



1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

Client Project Information

Project ID: 60566335

Project Description: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Contact: Amy Dahl

ALSE Project Information

Project ID: AECOM100

Contact: Whitney Davis

Submission ID(s): L2144849

Final Package Review by:

A handwritten signature in black ink that appears to read "Wendy".

Date Reviewed: 31-Aug-18

SVOC DATA PACKAGE

SECTION 1: PROJECT NARRATIVE

ALSE Project Information

Project ID: AECOM100

 Contact: Whitney Davis
 Submission ID(s): L2144849

Analytical Method: 2,4'- and 4,4'-DDE, DDD and DDT by EPA 1699 (modified)

Client Project Information

 Project ID: 60566335
 Project Description: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
 Contact: Amy Dahl

| ALS Sample ID | Client Sample Descriptions | Matrix | Date Sampled | Date Received | Date Extracted | Date Analyzed |
|---------------|-------------------------------|----------|--------------|---------------|----------------|---------------|
| L2144849-1 | PDI-SC-S222-5TO7.2D | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 28-Aug-18 |
| WG2845105-4 | PDI-SC-S222-5TO7.2D Duplicate | QC | n/a | n/a | 20-Aug-18 | 28-Aug-18 |
| L2144849-2 | PDI-SC-S222-7.2TO9.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 30-Aug-18 |
| L2144849-3 | PDI-SC-S222-9.2TO11.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-4 | PDI-SC-S222-11.2TO13.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 28-Aug-18 |
| L2144849-5 | PDI-SC-S222-13.2TO15.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 28-Aug-18 |
| L2144849-6 | PDI-SC-S248-0TO2 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-7 | PDI-SC-S248-2TO4 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-8 | PDI-SC-S248-4TO6.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 20-Aug-18 | 30-Aug-18 |
| L2144849-48 | PDI-SC-S226-6TO8 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-49 | PDI-SC-S226-10TO12 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-50 | PDI-SC-S226-8TO10 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-51 | PDI-SC-S226-0TO2 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-52 | PDI-SC-S226-2TO4 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-53 | PDI-SC-S226-12TO14 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-54 | PDI-SC-S226-4TO6 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| L2144849-55 | PDI-SC-S226-14TO15.8 | Sediment | 06-Aug-18 | 11-Aug-18 | 20-Aug-18 | 29-Aug-18 |
| WG2845105-1 | Method Blank | QC | n/a | n/a | 20-Aug-18 | 28-Aug-18 |
| WG2845105-2 | Laboratory Control Sample | QC | n/a | n/a | 20-Aug-18 | 28-Aug-18 |

Comments and Notes:
a) Sample Integrity:

All samples were received in good condition at 6.8 degrees C., which is above the recommended storage and transportation temperature. However, the brief exposure to above-recommended temperatures is not expected to have a negative impact on data quality.

b) Instrumental Analysis:

All results have been reported on a dry weight basis

The samples have been analyzed with an instrument method where conditions are optimized for acquisition of the selected targets only.

The highest available calibration level has not been analyzed as it was expected to saturate the instrument detector.
 Six calibration levels have been included.

For H6-18-CCV-0837, the post-run continuing calibration verification (CCV) for the analytical sequence 6-180827B, the recovery of the labelled standard 13C12-4,4'-DDD was marginally above the method control limit. The reported recoveries of this standard may be slightly elevated.
 Native target data are not expected to be biased as a result.

For H6-18-CCV-0845, the post-run continuing calibration verification (CCV) for the analytical sequence 6-180828A, the recovery of the labelled standard 13C12-4,4'-DDT was marginally above the method control limit. The reported recoveries of this standard may be slightly elevated.
 Native target data are not expected to be biased as a result.

Sample and duplicate replication criteria outside method limits for the low level detected targets. The sample may not be homogeneous.

For the laboratory control sample (LCS), the recovery of the native target 2,4'-DDD was marginally above the method control limit.
 As a result, the reported values for this target may be slightly elevated.

For the samples PDI-SC-S222-7.2TO9.2 and PDI-SC-S248-4TO6.2, the results have been reported from a re-analysis of the extracts in order to preclude the possibility of carryover from a prior higher level extract.
 Also for these samples, the extracts were found to contain water after extraction. The volume was reduced, and the organic layer separated from the aqueous layer prior to continuing laboratory preparation.

I certify that this data package is in compliance with the terms and condition of the contract , both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package (hardcopy and/or electronic version) has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Stephen Kennedy, Technical Supervisor

 31-Aug-18
 Date

SVOC DATA PACKAGE

SECTION 1: PROJECT NARRATIVE

ALSE Project Information

Project ID: AECOM100

 Contact: Whitney Davis
 Submission ID(s): L2144849

Analytical Method: 2,4'- and 4,4'-DDE, DDD and DDT by EPA 1699 (modified)

Client Project Information

Project ID: 60566335

 Project Description: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
 Contact: Amy Dahl

| ALS Sample ID | Client Sample Descriptions | Matrix | Date Sampled | Date Received | Date Extracted | Date Analyzed |
|---------------|----------------------------|----------|--------------|---------------|----------------|---------------|
| L2144849-9 | PDI-SC-S139-0TO2 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| WG2848035-4 | PDI-SC-S139-0TO2 Duplicate | QC | n/a | n/a | 21-Aug-18 | 29-Aug-18 |
| L2144849-10 | PDI-SC-S139-2TO4.1 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-11 | PDI-SC-S139-4.1TO5.9 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-12 | PDI-SC-S139-4.1TO5.9D | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-13 | PDI-SC-S176-0TO2 | Sediment | 08-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-14 | PDI-SC-S176-2TO4 | Sediment | 08-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-15 | PDI-SC-S176-4TO5.5 | Sediment | 08-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-16 | PDI-SC-S176-5.5TO7.5 | Sediment | 08-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-17 | PDI-SC-S176-7.5TO9.6 | Sediment | 08-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-18 | PDI-SC-S188-0TO1.5 | Sediment | 08-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-56 | PDI-SC-S222-0TO2 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-57 | PDI-SC-S222-2TO4 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-58 | PDI-SC-S222-4TO5 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-59 | PDI-SC-S222-5TO7.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-60 | PDI-SC-S117-0TO2 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-61 | PDI-SC-S117-2TO4 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-62 | PDI-SC-S117-4TO6 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-63 | PDI-SC-S219-0TO2 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-64 | PDI-SC-S219-2TO4 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| L2144849-65 | PDI-SC-S219-4TO5.2 | Sediment | 07-Aug-18 | 11-Aug-18 | 21-Aug-18 | 29-Aug-18 |
| WG2848035-1 | Method Blank | QC | n/a | n/a | 21-Aug-18 | 29-Aug-18 |
| WG2848035-2 | Laboratory Control Sample | QC | n/a | n/a | 21-Aug-18 | 30-Aug-18 |

Comments and Notes:
a) Sample Integrity:

All samples were received in good condition at 6.8 degrees C., which is above the recommended storage and transportation temperature. However, the brief exposure to above-recommended temperatures is not expected to have a negative impact on data quality.

b) Instrumental Analysis:

All results have been reported on a dry weight basis

The samples have been analyzed with an instrument method where conditions are optimized for acquisition of the selected targets only.

The highest available calibration level has not been analyzed as it was expected to saturate the instrument detector.
 Six calibration levels have been included.

For H6-18-CCV-0845, the post-run continuing calibration verification (CCV) for the analytical sequence 6-180828A, the recovery of the labelled standard 13C12-4,4'-DDT was marginally above the method control limit. The reported recoveries of this standard may be slightly elevated.
 Native target data are not expected to be biased as a result.

For H6-18-CCV-0857 & 0859, the CCVs for the last CCV bracket of analytical sequence 6-180830A, the recovery of the labelled standards 13C12-4,4'-DDD and/or 13C12-4,4'-DDT were below the method control limit. The reported recoveries of this standard may be biased low as a result. Native target data are not expected to be biased as a result.

The recoveries of 13C12-4,4'-DDE are below the method control limit for a number of samples. As a result, the detection limits may be elevated. Detected native target results are not expected to be biased.

The results for some samples have been reported from the analysis of diluted extracts due to target levels, while others have been reported from a re-analysis of the extract in order to preclude the possibility of carryover.

Ran at 20x dilution: Ran at 40x dilution: Re-analyzed:

| | | |
|------------------|------------------|----------------------|
| PDI-SC-S117-0TO2 | PDI-SC-S222-0TO2 | PDI-SC-S139-4.1TO5.9 |
| PDI-SC-S117-2TO4 | PDI-SC-S222-2TO4 | PDI-SC-S176-4TO5.5 |
| PDI-SC-S117-4TO6 | PDI-SC-S222-4TO5 | PDI-SC-S117-0TO2 |
| | | PDI-SC-S117-4TO6 |

For the forty-fold dilutions, the areas of the labelled extraction standards were below the level of the lowest calibration standard. Response linearity has been assumed. Standard signal/noise ratios are all at least 10/1 and allow for isotope dilution quantification.

Where applicable, the results match the original five-fold diluted extract data. No bias to native target results is expected.

Sample and duplicate replication criteria outside method limits for the low level detected targets. The sample may not be homogeneous.

I certify that this data package is in compliance with the terms and condition of the contract , both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package (hardcopy and/or electronic version) has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Steve Kennedy, Technical Supervisor

31-Aug-18

Date

SVOC DATA PACKAGE

SECTION 1: PROJECT NARRATIVE

ALSE Project Information

Project ID: AECOM100

Contact: Whitney Davis
Submission ID(s): L2144849

Analytical Method: 2,4'- and 4,4'-DDE, DDD and DDT by EPA 1699 (modified)

Client Project Information

Project ID: 60566335

Project Description: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling

Contact: Amy Dahl

| ALS Sample ID | Client Sample Descriptions | Matrix | Date Sampled | Date Received | Date Extracted | Date Analyzed |
|---------------|----------------------------|----------|--------------|---------------|----------------|---------------|
| L2144849-19 | PDI-SC-S213-0TO2 | Sediment | 09-Aug-18 | 11-Aug-18 | 22-Aug-18 | 30-Aug-18 |
| WG2848060-4 | Duplicate | QC | n/a | n/a | 22-Aug-18 | 30-Aug-18 |
| L2144849-20 | PDI-SC-S213-2TO4 | Sediment | 09-Aug-18 | 11-Aug-18 | 22-Aug-18 | 30-Aug-18 |
| L2144849-36 | PDI-SC-S191-4TO6 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-37 | PDI-SC-S191-6TO8.1 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-38 | PDI-SC-S192-0TO1.5 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-39 | PDI-SC-S192-1.5TO3 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-40 | PDI-SC-S192-3TO4.2 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-41 | PDI-SC-S198-0TO2 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 30-Aug-18 |
| L2144849-42 | PDI-SC-S198-2TO4 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 30-Aug-18 |
| L2144849-43 | PDI-SC-S198-2TO4D | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 30-Aug-18 |
| L2144849-44 | PDI-SC-S198-4TO6 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 30-Aug-18 |
| L2144849-45 | PDI-SC-S198-6TO8 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-46 | PDI-SC-S198-8TO10 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-47 | PDI-SC-S198-10TO11.8 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-66 | PDI-SC-S105-0TO2 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-67 | PDI-SC-S105-2TO4 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-68 | PDI-SC-S105-4TO5.6 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-69 | PDI-SC-S105-5.6TO6.6 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-70 | PDI-SC-S191-0TO2 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| L2144849-71 | PDI-SC-S191-2TO4 | Sediment | 08-Aug-18 | 11-Aug-18 | 22-Aug-18 | 31-Aug-18 |
| WG2848060-1 | Method Blank | QC | n/a | n/a | 22-Aug-18 | 30-Aug-18 |
| WG2848060-2 | Laboratory Control Sample | QC | n/a | n/a | 22-Aug-18 | 30-Aug-18 |

Comments and Notes:
a) Sample Integrity:

All samples were received in good condition at 6.8 degrees C., which is above the recommended storage and transportation temperature. However, the brief exposure to above-recommended temperatures is not expected to have a negative impact on data quality.

b) Instrumental Analysis:

All results have been reported on a dry weight basis

The samples have been analyzed with an instrument method where conditions are optimized for acquisition of the selected targets only.

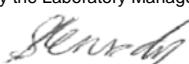
The highest available calibration level has not been analyzed as it was expected to saturate the instrument detector. Six calibration levels have been included.

For H6-18-CCV-0857 & 0859, the CCVs for the last CCV bracket of analytical sequence 6-180830A, the recovery of the labelled standards 13C12-4,4'-DDD and/or 13C12-4,4'-DDT were below the method control limit. The reported recoveries of this standard may be biased low as a result. Native target data are not expected to be biased as a result.

For the samples PDI-SC-S191-6TO8.1 and PDI-SC-S105-2TO4, the results have been reported from the reanalysis of the sample extract in order to preclude the possibility of carryover from a prior higher level extract.

The replication of 2,4'-DDT and 4,4'-DDT between the sample and laboratory duplicate does not meet expected control limits. All other targets replicate well. Sample may not be homogeneous.

I certify that this data package is in compliance with the terms and condition of the contract , both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package (hardcopy and/or electronic version) has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Steve Kennedy, Technical Supervisor

31-Aug-18
Date

SVOC DATA PACKAGE

SECTION 1: PROJECT NARRATIVE

ALSE Project Information

Project ID: AECOM100

Contact: Whitney Davis
Submission ID(s): L2144849

Client Project Information

Project ID: 60566335
Project Description: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling
Contact: Amy Dahl

Analytical Method: 2,4'- and 4,4'-DDE, DDD and DDT by EPA 1699 (modified)

| ALS Sample ID | Client Sample Descriptions | Matrix | Date Sampled | Date Received | Date Extracted | Date Analyzed |
|---------------|----------------------------|----------|--------------|---------------|----------------|---------------|
| L2144849-21 | PDI-SC-S213-4TO06 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-22 | PDI-SC-S213-6TO8 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-23 | PDI-SC-S213-8TO10 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-24 | PDI-SC-S213-10TO11.8 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-25 | PDI-SC-S213-11.8TO12.8 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-26 | PDI-SC-S098-0TO1.3 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-27 | PDI-SC-S098-1.3TO3.3 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-28 | PDI-SC-S098-3.3TO5.3 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-29 | PDI-SC-S098-3.3TO5.3D | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-30 | PDI-SC-S098-5.3TO7.2 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| L2144849-31 | PDI-SC-S098-7.2TO8.2 | Sediment | 09-Aug-18 | 11-Aug-18 | 23-Aug-18 | 31-Aug-18 |
| WG2848066-1 | Method Blank | QC | n/a | n/a | 23-Aug-18 | 31-Aug-18 |
| WG2848066-2 | Laboratory Control Sample | QC | n/a | n/a | 23-Aug-18 | 31-Aug-18 |

Comments and Notes:
a) Sample Integrity:

All samples were received in good condition at 6.8 degrees C., which is above the recommended storage and transportation temperature. However, the brief exposure to above-recommended temperatures is not expected to have a negative impact on data quality.

b) Instrumental Analysis:

All results have been reported on a dry weight basis

The samples have been analyzed with an instrument method where conditions are optimized for acquisition of the selected targets only.

The highest available calibration level has not been analyzed as it was expected to saturate the instrument detector.
Six calibration levels have been included.

For H6-18-CCV-0857 & 0859, the CCVs for the last CCV bracket of analytical sequence 6-180830A, the recovery of the labelled standards 13C12-4,4'-DDD and/or 13C12-4,4'-DDT were below the method control limit. The reported recoveries of this standard may be biased low as a result. Native target data are not expected to be biased as a result.

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Steve Kennedy, Technical Supervisor

31-Aug-18

Date



1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 2: DATA SUMMARY REPORT



1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact: Whitney Davis
ALS Project ID: AECOM100
ALS WO#: L2144849
Date of Report 31-Aug-18
Date of Sample Receipt 11-Aug-18

Client Name: AECOM United States
Client Address: 1111 Third Avenue
Suite 1600
Seattle, WA 98101, USA
Client Contact: Amy Dahl
Client Project ID: 60566335

COMMENTS: 2,4'- and 4,4'-DDE, DDD and DDT by EPA 1699 (modified)

Certified by:

A handwritten signature in black ink, appearing to read "Steve Kennedy".

Steve Kennedy
Technical Supervisor

Results in this certificate relate only to the samples as submitted to the laboratory.
This report shall not be reproduced, except in full, without the written permission of ALS Canada Ltd.

| ALS Life sciences | | | | | | |
|--------------------------------|---------------------|-------------------------------|----------------------|-----------------------|------------------------|------------------------|
| Sample Analysis summary Report | | | | | | |
| Sample Name | PDI-SC-S222-5TO7.2D | PDI-SC-S222-5TO7.2D Duplicate | PDI-SC-S222-7.2TO9.2 | PDI-SC-S222-9.2TO11.2 | PDI-SC-S222-11.2TO13.2 | PDI-SC-S222-13.2TO15.2 |
| ALS Sample ID | L2144849-1 | WG2845105-4 | L2144849-2 | L2144849-3 | L2144849-4 | L2144849-5 |
| Sample Size | 8.03 | 8.06 | 6.00 | 6.75 | 6.88 | 6.40 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 80.2% | 80.2% | 59.0% | 65.7% | 67.3% | 63.5% |
| Sample Matrix | Sediment | QC | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 7-Aug-18 | n/a | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 |
| Extraction Date | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.661 | 0.401 | 0.0832 | 0.0419 | 0.0152 | <0.023 |
| 4,4'-DDE | 23.8 | 10.4 | 0.184 | 0.296 | 0.0669 | 0.277 |
| 2,4'-DDD | 1.46 | 0.650 | <0.040 | <0.057 | 0.0375 | 0.0449 |
| 4,4'-DDD | 4.42 | 1.55 | <0.051 | 0.0679 | 0.0500 | 0.0809 |
| 2,4'-DDT | <0.040 | <0.049 | <0.051 | <0.020 | <0.023 | <0.023 |
| 4,4'-DDT | 0.102 | 0.0981 | 0.332 | 0.141 | 0.149 | <0.075 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 70 | 59 | 52 | 68 | 57 | 71 |
| 4,4'-DDD, 13C12- | 57 | 58 | 45 | 71 | 53 | 64 |
| 4,4'-DDT, 13C12- | 52 | 55 | 40 | 73 | 50 | 63 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S248-0TO2 | PDI-SC-S248-2TO4 | PDI-SC-S248-4TO6.2 | PDI-SC-S226-6TO8 | PDI-SC-S226-10TO12 | PDI-SC-S226-8TO10 |
|-----------------------------|------------------|------------------|--------------------|------------------|--------------------|-------------------|
| ALS Sample ID | L2144849-6 | L2144849-7 | L2144849-8 | L2144849-48 | L2144849-49 | L2144849-50 |
| Sample Size | 4.55 | 5.71 | 5.80 | 5.45 | 5.80 | 5.35 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 44.9% | 56.5% | 56.8% | 54.1% | 57.3% | 53.4% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 | 6-Aug-18 | 6-Aug-18 | 6-Aug-18 |
| Extraction Date | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.0759 | 0.123 | 0.0899 | 0.783 | 0.160 | 0.222 |
| 4,4'-DDE | 2.10 | 3.56 | 1.58 | 13.0 | 3.96 | 4.70 |
| 2,4'-DDD | 0.300 | 3.27 | 0.353 | 1.45 | 0.351 | 0.430 |
| 4,4'-DDD | 0.987 | 15.7 | 1.20 | 3.53 | 0.903 | 1.17 |
| 2,4'-DDT | 0.128 | 0.502 | 0.113 | <0.10 | 0.125 | 0.0610 |
| 4,4'-DDT | 0.370 | 2.00 | <0.25 | 0.393 | 0.433 | 0.235 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 74 | 79 | 70 | 71 | 79 | 75 |
| 4,4'-DDD, 13C12- | 70 | 73 | 61 | 69 | 71 | 69 |
| 4,4'-DDT, 13C12- | 68 | 71 | 54 | 71 | 72 | 68 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S226-0TO2 | PDI-SC-S226-2TO4 | PDI-SC-S226-12TO14 | PDI-SC-S226-4TO6 | PDI-SC-S226-14TO15.8 |
|-----------------------------|------------------|------------------|--------------------|------------------|----------------------|
| ALS Sample ID | L2144849-51 | L2144849-52 | L2144849-53 | L2144849-54 | L2144849-55 |
| Sample Size | 4.99 | 5.43 | 5.89 | 5.99 | 5.73 |
| Sample size units | g | g | g | g | g |
| Percent Solid | 48.6% | 53.2% | 57.7% | 58.4% | 56.0% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 6-Aug-18 | 6-Aug-18 | 6-Aug-18 | 6-Aug-18 | 6-Aug-18 |
| Extraction Date | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 | 20-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.142 | 0.258 | 0.214 | 0.221 | 0.410 |
| 4,4'-DDE | 3.61 | 5.00 | 5.52 | 5.13 | 8.21 |
| 2,4'-DDD | 0.399 | 0.505 | 0.567 | 0.677 | 0.659 |
| 4,4'-DDD | 1.24 | 1.39 | 1.93 | 2.40 | 2.01 |
| 2,4'-DDT | 0.116 | 0.125 | 0.0796 | 0.116 | 0.131 |
| 4,4'-DDT | 0.333 | 0.313 | 0.248 | 0.307 | 0.423 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 77 | 80 | 75 | 77 | 81 |
| 4,4'-DDD, 13C12- | 76 | 76 | 71 | 75 | 77 |
| 4,4'-DDT, 13C12- | 72 | 75 | 72 | 73 | 75 |

ALS Life sciences

Quality Control Summary Report

| Sample Name | Method Blank | Laboratory Control Sample |
|-----------------------------|--------------|------------------------------|
| ALS Sample ID | WG2845105-1 | WG2845105-2 |
| Sample Size | 7.21 | 1.00 |
| Sample size units | g | n/a |
| Percent Solid | 100.0% | 49.5% |
| Sample Matrix | QC | QC |
| Sampling Date | n/a | n/a |
| Extraction Date | 20-Aug-18 | 20-Aug-18 |
| Target Analytes | ng/g | % Rec |
| 2,4'-DDE | <0.0020 | 115 |
| 4,4'-DDE | 0.00572 | 108 |
| 2,4'-DDD | 0.00505 | 123 |
| 4,4'-DDD | 0.00696 | 105 |
| 2,4'-DDT | <0.0076 | 119 |
| 4,4'-DDT | 0.0213 | 108 |
| Extraction Standards | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 79 | 81 |
| 4,4'-DDD, 13C12- | 82 | 74 |
| 4,4'-DDT, 13C12- | 75 | 70 |

