Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 25 April 2019
Batch ID: WG67405

Laboratory report checked by: Amy L. Sumner
Check Date: 1 May 2019

DESCRIPTION:
Batch WG67405 contains the AXYS laboratory data for the February 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

DUPLICATE:
The duplicate relative percent difference (RPD) was less than or equal to 50 percent as required by the QAPP. The RPD was 7.7 percent.

COMPOUND RECOVERY:
Laboratory check/spiked samples were not within the percent recovery range required in the QAPP for certain surrogates as described in the lab's comments. The lab flagged affected data. QA/QC of data determined that the impact on data is not significant and samples were not reanalyzed.

REPORTING LIMITS:
Reporting limits for the individual congeners were not all below 10 pg/L for the method blank (WG67405-101) and the SVI sample. The method blank had 95 percent compliance, with only PCB-4, 5, 7, 10, 12/13, and 14 not meeting this requirement. Only PCB-4 deviated more than 1 pg/L from the max required reporting limit at 23.1. The SVI sample had 99 percent compliance with only PCB-94 not meeting this requirement at 10.4 pg/L. However, QA/QC of the data determined that the impact on data is not significant and samples were not reanalyzed. See Comment/Response 4.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. The recoveries of surrogates 1L, 3L, and 4L in the lab blank are extremely low. The accuracy of PCBs 1 to 14 in the blank is uncertain.	Discussed with SGS AXYS. Acceptance limits for 1L, 3L and 4L are 5-145%; the lab blank recoveries were 1.11, 3.17 and 3.59% respectively. The lab blank had 90% of the recoveries of surrogates passing acceptance limits (all others passed). There were no other triggers for reanalysis. Most of the target analytes in the lab blank are K and U flagged, which would exclude them from the use in blank correction; only PCBs 1, 8, and 11 not U or K flagged. Therefore, there is little impact on data and no need for reanalysis.

SGS AXYS Comments		Response/Comment
	5. The recoveries of surrogates 1L, 104L, 155L, and/or 188L in the OPR WG67405-102 and duplicate OPR WG67405-103 fell slightly below the lower method control limits, as indicated by the V flags. The impact on the data is not significant.	Accepted. Recovery targets for surrogates 1L is 15-145%, and for 104L, 155L and 188L it is 40 - 130%. The OPR was within 5% of the lower acceptance limit. The OPR duplicate was within 5% of recovery targets except for 104L (34.21%) and 155L (29.3%). The RPD for the OPR and OPR duplicate was acceptable.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polybrominated diphenyl ether (PDBE)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date:12 April 2019
Batch ID: WG67330

Laboratory report checked by: Amy L Sumner
Check Date: 1 May 2019

DESCRIPTION:
Batch WG67330 contains the AXYS laboratory data for the February 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

DUPLICATE:
A PBDE duplicate was not collected during this sampling event.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were not all below 5 pg/L. The effluent, travel blank, rinsate blank and lab blanks had over 90% of congeners passing this requirement, but had 100% of congeners passing the lab's reporting limits. The NVI and SVI samples had 47% and 50% of congeners passing this requirement, respectively, and 53% and 56% of congeners passing the lab's reporting limits. Samples with RLs greater than 5 pg/L are flagged in the analytical report with an "S", which indicates that the RL are the Sample Detection Limit. The sample detection limit is defined as the RL adjusted to reflect sample-specific actions such as dilution or use of smaller aliquot sizes.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

SGS AXYS Comments		Response/Comment
	4. The ion abundance ratio of 13C-labeled BDE 209 did not meet the method specification in the Lab Blank (AXYS ID: WG67330-101), as indicated by a 'K' flag. 13C-labeled BDE 209 is only used for the quantification of native BDE 209. Given that native BDE 209 was not detected in the Lab Blank, blank data are considered not to be significantly affected by the variance.	Accepted. K-flag retained. Ion ratio limits for 209L is 1.05 - 1.41. The ion abundance ratio in the lab blank was 0.91. In addition, PBDE data from influent and effluent samples are not blank corrected.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 17 April 2019
Batch ID: WG67331

