4	15.5 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,5,5'-Pentachlorobiphenyl (PCB 92)	51.4	51.4	10.8 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	51.4	51.4	2.21 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,5',6-Pentachlorobiphenyl (PCB 95)	206	206	39.8 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',3,6'-Tetrachlorobiphenyl (PCB 46)	20.6	20.6	5.58 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	103	103	6.46 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155)	51.4	51.4	4.32 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	51.4	51.4	35.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',5,5',6-Octachlorobiphenyl (PCB 205)	51.4	51.4	32.4 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	51.4	51.4	16.1 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',5,6-Heptachlorobiphenyl (PCB 190)	51.4	51.4	14.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	51.4	51.4	10.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	51.4	51.4	13.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	51.4	51.4	24.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192)	51.4	51.4	8.61 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,5,5'-Hexachlorobiphenyl (PCB 159)	51.4	51.4	8.97 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4',5,5'-Hexachlorobiphenyl (PCB 162)	51.4	51.4	10.1 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	51.4	51.4	13.4 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4,5-Pentachlorobiphenyl (PCB 106)	51.4	51.4	22.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4',5-Pentachlorobiphenyl (PCB 107)	51.4	51.4	13.7 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',4'-Tetrachlorobiphenyl (PCB 56)	51.4	51.4	9.84 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',5,5'-Pentachlorobiphenyl (PCB 111)	51.4	51.4	5.37 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,3',5,6-Pentachlorobiphenyl (PCB 112)	51.4	51.4	3.85 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	51.4	51.4	17.9 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	103	103	50.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	51.4	51.4	17.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',4,5,5'-Pentachlorobiphenyl (PCB 120)	51.4	51.4	6.89 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',4,5'-Tetrachlorobiphenyl (PCB 68)	51.4	51.4	6.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,4',6-Tetrachlorobiphenyl (PCB 64)	51.4	51.4	6.23 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3,4'-Trichlorobiphenyl (PCB 22)	20.6	20.6	6.02 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3',5,5'-Tetrachlorobiphenyl (PCB 72)	51.4	51.4	3.76 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,3'-Dichlorobiphenyl (PCB 6)	20.6	20.6	5.61 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,4',5-Trichlorobiphenyl (PCB 31)	51.4	51.4	16.5 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	2,4'-Dichlorobiphenyl (PCB 8)	51.4	51.4	15.4 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	51.4	51.4	10.5 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,3',4-Trichlorobiphenyl (PCB 35)	20.6	20.6	10.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,3',5-Trichlorobiphenyl (PCB 36)	20.6	20.6	6.55 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,3'-Dichlorobiphenyl (PCB 11)	103	103	24.1 BJ	J+	b, g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,4,4'-Trichlorobiphenyl (PCB 37)	20.6	20.6	18.7 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	3,4',5-Trichlorobiphenyl (PCB 39)	20.6	20.6	10.9 JK	J	g, r	ng/kg