ALS Life sciences

Continuing Calibration Summary Report

| Sample Name | CCV | CCV | CCV | CCV | CCV | CCV |
|-----------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| ALS Sample ID | H6-18-RS1-065 | H6-18-CCV-0837 | H6-18-CCV-0839 | H6-18-CCV-0841 | H6-18-CCV-0843 | H6-18-CCV-0845 |
| Sample Size | 1 | 1 | 1 | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 2,4'-DDE | | 105 | 107 | 100 | 100 | 103 |
| 4,4'-DDE | 92 | 108 | 110 | 99 | 100 | 101 |
| 2,4'-DDD | | 104 | 113 | 100 | 96 | 94 |
| 4,4'-DDD | 95 | 110 | 110 | 97 | 102 | 100 |
| 2,4'-DDT | | 106 | 115 | 108 | 99 | 102 |
| 4,4'-DDT | 92 | 110 | 108 | 97 | 99 | 101 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 104 | 122 | 116 | 95 | 102 | 98 |
| 4,4'-DDD, 13C12- | 104 | 135 | 104 | 95 | 113 | 122 |
| 4,4'-DDT, 13C12- | 110 | 126 | 90 | 96 | 119 | 135 |

| ALS Life sciences | | | | | |
|---------------------------------------|----------------|---------------|---------------|----------------|----------------|
| Continuing Calibration Summary Report | | | | | |
| Sample Name | CCV | CCV | CCV | CCV | CCV |
| ALS Sample ID | H6-18-CCV-0847 | H6-18-RS1-064 | H6-18-RS1-067 | H6-18-CCV-0853 | H6-18-CCV-0855 |
| Sample Size | 1 | 1 | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec | % Rec | % Rec |
| 2,4'-DDE | 101 | | | 100 | 98 |
| 4,4'-DDE | 100 | 93 | 94 | 100 | 99 |
| 2,4'-DDD | 103 | | | 99 | 99 |
| 4,4'-DDD | 102 | 95 | 94 | 101 | 100 |
| 2,4'-DDT | 104 | | | 99 | 101 |
| 4,4'-DDT | 101 | 95 | 95 | 100 | 101 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 92 | 102 | 100 | 97 | 97 |
| 4,4'-DDD, 13C12- | 85 | 105 | 104 | 99 | 93 |
| 4,4'-DDT, 13C12- | 80 | 111 | 104 | 100 | 90 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S139-0TO2 | PDI-SC-S139-0TO2 Duplicate | PDI-SC-S139- 2TO4.1 | PDI-SC-S139- 4.1TO5.9 | PDI-SC-S139- 4.1TO5.9D | PDI-SC-S176-0TO2 |
|-----------------------------|------------------|-------------------------------|------------------------|--------------------------|---------------------------|------------------|
| ALS Sample ID | L2144849-9 | WG2848035-4 | L2144849-10 | L2144849-11 | L2144849-12 | L2144849-13 |
| Sample Size | 4.41 | 4.59 | 6.74 | 7.84 | 7.74 | 5.73 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 43.8% | 45.1% | 66.0% | 76.9% | 77.1% | 55.4% |
| Sample Matrix | Sediment | QC | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 7-Aug-18 | n/a | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 | 8-Aug-18 |
| Extraction Date | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 3.85 | 2.38 | 0.504 | <0.044 | <0.061 | 0.575 |
| 4,4'-DDE | 17.0 | 13.6 | 2.43 | 0.115 | <0.15 | 3.98 |
| 2,4'-DDD | 103 | 45.2 | 12.6 | 0.393 | 0.448 | 1.06 |
| 4,4'-DDD | 198 | 94.4 | 22.6 | 0.682 | 0.755 | 2.72 |
| 2,4'-DDT | 3.22 | 3.71 | <0.85 | <0.037 | <0.052 | <0.025 |
| 4,4'-DDT | 16.5 | 96.2 | 37.4 | 0.474 | <0.49 | 0.138 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 33 | 30 | 8 | 16 | 14 | 72 |
| 4,4'-DDD, 13C12- | 63 | 63 | 17 | 37 | 27 | 70 |
| 4,4'-DDT, 13C12- | 43 | 43 | 11 | 23 | 18 | 70 |

ALS Life sciences

| Sample Analysis summary Report | | | | | | |
|--------------------------------|------------------|--------------------|----------------------|----------------------|--------------------|------------------|
| Sample Name | PDI-SC-S176-2TO4 | PDI-SC-S176-4TO5.5 | PDI-SC-S176-5.5TO7.5 | PDI-SC-S176-7.5TO9.6 | PDI-SC-S188-0TO1.5 | PDI-SC-S222-0TO2 |
| ALS Sample ID | L2144849-14 | L2144849-15 | L2144849-16 | L2144849-17 | L2144849-18 | L2144849-56 |
| Sample Size | 5.85 | 6.83 | 7.35 | 7.31 | 3.86 | 4.32 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 57.1% | 66.3% | 73.0% | 71.3% | 38.1% | 42.0% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 7-Aug-18 |
| Extraction Date | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.762 | 0.0374 | 0.0312 | <0.023 | 0.266 | 185 |
| 4,4'-DDE | 4.28 | 0.274 | 0.0984 | 0.0873 | 7.43 | 2470 |
| 2,4'-DDD | 3.54 | 0.140 | 0.0738 | <0.038 | 0.618 | 350 |
| 4,4'-DDD | 6.40 | 0.256 | 0.155 | <0.025 | 1.42 | 293 |
| 2,4'-DDT | <0.081 | <0.020 | <0.021 | <0.026 | 0.623 | 6.28 |
| 4,4'-DDT | 0.510 | <0.11 | <0.084 | 0.259 | 1.41 | 9.76 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 9 | 66 | 25 | 23 | 58 | 24 |
| 4,4'-DDD, 13C12- | 18 | 64 | 49 | 46 | 65 | 28 |
| 4,4'-DDT, 13C12- | 11 | 68 | 36 | 33 | 72 | 17 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S222-2TO4 | PDI-SC-S222-4TO5 | PDI-SC-S222-5TO7.2 | PDI-SC-S117-0TO2 | PDI-SC-S117-2TO4 | PDI-SC-S117-4TO6 |
|-----------------------------|------------------|------------------|--------------------|------------------|------------------|------------------|
| ALS Sample ID | L2144849-57 | L2144849-58 | L2144849-59 | L2144849-60 | L2144849-61 | L2144849-62 |
| Sample Size | 5.92 | 6.11 | 7.85 | 6.37 | 6.18 | 5.55 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 58.9% | 60.0% | 77.4% | 62.4% | 60.9% | 55.1% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 |
| Extraction Date | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 25.8 | 37.6 | 0.418 | 4.74 | 14.7 | 17.6 |
| 4,4'-DDE | 514 | 2080 | 10.8 | 22.7 | 54.4 | 93.2 |
| 2,4'-DDD | 70.0 | 106 | 0.670 | 61.0 | 85.8 | 68.2 |
| 4,4'-DDD | 99.2 | 286 | 1.49 | 148 | 241 | 167 |
| 2,4'-DDT | <1.8 | <2.4 | <0.038 | 1.82 | 3.42 | 2.41 |
| 4,4'-DDT | <4.5 | 7.08 | <0.069 | 3.43 | 87.8 | 5.38 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 12 | 60 | 15 | 65 | 15 | 61 |
| 4,4'-DDD, 13C12- | 18 | 40 | 28 | 34 | 21 | 41 |
| 4,4'-DDT, 13C12- | 9 | 33 | 24 | 28 | 11 | 28 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S219-0TO2 | PDI-SC-S219-2TO4 | PDI-SC-S219-4TO5.2 |
|-----------------------------|------------------|------------------|--------------------|
| ALS Sample ID | L2144849-63 | L2144849-64 | L2144849-65 |
| Sample Size | 5.74 | 7.35 | 7.57 |
| Sample size units | g | g | g |
| Percent Solid | 56.8% | 73.5% | 73.4% |
| Sample Matrix | Sediment | Sediment | Sediment |
| Sampling Date | 7-Aug-18 | 7-Aug-18 | 7-Aug-18 |
| Extraction Date | 21-Aug-18 | 21-Aug-18 | 21-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.623 | <0.015 | 0.0984 |
| 4,4'-DDE | 5.30 | 0.0614 | 3.61 |
| 2,4'-DDD | 2.30 | <0.028 | 0.194 |
| 4,4'-DDD | 7.56 | <0.057 | 0.534 |
| 2,4'-DDT | 0.141 | <0.029 | <0.041 |
| 4,4'-DDT | 0.466 | 0.162 | 0.190 |
| Extraction Standards | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 70 | 24 | 13 |
| 4,4'-DDD, 13C12- | 74 | 34 | 24 |
| 4,4'-DDT, 13C12- | 83 | 32 | 20 |

ALS Life sciences

Quality Control Summary Report

| Sample Name | Method Blank | Laboratory Control Sample |
|-----------------------------|--------------|------------------------------|
| ALS Sample ID | WG2848035-1 | WG2848035-2 |
| Sample Size | 6.25 | 1.00 |
| Sample size units | g | n/a |
| Percent Solid | 100.0% | 50.3% |
| Sample Matrix | QC | QC |
| Sampling Date | n/a | n/a |
| Extraction Date | 21-Aug-18 | 21-Aug-18 |
| Target Analytes | ng/g | % Rec |
| 2,4'-DDE | 0.0246 | 129 |
| 4,4'-DDE | 0.0481 | 96 |
| 2,4'-DDD | <0.0099 | 102 |
| 4,4'-DDD | 0.0137 | 97 |
| 2,4'-DDT | <0.0071 | 89 |
| 4,4'-DDT | 0.0347 | 100 |
| Extraction Standards | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 16 | 24 |
| 4,4'-DDD, 13C12- | 31 | 47 |
| 4,4'-DDT, 13C12- | 23 | 33 |

ALS Life sciences

Continuing Calibration Summary Report

| Sample Name | CCV | CCV | CCV | CCV | CCV | CCV |
|-----------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| ALS Sample ID | H6-18-RS1-065 | H6-18-CCV-0843 | H6-18-CCV-0845 | H6-18-CCV-0847 | H6-18-CCV-0853 | H6-18-CCV-0855 |
| Sample Size | 1 | 1 | 1 | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 2,4'-DDE | | 100 | 103 | 101 | 100 | 98 |
| 4,4'-DDE | 92 | 100 | 101 | 100 | 100 | 99 |
| 2,4'-DDD | | 96 | 94 | 103 | 99 | 99 |
| 4,4'-DDD | 95 | 102 | 100 | 102 | 101 | 100 |
| 2,4'-DDT | | 99 | 102 | 104 | 99 | 101 |
| 4,4'-DDT | 92 | 99 | 101 | 101 | 100 | 101 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 104 | 102 | 98 | 92 | 97 | 97 |
| 4,4'-DDD, 13C12- | 104 | 113 | 122 | 85 | 99 | 93 |
| 4,4'-DDT, 13C12- | 110 | 119 | 135 | 80 | 100 | 90 |

ALS Life sciences

Continuing Calibration Summary Report

| Sample Name | CCV | CCV | CCV |
|-----------------------------|---------------|----------------|----------------|
| ALS Sample ID | H6-18-RS1-067 | H6-18-CCV-0857 | H6-18-CCV-0859 |
| Sample Size | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec |
| 2,4'-DDE | | 98 | 101 |
| 4,4'-DDE | 94 | 99 | 100 |
| 2,4'-DDD | | 106 | 106 |
| 4,4'-DDD | 94 | 97 | 99 |
| 2,4'-DDT | | 105 | 108 |
| 4,4'-DDT | 95 | 99 | 98 |
| Extraction Standards | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 100 | 93 | 91 |
| 4,4'-DDD, 13C12- | 104 | 64 | 74 |
| 4,4'-DDT, 13C12- | 104 | 56 | 63 |

ALS Life sciences

Sample Analysis summary Report

Sample Name PDI-RB-SS-180807 PDI-RB-SS-180808 PDI-RB-SS-180809 PDI-RB-SS-180806

| ALS Sample ID | L2144849-32 | L2144849-33 | L2144849-34 | L2144849-35 |
|-----------------------------|--------------|--------------|--------------|--------------|
| Sample Size | 0.93 | 1.02 | 1.00 | 0.97 |
| Sample size units | L | L | L | L |
| Percent Solid | n/a | n/a | n/a | n/a |
| Sample Matrix | Water | Water | Water | Water |
| Sampling Date | 7-Aug-18 | 8-Aug-18 | 9-Aug-18 | 6-Aug-18 |
| Extraction Date | 13-Aug-18 | 13-Aug-18 | 13-Aug-18 | 13-Aug-18 |
| Target Analytes | ng/L | ng/L | ng/L | ng/L |
| 2,4'-DDE | 0.729 | 0.0968 | 0.0714 | 0.0943 |
| 4,4'-DDE | 1.04 | 0.184 | 0.131 | 0.219 |
| 2,4'-DDD | <0.35 | <0.17 | 0.102 | 0.141 |
| 4,4'-DDD | 0.433 | 0.265 | <0.11 | 0.132 |
| 2,4'-DDT | <0.18 | 0.166 | <0.091 | <0.12 |
| 4,4'-DDT | 1.78 | 0.608 | 0.326 | 0.427 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 7 | 76 | 72 | 45 |
| 4,4'-DDD, 13C12- | 15 | 70 | 67 | 49 |
| 4,4'-DDT, 13C12- | 9 | 68 | 65 | 42 |

ALS Life sciences

Quality Control Summary Report

| Sample Name | Method Blank | Laboratory Control Sample |
|-----------------------------|--------------|------------------------------|
| ALS Sample ID | WG2847435-1 | WG2847435-2 |
| Sample Size | 1.00 | 1.00 |
| Sample size units | L | n/a |
| Percent Solid | n/a | n/a |
| Sample Matrix | QC | QC |
| Sampling Date | n/a | n/a |
| Extraction Date | 13-Aug-18 | 13-Aug-18 |
| Target Analytes | ng/L | % Rec |
| 2,4'-DDE | 0.0969 | 111 |
| 4,4'-DDE | 0.185 | 101 |
| 2,4'-DDD | <0.13 | 108 |
| 4,4'-DDD | 0.132 | 97 |
| 2,4'-DDT | <0.16 | 107 |
| 4,4'-DDT | 0.391 | 99 |
| Extraction Standards | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 59 | 65 |
| 4,4'-DDD, 13C12- | 61 | 68 |
| 4,4'-DDT, 13C12- | 53 | 65 |

ALS Life sciences

Continuing Calibration Summary Report

| Sample Name | CCV | CCV | CCV |
|-----------------------------|---------------|----------------|----------------|
| ALS Sample ID | H6-18-RS1-067 | H6-18-CCV-0853 | H6-18-CCV-0855 |
| Sample Size | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec |
| 2,4'-DDE | | 100 | 98 |
| 4,4'-DDE | 94 | 100 | 99 |
| 2,4'-DDD | | 99 | 99 |
| 4,4'-DDD | 94 | 101 | 100 |
| 2,4'-DDT | | 99 | 101 |
| 4,4'-DDT | 95 | 100 | 101 |
| Extraction Standards | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 100 | 97 | 97 |
| 4,4'-DDD, 13C12- | 104 | 99 | 93 |
| 4,4'-DDT, 13C12- | 104 | 100 | 90 |

| ALS Life sciences | | | | | | |
|--------------------------------|------------------|--------------|------------------|------------------|--------------------|--------------------|
| Sample Analysis summary Report | | | | | | |
| Sample Name | PDI-SC-S213-0TO2 | Duplicate | PDI-SC-S213-2TO4 | PDI-SC-S191-4TO6 | PDI-SC-S191-6TO8.1 | PDI-SC-S192-0TO1.5 |
| ALS Sample ID | L2144849-19 | WG2848060-4 | L2144849-20 | L2144849-36 | L2144849-37 | L2144849-38 |
| Sample Size | 3.51 | 3.60 | 3.95 | 5.58 | 6.85 | 2.88 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 34.9% | 35.1% | 38.5% | 55.0% | 67.7% | 28.8% |
| Sample Matrix | Sediment | QC | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 9-Aug-18 | n/a | 9-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 |
| Extraction Date | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.234 | 0.280 | 0.269 | 1.26 | 0.268 | 0.884 |
| 4,4'-DDE | 3.81 | 4.56 | 3.57 | 17.5 | 3.20 | 16.2 |
| 2,4'-DDD | 0.518 | 0.613 | 0.513 | 4.73 | 4.55 | 4.28 |
| 4,4'-DDD | 1.32 | 1.83 | 1.05 | 11.4 | 11.2 | 8.72 |
| 2,4'-DDT | <0.29 | 1.88 | <0.32 | 3.09 | 0.297 | 2.73 |
| 4,4'-DDT | 0.690 | 5.76 | 1.20 | 10.9 | 0.803 | 6.15 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 80 | 83 | 64 | 78 | 77 | 84 |
| 4,4'-DDD, 13C12- | 62 | 63 | 48 | 39 | 35 | 33 |
| 4,4'-DDT, 13C12- | 53 | 52 | 42 | 32 | 31 | 27 |

| ALS Life sciences | | | | | | |
|--------------------------------|--------------------|--------------------|------------------|------------------|-------------------|------------------|
| Sample Analysis summary Report | | | | | | |
| Sample Name | PDI-SC-S192-1.5TO3 | PDI-SC-S192-3TO4.2 | PDI-SC-S198-0TO2 | PDI-SC-S198-2TO4 | PDI-SC-S198-2TO4D | PDI-SC-S198-4TO6 |
| ALS Sample ID | L2144849-39 | L2144849-40 | L2144849-41 | L2144849-42 | L2144849-43 | L2144849-44 |
| Sample Size | 4.44 | 7.69 | 4.83 | 5.38 | 5.39 | 6.20 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 43.5% | 76.9% | 48.1% | 53.7% | 53.5% | 61.3% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 |
| Extraction Date | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.504 | 0.0966 | 0.755 | 0.973 | 1.09 | 0.247 |
| 4,4'-DDE | 8.81 | 1.51 | 10.2 | 9.31 | 9.63 | 2.66 |
| 2,4'-DDD | 2.06 | 0.506 | 0.841 | 0.762 | 0.785 | 0.346 |
| 4,4'-DDD | 4.37 | 1.05 | 2.17 | 2.01 | 2.05 | 0.854 |
| 2,4'-DDT | 1.87 | 0.251 | <0.73 | 0.144 | <0.17 | 0.269 |
| 4,4'-DDT | 6.28 | 0.852 | 2.60 | 0.425 | <0.41 | 0.914 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 77 | 75 | 83 | 89 | 84 | 75 |
| 4,4'-DDD, 13C12- | 35 | 38 | 60 | 64 | 60 | 60 |
| 4,4'-DDT, 13C12- | 30 | 33 | 53 | 56 | 51 | 50 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S198-6TO8 | PDI-SC-S198-8TO10 | PDI-SC-S198-10TO11.8 | PDI-SC-S105-0TO2 | PDI-SC-S105-2TO4 | PDI-SC-S105-4TO5.6 |
|-----------------------------|------------------|-------------------|----------------------|------------------|------------------|--------------------|
| ALS Sample ID | L2144849-45 | L2144849-46 | L2144849-47 | L2144849-66 | L2144849-67 | L2144849-68 |
| Sample Size | 6.92 | 6.95 | 7.49 | 6.48 | 7.18 | 7.21 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 68.7% | 67.7% | 74.8% | 64.6% | 69.9% | 70.4% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 |
| Extraction Date | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.0488 | <0.017 | <0.025 | 0.285 | 0.0855 | 0.0675 |
| 4,4'-DDE | 0.305 | 0.0576 | 0.0582 | 1.43 | <0.24 | 0.258 |
| 2,4'-DDD | <0.082 | <0.031 | 0.0427 | 5.86 | 0.842 | 1.34 |
| 4,4'-DDD | 0.152 | 0.0458 | <0.041 | 15.3 | 2.34 | 3.05 |
| 2,4'-DDT | <0.029 | <0.026 | <0.039 | 0.380 | <0.11 | <0.11 |
| 4,4'-DDT | 0.284 | <0.12 | <0.16 | 0.775 | 0.451 | 0.325 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 74 | 68 | 67 | 77 | 64 | 79 |
| 4,4'-DDD, 13C12- | 57 | 58 | 57 | 48 | 40 | 51 |
| 4,4'-DDT, 13C12- | 51 | 51 | 52 | 37 | 31 | 37 |

ALS Life sciences

Sample Analysis summary Report

| | | | |
|-----------------------------|--|--------------|--------------|
| Sample Name | PDI-SC-S105- PDI-SC-S191-0TO2 PDI-SC-S191-2TO4 5.6TO6.6 | | |
| ALS Sample ID | L2144849-69 | L2144849-70 | L2144849-71 |
| Sample Size | 6.22 | 4.57 | 5.89 |
| Sample size units | g | g | g |
| Percent Solid | 61.9% | 45.2% | 58.4% |
| Sample Matrix | Sediment | Sediment | Sediment |
| Sampling Date | 8-Aug-18 | 8-Aug-18 | 8-Aug-18 |
| Extraction Date | 22-Aug-18 | 22-Aug-18 | 22-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g |
| 2,4'-DDE | 1.11 | 0.264 | 0.837 |
| 4,4'-DDE | 7.53 | 7.21 | 18.4 |
| 2,4'-DDD | 30.1 | 1.54 | 6.68 |
| 4,4'-DDD | 71.4 | 3.87 | 18.2 |
| 2,4'-DDT | <0.52 | 1.31 | 11.8 |
| 4,4'-DDT | 1.28 | 4.20 | 43.4 |
| Extraction Standards | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 66 | 77 | 85 |
| 4,4'-DDD, 13C12- | 49 | 40 | 46 |
| 4,4'-DDT, 13C12- | 29 | 34 | 40 |

ALS Life sciences

Quality Control Summary Report

| Sample Name | Method Blank | Laboratory Control Sample |
|-----------------------------|--------------|------------------------------|
| ALS Sample ID | WG2848060-1 | WG2848060-2 |
| Sample Size | 5.68 | 1.00 |
| Sample size units | g | n/a |
| Percent Solid | 100.0% | 50.0% |
| Sample Matrix | QC | QC |
| Sampling Date | n/a | n/a |
| Extraction Date | 22-Aug-18 | 22-Aug-18 |
| Target Analytes | ng/g | % Rec |
| 2,4'-DDE | <0.046 | 98 |
| 4,4'-DDE | 0.0789 | 90 |
| 2,4'-DDD | <0.039 | 104 |
| 4,4'-DDD | <0.068 | 88 |
| 2,4'-DDT | <0.049 | 105 |
| 4,4'-DDT | 0.291 | 101 |
| Extraction Standards | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 67 | 72 |
| 4,4'-DDD, 13C12- | 61 | 63 |
| 4,4'-DDT, 13C12- | 57 | 60 |