Laboratory report checked by: Amy L Sumner
Check Date: 2 May 2019

DESCRIPTION:
Batch WG67331 contains the AXYS laboratory data for the February 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 5 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 28 May 2019
Batch ID: WG67795

Laboratory report checked by: Amy L Sumner
Check Date: 7 June 2019

DESCRIPTION:
Batch WG67795 contains the AXYS laboratory data for the April 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

DUPLICATE:
A duplicate PCB sample was not collected during this sampling event.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 10 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. For the lab blank (SGS AXYS ID: WG67795-101), due to low recoveries, the labeled surrogates PCB 1L and 3L and their associated targets mono-substituted PCBs were not considered quantifiable and flagged with 'NQ'. The data are not available.	This only affects PCB-1, 2, and 3, in the lab blank. Effluent was not sampled during this event. Therefore, data correction with a lab blank missing data for these congeners would

SGS AXYS Comments		Response/Comment
		not significantly affect the influent samples. No action necessary.
	5. Relative Retention Time (RRT) for PCB 180/193 in the sample Travel Blank PCB-041719 (SGS AXYS ID: L31016-1) and PCB 123 in the sample NVIPS PCB-041619 (SGS AXYS ID: L31016-8) are outside the RRT control limits provided on Form 3A. These PCB analytes are determined to be present based on the comparison of the chromatographic pattern between the sample and the calibration data.	Noted. RTT for PCB 180/193 in the Travel Blank is 1.001; the acceptable range is 0.998 – 1. RTT for PCB 123 in the NVI sample is 1.002; the acceptable range is 1 – 1.001. Data does not appear to be affected. No action necessary.
	6. A disturbance of the mass ion used to monitor instrument performance (lock-mass) was observed in the OPR duplicate (SGS AXYS ID: WG67795-103) at the retention time corresponding to PCB 202 and the surrogate PCB 202L, as indicated by the flag of 'G'. Since the LMI affects the native and surrogate the same way, isotope dilution quantification method automatically corrects for the impact, sample data is not affected.	Accepted. Data does not appear to be affected. No other samples contained G-flagged data. No action necessary.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polybrominated diphenyl ether (PDBE)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 28 June 2019
Batch ID: WG67850

Laboratory report checked by: Amy L Sumner
Check Date: 2 Oct. 2019

DESCRIPTION:
Batch WG67850 contains the AXYS laboratory data for the April 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP, except as described below. Data quality was not considered significantly affected. Comments received from the laboratory are addressed below.

DUPLICATE:
The duplicate relative percent difference (RPD) was not less than or equal to 50 percent as required by the QAPP. Using all data (including U and K flagged) the RDP was 50.6 percent. With U and K flags excluded, RPD was 51.6 percent. An acceptable RPD was met for 78 percent of individual congeners.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were not all below 5 pg/L. The effluent, travel blank, rinsate blank and lab blanks had over 90% of congeners passing this requirement, but had 100% of congeners passing the lab's reporting limits. The NVI, SVI, and duplicate samples had 74%, 47% and 56% of congeners passing this requirement, respectively, and 84%, 67% and 56% of congeners passing the lab's reporting limits. Samples with RLs greater than 5 pg/L are flagged in the analytical report with an "S", which indicates that the RL are the Sample Detection Limit. The sample detection limit is defined as the RL adjusted to reflect sample-specific actions such as dilution or use of smaller aliquot sizes.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. Disturbances of the mass ion used to monitor instrument performance (lock-mass) greater than the method specification were observed in some samples near the retention times corresponding to the analytes tabulated below. The affected compounds have been flagged with a 'G'. Sample data are considered not to be significantly affected. G-flagged data are as follows: BDE-15, 13C-BDE 15, BDE 138/166, BDE 154 and 13CBDE 154 in SVI and Duplicate samples; BDE 154 and 13CBDE 154 in NVI Sample.	G-flagged data from NVIPS, SVIPS and Duplicate samples for congeners listed were less than 5% of the total mass for each sample, therefore data was accepted but G flags were retained. Percent of total mass was 2.1, 1.9 and 1.7 respectively. No action necessary.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 21 May 2019
Batch ID: WG67851