TABLE 10
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Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	4,4'-Dichlorobiphenyl (PCB 15)	51.4	51.4	40.8 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 110/115	103	103	75.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 12/13	51.4	51.4	15.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 128/166	103	103	11.2 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 129/138/163	206	206	45.8 BJ	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 147/149	103	103	25.2 BJ	J+	b, g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 153/168	103	103	33.3 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 156/157	103	103	23.4 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 171/173	103	103	43 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 18/30	51.4	51.4	9.05 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 180/193	103	103	46.7 BJ	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 198/199	103	103	66.8 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 20/28	51.4	51.4	14.7 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 21/33	51.4	51.4	7.68 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 26/29	51.4	51.4	5.64 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 40/41/71	103	103	21.9 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 44/47/65	103	103	45.9 BJ	J+	b, g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 49/69	103	103	11.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 59/62/75	103	103	13.6 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 61/70/74/76	206	206	41.7 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 83/99	103	103	27.6 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 88/91	51.4	51.4	9.77 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCB 90/101/113	206	206	49.5 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCBs 135/151	103	103	18.5 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCBs 85/116	103	103	38.9 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCBs 86/87/97/109/119/125	206	206	60.2 J	J	g	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	PCBs 93/100	206	206	7.8 JK	J	g, r	ng/kg
EPA 1668C	E1301166	E1301166-003	NW-5_09/04/13	Total Dichlorobiphenyl	103	103	101 J	J	g, j	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)	52.4	52.4	50.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)	52.4	52.4	14.5 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	52.4	52.4	26.3 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,4',6,6'-Octachlorobiphenyl (PCB 197)	105	105	83.5 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172)	52.4	52.4	40.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5,6,6'-Octachlorobiphenyl (PCB 200)	105	105	33.7 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5,6'-Heptachlorobiphenyl (PCB 174)	52.4	52.4	26.9 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5',6-Heptachlorobiphenyl (PCB 175)	52.4	52.4	34 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5',6'-Heptachlorobiphenyl (PCB 177)	52.4	52.4	19.3 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,5'-Hexachlorobiphenyl (PCB 130)	52.4	52.4	20.6 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,6,6'-Heptachlorobiphenyl (PCB 176)	52.4	52.4	21.1 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4,6'-Hexachlorobiphenyl (PCB 132)	52.4	52.4	23.4 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',4-Pentachlorobiphenyl (PCB 82)	52.4	52.4	16.1 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',5,5',6,6'-Octachlorobiphenyl (PCB 202)	105	105	24.5 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178)	52.4	52.4	22 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',5,5'-Hexachlorobiphenyl (PCB 133)	52.4	52.4	14.6 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',5,6,6'-Heptachlorobiphenyl (PCB 179)	52.4	52.4	14.5 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',6,6'-Hexachlorobiphenyl (PCB 136)	52.4	52.4	7.96 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,3',6-Pentachlorobiphenyl (PCB 84)	21.0	21.0	13.2 J	J	g	ng/kg

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Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)	52.4	52.4	49.7 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 181)	52.4	52.4	11.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5,6'-Heptachlorobiphenyl (PCB 182)	52.4	52.4	18.2 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',5',6-Heptachlorobiphenyl (PCB 183)	105	105	40.3 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,4',6,6'-Heptachlorobiphenyl (PCB 184)	52.4	52.4	26.8 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,5,5',6-Heptachlorobiphenyl (PCB 185)	105	105	14.8 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)	52.4	52.4	31.7 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,5,5'-Hexachlorobiphenyl (PCB 141)	52.4	52.4	18.9 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)	52.4	52.4	39 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,6,6'-Heptachlorobiphenyl (PCB 188)	52.4	52.4	16.6 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,5',6-Hexachlorobiphenyl (PCB 144)	52.4	52.4	6.95 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',5,6'-Hexachlorobiphenyl (PCB 148)	52.4	52.4	8.9 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,6,6'-Hexachlorobiphenyl (PCB 145)	52.4	52.4	4.4 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4',6,6'-Hexachlorobiphenyl (PCB 150)	52.4	52.4	6.11 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,4,6'-Pentachlorobiphenyl (PCB 89)	52.4	52.4	17.5 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,5,5'-Pentachlorobiphenyl (PCB 92)	52.4	52.4	15.9 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,5,6,6'-Hexachlorobiphenyl (PCB 152)	52.4	52.4	2.87 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',3,5',6-Pentachlorobiphenyl (PCB 95)	210	210	30.6 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	105	105	7.3 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',4,4',6,6'-Hexachlorobiphenyl (PCB 155)	52.4	52.4	6.79 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',4-Trichlorobiphenyl (PCB 17)	21.0	21.0	4.59 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2',5,5'-Tetrachlorobiphenyl (PCB 52)	52.4	52.4	18.3 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,2'-Dichlorobiphenyl (PCB 4)	52.4	52.4	9.29 J	J+	d, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	52.4	52.4	28.1 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4',5,6-Heptachlorobiphenyl (PCB 190)	52.4	52.4	22.6 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4',5',6-Heptachlorobiphenyl (PCB 191)	52.4	52.4	20 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)	52.4	52.4	18.8 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	52.4	52.4	33 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5,5',6-Heptachlorobiphenyl (PCB 192)	52.4	52.4	10.8 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	210	210	11.1 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5',6-Hexachlorobiphenyl (PCB 161)	52.4	52.4	9.34 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4',5',6-Hexachlorobiphenyl (PCB 164)	52.4	52.4	27.7 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4,5-Pentachlorobiphenyl (PCB 106)	52.4	52.4	39.1 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4',5-Pentachlorobiphenyl (PCB 107)	52.4	52.4	20.9 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',4'-Tetrachlorobiphenyl (PCB 56)	52.4	52.4	15.9 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',5,5'-Pentachlorobiphenyl (PCB 111)	52.4	52.4	8.94 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,3',5,6-Pentachlorobiphenyl (PCB 112)	52.4	52.4	4.04 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	52.4	52.4	27.3 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	52.4	52.4	14 JK	J+	e, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	105	105	68.6 BJ	J+	b, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,4,4'-Tetrachlorobiphenyl (PCB 60)	52.4	52.4	8.48 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,4'-Tetrachlorobiphenyl (PCB 66)	52.4	52.4	24.1 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,5,5'-Pentachlorobiphenyl (PCB 120)	52.4	52.4	11.1 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3',4,5',6-Pentachlorobiphenyl (PCB 121)	52.4	52.4	5.39 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3,4'-Trichlorobiphenyl (PCB 22)	21.0	21.0	5.72 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3-Dichlorobiphenyl (PCB 5)	21.0	21.0	10.6 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,3'-Dichlorobiphenyl (PCB 6)	21.0	21.0	9.19 J	J	g	ng/kg