ALS Life sciences

Continuing Calibration Summary Report

| Sample Name | CCV | CCV | CCV | CCV |
|-----------------------------|---------------|----------------|----------------|----------------|
| ALS Sample ID | H6-18-RS1-067 | H6-18-CCV-0855 | H6-18-CCV-0857 | H6-18-CCV-0859 |
| Sample Size | 1 | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec | % Rec |
| 2,4'-DDE | | 98 | 98 | 101 |
| 4,4'-DDE | 94 | 99 | 99 | 100 |
| 2,4'-DDD | | 99 | 106 | 106 |
| 4,4'-DDD | 94 | 100 | 97 | 99 |
| 2,4'-DDT | | 101 | 105 | 108 |
| 4,4'-DDT | 95 | 101 | 99 | 98 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 100 | 97 | 93 | 91 |
| 4,4'-DDD, 13C12- | 104 | 93 | 64 | 74 |
| 4,4'-DDT, 13C12- | 104 | 90 | 56 | 63 |

ALS Life sciences

Sample Analysis summary Report

| Sample Name | PDI-SC-S213-4TO6 | PDI-SC-S213-6TO8 | PDI-SC-S213-8TO10 | PDI-SC-S213-10TO11.8 | PDI-SC-S213-11.8TO12.8 | PDI-SC-S098-OT01.3 |
|-----------------------------|------------------|------------------|-------------------|----------------------|------------------------|--------------------|
| ALS Sample ID | L2144849-21 | L2144849-22 | L2144849-23 | L2144849-24 | L2144849-25 | L2144849-26 |
| Sample Size | 4.33 | 5.05 | 5.67 | 5.32 | 5.45 | 5.47 |
| Sample size units | g | g | g | g | g | g |
| Percent Solid | 42.7% | 50.3% | 55.4% | 52.6% | 53.9% | 53.5% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 |
| Extraction Date | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.476 | 0.663 | 1.20 | 1.02 | 0.562 | 0.418 |
| 4,4'-DDE | 6.15 | 9.28 | 13.4 | 10.2 | 4.66 | 4.74 |
| 2,4'-DDD | 0.783 | 1.54 | 1.66 | 2.49 | 2.30 | 2.90 |
| 4,4'-DDD | 2.05 | 4.80 | 6.35 | 6.83 | 4.57 | 8.65 |
| 2,4'-DDT | 0.229 | 0.185 | <0.11 | 0.186 | <0.041 | 0.251 |
| 4,4'-DDT | 0.771 | 0.949 | 0.510 | 0.402 | 0.258 | 0.649 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 80 | 81 | 92 | 80 | 84 | 81 |
| 4,4'-DDD, 13C12- | 54 | 53 | 49 | 49 | 51 | 50 |
| 4,4'-DDT, 13C12- | 45 | 43 | 38 | 37 | 37 | 39 |

ALS Life sciences

| Sample Analysis summary Report | | | | | |
|--------------------------------|----------------------|----------------------|-----------------------|----------------------|----------------------|
| Sample Name | PDI-SC-S098-1.3TO3.3 | PDI-SC-S098-3.3TO5.3 | PDI-SC-S098-3.3TO5.3D | PDI-SC-S098-5.3TO7.2 | PDI-SC-S098-7.2TO8.2 |
| ALS Sample ID | L2144849-27 | L2144849-28 | L2144849-29 | L2144849-30 | L2144849-31 |
| Sample Size | 8.24 | 7.86 | 7.73 | 7.37 | 7.35 |
| Sample size units | g | g | g | g | g |
| Percent Solid | 80.7% | 77.2% | 75.6% | 71.7% | 71.7% |
| Sample Matrix | Sediment | Sediment | Sediment | Sediment | Sediment |
| Sampling Date | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 | 9-Aug-18 |
| Extraction Date | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 | 23-Aug-18 |
| Target Analytes | ng/g | ng/g | ng/g | ng/g | ng/g |
| 2,4'-DDE | 0.204 | <0.0095 | <0.0075 | 0.0276 | <0.011 |
| 4,4'-DDE | 0.650 | <0.026 | 0.0263 | <0.046 | <0.022 |
| 2,4'-DDD | 1.13 | <0.017 | <0.014 | 0.0631 | 0.0458 |
| 4,4'-DDD | 2.49 | <0.031 | 0.0424 | 0.0783 | 0.0597 |
| 2,4'-DDT | <0.021 | <0.031 | <0.025 | <0.077 | <0.033 |
| 4,4'-DDT | 0.112 | <0.096 | 0.130 | 0.274 | <0.14 |
| Extraction Standards | % Rec | % Rec | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 75 | 71 | 70 | 56 | 68 |
| 4,4'-DDD, 13C12- | 47 | 45 | 46 | 41 | 47 |
| 4,4'-DDT, 13C12- | 39 | 38 | 39 | 33 | 40 |

ALS Life sciences

Quality Control Summary Report

| Sample Name | Method Blank | Laboratory Control Sample |
|-----------------------------|--------------|------------------------------|
| ALS Sample ID | WG2848066-1 | WG2848066-2 |
| Sample Size | 6.07 | 1.00 |
| Sample size units | g | n/a |
| Percent Solid | 100.0% | 50.2% |
| Sample Matrix | QC | QC |
| Sampling Date | n/a | n/a |
| Extraction Date | 23-Aug-18 | 23-Aug-18 |
| Target Analytes | ng/g | % Rec |
| 2,4'-DDE | 0.0337 | 107 |
| 4,4'-DDE | 0.0742 | 99 |
| 2,4'-DDD | <0.078 | 112 |
| 4,4'-DDD | 0.115 | 96 |
| 2,4'-DDT | <0.028 | 100 |
| 4,4'-DDT | 0.299 | 95 |
| Extraction Standards | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 68 | 68 |
| 4,4'-DDD, 13C12- | 50 | 47 |
| 4,4'-DDT, 13C12- | 43 | 42 |

ALS Life sciences

Continuing Calibration Summary Report

| Sample Name | CCV | CCV | CCV |
|-----------------------------|---------------|----------------|----------------|
| ALS Sample ID | H6-18-RS1-067 | H6-18-CCV-0857 | H6-18-CCV-0859 |
| Sample Size | 1 | 1 | 1 |
| Sample size units | n/a | n/a | n/a |
| Percent Solid | n/a | n/a | n/a |
| Sample Matrix | QC | QC | QC |
| Sampling Date | n/a | n/a | n/a |
| Extraction Date | n/a | n/a | n/a |
| Target Analytes | % Rec | % Rec | % Rec |
| 2,4'-DDE | | 98 | 101 |
| 4,4'-DDE | 94 | 99 | 100 |
| 2,4'-DDD | | 106 | 106 |
| 4,4'-DDD | 94 | 97 | 99 |
| 2,4'-DDT | | 105 | 108 |
| 4,4'-DDT | 95 | 99 | 98 |
| Extraction Standards | % Rec | % Rec | % Rec |
| 4,4'-DDE, 13C12- | 100 | 93 | 91 |
| 4,4'-DDD, 13C12- | 104 | 64 | 74 |
| 4,4'-DDT, 13C12- | 104 | 56 | 63 |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-5TO7.2D | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|--------|-------|----------|-------|------|--------|--|----------|-------|------|-------|--|----------|-------|------|-------|---|----------|-------|--------|-------|-------|----------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-1 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 8.03 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 80.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 28-Aug-18 22:15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.661</td> <td>0.0075</td> <td>J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>23.8</td> <td>0.0088</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>1.46</td> <td>0.014</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>4.42</td> <td>0.023</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td><0.040</td> <td>0.024</td> <td>M,J,R</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.102</td> <td>0.047</td> <td>J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.89 | 0.661 | 0.0075 | J | 4,4'-DDE | 11.42 | 23.8 | 0.0088 | | 2,4'-DDD | 11.59 | 1.46 | 0.014 | | 4,4'-DDD | 12.10 | 4.42 | 0.023 | M | 2,4'-DDT | 12.15 | <0.040 | 0.024 | M,J,R | 4,4'-DDT | 12.59 | 0.102 | 0.047 | J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.661 | 0.0075 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 23.8 | 0.0088 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 1.46 | 0.014 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 4.42 | 0.023 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | <0.040 | 0.024 | M,J,R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.102 | 0.047 | J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>70</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>57</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>52</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 70 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 57 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 52 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 70 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 57 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 52 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J Indicates that a target analyte was detected below the calibrated range.</p> <p>R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-5TO7.2D Duplicate | | | | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | |
|-----------------------------|--|------------------------|------------|-------------|----------------------|--------|--|--|--|--|--|--|--|--|
| ALS Sample ID | WG2845105-4 | Extraction Date | 20-Aug-18 | | Sample Size | 8.06 g | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 80.2% | | Split Ratio | 1 | | | | | | | | |
| Analysis Type | Sample | | | | | | | | | | | | | |
| Sample Matrix | QC | Run Information | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | |
| Filename | 6-180828A15 | | | | | | | | | | | | | |
| Run Date | 28-Aug-18 22:35 | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.401 | 0.010 | J | 1.3 | | | | | | | | | |
| 4,4'-DDE | 11.42 | 10.4 | 0.012 | M | 1.3 | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.650 | 0.017 | J | 1.3 | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.55 | 0.024 | M | 1.3 | | | | | | | | | |
| 2,4'-DDT | 12.15 | <0.049 | 0.025 | M,J,R | 0.049 | 1.3 | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.0981 | 0.044 | M,J,B | | 1.3 | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 59 | 21-125 | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 58 | 5-150 | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 55 | 5-120 | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-7.2TO9.2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|----------------------|-----------|--|------------------|------|-------|-----------|------|------------------|------|-------|----------|-------|------------------|-----|----------|----------|--------|-------|-----|-----|----------|-------|-------|-------|-----|-----|----------|----------|--------|-------|---|-----|----------|----------|--------|-------|---|-----|----------|----------|--------|-------|---|-----|----------|-------|-------|-------|---|-----|
| ALS Sample ID | L2144849-2 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.00 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 59.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 18:04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.86</td> <td>0.0832</td> <td>0.025</td> <td>M,J</td> <td>1.7</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>0.184</td> <td>0.032</td> <td>M,J</td> <td>1.7</td> </tr> <tr> <td>2,4'-DDD</td> <td>NotFound</td> <td><0.040</td> <td>0.040</td> <td>U</td> <td>1.7</td> </tr> <tr> <td>4,4'-DDD</td> <td>NotFound</td> <td><0.051</td> <td>0.051</td> <td>U</td> <td>1.7</td> </tr> <tr> <td>2,4'-DDT</td> <td>NotFound</td> <td><0.051</td> <td>0.051</td> <td>U</td> <td>1.7</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.332</td> <td>0.091</td> <td>J</td> <td>1.7</td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.86 | 0.0832 | 0.025 | M,J | 1.7 | 4,4'-DDE | 11.40 | 0.184 | 0.032 | M,J | 1.7 | 2,4'-DDD | NotFound | <0.040 | 0.040 | U | 1.7 | 4,4'-DDD | NotFound | <0.051 | 0.051 | U | 1.7 | 2,4'-DDT | NotFound | <0.051 | 0.051 | U | 1.7 | 4,4'-DDT | 12.57 | 0.332 | 0.091 | J | 1.7 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.86 | 0.0832 | 0.025 | M,J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 0.184 | 0.032 | M,J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | NotFound | <0.040 | 0.040 | U | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NotFound | <0.051 | 0.051 | U | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | NotFound | <0.051 | 0.051 | U | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.332 | 0.091 | J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">4,4'-DDE, 13C12-</td> <td style="width: 20%;">125</td> <td style="width: 20%;">11.39</td> <td style="width: 20%;">52 21-125</td> <td style="width: 20%;"></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>45 5-150</td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>40 5-120</td> <td></td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 52 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.07 | 45 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.57 | 40 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 52 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 45 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 40 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>U Indicates that this compound was not detected above the EDL.</p> <p>J Indicates that a target analyte was detected below the calibrated range.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-9.2TO11.2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|-------|------|-------|-----|------|--|--|------|------|------|-------|------|----------|-------|--------|--------|---|-----|----------|-------|-------|--------|---|-----|----------|-------|--------|-------|-----|-------|----------|-------|--------|-------|-------|-----|----------|---------|--------|-------|---|-----|----------|-------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-3 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.75 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 65.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 13:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> <th style="text-align: left;"></th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> <th style="text-align: left;">ng/g</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.0419</td> <td>0.0070</td> <td>J</td> <td>1.5</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>0.296</td> <td>0.0083</td> <td>J</td> <td>1.5</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td><0.057</td> <td>0.014</td> <td>J,R</td> <td>0.057</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>0.0679</td> <td>0.019</td> <td>M,J,B</td> <td>1.5</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.020</td> <td>0.020</td> <td>U</td> <td>1.5</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.141</td> <td>0.029</td> <td>M,J,B</td> <td>1.5</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | 2,4'-DDE | 10.89 | 0.0419 | 0.0070 | J | 1.5 | 4,4'-DDE | 11.42 | 0.296 | 0.0083 | J | 1.5 | 2,4'-DDD | 11.59 | <0.057 | 0.014 | J,R | 0.057 | 4,4'-DDD | 12.09 | 0.0679 | 0.019 | M,J,B | 1.5 | 2,4'-DDT | Not Fnd | <0.020 | 0.020 | U | 1.5 | 4,4'-DDT | 12.59 | 0.141 | 0.029 | M,J,B | 1.5 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.0419 | 0.0070 | J | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 0.296 | 0.0083 | J | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | <0.057 | 0.014 | J,R | 0.057 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 0.0679 | 0.019 | M,J,B | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.020 | 0.020 | U | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.141 | 0.029 | M,J,B | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 68 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 71 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 73 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. U Indicates that this compound was not detected above the EDL. J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-11.2TO13.2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|--------|--------|-------|----------|-------|--------|-------|-----|----------|-------|--------|-------|-------|----------|-------|--------|-------|-------|----------|---------|--------|-------|---|----------|-------|-------|-------|-------|
| ALS Sample ID | L2144849-4 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.88 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 67.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 28-Aug-18 23:36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.0152</td> <td>0.0095</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>0.0669</td> <td>0.011</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.0375</td> <td>0.016</td> <td>M,J,B</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>0.0500</td> <td>0.022</td> <td>M,J,B</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.023</td> <td>0.023</td> <td>U</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.149</td> <td>0.040</td> <td>M,J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.89 | 0.0152 | 0.0095 | M,J | 4,4'-DDE | 11.42 | 0.0669 | 0.011 | M,J | 2,4'-DDD | 11.59 | 0.0375 | 0.016 | M,J,B | 4,4'-DDD | 12.10 | 0.0500 | 0.022 | M,J,B | 2,4'-DDT | Not Fnd | <0.023 | 0.023 | U | 4,4'-DDT | 12.59 | 0.149 | 0.040 | M,J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.0152 | 0.0095 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 0.0669 | 0.011 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.0375 | 0.016 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 0.0500 | 0.022 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.023 | 0.023 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.149 | 0.040 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.42</td> <td>57</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>53</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>50</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.42 | 57 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 53 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 50 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.42 | 57 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 53 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 50 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-13.2TO15.2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|-----------------|-----------|--|-------|-----|
| ALS Sample ID | L2144849-5 | Extraction Date | 20-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.40 g | | | |
| Analysis Type | Sample | Percent Solid | 63.5% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180828A19 | | | | | |
| Run Date | 28-Aug-18 23:56 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | 10.88 | <0.023 | 0.0091 | M,J,R | 0.023 | 1.6 |
| 4,4'-DDE | 11.41 | 0.277 | 0.011 | M,J | | 1.6 |
| 2,4'-DDD | 11.58 | 0.0449 | 0.016 | M,J,B | | 1.6 |
| 4,4'-DDD | 12.09 | 0.0809 | 0.022 | M,J | | 1.6 |
| 2,4'-DDT | Not Fnd | <0.023 | 0.023 | U | | 1.6 |
| 4,4'-DDT | 12.58 | <0.075 | 0.043 | M,J,R | 0.075 | 1.6 |
| Extraction Standards | | ng | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 71 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 64 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 63 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S248-0TO2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|--------|-------|-------|----------|-------|------|-------|-----|----------|-------|-------|-------|-----|----------|-------|-------|-------|---|----------|-------|-------|-------|---|----------|-------|-------|-------|---|
| ALS Sample ID | L2144849-6 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.55 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 44.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 00:17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.0759</td> <td>0.013</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>2.10</td> <td>0.015</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.300</td> <td>0.021</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>0.987</td> <td>0.030</td> <td>J</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.16</td> <td>0.128</td> <td>0.031</td> <td>J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.60</td> <td>0.370</td> <td>0.050</td> <td>J</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.89 | 0.0759 | 0.013 | M,J | 4,4'-DDE | 11.42 | 2.10 | 0.015 | M,J | 2,4'-DDD | 11.59 | 0.300 | 0.021 | M,J | 4,4'-DDD | 12.10 | 0.987 | 0.030 | J | 2,4'-DDT | 12.16 | 0.128 | 0.031 | J | 4,4'-DDT | 12.60 | 0.370 | 0.050 | J |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.0759 | 0.013 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 2.10 | 0.015 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.300 | 0.021 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 0.987 | 0.030 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.16 | 0.128 | 0.031 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.60 | 0.370 | 0.050 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.42</td> <td>74</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>70</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>68</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.42 | 74 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 70 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 68 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.42 | 74 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 70 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 68 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| | | | | |
|--------------------|-------------------------|-----------------|-----------|---|
| Sample Name | PDI-SC-S248-2TO4 | Sampling Date | 7-Aug-18 | |
| ALS Sample ID | L2144849-7 | Extraction Date | 20-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.71 | g |
| Analysis Type | Sample | Percent Solid | 56.5% | |
| Sample Matrix | Sediment | Split Ratio | 1 | |

Approved:
R. Bakhtiari
 -e-signature--
31-Aug-2018

Run Information

Run 1

| | |
|---------------------|------------------------|
| Filename | 6-180828A21 |
| Run Date | 29-Aug-18 00:37 |
| Final Volume | 1020 uL |
| Dilution Factor | 5 |
| Analysis Units | ng/g |
| Instrument - Column | HRMS-6 HP5MSUSR163634H |

Approved:
R. Bakhtiari
--e-signature--
31-Aug-2018

Ret. **Conc.** **EDL** **EMPC**

| Analytes | Time | ng/g | ng/g | Flags | ng/g | LQL |
|----------|-------|-------|--------|-------|------|-----|
| 2,4'-DDE | 10.89 | 0.123 | 0.0089 | M,J | 1.8 | |
| 4,4'-DDE | 11.42 | 3.56 | 0.010 | M | 1.8 | |
| 2,4'-DDD | 11.59 | 3.27 | 0.015 | | 1.8 | |
| 4,4'-DDD | 12.09 | 15.7 | 0.023 | M | 1.8 | |
| 2,4'-DDT | 12.15 | 0.502 | 0.023 | M,J | 1.8 | |
| 4,4'-DDT | 12.59 | 2.00 | 0.040 | M | 1.8 | |

Extraction Standards

4,4'-DDE, 13C12- 125 11.41 79 21-125
 4,4'-DDD, 13C12- 125 12.09 73 5-150
 4,4'-DDT, 13C12- 125 12.58 71 5-120

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M Indicates that a peak has been manually integrated.

J indicates that a target analyte was detected below the calibrated range.

EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S248-4TO6.2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|--------|-------|-------|----------|-------|------|-------|-----|----------|-------|-------|-------|-----|----------|-------|------|-------|-----|----------|-------|-------|-------|-----|----------|-------|-------|-------|-------|
| ALS Sample ID | L2144849-8 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.80 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 56.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 18:24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.0899</td> <td>0.017</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>1.58</td> <td>0.022</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.353</td> <td>0.024</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>1.20</td> <td>0.029</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>0.113</td> <td>0.029</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td><0.25</td> <td>0.050</td> <td>M,J,R</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.87 | 0.0899 | 0.017 | M,J | 4,4'-DDE | 11.40 | 1.58 | 0.022 | M,J | 2,4'-DDD | 11.57 | 0.353 | 0.024 | M,J | 4,4'-DDD | 12.08 | 1.20 | 0.029 | M,J | 2,4'-DDT | 12.13 | 0.113 | 0.029 | M,J | 4,4'-DDT | 12.57 | <0.25 | 0.050 | M,J,R |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.0899 | 0.017 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 1.58 | 0.022 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.353 | 0.024 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 1.20 | 0.029 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 0.113 | 0.029 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | <0.25 | 0.050 | M,J,R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>70</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>61</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>54</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 70 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 61 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 54 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 70 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 61 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 54 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S139-0TO2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|-------|----|-------|----------|-------|------|-------|-----|----------|-------|------|-------|---|-----|----------|-------|-----|-------|---|-----|----------|-------|-----|-------|---|-----|----------|-------|------|-------|---|-----|----------|-------|------|-------|---|-----|
| ALS Sample ID | L2144849-9 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.41 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 43.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 06:40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;">ng/g</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>3.85</td> <td>0.023</td> <td>2.3</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>17.0</td> <td>0.027</td> <td>M</td> <td>2.3</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>103</td> <td>0.038</td> <td>M</td> <td>2.3</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>198</td> <td>0.028</td> <td>M</td> <td>2.3</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>3.22</td> <td>0.029</td> <td>M</td> <td>2.3</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>16.5</td> <td>0.066</td> <td>M</td> <td>2.3</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | | | | | ng/g | 2,4'-DDE | 10.87 | 3.85 | 0.023 | 2.3 | 4,4'-DDE | 11.41 | 17.0 | 0.027 | M | 2.3 | 2,4'-DDD | 11.58 | 103 | 0.038 | M | 2.3 | 4,4'-DDD | 12.08 | 198 | 0.028 | M | 2.3 | 2,4'-DDT | 12.13 | 3.22 | 0.029 | M | 2.3 | 4,4'-DDT | 12.58 | 16.5 | 0.066 | M | 2.3 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 3.85 | 0.023 | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 17.0 | 0.027 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 103 | 0.038 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 198 | 0.028 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 3.22 | 0.029 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 16.5 | 0.066 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>33</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>63</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>43</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 33 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 63 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 43 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 33 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 63 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 43 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S139-0TO2 Duplicate | | | | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|---|-----------------------------------|------------------------|-----------|-------|----------------------|------|--|
| ALS Sample ID | WG2848035-4 | Extraction Date | 21-Aug-18 | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.59 | g | | | |
| Analysis Type | Sample | Percent Solid | 45.1% | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | |
| Run Information | | | | | | | |
| Filename | 6-180828A40 | | | | | | |
| Run Date | 29-Aug-18 07:00 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 5 | | | | | | |
| Analysis Units | ng/g | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |
| | | | | | | | |
| Target Analytes | | Ret. | Conc. | EDL | EMPC | | |
| | | Time | ng/g | ng/g | Flags | ng/g | LQL |
| | | | | | | | |
| 2,4'-DDE | | 10.89 | 2.38 | 0.026 | M | 2.2 | |
| 4,4'-DDE | | 11.42 | 13.6 | 0.030 | M | 2.2 | |
| 2,4'-DDD | | 11.59 | 45.2 | 0.038 | M | 2.2 | |
| 4,4'-DDD | | 12.09 | 94.4 | 0.025 | M | 2.2 | |
| 2,4'-DDT | | 12.15 | 3.71 | 0.026 | M | 2.2 | |
| 4,4'-DDT | | 12.59 | 96.2 | 0.062 | M | 2.2 | |
| Extraction Standards | | ng | | | | | |
| | | | | | | | |
| 4,4'-DDE, 13C12- | | 125 | 11.41 | 30 | 21-125 | | |
| 4,4'-DDD, 13C12- | | 125 | 12.09 | 63 | 5-150 | | |
| 4,4'-DDT, 13C12- | | 125 | 12.58 | 43 | 5-120 | | |
| | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | |
| | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S139-2TO4.1 | Sampling Date | 7-Aug-18 | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|-----------|---|------|------|-------|-----|------|--|--|------|------|------|-------|------|----------|-------|-------|-------|-----|-----|----------|-------|------|-------|---|-----|----------|-------|------|------|---|-----|----------|-------|------|-------|---|-----|----------|-------|-------|-------|-------|------|----------|-------|------|------|---|-----|
| ALS Sample ID | L2144849-10 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.74 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 66.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 07:20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> <th style="text-align: left;"></th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> <th style="text-align: left;">ng/g</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.504</td> <td>0.058</td> <td>M,J</td> <td>1.5</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>2.43</td> <td>0.068</td> <td>M</td> <td>1.5</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>12.6</td> <td>0.10</td> <td>M</td> <td>1.5</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>22.6</td> <td>0.064</td> <td>M</td> <td>1.5</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td><0.85</td> <td>0.067</td> <td>M,J,R</td> <td>0.85</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>37.4</td> <td>0.17</td> <td>M</td> <td>1.5</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | 2,4'-DDE | 10.89 | 0.504 | 0.058 | M,J | 1.5 | 4,4'-DDE | 11.42 | 2.43 | 0.068 | M | 1.5 | 2,4'-DDD | 11.59 | 12.6 | 0.10 | M | 1.5 | 4,4'-DDD | 12.10 | 22.6 | 0.064 | M | 1.5 | 2,4'-DDT | 12.15 | <0.85 | 0.067 | M,J,R | 0.85 | 4,4'-DDT | 12.59 | 37.4 | 0.17 | M | 1.5 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.504 | 0.058 | M,J | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 2.43 | 0.068 | M | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 12.6 | 0.10 | M | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 22.6 | 0.064 | M | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | <0.85 | 0.067 | M,J,R | 0.85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 37.4 | 0.17 | M | 1.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 8 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 17 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 11 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S139-4.1TO5.9 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|-------|-------|------|--------|--|------------------|------|-------|-------|-------|-----|------------------|-------|--------|-------|-------|-------|-----|----------|-------|-------|-------|-------|--|-----|----------|-------|-------|-------|-----|--|-----|----------|-------|-------|-------|-----|--|-----|----------|---------|--------|-------|---|--|-----|----------|-------|-------|------|-----|--|-----|
| ALS Sample ID | L2144849-11 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.84 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 76.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 07:40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="3">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td><0.044</td> <td>0.034</td> <td>M,J,R</td> <td>0.044</td> <td>1.3</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>0.115</td> <td>0.040</td> <td>M,J,B</td> <td></td> <td>1.3</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.393</td> <td>0.063</td> <td>M,J</td> <td></td> <td>1.3</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>0.682</td> <td>0.036</td> <td>M,J</td> <td></td> <td>1.3</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.037</td> <td>0.037</td> <td>U</td> <td></td> <td>1.3</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.474</td> <td>0.10</td> <td>M,J</td> <td></td> <td>1.3</td> </tr> </tbody> </table> | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.89 | <0.044 | 0.034 | M,J,R | 0.044 | 1.3 | 4,4'-DDE | 11.42 | 0.115 | 0.040 | M,J,B | | 1.3 | 2,4'-DDD | 11.59 | 0.393 | 0.063 | M,J | | 1.3 | 4,4'-DDD | 12.10 | 0.682 | 0.036 | M,J | | 1.3 | 2,4'-DDT | Not Fnd | <0.037 | 0.037 | U | | 1.3 | 4,4'-DDT | 12.59 | 0.474 | 0.10 | M,J | | 1.3 |
| Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | <0.044 | 0.034 | M,J,R | 0.044 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 0.115 | 0.040 | M,J,B | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.393 | 0.063 | M,J | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 0.682 | 0.036 | M,J | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.037 | 0.037 | U | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.474 | 0.10 | M,J | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>16</td> <td>21-125</td> <td></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>37</td> <td>5-150</td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>23</td> <td>5-120</td> <td></td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 16 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.09 | 37 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.59 | 23 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 16 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 37 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 23 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. U Indicates that this compound was not detected above the EDL. J Indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S139-4.1TO5.9D | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|-----------|--|------------------|-------|-------|------|--------|--|------------------|------|-------|-------|-------|-----|------------------|-------|--------|-------|-------|-------|-----|----------|-------|-------|-------|-------|------|-----|----------|-------|-------|-------|-----|--|-----|----------|-------|-------|-------|-----|--|-----|----------|---------|--------|-------|---|--|-----|----------|-------|-------|------|-------|------|-----|
| ALS Sample ID | L2144849-12 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.74 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 77.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 08:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="3">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td><0.061</td> <td>0.041</td> <td>M,J,R</td> <td>0.061</td> <td>1.3</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td><0.15</td> <td>0.048</td> <td>M,J,R</td> <td>0.15</td> <td>1.3</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.448</td> <td>0.071</td> <td>M,J</td> <td></td> <td>1.3</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>0.755</td> <td>0.050</td> <td>M,J</td> <td></td> <td>1.3</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.052</td> <td>0.052</td> <td>U</td> <td></td> <td>1.3</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td><0.49</td> <td>0.13</td> <td>M,J,R</td> <td>0.49</td> <td>1.3</td> </tr> </tbody> </table> | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.89 | <0.061 | 0.041 | M,J,R | 0.061 | 1.3 | 4,4'-DDE | 11.42 | <0.15 | 0.048 | M,J,R | 0.15 | 1.3 | 2,4'-DDD | 11.59 | 0.448 | 0.071 | M,J | | 1.3 | 4,4'-DDD | 12.10 | 0.755 | 0.050 | M,J | | 1.3 | 2,4'-DDT | Not Fnd | <0.052 | 0.052 | U | | 1.3 | 4,4'-DDT | 12.59 | <0.49 | 0.13 | M,J,R | 0.49 | 1.3 |
| Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | <0.061 | 0.041 | M,J,R | 0.061 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | <0.15 | 0.048 | M,J,R | 0.15 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.448 | 0.071 | M,J | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 0.755 | 0.050 | M,J | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.052 | 0.052 | U | | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | <0.49 | 0.13 | M,J,R | 0.49 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>14</td> <td>21-125</td> <td></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>27</td> <td>5-150</td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>18</td> <td>5-120</td> <td></td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 14 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.09 | 27 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.59 | 18 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 14 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 27 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 18 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S176-0TO2 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|-------|----|-------|--|--|--|--|-----|----------|-------|-------|-------|-------|----------|-------|------|-------|-------|----------|-------|------|-------|---------|----------|-------|------|-------|-------|----------|---------|--------|-------|-------|----------|-------|-------|-------|-----------|
| ALS Sample ID | L2144849-13 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.73 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 55.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 08:21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;">ng/g</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;">LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.575</td> <td>0.011</td> <td>J 1.8</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>3.98</td> <td>0.013</td> <td>M 1.8</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>1.06</td> <td>0.018</td> <td>M,J 1.8</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>2.72</td> <td>0.024</td> <td>M 1.8</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.025</td> <td>0.025</td> <td>U 1.8</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.138</td> <td>0.040</td> <td>M,J,B 1.8</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | | | | | ng/g | | | | | LQL | 2,4'-DDE | 10.88 | 0.575 | 0.011 | J 1.8 | 4,4'-DDE | 11.41 | 3.98 | 0.013 | M 1.8 | 2,4'-DDD | 11.58 | 1.06 | 0.018 | M,J 1.8 | 4,4'-DDD | 12.09 | 2.72 | 0.024 | M 1.8 | 2,4'-DDT | Not Fnd | <0.025 | 0.025 | U 1.8 | 4,4'-DDT | 12.58 | 0.138 | 0.040 | M,J,B 1.8 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.575 | 0.011 | J 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 3.98 | 0.013 | M 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 1.06 | 0.018 | M,J 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 2.72 | 0.024 | M 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.025 | 0.025 | U 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.138 | 0.040 | M,J,B 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>72</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>70</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>70</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 72 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 70 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 70 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 72 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 70 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 70 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. U Indicates that this compound was not detected above the EDL. J indicates that a target analyte was detected below the calibrated range. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S176-2TO4 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|----------|-------|-------|-------|-----|-----|----------|-------|------|-------|--|-----|----------|-------|------|------|---|-----|----------|-------|------|-------|---|-----|----------|---------|--------|-------|---|-----|----------|-------|-------|------|-----|-----|
| ALS Sample ID | L2144849-14 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.85 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 57.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 08:41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.762</td> <td>0.070</td> <td>M,J</td> <td>1.7</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>4.28</td> <td>0.082</td> <td></td> <td>1.7</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>3.54</td> <td>0.11</td> <td>M</td> <td>1.7</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>6.40</td> <td>0.078</td> <td>M</td> <td>1.7</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.081</td> <td>0.081</td> <td>U</td> <td>1.7</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.510</td> <td>0.19</td> <td>M,J</td> <td>1.7</td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.88 | 0.762 | 0.070 | M,J | 1.7 | 4,4'-DDE | 11.42 | 4.28 | 0.082 | | 1.7 | 2,4'-DDD | 11.59 | 3.54 | 0.11 | M | 1.7 | 4,4'-DDD | 12.09 | 6.40 | 0.078 | M | 1.7 | 2,4'-DDT | Not Fnd | <0.081 | 0.081 | U | 1.7 | 4,4'-DDT | 12.59 | 0.510 | 0.19 | M,J | 1.7 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.762 | 0.070 | M,J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 4.28 | 0.082 | | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 3.54 | 0.11 | M | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 6.40 | 0.078 | M | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.081 | 0.081 | U | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.510 | 0.19 | M,J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>9</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>18</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>11</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 9 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 18 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 11 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 9 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 18 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 11 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>U Indicates that this compound was not detected above the EDL.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S176-4TO5.5 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | |
|-----------------------------|--|-----------------|-----------|--|----------|
| ALS Sample ID | L2144849-15 | Extraction Date | 21-Aug-18 | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.83 g | | |
| Analysis Type | Sample | Percent Solid | 66.3% | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | |
| Run Information | | | | | |
| Run 1 | | | | | |
| Filename | 6-180828A46 | | | | |
| Run Date | 29-Aug-18 09:01 | | | | |
| Final Volume | 1020 uL | | | | |
| Dilution Factor | 5 | | | | |
| Analysis Units | ng/g | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | |
| | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | |
| | Time | ng/g | ng/g | Flags | ng/g LQL |
| 2,4'-DDE | 10.88 | 0.0374 | 0.0079 | M,J,B | 1.5 |
| 4,4'-DDE | 11.41 | 0.274 | 0.0093 | M,J,B | 1.5 |
| 2,4'-DDD | 11.58 | 0.140 | 0.013 | M,J | 1.5 |
| 4,4'-DDD | 12.09 | 0.256 | 0.019 | M,J | 1.5 |
| 2,4'-DDT | Not Fnd | <0.020 | 0.020 | U | 1.5 |
| 4,4'-DDT | 12.59 | <0.11 | 0.028 | M,J,R | 0.11 |
| | | | | | |
| Extraction Standards | ng | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 66 | 21-125 | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 64 | 5-150 | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 68 | 5-120 | |
| | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | |
| M | Indicates that a peak has been manually integrated. | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S176-5.5TO7.5 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|----------------------|-----------|--|----------|-----|
| ALS Sample ID | L2144849-16 | Extraction Date | 21-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.35 g | | | |
| Analysis Type | Sample | Percent Solid | 73.0% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180828A47 | | | | | |
| Run Date | 29-Aug-18 09:21 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g LQL | |
| 2,4'-DDE | 10.88 | 0.0312 | 0.019 | M,J,B | 1.4 | |
| 4,4'-DDE | 11.42 | 0.0984 | 0.022 | M,J,B | 1.4 | |
| 2,4'-DDD | 11.59 | 0.0738 | 0.030 | M,J | 1.4 | |
| 4,4'-DDD | 12.09 | 0.155 | 0.020 | M,J | 1.4 | |
| 2,4'-DDT | Not Fnd | <0.021 | 0.021 | U | 1.4 | |
| 4,4'-DDT | 12.59 | <0.084 | 0.049 | M,J,R | 0.084 | 1.4 |
| | | | | | | |
| Extraction Standards | ng | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 25 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 49 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 36 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S176-7.5TO9.6 | | | | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------|---------------------|------------------------|--------|----------------------|----------|--|----------------------|-------|-----|------|--|--|--|------|------------------|------|-------|------|--------|----------|----------|--------|------------------|-----|-------|----|-------|----------|-------|--------|------------------|-------|-------|----|-------|----------|----------|--------|-------|---|-----|--|--|----------|----------|--------|-------|---|-----|--|--|----------|----------|--------|-------|---|-----|--|--|----------|-------|-------|-------|-------|-----|--|--|
| ALS Sample ID | L2144849-17 | Extraction Date | 21-Aug-18 | | Sample Size | 7.31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 71.3% | | g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A48 | Run Date | 29-Aug-18 09:41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="3">EMPC</th> <th rowspan="2"></th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>NotFound</td> <td><0.023</td> <td>0.023</td> <td>U</td> <td>1.4</td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>0.0873</td> <td>0.027</td> <td>M,J,B</td> <td>1.4</td> <td></td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>NotFound</td> <td><0.038</td> <td>0.038</td> <td>U</td> <td>1.4</td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>NotFound</td> <td><0.025</td> <td>0.025</td> <td>U</td> <td>1.4</td> <td></td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>NotFound</td> <td><0.026</td> <td>0.026</td> <td>U</td> <td>1.4</td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.259</td> <td>0.061</td> <td>M,J,B</td> <td>1.4</td> <td></td> <td></td> </tr> </tbody> </table> | | | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | NotFound | <0.023 | 0.023 | U | 1.4 | | | 4,4'-DDE | 11.42 | 0.0873 | 0.027 | M,J,B | 1.4 | | | 2,4'-DDD | NotFound | <0.038 | 0.038 | U | 1.4 | | | 4,4'-DDD | NotFound | <0.025 | 0.025 | U | 1.4 | | | 2,4'-DDT | NotFound | <0.026 | 0.026 | U | 1.4 | | | 4,4'-DDT | 12.59 | 0.259 | 0.061 | M,J,B | 1.4 | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | NotFound | <0.023 | 0.023 | U | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 0.0873 | 0.027 | M,J,B | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | NotFound | <0.038 | 0.038 | U | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NotFound | <0.025 | 0.025 | U | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | NotFound | <0.026 | 0.026 | U | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.259 | 0.061 | M,J,B | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 23 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 46 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 33 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>U Indicates that this compound was not detected above the EDL.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S188-0TO1.5 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|----------------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|----------|-------|-------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|-----|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|-----|-----|--|
| ALS Sample ID | L2144849-18 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 3.86 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 38.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 10:01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2" style="width: 30%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.266</td> <td>0.018</td> <td>J</td> <td>2.6</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>7.43</td> <td>0.021</td> <td>M</td> <td>2.6</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.618</td> <td>0.030</td> <td>M,J</td> <td>2.6</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>1.42</td> <td>0.035</td> <td>M,J</td> <td>2.6</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td>0.623</td> <td>0.036</td> <td>M,J</td> <td>2.6</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>1.41</td> <td>0.059</td> <td>M,J</td> <td>2.6</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.89 | 0.266 | 0.018 | J | 2.6 | | 4,4'-DDE | 11.42 | 7.43 | 0.021 | M | 2.6 | | 2,4'-DDD | 11.59 | 0.618 | 0.030 | M,J | 2.6 | | 4,4'-DDD | 12.10 | 1.42 | 0.035 | M,J | 2.6 | | 2,4'-DDT | 12.15 | 0.623 | 0.036 | M,J | 2.6 | | 4,4'-DDT | 12.59 | 1.41 | 0.059 | M,J | 2.6 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.266 | 0.018 | J | 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 7.43 | 0.021 | M | 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.618 | 0.030 | M,J | 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 1.42 | 0.035 | M,J | 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | 0.623 | 0.036 | M,J | 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 1.41 | 0.059 | M,J | 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">4,4'-DDE, 13C12-</td> <td style="width: 15%;">125</td> <td style="width: 15%;">11.41</td> <td style="width: 15%;">58</td> <td style="width: 30%;">21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>65</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>72</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 58 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 65 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 72 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 58 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 65 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 72 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-0TO2 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|-----------|--|------------------|-------|-------|------|--------|--|------------------|------|-------|-------|-------|-----|------------------|-------|-------|-------|-------|-----|----------|-------|------|-------|---|-----|----------|-------|-------|-------|-----|-----|----------|-------|------|-------|-----|-----|----------|-------|-------|-------|-------|------|----------|-------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-19 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 3.51 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 34.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 21:44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.234 | 0.027 | M,J | 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 3.81 | 0.034 | M | 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 0.518 | 0.038 | M,J | 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.32 | 0.052 | M,J | 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | <0.29 | 0.052 | M,J,R | 0.29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.690 | 0.089 | M,J,B | 2.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>80</td> <td>21-125</td> <td> </td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>62</td> <td>5-150</td> <td> </td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>53</td> <td>5-120</td> <td> </td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 80 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.08 | 62 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.58 | 53 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 80 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 62 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 53 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | Duplicate | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|----------|-------|-------|-------|-----|-----|----------|-------|------|-------|---|-----|----------|-------|-------|-------|---|-----|----------|-------|------|-------|---|-----|----------|-------|------|-------|---|-----|----------|-------|------|-------|--|-----|
| ALS Sample ID | WG2848060-4 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 3.60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 35.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 22:05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.280</td> <td>0.025</td> <td>M,J</td> <td>2.8</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>4.56</td> <td>0.032</td> <td>M</td> <td>2.8</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.613</td> <td>0.037</td> <td>J</td> <td>2.8</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>1.83</td> <td>0.056</td> <td>J</td> <td>2.8</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td>1.88</td> <td>0.056</td> <td>J</td> <td>2.8</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>5.76</td> <td>0.092</td> <td></td> <td>2.8</td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | 0.280 | 0.025 | M,J | 2.8 | 4,4'-DDE | 11.40 | 4.56 | 0.032 | M | 2.8 | 2,4'-DDD | 11.57 | 0.613 | 0.037 | J | 2.8 | 4,4'-DDD | 12.08 | 1.83 | 0.056 | J | 2.8 | 2,4'-DDT | 12.14 | 1.88 | 0.056 | J | 2.8 | 4,4'-DDT | 12.58 | 5.76 | 0.092 | | 2.8 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.280 | 0.025 | M,J | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 4.56 | 0.032 | M | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.613 | 0.037 | J | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 1.83 | 0.056 | J | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 1.88 | 0.056 | J | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 5.76 | 0.092 | | 2.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>83</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>63</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>52</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 83 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 63 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 52 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 83 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 63 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 52 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-2TO4 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|-------|-------|---|----------|-------|------|-------|-----|----------|-------|-------|-------|-------|----------|-------|------|------|-------|
| ALS Sample ID | L2144849-20 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 3.95 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 38.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 22:25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.269</td> <td>0.034</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>3.57</td> <td>0.043</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>0.513</td> <td>0.049</td> <td>J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>1.05</td> <td>0.070</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td><0.32</td> <td>0.070</td> <td>M,J,R</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>1.20</td> <td>0.12</td> <td>M,J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.88 | 0.269 | 0.034 | M,J | 4,4'-DDE | 11.41 | 3.57 | 0.043 | M | 2,4'-DDD | 11.58 | 0.513 | 0.049 | J | 4,4'-DDD | 12.09 | 1.05 | 0.070 | M,J | 2,4'-DDT | 12.14 | <0.32 | 0.070 | M,J,R | 4,4'-DDT | 12.59 | 1.20 | 0.12 | M,J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.269 | 0.034 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 3.57 | 0.043 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 0.513 | 0.049 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.05 | 0.070 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | <0.32 | 0.070 | M,J,R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 1.20 | 0.12 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>64</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>48</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>42</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 64 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 48 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 42 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 64 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 48 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 42 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-4TO6 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|-------|-------|------------------|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|-----|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|-------|-----|--|
| ALS Sample ID | L2144849-21 | Extraction Date | 23-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.33 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 42.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A66 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 07:28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 10%;">Target Analytes</th> <th style="width: 10%;">Ret.</th> <th style="width: 10%;">Conc.</th> <th style="width: 10%;">EDL</th> <th style="width: 10%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.476</td> <td>0.014</td> <td>M,J</td> <td>2.3</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>6.15</td> <td>0.019</td> <td>M</td> <td>2.3</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.783</td> <td>0.027</td> <td>M,J</td> <td>2.3</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>2.05</td> <td>0.044</td> <td>M,J</td> <td>2.3</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>0.229</td> <td>0.044</td> <td>M,J</td> <td>2.3</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.771</td> <td>0.087</td> <td>M,J,B</td> <td>2.3</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | 0.476 | 0.014 | M,J | 2.3 | | 4,4'-DDE | 11.40 | 6.15 | 0.019 | M | 2.3 | | 2,4'-DDD | 11.57 | 0.783 | 0.027 | M,J | 2.3 | | 4,4'-DDD | 12.08 | 2.05 | 0.044 | M,J | 2.3 | | 2,4'-DDT | 12.13 | 0.229 | 0.044 | M,J | 2.3 | | 4,4'-DDT | 12.57 | 0.771 | 0.087 | M,J,B | 2.3 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.476 | 0.014 | M,J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 6.15 | 0.019 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.783 | 0.027 | M,J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 2.05 | 0.044 | M,J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 0.229 | 0.044 | M,J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.771 | 0.087 | M,J,B | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>80</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>54</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>45</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 80 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 54 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 45 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 80 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 54 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 45 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="font-size: small; margin-bottom: 5px;"> EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. </div> <div style="font-size: small; margin-bottom: 5px;"> LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. </div> <div style="font-size: small; margin-bottom: 5px;"> M Indicates that a peak has been manually integrated. </div> <div style="font-size: small; margin-bottom: 5px;"> J indicates that a target analyte was detected below the calibrated range. </div> <div style="font-size: small; margin-bottom: 5px;"> B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. </div> <div style="font-size: small; margin-bottom: 5px;"> EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-6TO8 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|----------------------|------|-------|-----|------|--|------------------|------|-------|-------|--------|-----|------------------|-------|-------|-------|-------|-----|------------------|----------|-------|------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|-------|-----|--|
| ALS Sample ID | L2144849-22 | Extraction Date | 23-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.05 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 50.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A67 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 07:48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> <th style="width: 15%;"> </th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.663</td> <td>0.012</td> <td>J</td> <td>2.0</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>9.28</td> <td>0.015</td> <td>M</td> <td>2.0</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>1.54</td> <td>0.021</td> <td>J</td> <td>2.0</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>4.80</td> <td>0.035</td> <td>M</td> <td>2.0</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>0.185</td> <td>0.035</td> <td>M,J</td> <td>2.0</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.949</td> <td>0.065</td> <td>M,J,B</td> <td>2.0</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | 0.663 | 0.012 | J | 2.0 | | 4,4'-DDE | 11.40 | 9.28 | 0.015 | M | 2.0 | | 2,4'-DDD | 11.57 | 1.54 | 0.021 | J | 2.0 | | 4,4'-DDD | 12.08 | 4.80 | 0.035 | M | 2.0 | | 2,4'-DDT | 12.13 | 0.185 | 0.035 | M,J | 2.0 | | 4,4'-DDT | 12.57 | 0.949 | 0.065 | M,J,B | 2.0 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.663 | 0.012 | J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 9.28 | 0.015 | M | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 1.54 | 0.021 | J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 4.80 | 0.035 | M | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 0.185 | 0.035 | M,J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.949 | 0.065 | M,J,B | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Extraction Standards</th> <th style="width: 15%;">ng</th> <th colspan="4" style="width: 70%;"> </th> </tr> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>81</td> <td>21-125</td> <td></td> </tr> </thead> <tbody> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>53</td> <td>5-150</td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>43</td> <td>5-120</td> <td></td> </tr> </tbody> </table> | | | | | Extraction Standards | ng | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 81 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.07 | 53 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.57 | 43 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 81 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 53 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 43 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J Indicates that a target analyte was detected below the calibrated range.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-8TO10 | | | | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------------|-----------------|-----------|--------|---------------|----------|--|------------------|-------|-------|------|--------|--|--|--|------------------|------|-------|-------|-------|-----|--|----------|------------------|------|--------|-----|-------|--|--|----------|-------|------|-------|---|-----|--|--|----------|-------|------|-------|-----|-----|--|--|----------|-------|------|-------|---|-----|--|--|----------|-------|-------|-------|-------|------|-----|--|----------|-------|-------|-------|-------|-----|--|--|
| ALS Sample ID | L2144849-23 | Extraction Date | 23-Aug-18 | | Sample Size | 5.67 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 55.4% | | g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 08:08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th colspan="3" style="text-align: left;">EMPC</th> <th></th> </tr> <tr> <th></th> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> <th></th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>1.20</td> <td>0.0094</td> <td>M,J</td> <td>1.8</td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>13.4</td> <td>0.012</td> <td>M</td> <td>1.8</td> <td></td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>1.66</td> <td>0.019</td> <td>M,J</td> <td>1.8</td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>6.35</td> <td>0.038</td> <td>M</td> <td>1.8</td> <td></td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td><0.11</td> <td>0.038</td> <td>M,J,R</td> <td>0.11</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.510</td> <td>0.081</td> <td>M,J,B</td> <td>1.8</td> <td></td> <td></td> </tr> </tbody> </table> | | | | | | | | Ret. | Conc. | EDL | EMPC | | | | | Time | ng/g | ng/g | Flags | ng/g | LQL | | 2,4'-DDE | 10.87 | 1.20 | 0.0094 | M,J | 1.8 | | | 4,4'-DDE | 11.41 | 13.4 | 0.012 | M | 1.8 | | | 2,4'-DDD | 11.58 | 1.66 | 0.019 | M,J | 1.8 | | | 4,4'-DDD | 12.08 | 6.35 | 0.038 | M | 1.8 | | | 2,4'-DDT | 12.14 | <0.11 | 0.038 | M,J,R | 0.11 | 1.8 | | 4,4'-DDT | 12.58 | 0.510 | 0.081 | M,J,B | 1.8 | | |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 1.20 | 0.0094 | M,J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 13.4 | 0.012 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 1.66 | 0.019 | M,J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 6.35 | 0.038 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | <0.11 | 0.038 | M,J,R | 0.11 | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.510 | 0.081 | M,J,B | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>92</td> <td>21-125</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>49</td> <td>5-150</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>38</td> <td>5-120</td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 92 | 21-125 | | | | 4,4'-DDD, 13C12- | 125 | 12.08 | 49 | 5-150 | | | | 4,4'-DDT, 13C12- | 125 | 12.57 | 38 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 92 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 49 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 38 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-10TO11.8 | | | | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------|-----------------|-----------|--------|----------------------|----------|--|------------------|-------|-------|------|--------|--|--|------|------------------|------|-------|------|-------|----------|-------|------|------------------|-----|-------|----|-------|----------|-------|------|-------|---|-----|--|--|----------|-------|------|-------|---|-----|--|--|----------|-------|------|-------|---|-----|--|--|----------|-------|-------|-------|-----|-----|--|--|----------|-------|-------|-------|-------|-----|--|--|
| ALS Sample ID | L2144849-24 | Extraction Date | 23-Aug-18 | | Sample Size | 5.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 52.6% | | g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A69 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 08:28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 1.02 | 0.015 | J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 10.2 | 0.019 | M | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 2.49 | 0.028 | M | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 6.83 | 0.052 | M | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 0.186 | 0.052 | M,J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.402 | 0.096 | M,J,B | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">4,4'-DDE, 13C12-</td> <td style="width: 10%;">125</td> <td style="width: 10%;">11.40</td> <td style="width: 10%;">80</td> <td style="width: 10%;">21-125</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>49</td> <td>5-150</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>37</td> <td>5-120</td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 80 | 21-125 | | | | 4,4'-DDD, 13C12- | 125 | 12.07 | 49 | 5-150 | | | | 4,4'-DDT, 13C12- | 125 | 12.57 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 80 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 49 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S213-11.8TO12.8 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|--|------------------|------|-------|-------|-------|-----|------------------|-------|-------|-------|-------|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|---------|--------|-------|---|-----|--|----------|-------|-------|-------|-------|-----|--|
| ALS Sample ID | L2144849-25 | Extraction Date | 23-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.45 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 53.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 08:48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.562</td> <td>0.012</td> <td>J</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>4.66</td> <td>0.016</td> <td>M</td> <td>1.8</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>2.30</td> <td>0.022</td> <td>M</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>4.57</td> <td>0.041</td> <td>M</td> <td>1.8</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.041</td> <td>0.041</td> <td>U</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.258</td> <td>0.088</td> <td>M,J,B</td> <td>1.8</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | 0.562 | 0.012 | J | 1.8 | | 4,4'-DDE | 11.40 | 4.66 | 0.016 | M | 1.8 | | 2,4'-DDD | 11.58 | 2.30 | 0.022 | M | 1.8 | | 4,4'-DDD | 12.08 | 4.57 | 0.041 | M | 1.8 | | 2,4'-DDT | Not Fnd | <0.041 | 0.041 | U | 1.8 | | 4,4'-DDT | 12.58 | 0.258 | 0.088 | M,J,B | 1.8 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.562 | 0.012 | J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 4.66 | 0.016 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 2.30 | 0.022 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 4.57 | 0.041 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.041 | 0.041 | U | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.258 | 0.088 | M,J,B | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>84</td> <td>21-125</td> <td></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>51</td> <td>5-150</td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>37</td> <td>5-120</td> <td></td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 84 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.08 | 51 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.57 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 84 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 51 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>U Indicates that this compound was not detected above the EDL.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S098-0TO1.3 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|-----------------|-----------|--|------|-----|
| ALS Sample ID | L2144849-26 | Extraction Date | 23-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.47 g | | | |
| Analysis Type | Sample | Percent Solid | 53.5% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180830A71 | | | | | |
| Run Date | 31-Aug-18 09:08 | | | | | |
| Final Volume | 1000 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | 10.87 | 0.418 | 0.0095 | J | 1.8 | |
| 4,4'-DDE | 11.40 | 4.74 | 0.012 | M | 1.8 | |
| 2,4'-DDD | 11.58 | 2.90 | 0.017 | | 1.8 | |
| 4,4'-DDD | 12.08 | 8.65 | 0.030 | M | 1.8 | |
| 2,4'-DDT | 12.14 | 0.251 | 0.030 | M,J | 1.8 | |
| 4,4'-DDT | 12.58 | 0.649 | 0.058 | M,J,B | 1.8 | |
| Extraction Standards | | | | | ng | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 81 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 50 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 39 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S098-1.3TO3.3 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | |
|-----------------------------|------------------------|-----------------|-----------|--|--|-----|--|
| ALS Sample ID | L2144849-27 | Extraction Date | 23-Aug-18 | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 8.24 g | | | | |
| Analysis Type | Sample | Percent Solid | 80.7% | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | |
| Run Information | | | | | | | |
| Run 1 | | | | | | | |
| Filename | 6-180830A72 | | | | | | |
| Run Date | 31-Aug-18 09:28 | | | | | | |
| Final Volume | 1000 uL | | | | | | |
| Dilution Factor | 5 | | | | | | |
| Analysis Units | ng/g | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |
| | | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | |
| | 2,4'-DDE | 10.87 | 0.204 | 0.0064 | M,J,B | 1.2 | |
| | 4,4'-DDE | 11.40 | 0.650 | 0.0084 | J,B | 1.2 | |
| | 2,4'-DDD | 11.57 | 1.13 | 0.012 | M,J | 1.2 | |
| | 4,4'-DDD | 12.08 | 2.49 | 0.021 | M | 1.2 | |
| | 2,4'-DDT | Not Fnd | <0.021 | 0.021 | U | 1.2 | |
| 4,4'-DDT | 12.57 | 0.112 | 0.038 | M,J,B | 1.2 | | |
| | | | | | | | |
| Extraction Standards | ng | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 75 | 21-125 | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 47 | 5-150 | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 39 | 5-120 | | | |
| | | | | | | | |
| | | | | | | | |
| EDL | | | | | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | |
| LQL | | | | | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | |
| M | | | | | Indicates that a peak has been manually integrated. | | |
| U | | | | | Indicates that this compound was not detected above the EDL. | | |
| J | | | | | indicates that a target analyte was detected below the calibrated range. | | |
| B | | | | | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | |
| EMPC | | | | | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S098-3.3TO5.3 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|-----------|--|------------------|-------|-------|------|--------|--|------------------|------|-------|-------|-------|-----|------------------|----------|---------|--------|-------|-----|----------|-------|--------|-------|-------|-------|----------|----------|--------|-------|---|-----|----------|----------|--------|-------|---|-----|----------|----------|--------|-------|---|-----|----------|-------|--------|-------|-------|-------|
| ALS Sample ID | L2144849-28 | Extraction Date | 23-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.86 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 77.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A73 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 09:51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> <th style="width: 15%;"> </th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>NotFound</td> <td><0.0095</td> <td>0.0095</td> <td>U</td> <td>1.3</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td><0.026</td> <td>0.012</td> <td>M,J,R</td> <td>0.026</td> </tr> <tr> <td>2,4'-DDD</td> <td>NotFound</td> <td><0.017</td> <td>0.017</td> <td>U</td> <td>1.3</td> </tr> <tr> <td>4,4'-DDD</td> <td>NotFound</td> <td><0.031</td> <td>0.031</td> <td>U</td> <td>1.3</td> </tr> <tr> <td>2,4'-DDT</td> <td>NotFound</td> <td><0.031</td> <td>0.031</td> <td>U</td> <td>1.3</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td><0.096</td> <td>0.051</td> <td>M,J,R</td> <td>0.096</td> </tr> </tbody> </table> | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | NotFound | <0.0095 | 0.0095 | U | 1.3 | 4,4'-DDE | 11.40 | <0.026 | 0.012 | M,J,R | 0.026 | 2,4'-DDD | NotFound | <0.017 | 0.017 | U | 1.3 | 4,4'-DDD | NotFound | <0.031 | 0.031 | U | 1.3 | 2,4'-DDT | NotFound | <0.031 | 0.031 | U | 1.3 | 4,4'-DDT | 12.57 | <0.096 | 0.051 | M,J,R | 0.096 |
| Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | NotFound | <0.0095 | 0.0095 | U | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | <0.026 | 0.012 | M,J,R | 0.026 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | NotFound | <0.017 | 0.017 | U | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | NotFound | <0.031 | 0.031 | U | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | NotFound | <0.031 | 0.031 | U | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | <0.096 | 0.051 | M,J,R | 0.096 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>71</td> <td>21-125</td> <td> </td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>45</td> <td>5-150</td> <td> </td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>38</td> <td>5-120</td> <td> </td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 71 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.07 | 45 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.57 | 38 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 71 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 45 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 38 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S098-3.3TO5.3D | | | | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-----------------------------|--|-----------------|-----------|--------|---------------|----------|--|
| ALS Sample ID | L2144849-29 | Extraction Date | 23-Aug-18 | | Sample Size | 7.73 | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 75.6% | | g | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | |
| Sample Matrix | Sediment | | | | | | |
| Run Information | | | | | | | |
| Run 1 | | | | | | | |
| Filename | 6-180830A74 | | | | | | |
| Run Date | 31-Aug-18 10:08 | | | | | | |
| Final Volume | 1000 uL | | | | | | |
| Dilution Factor | 5 | | | | | | |
| Analysis Units | ng/g | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |
| | | | | | | | |
| Target Analytes | | Ret. | Conc. | EDL | EMPC | | |
| | | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | | 10.87 | <0.0075 | 0.0075 | M,U | 0.0062 | 1.3 |
| 4,4'-DDE | | 11.40 | 0.0263 | 0.0097 | M,J,B | | 1.3 |
| 2,4'-DDD | | NotFound | <0.014 | 0.014 | U | | 1.3 |
| 4,4'-DDD | | 12.08 | 0.0424 | 0.025 | M,J,B | | 1.3 |
| 2,4'-DDT | | NotFound | <0.025 | 0.025 | U | | 1.3 |
| 4,4'-DDT | | 12.58 | 0.130 | 0.040 | M,J,B | | 1.3 |
| Extraction Standards | | ng | | | | | |
| 4,4'-DDE, 13C12- | | 125 | 11.40 | 70 | 21-125 | | |
| 4,4'-DDD, 13C12- | | 125 | 12.08 | 46 | 5-150 | | |
| 4,4'-DDT, 13C12- | | 125 | 12.57 | 39 | 5-120 | | |
| | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S098-5.3TO7.2 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|----------------------|-----------|--|-------|-----|
| ALS Sample ID | L2144849-30 | Extraction Date | 23-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.37 | | | |
| Analysis Type | Sample | Percent Solid | 71.7% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180830A75 | | | | | |
| Run Date | 31-Aug-18 10:29 | | | | | |
| Final Volume | 1000 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | 10.87 | 0.0276 | 0.014 | M,J,B | 1.4 | |
| 4,4'-DDE | 11.40 | <0.046 | 0.018 | M,J,R | 0.046 | 1.4 |
| 2,4'-DDD | 11.57 | 0.0631 | 0.021 | M,J | 1.4 | |
| 4,4'-DDD | 12.08 | 0.0783 | 0.033 | M,J,B | 1.4 | |
| 2,4'-DDT | 12.14 | <0.077 | 0.033 | M,J,R | 0.077 | 1.4 |
| 4,4'-DDT | 12.58 | 0.274 | 0.053 | M,J,B | 1.4 | |
| Extraction Standards | | ng | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 56 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 41 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 33 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S098-7.2TO8.2 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|-----------------|-----------|--|-------|-----|
| ALS Sample ID | L2144849-31 | Extraction Date | 23-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.35 g | | | |
| Analysis Type | Sample | Percent Solid | 71.7% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180830A76 | | | | | |
| Run Date | 31-Aug-18 10:49 | | | | | |
| Final Volume | 1000 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | NotFound | <0.011 | 0.011 | U | 1.4 | |
| 4,4'-DDE | 11.40 | <0.022 | 0.014 | M,J,R | 0.022 | 1.4 |
| 2,4'-DDD | 11.57 | 0.0458 | 0.020 | M,J | 1.4 | |
| 4,4'-DDD | 12.08 | 0.0597 | 0.033 | M,J,B | 1.4 | |
| 2,4'-DDT | NotFound | <0.033 | 0.033 | U | 1.4 | |
| 4,4'-DDT | 12.57 | <0.14 | 0.052 | M,J,R | 0.14 | 1.4 |
| | | | | | | |
| Extraction Standards | ng | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 68 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 47 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 40 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-RB-SS-180807 | | | | | Sampling Date | 7-Aug-18 | <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 </div> | | | | | | | | |
|---|-------------------------|-----------------|--------------|------------|-------------|----------------------|----------|--|--|--|--|--|--|--|--|--|
| ALS Sample ID | L2144849-32 | Extraction Date | 13-Aug-18 | | | Sample Size | 0.93 | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | n/a | | | L | | | | | | | | | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | | | | | | | | | | |
| Sample Matrix | Water | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | |
| Filename | 6-180830A22 | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 16:43 | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | |
| Dilution Factor | 1 | | | | | | | | | | | | | | | |
| Analysis Units | ng/L | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Target Analytes | | | | | | | | | | | | | | | | |
| | | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | |
| | | Time | ng/L | ng/L | Flags | ng/L | LQL | | | | | | | | | |
| 2,4'-DDE | | 10.88 | 0.729 | 0.16 | M,J,B | 2.2 | | | | | | | | | | |
| 4,4'-DDE | | 11.41 | 1.04 | 0.21 | M,J,B | 2.2 | | | | | | | | | | |
| 2,4'-DDD | | NotFind | <0.35 | 0.35 | U | 2.2 | | | | | | | | | | |
| 4,4'-DDD | | 12.09 | 0.433 | 0.18 | M,J,B | 2.2 | | | | | | | | | | |
| 2,4'-DDT | | NotFind | <0.18 | 0.18 | U | 2.2 | | | | | | | | | | |
| 4,4'-DDT | | 12.58 | 1.78 | 0.50 | M,J,B | 2.2 | | | | | | | | | | |
| Extraction Standards | | | | | | | | | | | | | | | | |
| ng | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | | 125 | 11.40 | 7 | 21-125 | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | | 125 | 12.08 | 15 | 5-150 | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | | 125 | 12.58 | 9 | 5-120 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. U Indicates that this compound was not detected above the EDL. J indicates that a target analyte was detected below the calibrated range. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-RB-SS-180808 | Sampling Date | 8-Aug-18 | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Approved: <i>R. Bakhtiari</i> --e-signature--</div> <div style="border: 1px solid black; padding: 5px;">31-Aug-2018</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|-------|-------|------------------|----------|-------|--------|-------|-------|-----|--|----------|-------|-------|-------|-------|-----|--|----------|-------|-------|-------|-------|------|-----|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|
| ALS Sample ID | L2144849-33 | Extraction Date | 13-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Water | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 17:03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 10%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/L</th> <th>ng/L</th> <th>Flags</th> <th>ng/L</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td><td>10.88</td><td>0.0968</td><td>0.014</td><td>M,J,B</td><td>2.0</td><td></td></tr> <tr> <td>4,4'-DDE</td><td>11.41</td><td>0.184</td><td>0.018</td><td>M,J,B</td><td>2.0</td><td></td></tr> <tr> <td>2,4'-DDD</td><td>11.58</td><td><0.17</td><td>0.024</td><td>M,J,R</td><td>0.17</td><td>2.0</td></tr> <tr> <td>4,4'-DDD</td><td>12.09</td><td>0.265</td><td>0.028</td><td>J,B</td><td>2.0</td><td></td></tr> <tr> <td>2,4'-DDT</td><td>12.14</td><td>0.166</td><td>0.028</td><td>J</td><td>2.0</td><td></td></tr> <tr> <td>4,4'-DDT</td><td>12.58</td><td>0.608</td><td>0.044</td><td>J,B</td><td>2.0</td><td></td></tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Time | ng/L | ng/L | Flags | ng/L | LQL | 2,4'-DDE | 10.88 | 0.0968 | 0.014 | M,J,B | 2.0 | | 4,4'-DDE | 11.41 | 0.184 | 0.018 | M,J,B | 2.0 | | 2,4'-DDD | 11.58 | <0.17 | 0.024 | M,J,R | 0.17 | 2.0 | 4,4'-DDD | 12.09 | 0.265 | 0.028 | J,B | 2.0 | | 2,4'-DDT | 12.14 | 0.166 | 0.028 | J | 2.0 | | 4,4'-DDT | 12.58 | 0.608 | 0.044 | J,B | 2.0 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/L | ng/L | Flags | ng/L | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.0968 | 0.014 | M,J,B | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 0.184 | 0.018 | M,J,B | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | <0.17 | 0.024 | M,J,R | 0.17 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 0.265 | 0.028 | J,B | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 0.166 | 0.028 | J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.608 | 0.044 | J,B | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>76</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>70</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>68</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 76 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 70 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 68 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 76 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 70 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 68 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-RB-SS-180809 | Sampling Date | 9-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|------------------------|-----------------|-----------|--|--------|-------|
| ALS Sample ID | L2144849-34 | Extraction Date | 13-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | | | |
| Analysis Type | Sample | Percent Solid | n/a | | | |
| Sample Matrix | Water | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180830A24 | | | | | |
| Run Date | 30-Aug-18 17:24 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 1 | | | | | |
| Analysis Units | ng/L | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/L | ng/L | Flags | ng/L | LQL |
| | 2,4'-DDE | 10.88 | 0.0714 | 0.017 | M,J,B | 2.0 |
| | 4,4'-DDE | 11.41 | 0.131 | 0.022 | M,J,B | 2.0 |
| | 2,4'-DDD | 11.58 | 0.102 | 0.029 | M,J | 2.0 |
| | 4,4'-DDD | 12.09 | <0.11 | 0.033 | M,J,R | 0.11 |
| | 2,4'-DDT | 12.14 | <0.091 | 0.033 | M,J,R | 0.091 |
| 4,4'-DDT | 12.59 | 0.326 | 0.049 | M,J,B | 2.0 | |
| | | | | | | |
| Extraction Standards | ng | | | | | |
| | 4,4'-DDE, 13C12- | 125 | 11.40 | 72 | 21-125 | |
| | 4,4'-DDD, 13C12- | 125 | 12.08 | 67 | 5-150 | |
| | 4,4'-DDT, 13C12- | 125 | 12.58 | 65 | 5-120 | |
| | | | | | | |
| | | | | | | |
| EDL | | | | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | |
| LQL | | | | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | |
| M | | | | Indicates that a peak has been manually integrated. | | |
| | | | | | | |
| J | | | | Indicates that a target analyte was detected below the calibrated range. | | |
| R | | | | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | |
| B | | | | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | |
| | | | | | | |
| EMPC | | | | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | |

ALS Life sciences

Sample Analysis Report

| | | | | |
|--------------------|-------------------------|----------------------|-----------|---|
| Sample Name | PDI-RB-SS-180806 | Sampling Date | 6-Aug-18 | |
| ALS Sample ID | L2144849-35 | Extraction Date | 13-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 0.97 | L |
| Analysis Type | Sample | Percent Solid | n/a | |
| Sample Matrix | Water | Split Ratio | 1 | |

Run Information

Run 1

Filename 6-180830A25
Run Date 30-Aug-18 17:44
Final Volume 1020 uL
Dilution Factor 1
Analysis Units ng/L
Instrument - Column HRMS-6 HP5MSUSR163634H

Approved:
R. Bakhtiari
--e-signature--
31-Aug-2018

| Ret. | Conc. | EDL | EMPC | | |
|-------|--------|-------|-------|------|-----|
| Time | ng/L | ng/L | Flags | ng/L | LQL |
| 10.88 | 0.0943 | 0.027 | M,J,B | | 2.1 |
| 11.41 | 0.219 | 0.035 | M,J,B | | 2.1 |
| 11.58 | 0.141 | 0.040 | M,J | | 2.1 |
| 12.09 | 0.132 | 0.038 | M,J,B | | 2.1 |
| 12.14 | <0.12 | 0.038 | M,J,R | 0.12 | 2.1 |
| 12.58 | 0.427 | 0.069 | M,J,B | | 2.1 |

Extraction Standards

| | | | | |
|------------------|-----|-------|----|--------|
| 4,4'-DDE, 13C12- | 125 | 11.40 | 45 | 21-125 |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 49 | 5-150 |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 42 | 5-120 |

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
QLQ Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M Indicates that a peak has been manually integrated.