Laboratory report checked by: Amy L Sumner
Check Date: 5 June 2019

DESCRIPTION:
Batch WG67851 contains the AXYS laboratory data for the April 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were 5 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. 2,3,7,8-TCDD was detected in Lab Blank WG67851-101 at a concentration above the method control limit. Sample 'Travel Blank TCDD-041719' (SGS AXYS ID: L31016-2) has a similar concentration of 2,3,7,8-TCDD to the lab blank and should be interpreted with caution. 2,3,7,8-TCDD was not detected in client samples and data are not considered affected.	Accepted. Influent and Effluent sample data are not blank corrected. Detections in blanks will not affect samples.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 22 Aug. 2019
Batch ID: WG68469

Laboratory report checked by: Amy L Sumner
Check Date: 2 Oct. 2019

DESCRIPTION:
Batch WG68469 contains the AXYS laboratory data for the June 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments from the laboratory are addressed below.

DUPLICATE:
The duplicate relative percent difference (RPD) was less than or equal to 50 percent as required by the QAPP. The RPD was 0.6 percent.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 10 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. The relative retention time (RRT) for PCB 183/185 in the Lab Blank was slightly outside of the nominal RRT acceptance windows printed on Form 3A/B. But the congeners were determined to be present based on a detailed inspection of sample and calibration chromatogram patterns.	Noted. The RTT for PCB 183/185 in the lab blank was 1.126; the acceptable range is 1.127 - 1.129. The concentration of PCB 183/185 is relatively

SGS AXYS Comments		Response/Comment
		low and data does not appear to be affected. No action required.
	5. PCB 123 peak was not resolved from interference peaks in samples NVIPS PCB-061219, SVIPS PCB-061219 and Duplicate PCB-061219 (AXYS ID L31324-11, -13 and -15, respectively). This resulted in that its RRT was slightly outside the nominal RRT acceptance window. This congener was flagged with a 'K' though its ion abundance ratio was within the method control limit in some of the samples. The reported concentration should be interpreted as estimated maximum possible concentration.	K-flagged data is typically excluded during data correction. The exclusion of this data is unlikely to significantly affect total PCB concentrations. The reported effluent PCB-123 concentration is low enough that it would be excluded at 3x the lab blank levels if not K-flagged. No action necessary.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polybrominated diphenyl ether (PDBE)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 10/19/2019
Batch ID: WG69258

Laboratory report checked by: Amy L Sumner
Check Date: 11/12/2019

DESCRIPTION:
Batch WG69258 contains the AXYS laboratory data for the June 2019 sampling event. QA/QC was performed on the AXYS laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP except for the permit reporting limits as described below. Note that lab reported problems with the original analysis (Batch ID WG68736) and did not issue a final report of those results; instead an analysis of all back-up samples was done and the results from this second analysis (Batch ID WG69258) are used in the report and QA/QC process. Comments received from the laboratory are addressed below.

DUPLICATE:
Duplicate PBDE samples were not collected during this sampling event.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were not all below 5 pg/L. The Effluent, SVI Rinsate and Method Blank samples had 97% of congeners passing this requirement, with only PBDE-209 not meeting the requirement. The Travel Blank sample had 92% of congeners passing with PBDE-207 through 209 not passing. However, all samples had 100% of congeners passing the lab's reporting limits. Samples with RLs greater than 5 pg/L are flagged in the analytical report with an "S", which indicates that the RL are the Sample Detection Limit. The sample detection limit is defined as the RL adjusted to reflect sample-specific actions such as dilution or use of smaller aliquot sizes.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 30 July 2019
Batch ID: WG68747

Laboratory report checked by: Amy L. Sumner
Check Date: 2 Oct. 2019

DESCRIPTION:
Batch WG68747 contains the AXYS laboratory data for the June 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 5 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 11 Nov. 2019
Batch ID: WG69283

Laboratory report checked by: Amy L. Sumner
Check Date: 12 Nov. 2019

DESCRIPTION:
Batch WG69283 contains the AXYS laboratory data for the August 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Note that the lab reported that the results for the NVI sample did not meet the method specifications and a back-up sample will be analyzed separately (see SGS AXYS Comment 4 below); therefore, this batch and QA/QC does not include the results for the NVI sample collected during the August 2019 event. Comments from the laboratory are addressed below.