TABLE 10
QUALIFICATION WHEN RESULTS ARE LESS THAN PQL
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,4',5-Trichlorobiphenyl (PCB 31)	52.4	52.4	20.2 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,4',6-Trichlorobiphenyl (PCB 32)	21.0	21.0	3.92 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2,4'-Dichlorobiphenyl (PCB 8)	52.4	52.4	22.7 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	2-Chlorobiphenyl (PCB 1)	21.0	21.0	7.83 J	J+	d, e, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	52.4	52.4	11.4 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	52.4	52.4	15.1 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4,5-Tetrachlorobiphenyl (PCB 78)	52.4	52.4	6.15 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4,5'-Tetrachlorobiphenyl (PCB 79)	52.4	52.4	7.8 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3',4-Trichlorobiphenyl (PCB 35)	21.0	21.0	9.52 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	3,3'-Dichlorobiphenyl (PCB 11)	105	105	31.2 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	4-Chlorobiphenyl (PCB 3)	52.4	52.4	10.9 JK	J+	d, e, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 108/124	105	105	10.3 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 110/115	105	105	94.7 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 12/13	52.4	52.4	22.6 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 128/166	105	105	18.6 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 129/138/163	210	210	69.4 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 139/140	105	105	13.4 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 147/149	105	105	40.7 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 153/168	105	105	46.3 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 156/157	105	105	36.8 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 171/173	105	105	72.5 BJ	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 18/30	52.4	52.4	11.8 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 180/193	105	105	84.1 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 20/28	52.4	52.4	20.5 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 21/33	52.4	52.4	11.2 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 26/29	52.4	52.4	6.48 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 40/41/71	105	105	21.3 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 44/47/65	105	105	32.3 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 49/69	105	105	12.8 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 59/62/75	105	105	15.9 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 61/70/74/76	210	210	59.7 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 83/99	105	105	30.6 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 88/91	52.4	52.4	13.3 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCB 90/101/113	210	210	71.2 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 135/151	105	105	27.5 BJK	J+	b, g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 85/116	105	105	69.5 J	J	g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 86/87/97/109/119/125	210	210	78.1 BJ	J+	b, g	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 93/100	210	210	9.78 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	PCBs 98/102	210	210	5.67 JK	J	g, r	ng/kg
EPA 1668C	E1301209	E1301209-001	NW-23_09/12/13	Total Monochlorobiphenyl	52.4	52.4	18.7 J	J	g, j	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,3,4,4'-Tetrachlorobiphenyl (PCB 60)	10.4	10.4	9.36 JK	J	g, r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	2,4',5-Trichlorobiphenyl (PCB 31)	10.4	10.4	6.02 J	J	g	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	PCBs 98/102	41.5	41.5	9.4 JK	J	g, r	ng/kg
EPA 1668C	E1301243	E1301243-005	BD-13_09/23/13	Total Trichlorobiphenyl	10.4	10.4	6.02 J	J	g, j	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,4'-Tetrachlorobiphenyl (PCB 42)	21.6	21.6	16.7 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,5,6'-Pentachlorobiphenyl (PCB 94)	10.8	10.8	7.62 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',3,6,6'-Pentachlorobiphenyl (PCB 96)	10.8	10.8	5.09 JK	J	g, r	ng/kg