J indicates that a target analyte was detected below the calibrated range.
R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.
B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.

Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S191-4TO6 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|------|-------|--|----------|-------|------|------|--|----------|-------|------|------|--|----------|-------|------|------|--|
| ALS Sample ID | L2144849-36 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 55.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 12:29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>1.26</td> <td>0.031</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>17.5</td> <td>0.040</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>4.73</td> <td>0.051</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>11.4</td> <td>0.11</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>3.09</td> <td>0.11</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>10.9</td> <td>0.23</td> <td></td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.87 | 1.26 | 0.031 | M,J | 4,4'-DDE | 11.40 | 17.5 | 0.040 | M | 2,4'-DDD | 11.57 | 4.73 | 0.051 | | 4,4'-DDD | 12.08 | 11.4 | 0.11 | | 2,4'-DDT | 12.13 | 3.09 | 0.11 | | 4,4'-DDT | 12.57 | 10.9 | 0.23 | |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 1.26 | 0.031 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 17.5 | 0.040 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 4.73 | 0.051 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 11.4 | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 3.09 | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 10.9 | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>78</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>39</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>32</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 78 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 39 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 32 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 78 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 39 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 32 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S191-6TO8.1 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|------|-------|--|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|-------|------|-----|
| ALS Sample ID | L2144849-37 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.85 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 67.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 02:46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.268</td> <td>0.016</td> <td>J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>3.20</td> <td>0.021</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>4.55</td> <td>0.027</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>11.2</td> <td>0.064</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>0.297</td> <td>0.064</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.803</td> <td>0.12</td> <td>J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.87 | 0.268 | 0.016 | J | 4,4'-DDE | 11.40 | 3.20 | 0.021 | M | 2,4'-DDD | 11.57 | 4.55 | 0.027 | | 4,4'-DDD | 12.08 | 11.2 | 0.064 | M | 2,4'-DDT | 12.13 | 0.297 | 0.064 | M,J | 4,4'-DDT | 12.57 | 0.803 | 0.12 | J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.268 | 0.016 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 3.20 | 0.021 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 4.55 | 0.027 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 11.2 | 0.064 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 0.297 | 0.064 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.803 | 0.12 | J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>77</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>35</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>31</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 77 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 35 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 31 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 77 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 35 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 31 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>B Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S192-0TO1.5 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|------|-------|---|----------|-------|------|------|---|----------|-------|------|------|-----|----------|-------|------|------|---|
| ALS Sample ID | L2144849-38 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 2.88 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 28.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 03:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.884 | 0.046 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 16.2 | 0.060 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 4.28 | 0.079 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 8.72 | 0.21 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | 2.73 | 0.21 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 6.15 | 0.38 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>84</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>33</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>27</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 84 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 33 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 27 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 84 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 33 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 27 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S192-1.5TO3 | Sampling Date | 8-Aug-18 | <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|----------------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|-------|-------|------------------|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|------|------|--|-----|--|----------|-------|------|------|---|-----|--|----------|-------|------|------|---|-----|--|
| ALS Sample ID | L2144849-39 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 43.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 03:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.504</td> <td>0.028</td> <td>M,J</td> <td>2.3</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>8.81</td> <td>0.036</td> <td>M</td> <td>2.3</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>2.06</td> <td>0.050</td> <td>J</td> <td>2.3</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>4.37</td> <td>0.12</td> <td></td> <td>2.3</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td>1.87</td> <td>0.12</td> <td>J</td> <td>2.3</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>6.28</td> <td>0.22</td> <td>M</td> <td>2.3</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.88 | 0.504 | 0.028 | M,J | 2.3 | | 4,4'-DDE | 11.41 | 8.81 | 0.036 | M | 2.3 | | 2,4'-DDD | 11.58 | 2.06 | 0.050 | J | 2.3 | | 4,4'-DDD | 12.09 | 4.37 | 0.12 | | 2.3 | | 2,4'-DDT | 12.14 | 1.87 | 0.12 | J | 2.3 | | 4,4'-DDT | 12.58 | 6.28 | 0.22 | M | 2.3 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.504 | 0.028 | M,J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 8.81 | 0.036 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 2.06 | 0.050 | J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 4.37 | 0.12 | | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 1.87 | 0.12 | J | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 6.28 | 0.22 | M | 2.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>77</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>35</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>30</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 77 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 35 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 30 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 77 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 35 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 30 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S192-3TO4.2 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|-----------|--|------------------|---|-------|--|--------|---|------|--|------|---|------------------|--|--------|-------|-------|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|-----|----------|-------|-------|-------|-----|----------|-------|-------|------|-------|
| ALS Sample ID | L2144849-40 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.69 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 76.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 03:46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.86</td> <td>0.0966</td> <td>0.017</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>1.51</td> <td>0.022</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.506</td> <td>0.034</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.07</td> <td>1.05</td> <td>0.072</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>0.251</td> <td>0.072</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.852</td> <td>0.13</td> <td>M,J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.86 | 0.0966 | 0.017 | M,J | 4,4'-DDE | 11.40 | 1.51 | 0.022 | M | 2,4'-DDD | 11.57 | 0.506 | 0.034 | M,J | 4,4'-DDD | 12.07 | 1.05 | 0.072 | M,J | 2,4'-DDT | 12.13 | 0.251 | 0.072 | M,J | 4,4'-DDT | 12.57 | 0.852 | 0.13 | M,J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.86 | 0.0966 | 0.017 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 1.51 | 0.022 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.506 | 0.034 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.07 | 1.05 | 0.072 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 0.251 | 0.072 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.852 | 0.13 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>75</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>38</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>33</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 75 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 38 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 33 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 75 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 38 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 33 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">EDL</td> <td>Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</td> </tr> <tr> <td style="width: 15%;">LQL</td> <td>Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</td> </tr> <tr> <td style="width: 15%;">M</td> <td>Indicates that a peak has been manually integrated.</td> </tr> <tr> <td style="width: 15%;">J</td> <td>indicates that a target analyte was detected below the calibrated range.</td> </tr> <tr> <td style="width: 15%;">B</td> <td>Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</td> </tr> <tr> <td style="width: 15%;">EMPC</td> <td>Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</td> </tr> </table> | | | | | EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | M | Indicates that a peak has been manually integrated. | J | indicates that a target analyte was detected below the calibrated range. | B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-0TO2 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|---|----------|-------|-------|-------|-------|----------|-------|------|------|-----|
| ALS Sample ID | L2144849-41 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.83 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 48.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 22:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.755</td> <td>0.027</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>10.2</td> <td>0.034</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.841</td> <td>0.044</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>2.17</td> <td>0.067</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td><0.73</td> <td>0.067</td> <td>M,J,R</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>2.60</td> <td>0.12</td> <td>M,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.87 | 0.755 | 0.027 | M,J | 4,4'-DDE | 11.40 | 10.2 | 0.034 | M | 2,4'-DDD | 11.57 | 0.841 | 0.044 | M,J | 4,4'-DDD | 12.08 | 2.17 | 0.067 | M | 2,4'-DDT | 12.13 | <0.73 | 0.067 | M,J,R | 4,4'-DDT | 12.57 | 2.60 | 0.12 | M,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.755 | 0.027 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 10.2 | 0.034 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.841 | 0.044 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 2.17 | 0.067 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | <0.73 | 0.067 | M,J,R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 2.60 | 0.12 | M,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>83</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>60</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>53</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 83 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 60 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 53 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 83 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 60 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 53 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-2TO4 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|-----------|--|------------------|---|-------|--|--------|---|------|--|-------|---|------------------|--|-------|-------|-------|-----|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|-------|-----|--|
| ALS Sample ID | L2144849-42 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.38 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 53.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 23:05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.973</td> <td>0.013</td> <td>M,J</td> <td>1.9</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>9.31</td> <td>0.017</td> <td>M</td> <td>1.9</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.762</td> <td>0.022</td> <td>M,J</td> <td>1.9</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>2.01</td> <td>0.033</td> <td>M</td> <td>1.9</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td>0.144</td> <td>0.033</td> <td>M,J</td> <td>1.9</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.425</td> <td>0.060</td> <td>M,J,B</td> <td>1.9</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | 0.973 | 0.013 | M,J | 1.9 | | 4,4'-DDE | 11.40 | 9.31 | 0.017 | M | 1.9 | | 2,4'-DDD | 11.57 | 0.762 | 0.022 | M,J | 1.9 | | 4,4'-DDD | 12.08 | 2.01 | 0.033 | M | 1.9 | | 2,4'-DDT | 12.13 | 0.144 | 0.033 | M,J | 1.9 | | 4,4'-DDT | 12.57 | 0.425 | 0.060 | M,J,B | 1.9 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.973 | 0.013 | M,J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 9.31 | 0.017 | M | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.762 | 0.022 | M,J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 2.01 | 0.033 | M | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | 0.144 | 0.033 | M,J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.425 | 0.060 | M,J,B | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>89</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>64</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>56</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 89 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 64 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 56 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 89 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 64 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 56 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">EDL</td> <td>Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</td> </tr> <tr> <td style="width: 15%;">LQL</td> <td>Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</td> </tr> <tr> <td style="width: 15%;">M</td> <td>Indicates that a peak has been manually integrated.</td> </tr> <tr> <td style="width: 15%;">J</td> <td>indicates that a target analyte was detected below the calibrated range.</td> </tr> <tr> <td style="width: 15%;">B</td> <td>Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</td> </tr> <tr> <td style="width: 15%;">EMPC</td> <td>Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</td> </tr> </table> | | | | | EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | M | Indicates that a peak has been manually integrated. | J | indicates that a target analyte was detected below the calibrated range. | B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-2TO4D | | | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------|-----------------|-----------|---------------|----------|--|------------------|-------|-------|------|--------|--|--|------------------|------|-------|-------|-------|-----|----------|------------------|------|-------|-----|-------|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|------|-------|--|-----|--|----------|-------|-------|-------|-------|------|-----|----------|-------|-------|------|-------|------|-----|
| ALS Sample ID | L2144849-43 | Extraction Date | 22-Aug-18 | Sample Size | 5.39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 53.5% | g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A42 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 23:25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;">Ret.</th> <th style="width: 10%;">Conc.</th> <th style="width: 10%;">EDL</th> <th colspan="3">EMPC</th> </tr> <tr> <th></th> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>1.09</td> <td>0.018</td> <td>M,J</td> <td>1.9</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>9.63</td> <td>0.023</td> <td>M</td> <td>1.9</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>0.785</td> <td>0.042</td> <td>M,J</td> <td>1.9</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>2.05</td> <td>0.064</td> <td></td> <td>1.9</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td><0.17</td> <td>0.064</td> <td>M,J,R</td> <td>0.17</td> <td>1.9</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td><0.41</td> <td>0.11</td> <td>M,J,R</td> <td>0.41</td> <td>1.9</td> </tr> </tbody> </table> | | | | | | | Ret. | Conc. | EDL | EMPC | | | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | 1.09 | 0.018 | M,J | 1.9 | | 4,4'-DDE | 11.40 | 9.63 | 0.023 | M | 1.9 | | 2,4'-DDD | 11.57 | 0.785 | 0.042 | M,J | 1.9 | | 4,4'-DDD | 12.08 | 2.05 | 0.064 | | 1.9 | | 2,4'-DDT | 12.14 | <0.17 | 0.064 | M,J,R | 0.17 | 1.9 | 4,4'-DDT | 12.57 | <0.41 | 0.11 | M,J,R | 0.41 | 1.9 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 1.09 | 0.018 | M,J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 9.63 | 0.023 | M | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 0.785 | 0.042 | M,J | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 2.05 | 0.064 | | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | <0.17 | 0.064 | M,J,R | 0.17 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | <0.41 | 0.11 | M,J,R | 0.41 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">4,4'-DDE, 13C12-</td> <td style="width: 10%;">125</td> <td style="width: 10%;">11.39</td> <td style="width: 10%;">84</td> <td style="width: 10%;">21-125</td> <td colspan="2"></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>60</td> <td>5-150</td> <td colspan="2"></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>51</td> <td>5-120</td> <td colspan="2"></td> </tr> </table> | | | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 84 | 21-125 | | | 4,4'-DDD, 13C12- | 125 | 12.07 | 60 | 5-150 | | | 4,4'-DDT, 13C12- | 125 | 12.57 | 51 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 84 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 60 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 51 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-4TO6 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|-----------------|-----------|--|------|-----|
| ALS Sample ID | L2144849-44 | Extraction Date | 22-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.20 g | | | |
| Analysis Type | Sample | Percent Solid | 61.3% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180830A43 | | | | | |
| Run Date | 30-Aug-18 23:45 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | 10.86 | 0.247 | 0.012 | M,J | 1.6 | |
| 4,4'-DDE | 11.39 | 2.66 | 0.016 | M | 1.6 | |
| 2,4'-DDD | 11.56 | 0.346 | 0.020 | M,J | 1.6 | |
| 4,4'-DDD | 12.07 | 0.854 | 0.029 | M,J | 1.6 | |
| 2,4'-DDT | 12.13 | 0.269 | 0.029 | M,J | 1.6 | |
| 4,4'-DDT | 12.57 | 0.914 | 0.050 | M,J,B | 1.6 | |
| | | | | | | |
| Extraction Standards | ng | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 75 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 60 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.56 | 50 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-6TO8 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | |
|-----------------------------|------------------------|-----------------|-----------|--|--|-------|-----|
| ALS Sample ID | L2144849-45 | Extraction Date | 22-Aug-18 | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.92 g | | | | |
| Analysis Type | Sample | Percent Solid | 68.7% | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | |
| Run Information | | | | | | | |
| Run 1 | | | | | | | |
| Filename | 6-180830A44 | | | | | | |
| Run Date | 31-Aug-18 00:05 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 5 | | | | | | |
| Analysis Units | ng/g | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |
| | | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | |
| | 2,4'-DDE | 10.88 | 0.0488 | 0.013 | M,J | 1.5 | |
| | 4,4'-DDE | 11.41 | 0.305 | 0.016 | J,B | 1.5 | |
| | 2,4'-DDD | 11.58 | <0.082 | 0.021 | M,J,R | 0.082 | 1.5 |
| | 4,4'-DDD | 12.09 | 0.152 | 0.029 | M,J | 1.5 | |
| | 2,4'-DDT | Not Fnd | <0.029 | 0.029 | U | 1.5 | |
| 4,4'-DDT | 12.58 | 0.284 | 0.051 | M,J,B | 1.5 | | |
| | | | | | | | |
| Extraction Standards | ng | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 74 | 21-125 | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 57 | 5-150 | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 51 | 5-120 | | | |
| | | | | | | | |
| | | | | | | | |
| EDL | | | | | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | |
| LQL | | | | | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | |
| M | | | | | Indicates that a peak has been manually integrated. | | |
| U | | | | | Indicates that this compound was not detected above the EDL. | | |
| | | | | | | | |
| J | | | | | indicates that a target analyte was detected below the calibrated range. | | |
| R | | | | | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | |
| B | | | | | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | |
| | | | | | | | |
| EMPC | | | | | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-8TO10 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | |
|-----------------------------|--|-----------------|-----------|--|----------|
| ALS Sample ID | L2144849-46 | Extraction Date | 22-Aug-18 | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.95 g | | |
| Analysis Type | Sample | Percent Solid | 67.7% | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | |
| Run Information | | | | | |
| Run 1 | | | | | |
| Filename | 6-180830A45 | | | | |
| Run Date | 31-Aug-18 00:25 | | | | |
| Final Volume | 1020 uL | | | | |
| Dilution Factor | 5 | | | | |
| Analysis Units | ng/g | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | |
| | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | |
| | Time | ng/g | ng/g | Flags | ng/g LQL |
| 2,4'-DDE | 10.88 | <0.017 | 0.012 | M,J,R 0.017 | 1.5 |
| 4,4'-DDE | 11.41 | 0.0576 | 0.016 | M,J,B | 1.5 |
| 2,4'-DDD | 11.58 | <0.031 | 0.020 | M,J,R 0.031 | 1.5 |
| 4,4'-DDD | 12.09 | 0.0458 | 0.026 | M,J | 1.5 |
| 2,4'-DDT | Not Fnd | <0.026 | 0.026 | U | 1.5 |
| 4,4'-DDT | 12.59 | <0.12 | 0.043 | M,J,R 0.12 | 1.5 |
| Extraction Standards | ng | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 68 | 21-125 | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 58 | 5-150 | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 51 | 5-120 | |
| | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | |
| M | Indicates that a peak has been manually integrated. | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S198-10TO11.8 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|-----------------------------|--|-----------------|-----------|--|----------|-----|
| ALS Sample ID | L2144849-47 | Extraction Date | 22-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.49 g | | | |
| Analysis Type | Sample | Percent Solid | 74.8% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180830A46 | | | | | |
| Run Date | 31-Aug-18 00:45 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g LQL | |
| 2,4'-DDE | 10.87 | <0.025 | 0.0088 | M,J,R | 0.025 | 1.4 |
| 4,4'-DDE | 11.40 | 0.0582 | 0.011 | M,J,B | | 1.4 |
| 2,4'-DDD | 11.57 | 0.0427 | 0.018 | M,J | | 1.4 |
| 4,4'-DDD | 12.08 | <0.041 | 0.025 | M,J,R | 0.041 | 1.4 |
| 2,4'-DDT | 12.14 | <0.039 | 0.025 | M,J,R | 0.039 | 1.4 |
| 4,4'-DDT | 12.58 | <0.16 | 0.038 | M,J,R | 0.16 | 1.4 |
| Extraction Standards | | ng | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 67 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 57 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 52 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-6TO8 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|--------|-------|----------|-------|------|--------|---|----------|-------|------|-------|-----|----------|-------|------|-------|---|----------|-------|-------|-------|-------|----------|-------|-------|-------|---|
| ALS Sample ID | L2144849-48 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.45 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 54.1% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 01:38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.783</td> <td>0.0083</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>13.0</td> <td>0.0097</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>1.45</td> <td>0.016</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>3.53</td> <td>0.021</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td><0.10</td> <td>0.022</td> <td>M,J,R</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.393</td> <td>0.035</td> <td>J</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.89 | 0.783 | 0.0083 | M,J | 4,4'-DDE | 11.42 | 13.0 | 0.0097 | M | 2,4'-DDD | 11.59 | 1.45 | 0.016 | M,J | 4,4'-DDD | 12.10 | 3.53 | 0.021 | M | 2,4'-DDT | 12.15 | <0.10 | 0.022 | M,J,R | 4,4'-DDT | 12.59 | 0.393 | 0.035 | J |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.783 | 0.0083 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 13.0 | 0.0097 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 1.45 | 0.016 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 3.53 | 0.021 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | <0.10 | 0.022 | M,J,R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.393 | 0.035 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.42</td> <td>71</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>69</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>71</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.42 | 71 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 69 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 71 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.42 | 71 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 69 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 71 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-10TO12 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|-------|-------|------------------|----------|-------|-------|--------|-----|-----|--|----------|-------|------|--------|---|-----|--|----------|-------|-------|-------|---|-----|--|----------|-------|-------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|-----|-----|--|
| ALS Sample ID | L2144849-49 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 57.3% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 01:58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.160</td> <td>0.0066</td> <td>M,J</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>3.96</td> <td>0.0077</td> <td>M</td> <td>1.8</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.351</td> <td>0.011</td> <td>J</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.10</td> <td>0.903</td> <td>0.015</td> <td>J</td> <td>1.8</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td>0.125</td> <td>0.016</td> <td>M,J</td> <td>1.8</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>12.60</td> <td>0.433</td> <td>0.025</td> <td>M,J</td> <td>1.8</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.89 | 0.160 | 0.0066 | M,J | 1.8 | | 4,4'-DDE | 11.42 | 3.96 | 0.0077 | M | 1.8 | | 2,4'-DDD | 11.59 | 0.351 | 0.011 | J | 1.8 | | 4,4'-DDD | 12.10 | 0.903 | 0.015 | J | 1.8 | | 2,4'-DDT | 12.15 | 0.125 | 0.016 | M,J | 1.8 | | 4,4'-DDT | 12.60 | 0.433 | 0.025 | M,J | 1.8 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.160 | 0.0066 | M,J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 3.96 | 0.0077 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.351 | 0.011 | J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.10 | 0.903 | 0.015 | J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | 0.125 | 0.016 | M,J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.60 | 0.433 | 0.025 | M,J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">4,4'-DDE, 13C12-</td> <td>125</td> <td>11.42</td> <td>79</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>71</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>72</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.42 | 79 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 71 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 72 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.42 | 79 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 71 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 72 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-8TO10 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|--------|-------|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|-----|----------|-------|--------|-------|-----|----------|-------|-------|-------|---|
| ALS Sample ID | L2144849-50 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.35 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 53.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 02:18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.222</td> <td>0.0099</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>4.70</td> <td>0.012</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>0.430</td> <td>0.015</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>1.17</td> <td>0.023</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td>0.0610</td> <td>0.024</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.235</td> <td>0.037</td> <td>J</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.88 | 0.222 | 0.0099 | M,J | 4,4'-DDE | 11.42 | 4.70 | 0.012 | M | 2,4'-DDD | 11.58 | 0.430 | 0.015 | M,J | 4,4'-DDD | 12.09 | 1.17 | 0.023 | M,J | 2,4'-DDT | 12.15 | 0.0610 | 0.024 | M,J | 4,4'-DDT | 12.59 | 0.235 | 0.037 | J |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.222 | 0.0099 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 4.70 | 0.012 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 0.430 | 0.015 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.17 | 0.023 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | 0.0610 | 0.024 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.235 | 0.037 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>75</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>69</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>68</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 75 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 69 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 68 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 75 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 69 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 68 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-0TO2 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | |
|--------------------------------|--|-----------------|-----------|--|------|-----|
| ALS Sample ID | L2144849-51 | Extraction Date | 20-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.99 g | | | |
| Analysis Type | Sample | Percent Solid | 48.6% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180828A27 | | | | | |
| Run Date | 29-Aug-18 02:38 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | 10.88 | 0.142 | 0.011 | J | 2.0 | |
| 4,4'-DDE | 11.42 | 3.61 | 0.013 | M | 2.0 | |
| 2,4'-DDD | 11.59 | 0.399 | 0.017 | J | 2.0 | |
| 4,4'-DDD | 12.09 | 1.24 | 0.025 | J | 2.0 | |
| 2,4'-DDT | 12.15 | 0.116 | 0.026 | J | 2.0 | |
| 4,4'-DDT | 12.59 | 0.333 | 0.041 | M,J | 2.0 | |
| Extraction Standards ng | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 77 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 76 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 72 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-2TO4 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|--------|-------|----------|-------|------|--------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|-----|----------|-------|-------|-------|-----|----------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-52 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.43 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 53.2% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 02:58 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.258</td> <td>0.0078</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>5.00</td> <td>0.0091</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.505</td> <td>0.015</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>1.39</td> <td>0.023</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td>0.125</td> <td>0.024</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.313</td> <td>0.037</td> <td>M,J</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.88 | 0.258 | 0.0078 | M,J | 4,4'-DDE | 11.42 | 5.00 | 0.0091 | M | 2,4'-DDD | 11.59 | 0.505 | 0.015 | M,J | 4,4'-DDD | 12.09 | 1.39 | 0.023 | M,J | 2,4'-DDT | 12.15 | 0.125 | 0.024 | M,J | 4,4'-DDT | 12.59 | 0.313 | 0.037 | M,J |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.258 | 0.0078 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 5.00 | 0.0091 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.505 | 0.015 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.39 | 0.023 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | 0.125 | 0.024 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.313 | 0.037 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>80</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>76</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>75</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 80 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 76 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 75 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 80 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 76 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 75 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-12TO14 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|--------|-------|----------|-------|------|--------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|---|----------|-------|--------|-------|-----|----------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-53 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.89 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 57.7% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 03:18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 | uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.214</td> <td>0.0053</td> <td>J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>5.52</td> <td>0.0062</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>0.567</td> <td>0.010</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>1.93</td> <td>0.014</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td>0.0796</td> <td>0.014</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.248</td> <td>0.023</td> <td>M,J</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.88 | 0.214 | 0.0053 | J | 4,4'-DDE | 11.41 | 5.52 | 0.0062 | M | 2,4'-DDD | 11.58 | 0.567 | 0.010 | M,J | 4,4'-DDD | 12.09 | 1.93 | 0.014 | M | 2,4'-DDT | 12.14 | 0.0796 | 0.014 | M,J | 4,4'-DDT | 12.58 | 0.248 | 0.023 | M,J |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.214 | 0.0053 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 5.52 | 0.0062 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 0.567 | 0.010 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.93 | 0.014 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 0.0796 | 0.014 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.248 | 0.023 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>75</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>71</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>72</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 75 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 71 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 72 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 75 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 71 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 72 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-4TO6 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|--|------------------|------|-------|-------|-------|-----|------------------|-------|-------|--------|-------|-----|--|----------|-------|------|--------|---|-----|--|----------|-------|-------|-------|---|-----|--|----------|-------|------|-------|---|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|---|-----|--|
| ALS Sample ID | L2144849-54 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.99 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 58.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 03:39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> <th style="width: 15%;"></th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td><td>10.88</td><td>0.221</td><td>0.0073</td><td>J</td><td>1.7</td><td></td></tr> <tr> <td>4,4'-DDE</td><td>11.41</td><td>5.13</td><td>0.0086</td><td>M</td><td>1.7</td><td></td></tr> <tr> <td>2,4'-DDD</td><td>11.58</td><td>0.677</td><td>0.014</td><td>J</td><td>1.7</td><td></td></tr> <tr> <td>4,4'-DDD</td><td>12.08</td><td>2.40</td><td>0.019</td><td>M</td><td>1.7</td><td></td></tr> <tr> <td>2,4'-DDT</td><td>12.14</td><td>0.116</td><td>0.020</td><td>M,J</td><td>1.7</td><td></td></tr> <tr> <td>4,4'-DDT</td><td>12.58</td><td>0.307</td><td>0.034</td><td>J</td><td>1.7</td><td></td></tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.88 | 0.221 | 0.0073 | J | 1.7 | | 4,4'-DDE | 11.41 | 5.13 | 0.0086 | M | 1.7 | | 2,4'-DDD | 11.58 | 0.677 | 0.014 | J | 1.7 | | 4,4'-DDD | 12.08 | 2.40 | 0.019 | M | 1.7 | | 2,4'-DDT | 12.14 | 0.116 | 0.020 | M,J | 1.7 | | 4,4'-DDT | 12.58 | 0.307 | 0.034 | J | 1.7 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.221 | 0.0073 | J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 5.13 | 0.0086 | M | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 0.677 | 0.014 | J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 2.40 | 0.019 | M | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 0.116 | 0.020 | M,J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.307 | 0.034 | J | 1.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>77</td> <td>21-125</td> <td></td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>75</td> <td>5-150</td> <td></td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>73</td> <td>5-120</td> <td></td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 77 | 21-125 | | 4,4'-DDD, 13C12- | 125 | 12.08 | 75 | 5-150 | | 4,4'-DDT, 13C12- | 125 | 12.57 | 73 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 77 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 75 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 73 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S226-14TO15.8 | Sampling Date | 6-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|--------|-------|----------|-------|------|--------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-55 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.73 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 56.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 03:59 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.410</td> <td>0.0073</td> <td>J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>8.21</td> <td>0.0086</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.659</td> <td>0.014</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>2.01</td> <td>0.020</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.15</td> <td>0.131</td> <td>0.021</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.423</td> <td>0.038</td> <td>M,J</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.89 | 0.410 | 0.0073 | J | 4,4'-DDE | 11.42 | 8.21 | 0.0086 | M | 2,4'-DDD | 11.59 | 0.659 | 0.014 | M,J | 4,4'-DDD | 12.09 | 2.01 | 0.020 | M | 2,4'-DDT | 12.15 | 0.131 | 0.021 | M,J | 4,4'-DDT | 12.59 | 0.423 | 0.038 | M,J |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.410 | 0.0073 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 8.21 | 0.0086 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.659 | 0.014 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 2.01 | 0.020 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.15 | 0.131 | 0.021 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.423 | 0.038 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>81</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>77</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.59</td> <td>75</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 81 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 77 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.59 | 75 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 81 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 77 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.59 | 75 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-0TO2 | Sampling Date | 7-Aug-18 | | | | | | |
|-----------------------------|------------------------|------------------------|-----------|------------|-----------|------------|--|------------|------|
| ALS Sample ID | L2144849-56 | Extraction Date | 21-Aug-18 | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.32 | g | | | | | |
| Analysis Type | Sample | Percent Solid | 42.0% | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | |
| Run Information | | Run 1 | | | | | | | |
| Filename | 6-180828A61 | 6-180830A86 | | | | | | | |
| Run Date | 29-Aug-18 14:03 | 31-Aug-18 14:10 | | | | | | | |
| Final Volume | 1020 uL | 1020 uL | | | | | | | |
| Dilution Factor | 5 | 40 | | | | | | | |
| Analysis Units | ng/g | ng/g | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | HRMS-6 HP5MSUSR163634H | | | | | | | |
| Target Analytes | | | | | | | | | |
| | Ret. Time | Conc. ng/g | EDL ng/g | EMPC Flags | Ret. Time | Conc. ng/g | EDL ng/g | EMPC Flags | EMPC |
| 2,4'-DDE | | | | | 10.87 | 185 | 0.63 | M | 19 |
| 4,4'-DDE | | | | | 11.41 | 2470 | 0.82 | M | 19 |
| 2,4'-DDD | | | | | 11.58 | 350 | 1.2 | | 19 |
| 4,4'-DDD | | | | | 12.08 | 293 | 1.2 | M | 19 |
| 2,4'-DDT | | | | | 12.12 | 6.28 | 1.2 | M,J | 19 |
| 4,4'-DDT | | | | | 12.58 | 9.76 | 3.1 | J | 19 |
| Extraction Standards | | ng | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 21-125 | | | 11.40 | 24 | | | |
| 4,4'-DDD, 13C12- | 125 | 5-150 | | | 12.08 | 28 | | | |
| 4,4'-DDT, 13C12- | 125 | 5-120 | | | 12.57 | 17 | | | |
| EDL | | | | | | | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | |
| LQL | | | | | | | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | |
| M | | | | | | | Indicates that a peak has been manually integrated. | | |
| J | | | | | | | indicates that a target analyte was detected below the calibrated range. | | |
| EMPC | | | | | | | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-2TO4 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|------------------------|-----------|--|------------------------|------|--------|-------|-------|------------------|-------|-------|-------|------|------------------|------|-------|-------|------|------|------|-------|----------|--|--|--|--|-------|------|-----|---|----|----------|--|--|--|--|-------|-----|-----|---|----|----------|--|--|--|--|-------|------|-----|--|----|----------|--|--|--|--|-------|------|-----|---|----|----------|--|--|--|--|-------|------|-----|-------|----|----------|--|--|--|--|--------|------|-----|---|----|
| ALS Sample ID | L2144849-57 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.92 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 58.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A62 | 6-180830A85 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 14:23 | 31-Aug-18 13:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: left; vertical-align: bottom;">Target Analytes</th> <th style="text-align: center; width: 10%;">Ret.</th> <th style="text-align: center; width: 10%;">Conc.</th> <th style="text-align: center; width: 10%;">EDL</th> <th style="text-align: center; width: 10%;">EMPC</th> <th style="text-align: center; width: 10%;">Ret.</th> <th style="text-align: center; width: 10%;">Conc.</th> <th style="text-align: center; width: 10%;">EDL</th> <th style="text-align: center; width: 10%;">EMPC</th> </tr> <tr> <th style="text-align: center;">Time</th> <th style="text-align: center;">ng/g</th> <th style="text-align: center;">ng/g</th> <th style="text-align: center;">Flags</th> <th style="text-align: center;">ng/g</th> <th style="text-align: center;">Time</th> <th style="text-align: center;">ng/g</th> <th style="text-align: center;">ng/g</th> <th style="text-align: center;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td><td></td><td></td><td></td><td></td><td>10.86</td><td>25.8</td><td>1.0</td><td>M</td> <td>14</td> </tr> <tr> <td>4,4'-DDE</td><td></td><td></td><td></td><td></td><td>11.39</td><td>514</td><td>1.3</td><td>M</td> <td>14</td> </tr> <tr> <td>2,4'-DDD</td><td></td><td></td><td></td><td></td><td>11.57</td><td>70.0</td><td>1.9</td><td></td> <td>14</td> </tr> <tr> <td>4,4'-DDD</td><td></td><td></td><td></td><td></td><td>12.07</td><td>99.2</td><td>1.5</td><td>M</td> <td>14</td> </tr> <tr> <td>2,4'-DDT</td><td></td><td></td><td></td><td></td><td>12.13</td><td><1.8</td><td>1.5</td><td>M,J,R</td> <td>14</td> </tr> <tr> <td>4,4'-DDT</td><td></td><td></td><td></td><td></td><td>NotFnd</td><td><4.5</td><td>4.5</td><td>U</td> <td>14</td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Ret. | Conc. | EDL | EMPC | Time | ng/g | ng/g | Flags | ng/g | Time | ng/g | ng/g | Flags | 2,4'-DDE | | | | | 10.86 | 25.8 | 1.0 | M | 14 | 4,4'-DDE | | | | | 11.39 | 514 | 1.3 | M | 14 | 2,4'-DDD | | | | | 11.57 | 70.0 | 1.9 | | 14 | 4,4'-DDD | | | | | 12.07 | 99.2 | 1.5 | M | 14 | 2,4'-DDT | | | | | 12.13 | <1.8 | 1.5 | M,J,R | 14 | 4,4'-DDT | | | | | NotFnd | <4.5 | 4.5 | U | 14 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | | | | | 10.86 | 25.8 | 1.0 | M | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | | | | | 11.39 | 514 | 1.3 | M | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | | | | | 11.57 | 70.0 | 1.9 | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | | | | | 12.07 | 99.2 | 1.5 | M | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | | | | | 12.13 | <1.8 | 1.5 | M,J,R | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | | | | | NotFnd | <4.5 | 4.5 | U | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">4,4'-DDE, 13C12-</td> <td style="width: 20%;">125</td> <td style="width: 20%;">21-125</td> <td style="width: 20%;">11.39</td> <td style="width: 20%;">12</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>5-150</td> <td>12.07</td> <td>18</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>5-120</td> <td>12.56</td> <td>9</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 21-125 | 11.39 | 12 | 4,4'-DDD, 13C12- | 125 | 5-150 | 12.07 | 18 | 4,4'-DDT, 13C12- | 125 | 5-120 | 12.56 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 21-125 | 11.39 | 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 5-150 | 12.07 | 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 5-120 | 12.56 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| | | | | |
|--------------------|-------------------------|-----------------|-----------|---|
| Sample Name | PDI-SC-S222-4TO5 | Sampling Date | 7-Aug-18 | |
| ALS Sample ID | L2144849-58 | Extraction Date | 21-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.11 | g |
| Analysis Type | Sample | Percent Solid | 60.0% | |
| Sample Matrix | Sediment | Split Ratio | 1 | |