DUPLICATE:
A duplicate PCB sample was not collected during this event.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 10 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

SGS AXYS Comments		Response/Comment
	4. Initial analysis of sample 'NVIPS PCB-080819' (SGS AXYS ID L31704-11) was included in analysis batch WG69283, however analysis results did not meet all method specifications. A repeat analysis of this sample will be performed, and results reported separately.	NVIPS PCB-080819 Back-up sample sent to lab and analyzed in Batch ID WG70206. See QA/QC Record for that Batch.
	5. The quantification standard 13C-labeled PCB-1 in the OPR duplicate, WG69283-103, did not meet method quantification specifications; native and labeled PCB-1 has been flagged with 'NQ' – not quantifiable.	This only affects the OPR duplicate. The quantification standard 13C-labeled PCB 1 met the method quantification standard in the OPR, and in all other samples. Data are not affected. No action required.
	6. The recoveries of several quantification standards were below the method control limit in the OPR duplicate, WG69283-103; the standards have been flagged with 'V'. Given that the recoveries of the corresponding native PCBs spiked into the OPR met the method specifications, sample data are not considered affected by this variance.	Only the OPR duplicate is affected. The recoveries of all quantification standards met the method control limits for the OPR WG69283-102 as well as all other samples. Data are not affected. No action required.
	7. The recovery of cleanup standard 13C-labeled PCB-28 was below the method control limit in the OPR duplicate, WG69283-103; the standard has been flagged with 'V'. Given that the cleanup standard is not used for quantification of target analytes, sample analyte data are not affected by this variance.	Only the OPR duplicate is affected. The quantification standard 13C-labeled PCB 28 met the method quantification standard in the OPR WG69283-102, and in all other samples. Data are not affected. No action required.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polybrominated diphenyl ether (PDBE)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 13 Nov. 2019
Batch ID: WG69348

Laboratory report checked by: Amy L. Sumner
Check Date: 25 Nov. 2019

DESCRIPTION:
Batch WG69348 contains the AXYS laboratory data for the August 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP, except for the reporting limit requirement as described below. The laboratory also noted some data quality flags with the lab blank, OPR and OPR duplicate, but these do not affect the overall analysis of the sample data. Comments received from the laboratory are addressed below.

DUPLICATE:
The duplicate relative percent difference (RPD) was less than or equal to 50 percent as required by the QAPP. The RPD was 47.6 percent.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP for all samples, except for the lab blank WG9348-101.

REPORTING LIMITS:
Reporting limits for the individual congeners were not all below 5 pg/L, except for the Duplicate PBDE sample in which this requirement was met. The effluent sample and the rinsate, travel and lab blanks had over 85% of congeners passing this requirement. However, these samples had 100% of congeners passing the lab's reporting limits.
The NVI and SVI samples had 67% and 71% of congeners passing the requirement, respectively. These samples had 80% and 88% of congeners passing the lab's reporting limits. Samples with RLs greater than 5 pg/L are flagged in the analytical report with an "S", which indicates that the RL are the Sample Detection Limit. The sample detection limit is defined as the RL adjusted to reflect sample-specific actions such as dilution or use of smaller aliquot sizes.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. The recoveries of several 13C-labeled quantification standards did not meet the method criteria in the OPR, OPR duplicate and the Lab Blank (SGS AXYS IDs: WG69348-102, -103 & -101, respectively); the affected standards have been flagged with 'V'. • For the OPRs: given that the recovery of the native BDE congeners spiked into the OPRs recovered within the method specifications, sample data are not considered significantly affected by this variance. • For the Lab Blank: As the isotope dilution method of quantification produces data that are recovery corrected, slight variances from the method acceptance criteria are not deemed to affect the quantification of these analytes. Percent surrogate recoveries are used as general method performance indicator only.	Accepted. V-flag retained. PBDE data from influent and effluent samples are not blank corrected.
	5. The recovery of the 13C-labeled cleanup standard did not meet the method criteria in the OPR, OPR duplicate and the Lab Blank (SGS AXYS IDs: WG69348-102, -103 & -101, respectively); the standard has been flagged with 'V'. Given that the cleanup standard is not used for the quantification of target analytes, sample data are considered affected by this variance.	Accepted. V-flag retained. PBDE data from influent and effluent samples are not blank corrected.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 19 Sept. 2019
Batch ID: WG69347