TABLE 10
QUALIFICATION WHEN RESULTS ARE LESS THAN PQL
Beta/NW Ditch Removal Action Data Validation Summary Report
Titanium Metals Corporation, Henderson, Nevada

Method	SDG	Lab ID	Sample ID	Analyte	PQL	SQL	Result[1]	Validation Qualifier	Comment	Unit
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	21.6	21.6	19.9 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,3',4,5,6-Hexachlorobiphenyl (PCB 160)	43.1	43.1	40.3 JK	J	g, r	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,3',4-Tetrachlorobiphenyl (PCB 55)	10.8	10.8	7.58 J	J	g	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	2,3,3',5'-Tetrachlorobiphenyl (PCB 58)	10.8	10.8	3.72 J	J	g	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCB 50/53	21.6	21.6	20.8 J	J	g	ng/kg
EPA 1668C	E1301286	E1301286-006	BD-1_20130925	PCBs 93/100	43.1	43.1	27.8 J	J	g	ng/kg
SW 8270D	1309221	1309221-1	NW-23_09/12/13	Hexachlorobenzene	370	370	160 J	J	g	ug/kg
SW 8270D	1309438	1309438-2	BD-1_09/25/13	Hexachlorobenzene	360	360	270 J	J	g	ug/kg
SW 8270D	680-95178-2	680-95178-8	TMBD-WHEELWASH-01_10/15/13	Hexachlorobenzene	350	35	200 J	J	g	ug/kg
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2	0.047	1.7 Jq	J	g, r	pg/g
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2	0.034	3.3 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.2	0.14	4.6 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2	0.033	3.4 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	1,2,3,7,8-Pentachlororodibenzo-p-dioxin (PeCDD)	5.2	0.069	2.2 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-10	TMBD-WHEELWASH-03_10/15/13	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.0	0.024	0.62 Jq	J	g, r	pg/g
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.1	0.047	2 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.1	0.035	3.4 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.1	0.033	3.7 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	1,2,3,7,8-Pentachlororodibenzo-p-dioxin (PeCDD)	5.1	0.080	2.2 J	J	g	pg/g
SW 8290	680-95178-2	680-95178-11	TMBD-WHEELWASH-DUP_10/15/13	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.0	0.028	0.81 J	J	g	pg/g
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.64	2.64	1.44 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.64	2.64	2.4 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.64	2.64	0.367 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.64	2.64	0.373 JK	J	g, r	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.64	2.64	0.347 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.64	2.64	2.06 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	1,2,3,7,8-Pentachlororodibenzo-p-dioxin (PeCDD)	2.64	2.64	0.162 JK	J	g, r	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.64	2.64	1.3 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.64	2.64	1.23 J	J	g	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	Total Heptachlorodibenzo-p-dioxin (HpCDD)	2.64	2.64	2.26 J	J	g, j	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	Total Hexachlorodibenzo-p-dioxin (HxCDD)	2.64	2.64	1.5 J	J	g, j	ng/kg
SW 8290	E1301243	E1301243-005	BD-13_09/23/13	Total Pentachlororodibenzo-p-dioxin (PeCDD)	2.64	2.64	0.478 J	J	g, j	ng/kg

Notes

+/-	Result may be biased high/low
UG/L	Micrograms per liter
PQL	Practical quantitation limit
SDG	Sample delivery group
SQL	Sample quantitation limit

1 Result field includes the numerical concentration and the laboratory qualifier or code.

Qualifiers/Comments

b	Comment code for blank contamination
B	Indicates detected result less than PQL
d	Comment code for duplicate precision
e	Comment code for spike recovery
g	Indicates detected result less than PQL
J	Estimated value
j	Comment code for other stable chemistry issues
K	Result represents the EMPC
r	Comment code for EMPC

Appendix A

Beta / NW Ditch Removal Action Analytical Database— 2013 (contained on compact disk)

Appendix B

Beta / NW Ditch Removal Action Analytical Data Packages— 2013 (contained on compact disk)