Approved:
R. Bakhtiari
 --e-signature--
31-Aug-2018

| Run Information | Run 1 | Run 2 |
|------------------------|------------------------|------------------------|
| Filename | 6-180828A63 | 6-180830A87 |
| Run Date | 29-Aug-18 14:43 | 31-Aug-18 14:30 |
| Final Volume | 1020 uL | 1020 uL |
| Dilution Factor | 5 | 40 |
| Analysis Units | ng/g | ng/g |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | HRMS-6 HP5MSUSR163634H |

| Target Analytes | Ret. | Conc. | EDL | EMPC | | Ret. | Conc. | EDL | EMPC | | | |
|----------------------|------|-------|------|-------|--------|------|-------|-------|------|-------|------|-----|
| | Time | ng/g | ng/g | Flags | ng/g | LQL | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | | | | | | | 10.87 | 37.6 | 0.21 | | | 13 |
| 4,4'-DDE | | | | | | | 11.40 | 2080 | 0.28 | M | | 13 |
| 2,4'-DDD | | | | | | | 11.57 | 106 | 0.39 | | | 13 |
| 4,4'-DDD | | | | | | | 12.08 | 286 | 0.64 | M | | 13 |
| 2,4'-DDT | | | | | | | 12.12 | <2.4 | 0.64 | M,J,R | 2.4 | 13 |
| 4,4'-DDT | | | | | | | 12.58 | 7.08 | 1.1 | J | | 13 |
| Extraction Standards | ng | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | | | | 21-125 | | | 11.40 | 60 | | | |
| 4,4'-DDD, 13C12- | 125 | | | | 5-150 | | | 12.07 | 40 | | | |
| 4,4'-DDT, 13C12- | 125 | | | | 5-120 | | | 12.57 | 33 | | | |

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M Indicates that a peak has been manually integrated.

J indicates that a target analyte was detected below the calibrated range.
R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S222-5TO7.2 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|------|-------|---|----------|---------|--------|-------|---|----------|---------|--------|-------|---|
| ALS Sample ID | L2144849-59 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.85 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 77.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 10:41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.418</td> <td>0.025</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>10.8</td> <td>0.029</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td>0.670</td> <td>0.048</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>1.49</td> <td>0.037</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Fnd</td> <td><0.038</td> <td>0.038</td> <td>U</td> </tr> <tr> <td>4,4'-DDT</td> <td>Not Fnd</td> <td><0.069</td> <td>0.069</td> <td>U</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.88 | 0.418 | 0.025 | M,J | 4,4'-DDE | 11.42 | 10.8 | 0.029 | M | 2,4'-DDD | 11.59 | 0.670 | 0.048 | M,J | 4,4'-DDD | 12.09 | 1.49 | 0.037 | M | 2,4'-DDT | Not Fnd | <0.038 | 0.038 | U | 4,4'-DDT | Not Fnd | <0.069 | 0.069 | U |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.418 | 0.025 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 10.8 | 0.029 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | 0.670 | 0.048 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 1.49 | 0.037 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.038 | 0.038 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | Not Fnd | <0.069 | 0.069 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>15</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>28</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>24</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 15 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 28 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 24 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 15 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 28 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 24 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>U Indicates that this compound was not detected above the EDL.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| | | | | |
|--------------------|-------------------------|-----------------|-----------|---|
| Sample Name | PDI-SC-S117-0TO2 | Sampling Date | 7-Aug-18 | |
| ALS Sample ID | L2144849-60 | Extraction Date | 21-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.37 | g |
| Analysis Type | Sample | Percent Solid | 62.4% | |
| Sample Matrix | Sediment | Split Ratio | 1 | |

Approved:
R. Bakhtiari
 --e-Signature--

31-Aug-2018

| Run Information | Run 1 | Run 2 |
|---------------------|------------------------|------------------------|
| Filename | 6-180828A64 | 6-180830A82 |
| Run Date | 29-Aug-18 15:04 | 31-Aug-18 12:50 |
| Final Volume | 1020 uL | 1020 uL |
| Dilution Factor | 5 | 20 |
| Analysis Units | ng/g | ng/g |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | HRMS-6 HP5MSUSR163634H |

| Target Analytes | Ret. | Conc. | EDL | EMPC | | Ret. | Conc. | EDL | EMPC | | |
|-----------------------------|-----------|-------|------|--------|------|------|-------|------|------|-------|------|
| | Time | ng/g | ng/g | Flags | ng/g | LQL | Time | ng/g | ng/g | Flags | ng/g |
| 2,4'-DDE | | | | | | | 10.86 | 4.74 | 0.12 | M,J | 6.4 |
| 4,4'-DDE | | | | | | | 11.40 | 22.7 | 0.16 | M | 6.4 |
| 2,4'-DDD | | | | | | | 11.57 | 61.0 | 0.16 | | 6.4 |
| 4,4'-DDD | | | | | | | 12.07 | 148 | 0.34 | M | 6.4 |
| 2,4'-DDT | | | | | | | 12.12 | 1.82 | 0.35 | M,J | 6.4 |
| 4,4'-DDT | | | | | | | 12.57 | 3.43 | 0.68 | J | 6.4 |
| Extraction Standards | ng | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | | | 21-125 | | | 11.39 | 65 | | | |
| 4,4'-DDD, 13C12- | 125 | | | 5-150 | | | 12.07 | 34 | | | |
| 4,4'-DDT, 13C12- | 125 | | | 5-120 | | | 12.56 | 28 | | | |

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M Indicates that a peak has been manually integrated.

J indicates that a target analyte was detected below the calibrated range.
R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S117-2TO4 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|------------------------|------------|--|-----------------|------|-------|------------|------|------|-------|-----|------|------|------|------------|------|-----|------|------|------------|------|-----|----------|--|--|--|--|-------|------|------|---|-----|----------|--|--|--|--|-------|------|------|---|-----|----------|--|--|--|--|-------|------|------|--|-----|----------|--|--|--|--|-------|-----|------|---|-----|----------|--|--|--|--|-------|------|------|-----|-----|----------|--|--|--|--|-------|------|-----|--|-----|
| ALS Sample ID | L2144849-61 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.18 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 60.9% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A65 | 6-180830A83 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 15:24 | 31-Aug-18 13:10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: left; vertical-align: bottom;">Target Analytes</th> <th style="text-align: left; vertical-align: bottom;">Ret.</th> <th style="text-align: left; vertical-align: bottom;">Conc.</th> <th style="text-align: left; vertical-align: bottom;">EDL</th> <th style="text-align: left; vertical-align: bottom;">EMPC</th> <th style="text-align: left; vertical-align: bottom;">Ret.</th> <th style="text-align: left; vertical-align: bottom;">Conc.</th> <th style="text-align: left; vertical-align: bottom;">EDL</th> <th style="text-align: left; vertical-align: bottom;">EMPC</th> </tr> <tr> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g Flags</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">LQL</th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g Flags</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td><td></td><td></td><td></td><td></td><td>10.87</td><td>14.7</td><td>0.52</td><td>M</td><td>6.6</td></tr> <tr> <td>4,4'-DDE</td><td></td><td></td><td></td><td></td><td>11.41</td><td>54.4</td><td>0.67</td><td>M</td><td>6.6</td></tr> <tr> <td>2,4'-DDD</td><td></td><td></td><td></td><td></td><td>11.58</td><td>85.8</td><td>0.76</td><td></td><td>6.6</td></tr> <tr> <td>4,4'-DDD</td><td></td><td></td><td></td><td></td><td>12.08</td><td>241</td><td>0.59</td><td>M</td><td>6.6</td></tr> <tr> <td>2,4'-DDT</td><td></td><td></td><td></td><td></td><td>12.14</td><td>3.42</td><td>0.59</td><td>M,J</td><td>6.6</td></tr> <tr> <td>4,4'-DDT</td><td></td><td></td><td></td><td></td><td>12.58</td><td>87.8</td><td>1.8</td><td></td><td>6.6</td></tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Ret. | Conc. | EDL | EMPC | Time | ng/g | ng/g Flags | ng/g | LQL | Time | ng/g | ng/g Flags | ng/g | LQL | 2,4'-DDE | | | | | 10.87 | 14.7 | 0.52 | M | 6.6 | 4,4'-DDE | | | | | 11.41 | 54.4 | 0.67 | M | 6.6 | 2,4'-DDD | | | | | 11.58 | 85.8 | 0.76 | | 6.6 | 4,4'-DDD | | | | | 12.08 | 241 | 0.59 | M | 6.6 | 2,4'-DDT | | | | | 12.14 | 3.42 | 0.59 | M,J | 6.6 | 4,4'-DDT | | | | | 12.58 | 87.8 | 1.8 | | 6.6 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g Flags | ng/g | LQL | Time | ng/g | ng/g Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | | | | | 10.87 | 14.7 | 0.52 | M | 6.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | | | | | 11.41 | 54.4 | 0.67 | M | 6.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | | | | | 11.58 | 85.8 | 0.76 | | 6.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | | | | | 12.08 | 241 | 0.59 | M | 6.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | | | | | 12.14 | 3.42 | 0.59 | M,J | 6.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | | | | | 12.58 | 87.8 | 1.8 | | 6.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 21-125 | | 11.40 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 5-150 | | 12.08 | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 5-120 | | 12.58 | 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| | | | | |
|--------------------|-------------------------|----------------------|-----------|---|
| Sample Name | PDI-SC-S117-4TO6 | Sampling Date | 7-Aug-18 | |
| ALS Sample ID | L2144849-62 | Extraction Date | 21-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.55 | g |
| Analysis Type | Sample | Percent Solid | 55.1% | |
| Sample Matrix | Sediment | Split Ratio | 1 | |

Approved:
R. Bakhtiari
 -e-signature--
31-Aug-2018

| Run Information | Run 1 | Run 2 |
|---------------------|------------------------|------------------------|
| Filename | 6-180828A66 | 6-180830A84 |
| Run Date | 29-Aug-18 15:44 | 31-Aug-18 13:30 |
| Final Volume | 1020 uL | 1020 uL |
| Dilution Factor | 5 | 20 |
| Analysis Units | ng/g | ng/g |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | HRMS-6 HP5MSUSR163634H |

| Target Analytes | Ret. | Conc. | EDL | EMPC | | Ret. | Conc. | EDL | EMPC | | | |
|-----------------------------|------|-----------|------|--------|------|------|-------|------|------|-------|------|-----|
| | Time | ng/g | ng/g | Flags | ng/g | LQL | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | | | | | | | 10.87 | 17.6 | 0.10 | | | 7.4 |
| 4,4'-DDE | | | | | | | 11.40 | 93.2 | 0.14 | M | | 7.4 |
| 2,4'-DDD | | | | | | | 11.58 | 68.2 | 0.17 | M | | 7.4 |
| 4,4'-DDD | | | | | | | 12.08 | 167 | 0.36 | M | | 7.4 |
| 2,4'-DDT | | | | | | | 12.12 | 2.41 | 0.36 | M,J | | 7.4 |
| 4,4'-DDT | | | | | | | 12.58 | 5.38 | 0.66 | M,J | | 7.4 |
| Extraction Standards | | ng | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | | | 21-125 | | | 11.40 | 61 | | | | |
| 4,4'-DDD, 13C12- | 125 | | | 5-150 | | | 12.08 | 41 | | | | |
| 4,4'-DDT, 13C12- | 125 | | | 5-120 | | | 12.57 | 28 | | | | |

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M Indicates that a peak has been manually integrated.