Laboratory report checked by: Amy L. Sumner
Check Date: 12 Nov. 2019

DESCRIPTION:
Batch WG69347 contains the AXYS laboratory data for the August 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 5 pg/L.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 9 Jan. 2020
Batch ID: WG70206

Laboratory report checked by: Amy L Sumner
Check Date: 16 Jan. 2020

DESCRIPTION:
Batch WG70206 contains the AXYS laboratory data for the October 2019 sampling event, and back-up samples of the August 2019 NVI sample and travel blank. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Note that the lab reported that the results for the October 2019 NVI sample did not meet the method specifications and a back-up sample will be analyzed separately (see SGS AXYS Comment 4 below); therefore, this batch and QA/QC does not include the results for the October 2019 NVI sample. Comments from the laboratory are addressed below.

DUPLICATE:
A PCB duplicate was collected during the October 2019 sampling event, but no data for a duplicate sample was officially reported by the lab.

The duplicate was one of two samples collected at the NVI pump station for PCB analysis. A third was collected for TCDD/Dioxin analysis. These samples were sent to the lab for analysis. In addition, two “back-up” samples are collected at the NVI pump station per standard practice. Back-up samples are stored in a refrigerator and only shipped to the lab when a need for reanalysis arises.

On November 7, 2019 the laboratory requested a back-up of the October 2019 NVI sample for reanalysis of TCDD/Dioxin. One of the back-up samples was then sent to the lab for reanalysis.

On November 28, the lab sent preliminary PCB data from the October 2019 samples indicating problems with the NVI sample and duplicate. The NVI sample had problems with volatility which caused the data to be non-reportable for several congeners. The field duplicate taken at the NVI location had an unusually high PCB concentration (144,337 pg/L) that was not replicating the data from the NVI sample (7,672 pg/L from preliminary data).

Given this information, it was decided that: 1) the second October 2019 NVI back-up sample will be sent for reanalysis of PCBs; 2) the back-up sent for TCDD/Dioxin reanalysis would be used for that purpose; and 3) the use of the PCB field duplicate data will be decided once the back-up sample had been reanalyzed, since there is not enough sample to “back-up” the field duplicate for reanalysis.

The PCB data for the analysis of the October 2019 NVI back-up sample was provided by the lab on February 19, 2020. The back-up sample was found to have an uncorrected PCB total of 9,840 pg/L. Based on the volatility issues, the original NVI sample result (preliminary result of 7,672 pg/L) was rejected. The original NVI duplicate sample (144,337 pg/L) is anomalously high, and is not consistent with either the preliminary result of the original NVI sample or the result of the back-up NVI sample, therefore it is also rejected. The back-up NVI sample result of 9,840 pg/L is accepted. Under normal circumstances a second back-up sample would have been analyzed, but this was not possible due to the use of a back-up sample for TCDD/Dioxin reanalysis.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 10 pg/L for PCBs.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. Initial analysis of samples 'Duplicate PCB-101919' and 'NVIPS PCB-101919' (SGS AXYS IDs: L32199-7 & -8, respectively) was performed in WG70206, however analysis results did not meet all method specifications. A replacement sample and repeat analysis will be performed using a fresh aliquot of sample; results will be reported separately.	Noted. Sent back-up samples for reanalysis, the results for which are reported under Batch WG71031.
	5. The ion abundance ratio of 13C-labeled PCB-81 did not meet the method specifications in closing calibration filename PB9C_409A S:9 and has been flagged with NDR. Given that the concentration of native and labeled PCB-81 passed method specifications in the closing calibration, sample data are not considered significantly affected by this variance.	Agreed. Ion abundance ratio for PB9C_409A S:9 is 0.64, slightly below the method specification (0.65 - 0.89). The ion abundance ratios for PCB-81 and 81L in all samples are within the method specifications. Sample data does not

SGS AXYS Comments		Response/Comment
		appear to be affected. No reaction required.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 19 Feb. 2020
Batch ID: WG71031

Laboratory report checked by: Amy L Sumner
Check Date: 20 Feb. 2020

DESCRIPTION:
Batch WG71031 contains the AXYS laboratory data for the voluntary sampling of the County's Significant Industrial Users (SIUs) and a back-up sample of the October 2019 NVI sample. QA/QC was performed on the AXYS laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments from the laboratory are addressed below.

DUPLICATE:
A PCB duplicate was not analyzed with this batch.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 10 pg/L for PCBs.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.

SGS AXYS Comments		Response/Comment
	4. Samples AMO-111919 and USWP-120419 (SGS AXYS IDs: L32450-5 and -10, respectively) are to be repeated due to low surrogate recoveries. Sample data will be reported when it becomes available.	Back-up samples of AMO-111919 and USWP-120419 have been sent to the lab for analysis
	5. For the OPR and OPR duplicate (SGS AXYS IDs: WG71031-102 and -103, respectively), percent recoveries of some labeled surrogates did not meet the method specifications and are flagged with a 'V'. However, percent recoveries for the associated targets met the method specifications, data is not considered affected. For the OPR duplicate, some of the labeled surrogate recoveries were below 1%, the surrogates and the associated targets were not considered quantifiable and flagged with 'NQ', the data is not available.	The OPR had 87% passing the target % recovery limits, all samples had 100% passing. Sample data is not considered affected. V-flag retained.
	6. Relative Retention Times (RRTs) for PCB 123 in the sample KEM-110519 (SGS AXYS ID: L32450-3) and PCB 206 in the sample GAL-111219 (SGS AXYS ID: L32450-6) were outside the RRT QC limits reported on Form A for the full calibration. These compounds are determined to be present based on the comparison of the chromatographic pattern between the samples and the calibration data.	Noted. Concentrations of affected congeners are relatively low and data does not appear to be affected. These samples are from the SIUs and are not required under the permit. No action required.
	7. A disturbance of the mass ion used to monitor instrument performance (lock-mass) was observed in the sample LLO-111919 (SGS AXYS ID: L32450-8) at the retention times corresponding to some PCB congeners, as indicated by the flag of 'G'. As these are not major contributors to the PCB totals, data are not considered significantly affected.	Lock-mass ions account for 6.2% of total sample mass. Data is not considered significantly affected and G flag is retained. This sample is from an SIU and is not required under the permit.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 18 Nov. 2019
Batch ID: WG70207

Laboratory report checked by: Amy L Sumner
Check Date: 25 Nov. 2019

DESCRIPTION:
Batch WG70207 contains the AXYS laboratory data for the October 2019 sampling event. QA/QC was performed on the AXYS laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Note that the lab reported that the results for the October 2019 NVI sample did not meet the method specifications and a back-up sample will be analyzed separately (see SGS AXYS Comment 4 below); therefore, this batch and QA/QC does not include the results for the October 2019 NVI sample. Comments from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 5 pg/L for TCDD.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. Sample 'NVIPS TCDD-101919' (SGS AXYS ID: L32199-9) was included in analysis batch WG70207, however the sample requires a repeat analysis. The results for this sample will be reported separately.	Noted. Sent back up sample for NVIPS TCDD-101919 for reanalysis. Results are reported under batch WG71035.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 18 Feb. 2020
Batch ID: WG71035

Laboratory report checked by: Amy L Sumner
Check Date: 26 Feb. 2020

DESCRIPTION:
Batch WG71035 contains the AXYS laboratory data for the back-up of the NVI sample and travel blank from the October 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 5 pg/L for TCDD.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. The recovery of the cleanup standard 37C-labeled 2,3,7,8-TCDD did not meet the method control limit in the OPR duplicate, WG71035-103, and has been flagged with 'V'. Given that the quantification standard does not show the same trend and that no targets are quantified against the clean-up standard, data are not considered affected by this variance.	Agreed. The recovery of the clean-up standard met the method control limit in the OPR WG71035-102. Data does not appear to be affected. No action required.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polychlorinated biphenyl (PCB)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 5 March 2020
Batch ID: WG70964

Laboratory report checked by: Amy L Sumner
Check Date: 9 March 2020

DESCRIPTION:
Batch WG70964 contains the AXYS laboratory data for the December 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments from the laboratory are addressed below.

DUPLICATE:
A duplicate PCB sample was not collected during this sampling event.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 10 pg/L for PCBs.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. For the OPR (SGS AXYS ID: WG70964-102), percent recoveries of the labeled surrogates PCB 104L and 155L were observed slightly below the method lower control limits and flagged with a 'V'. However, the percent recoveries of the associated targets met the method criteria, data is not affected.	Agreed. Recovery targets for surrogates 104L and 155L is 40%. The OPR had recoveries at 35.1 and 34.2% respectively. The data are not considered affected.

SGS AXYS Comments		Response/Comment
		The data is accepted and V flag is retained.
	5. Relative Retention Times (RRTs) for PCB 123 in samples NVIPS PCB-121619 and SVIPS PCB-121619 (SGS AXYS IDs: L32489-11 and -14, respectively) and PCB 104 in sample Rinsate SVIPS PCB-121619 (SGS AXYS ID: L32489-4) are outside the RRT control limits provided on Form 3A. These compounds are determined to be present based on the comparison of the chromatographic pattern between the samples and the calibration data.	Noted. Concentrations of affected congeners are relatively low and data does not appear to be affected. No action required.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Polybrominated diphenyl ether (PDBE)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 19 Feb. 2020
Batch ID: WG71070

Laboratory report checked by: Amy L Sumner
Check Date: 26 Feb. 2020

DESCRIPTION:
Batch WG71070 contains the AXYS laboratory data for the December 2019 sampling event. QA/QC was performed on the laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments received from the laboratory are addressed below.

DUPLICATE:
The duplicate relative percent difference (RPD) was less than or equal to 50 percent as required by the QAPP. The RPD was 5.5 percent.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were not all below 5 pg/L for PBDE, except for the travel blank which had 100% of congeners meeting this requirement. The Effluent, Rinsate and Method Blank samples had 97% of congeners passing this requirement, with only PBDE-209 not meeting the requirement. The Travel Blank sample had 92% of congeners passing with PBDE-207 through 209 not passing. The NVI, SVI and duplicate samples had 62%, 63% and 53% of congeners passing the requirement, respectively. However, the NVI, SVI and duplicate samples had 62%, 69% and 60% passing the lab's reporting limits. Samples with RLs greater than 5 pg/L are flagged in the analytical report with an "S", which indicates that the RL are the Sample Detection Limit. The sample detection limit is defined as the RL adjusted to reflect sample-specific actions such as dilution or use of smaller aliquot sizes.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
	4. The recovery of the cleanup standard 13C-labeled BDE-139 was above the method control limit in the Lab Blank, WG71070-101; the standard has been flagged with 'V'. Given that the quantification standards do not show the same trend and that no targets are quantified against the cleanup standard, sample data are not considered affected by this variance.	Noted; the recovery of PDBE 139L in the lab blank was outside of the EPA 1614A Limits, but within the lab's acceptance limits. No action recommended.

Quality Control
Comment/Action Record

PROJECT NAME: Spokane County NPDES Toxics Sampling
ANALYTE: Dioxin/Furan (TCDD)

Laboratory report prepared by: SGS AXYS Analytical Services
Batch Date: 23 Jan. 2020
Batch ID: WG71069

Laboratory report checked by: Amy L Sumner
Check Date: 2 March 2020

DESCRIPTION:
Batch WG71069 contains the AXYS laboratory data for the December 2019 sampling event. QA/QC was performed on the AXYS laboratory data based on the measurement quality objectives detailed in the QAPP. All data and data quality checks met the requirements of the QAPP. Comments from the laboratory are addressed below.

COMPOUND RECOVERY:
Laboratory check/spiked samples were within the percent recovery range required in the QAPP.

REPORTING LIMITS:
Reporting limits for the individual congeners were all below 5 pg/L for TCDD.

ADDITIONAL REMARKS / COMMENTS:

SGS AXYS Comments		Response/Comment
Results File Comments	1. Data are considered final. 2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data. 3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.	None.