J indicates that a target analyte was detected below the calibrated range.
R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S219-0TO2 | Sampling Date | 7-Aug-18 | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|-----------|---|------|------|-------|-----|------|--|--|------|------|------|-------|------|----------|-------|-------|-------|---|-----|----------|-------|------|-------|---|-----|----------|-------|------|-------|--|-----|----------|-------|------|-------|--|-----|----------|-------|-------|-------|---|-----|----------|-------|-------|-------|---|-----|
| ALS Sample ID | L2144849-63 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.74 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 56.8% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 11:02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th colspan="2" style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> <th style="text-align: left;">ng/g</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.623</td> <td>0.011</td> <td>J</td> <td>1.8</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>5.30</td> <td>0.013</td> <td>M</td> <td>1.8</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>2.30</td> <td>0.017</td> <td></td> <td>1.8</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>7.56</td> <td>0.020</td> <td></td> <td>1.8</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td>0.141</td> <td>0.021</td> <td>J</td> <td>1.8</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.466</td> <td>0.033</td> <td>J</td> <td>1.8</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | 2,4'-DDE | 10.88 | 0.623 | 0.011 | J | 1.8 | 4,4'-DDE | 11.41 | 5.30 | 0.013 | M | 1.8 | 2,4'-DDD | 11.58 | 2.30 | 0.017 | | 1.8 | 4,4'-DDD | 12.09 | 7.56 | 0.020 | | 1.8 | 2,4'-DDT | 12.14 | 0.141 | 0.021 | J | 1.8 | 4,4'-DDT | 12.58 | 0.466 | 0.033 | J | 1.8 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.623 | 0.011 | J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 5.30 | 0.013 | M | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 2.30 | 0.017 | | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 7.56 | 0.020 | | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 0.141 | 0.021 | J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.466 | 0.033 | J | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 70 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 74 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 83 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S219-2TO4 | Sampling Date | 7-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|-----------|--|------------------|---|-------|--|--------|---|------|--|------|--|------------------|---|--------|---|-------|--|-------|--------|-------|-------|----------|----------|--------|-------|---|----------|-------|--------|-------|-------------|----------|----------|--------|-------|---|----------|-------|-------|-------|-------|
| ALS Sample ID | L2144849-64 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.35 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 73.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A53 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 11:22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>NotFound</td> <td><0.015</td> <td>0.015</td> <td>U</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>0.0614</td> <td>0.017</td> <td>M,J,B</td> </tr> <tr> <td>2,4'-DDD</td> <td>NotFound</td> <td><0.028</td> <td>0.028</td> <td>U</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td><0.057</td> <td>0.028</td> <td>M,J,R 0.057</td> </tr> <tr> <td>2,4'-DDT</td> <td>NotFound</td> <td><0.029</td> <td>0.029</td> <td>U</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.162</td> <td>0.050</td> <td>M,J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | NotFound | <0.015 | 0.015 | U | 4,4'-DDE | 11.42 | 0.0614 | 0.017 | M,J,B | 2,4'-DDD | NotFound | <0.028 | 0.028 | U | 4,4'-DDD | 12.09 | <0.057 | 0.028 | M,J,R 0.057 | 2,4'-DDT | NotFound | <0.029 | 0.029 | U | 4,4'-DDT | 12.59 | 0.162 | 0.050 | M,J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | NotFound | <0.015 | 0.015 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 0.0614 | 0.017 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | NotFound | <0.028 | 0.028 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | <0.057 | 0.028 | M,J,R 0.057 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | NotFound | <0.029 | 0.029 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.162 | 0.050 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.41</td> <td>24</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.09</td> <td>34</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>32</td> <td>5-120</td> </tr> </tbody> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.41 | 24 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.09 | 34 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 32 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 24 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 34 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 32 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">EDL</td> <td>Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</td> </tr> <tr> <td>LQL</td> <td>Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</td> </tr> <tr> <td>M</td> <td>Indicates that a peak has been manually integrated.</td> </tr> <tr> <td>U</td> <td>Indicates that this compound was not detected above the EDL.</td> </tr> <tr> <td>J</td> <td>Indicates that a target analyte was detected below the calibrated range.</td> </tr> <tr> <td>R</td> <td>Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</td> </tr> <tr> <td>B</td> <td>Indicates that this target was detected in the blank at greater than 10% of the sample concentration.</td> </tr> <tr> <td>EMPC</td> <td>Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</td> </tr> </table> | | | | | EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | M | Indicates that a peak has been manually integrated. | U | Indicates that this compound was not detected above the EDL. | J | Indicates that a target analyte was detected below the calibrated range. | R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | Indicates that this compound was not detected above the EDL. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S219-4TO5.2 | Sampling Date | 7-Aug-18 | <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 </div> | | |
|------------------------|--|-----------------|-----------|--|------|-----|
| ALS Sample ID | L2144849-65 | Extraction Date | 21-Aug-18 | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.57 | | | |
| Analysis Type | Sample | Percent Solid | 73.4% | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | |
| Run Information | | | | | | |
| Run 1 | | | | | | |
| Filename | 6-180828A54 | | | | | |
| Run Date | 29-Aug-18 11:42 | | | | | |
| Final Volume | 1020 uL | | | | | |
| Dilution Factor | 5 | | | | | |
| Analysis Units | ng/g | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | |
| | | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL |
| 2,4'-DDE | 10.88 | 0.0984 | 0.033 | M,J,B | 1.3 | |
| 4,4'-DDE | 11.41 | 3.61 | 0.038 | M | 1.3 | |
| 2,4'-DDD | 11.58 | 0.194 | 0.050 | M,J | 1.3 | |
| 4,4'-DDD | 12.09 | 0.534 | 0.039 | M,J | 1.3 | |
| 2,4'-DDT | Not Fnd | <0.041 | 0.041 | U | 1.3 | |
| 4,4'-DDT | 12.59 | 0.190 | 0.076 | M,J,B | 1.3 | |
| | | | | | | |
| Extraction Standards | ng | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 13 | 21-125 | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 24 | 5-150 | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 20 | 5-120 | | |
| | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | |
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ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S105-0TO2 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------|-----------|--|--|------|-------|-----|------|--|------|------|------|-------|--|--|--|--|------|----------|-------|-------|-------|---|----------|-------|------|-------|-----|----------|-------|------|-------|--|----------|-------|------|-------|---|----------|-------|-------|-------|-----|----------|-------|-------|-------|-----|
| ALS Sample ID | L2144849-66 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 64.6% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 01:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;"></th> <th style="text-align: left;">ng/g</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td>0.285</td> <td>0.011</td> <td>J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>1.43</td> <td>0.015</td> <td>M,J</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>5.86</td> <td>0.018</td> <td></td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>15.3</td> <td>0.031</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td>0.380</td> <td>0.031</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.775</td> <td>0.064</td> <td>J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | | | | | ng/g | 2,4'-DDE | 10.88 | 0.285 | 0.011 | J | 4,4'-DDE | 11.41 | 1.43 | 0.015 | M,J | 2,4'-DDD | 11.58 | 5.86 | 0.018 | | 4,4'-DDD | 12.09 | 15.3 | 0.031 | M | 2,4'-DDT | 12.14 | 0.380 | 0.031 | M,J | 4,4'-DDT | 12.58 | 0.775 | 0.064 | J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.285 | 0.011 | J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 1.43 | 0.015 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 5.86 | 0.018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 15.3 | 0.031 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 0.380 | 0.031 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.775 | 0.064 | J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 77 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 48 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| | | | | |
|--------------------|-------------------------|-----------------|-----------|---|
| Sample Name | PDI-SC-S105-2TO4 | Sampling Date | 8-Aug-18 | |
| ALS Sample ID | L2144849-67 | Extraction Date | 22-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.18 | g |
| Analysis Type | Sample | Percent Solid | 69.9% | |
| Sample Matrix | Sediment | Split Ratio | 1 | |

Run Information

Run 1

| | |
|---------------------|------------------------|
| Filename | 6-180830A80 |
| Run Date | 31-Aug-18 12:09 |
| Final Volume | 1020 uL |
| Dilution Factor | 5 |
| Analysis Units | ng/g |
| Instrument - Column | HRMS-6 HP5MSUSR163634H |

Approved:
R. Bakhtiari
--e-signature--
31-Aug-2018

Ret. **Conc.** **EDL** **EMPC**

| Target Analytes | Time | ng/g | ng/g | Flags | ng/g | LQI |
|-----------------|--------|--------|-------|-------|------|-----|
| 2,4'-DDE | 10.87 | 0.0855 | 0.033 | M,J | 1.4 | |
| 4,4'-DDE | 11.40 | <0.24 | 0.043 | M,J,R | 0.24 | 1.4 |
| 2,4'-DDD | 11.57 | 0.842 | 0.056 | J | 1.4 | |
| 4,4'-DDD | 12.08 | 2.34 | 0.11 | M | 1.4 | |
| 2,4'-DDT | NotFnd | <0.11 | 0.11 | U | 1.4 | |
| 4,4'-DDT | 12.58 | 0.451 | 0.19 | M,J,B | 1.4 | |

Extraction Standards

4,4'-DDE, 13C12- 125

4,4'-DDD, 13C12- 125 12.07 40 5-150
 4,4'-DDT, 13C12- 125 12.57 31 5-120

EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.

LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.

Indicates that a peak has been manually integrated.

Indicates that this compound was not detected above the EDL.

Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.

EMBC

Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S105-4TO5.6 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|-----------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|--------|--------|-------|----------|-------|-------|-------|-------|----------|-------|------|-------|-----|----------|-------|------|-------|---|----------|-------|-------|-------|-------|----------|-------|-------|-------|-------|
| ALS Sample ID | L2144849-68 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.21 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 70.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 01:46 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.0675</td> <td>0.0084</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>0.258</td> <td>0.011</td> <td>M,J,B</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>1.34</td> <td>0.013</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>3.05</td> <td>0.023</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td><0.11</td> <td>0.024</td> <td>M,J,R</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.325</td> <td>0.052</td> <td>M,J,B</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.87 | 0.0675 | 0.0084 | M,J | 4,4'-DDE | 11.41 | 0.258 | 0.011 | M,J,B | 2,4'-DDD | 11.58 | 1.34 | 0.013 | M,J | 4,4'-DDD | 12.08 | 3.05 | 0.023 | M | 2,4'-DDT | 12.14 | <0.11 | 0.024 | M,J,R | 4,4'-DDT | 12.58 | 0.325 | 0.052 | M,J,B |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.0675 | 0.0084 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 0.258 | 0.011 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 1.34 | 0.013 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 3.05 | 0.023 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | <0.11 | 0.024 | M,J,R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.325 | 0.052 | M,J,B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>79</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>51</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>37</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 79 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 51 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 79 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 51 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 37 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. B Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S105-5.6TO6.6 | | | | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | |
|--|-----------------------------|-----------------|--------------|------------|----------------------|----------|--|--|--|--|--|--|--|--|
| ALS Sample ID | L2144849-69 | Extraction Date | 22-Aug-18 | | Sample Size | 6.22 | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Percent Solid | 61.9% | | g | | | | | | | | | |
| Analysis Type | Sample | Split Ratio | 1 | | | | | | | | | | | |
| Sample Matrix | Sediment | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | |
| Filename | 6-180830A50 | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 02:06 | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Target Analytes | | | | | | | | | | | | | | |
| | | Ret. | Conc. | EDL | EMPC | | | | | | | | | |
| | | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | |
| 2,4'-DDE | | 10.88 | 1.11 | 0.023 | M,J | 1.6 | | | | | | | | |
| 4,4'-DDE | | 11.41 | 7.53 | 0.030 | M | 1.6 | | | | | | | | |
| 2,4'-DDD | | 11.58 | 30.1 | 0.038 | M | 1.6 | | | | | | | | |
| 4,4'-DDD | | 12.09 | 71.4 | 0.056 | M | 1.6 | | | | | | | | |
| 2,4'-DDT | | 12.14 | <0.52 | 0.056 | M,J,R | 0.52 | 1.6 | | | | | | | |
| 4,4'-DDT | | 12.58 | 1.28 | 0.14 | M,J,B | 1.6 | | | | | | | | |
| Extraction Standards | | ng | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | | 125 | 11.41 | 66 | 21-125 | | | | | | | | | |
| 4,4'-DDD, 13C12- | | 125 | 12.08 | 49 | 5-150 | | | | | | | | | |
| 4,4'-DDT, 13C12- | | 125 | 12.58 | 29 | 5-120 | | | | | | | | | |
| | | | | | | | | | | | | | | |
| EDL | | | | | | | | | | | | | | |
| Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | |
| LQL | | | | | | | | | | | | | | |
| Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | |
| M | | | | | | | | | | | | | | |
| Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | |
| J | | | | | | | | | | | | | | |
| Indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | |
| R | | | | | | | | | | | | | | |
| Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | |
| B | | | | | | | | | | | | | | |
| Indicates that this target was detected in the blank at greater than 10% of the sample concentration. | | | | | | | | | | | | | | |
| EMPC | | | | | | | | | | | | | | |
| Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S191-0TO2 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | |
|-----------------------------|--|-----------------|-----------|--|----------|
| ALS Sample ID | L2144849-70 | Extraction Date | 22-Aug-18 | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 4.57 g | | |
| Analysis Type | Sample | Percent Solid | 45.2% | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | |
| Run Information | | | | | |
| Run 1 | | | | | |
| Filename | 6-180830A56 | | | | |
| Run Date | 31-Aug-18 04:06 | | | | |
| Final Volume | 1020 uL | | | | |
| Dilution Factor | 5 | | | | |
| Analysis Units | ng/g | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | |
| | | | | | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | |
| | Time | ng/g | ng/g | Flags | ng/g LQL |
| 2,4'-DDE | 10.88 | 0.264 | 0.014 | J | 2.2 |
| 4,4'-DDE | 11.41 | 7.21 | 0.018 | M | 2.2 |
| 2,4'-DDD | 11.58 | 1.54 | 0.029 | M,J | 2.2 |
| 4,4'-DDD | 12.09 | 3.87 | 0.059 | M | 2.2 |
| 2,4'-DDT | 12.14 | 1.31 | 0.059 | M,J | 2.2 |
| 4,4'-DDT | 12.58 | 4.20 | 0.11 | M | 2.2 |
| | | | | | |
| Extraction Standards | ng | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 77 | 21-125 | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 40 | 5-150 | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 34 | 5-120 | |
| | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | |
| M | Indicates that a peak has been manually integrated. | | | | |
| J | indicates that a target analyte was detected below the calibrated range. | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | |

ALS Life sciences

Sample Analysis Report

| Sample Name | PDI-SC-S191-2TO4 | Sampling Date | 8-Aug-18 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|----------------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-------|-------|-------|-------|----------|-------|------|-------|---|----------|-------|------|-------|---|----------|-------|------|-------|---|----------|-------|------|-------|---|----------|-------|------|-------|---|
| ALS Sample ID | L2144849-71 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.89 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Sample | Percent Solid | 58.4% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | Sediment | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A57 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 04:26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td>0.837</td> <td>0.014</td> <td>M,J</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>18.4</td> <td>0.018</td> <td>M</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td>6.68</td> <td>0.024</td> <td>M</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>18.2</td> <td>0.049</td> <td>M</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td>11.8</td> <td>0.049</td> <td>M</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>43.4</td> <td>0.084</td> <td>M</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | 2,4'-DDE | 10.87 | 0.837 | 0.014 | M,J | 4,4'-DDE | 11.40 | 18.4 | 0.018 | M | 2,4'-DDD | 11.57 | 6.68 | 0.024 | M | 4,4'-DDD | 12.08 | 18.2 | 0.049 | M | 2,4'-DDT | 12.14 | 11.8 | 0.049 | M | 4,4'-DDT | 12.58 | 43.4 | 0.084 | M |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | 0.837 | 0.014 | M,J | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 18.4 | 0.018 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | 6.68 | 0.024 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 18.2 | 0.049 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | 11.8 | 0.049 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 43.4 | 0.084 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="margin-left: auto; margin-right: auto;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.40</td> <td>85</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>46</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>40</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 85 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 46 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 40 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 85 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 46 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 40 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



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SVOC DATA PACKAGE

SECTION 3: METHOD SUMMARY

OC Pesticide METHOD SUMMARY
Method EPA 1699

Introduction:

This summary is to provide ALSE Burlington OC pesticide method details in order to provide persons reviewing or validating this data package sufficient information to re-construct the sample calculation, data verification and review. It incorporates the analysis of organochlorine pesticides via EPA method 1699. Deviations from this reference method are documented in ALS Standard Operating Procedures (available upon request) and in this Method Summary.

Any deviations to what is listed herein or in the ALS Standard Operating Procedures would be listed in the project narrative.

To avoid the confusion and conflicting nomenclature within the performance based methods, we have defined the labeled standards in terms relating to the time of addition to the sample or extract. Therefore;

- Laboratory Surrogate (when provided/requested by the client) are added prior to sample extraction
- The Field or Sampling Standards (where used) are added prior to field sampling
- The Extraction Standards are added prior to extraction
- The GPC Recovery Standard is added (when used) prior to Gel Permeation Chromatographic cleanup
- The Clean-up Standards (where used) are added prior to extract clean-up
- The Injection Standards are added prior to extract injection.

Additional method information, such as Instrumental Descriptors, is documented in ALS Standard Operating Procedures and available upon request.

Calibration Standard Levels:

Seven levels of standard are available for calibration as listed in Table 1. These targets give a wide range of responses on the analytical instruments, thus it is expected that for any given target, either the lowest standard level(s) or the highest standard level(s) may be excluded due to poor response, poor linearity, or detector saturation. With seven levels of standard, it is expected that at least 5 points can be used for calibration for each target.

Table 1: Calibration Standards (conc in ng/mL)

| | | CS1 | CS2 | CS3 | CS4 | CS5 | CS6 | CS7 |
|---------|------------------------------|-----|------|-----|-----|------|------|-------|
| Natives | Hexachlorobutadiene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 1,2,4,5-Tetrachlorobenzene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 1,2,3,4-Tetrachlorobenzene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Pentachlorobenzene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Hexachlorobenzene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 3,4,5,6-Tetrachloroveratrole | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Pentachloroanisole | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | alpha-BHC | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | beta-BHC | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | gamma-BHC | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | delta-BHC | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Pentachloronitrobenzene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Heptachlor | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Aldrin | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 4,4'-DDNU | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Dacthal | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Chlorpyrifos | 10 | 37.5 | 100 | 250 | 750 | 2000 | 6000 |
| | Octachlorostyrene | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Heptachlor Epoxide B | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Heptachlor Epoxide A | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Oxychlordane | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 4,4'-DDMU | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | trans-Chlordane | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | cis-Chlordane | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | trans-Nonachlor | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Dieldrin | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Endrin | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | cis-Nonachlor | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Endosulfan I | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Endosulfan II | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Endosulfan Sulfate | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 24'-DDE | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 44'-DDE | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 24'-DDD | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 44'-DDD | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 24'-DDT | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | 44'-DDT | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Endrin Aldehyde | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Endrin Ketone | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Methoxychlor | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Dicofol | 20 | 75 | 200 | 500 | 1500 | 4000 | 12000 |
| | Mirex | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Parlar-26 | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Parlar-50 | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |
| | Parlar-62 | 2 | 7.5 | 20 | 50 | 150 | 400 | 1200 |

| | | | | | | | |
|------------------------------|---------------------------|-----|-----|-----|-----|-----|-----|
| Laboratory Surrogate | 1,3-Dibromobenzene | 20 | 20 | 20 | 20 | 20 | 20 |
| | Endrin Ketone | 2 | 7.5 | 20 | 50 | 150 | 400 |
| Field Surrogate | 1,3,5-Tribromobenzene | 20 | 20 | 20 | 20 | 20 | 20 |
| | 1,2,4,5-Tetrabromobenzene | 20 | 20 | 20 | 20 | 20 | 20 |
| | delta-BHC | 2 | 7.5 | 20 | 50 | 150 | 400 |
| GPC Recovery Standard | 13C12-PCB-133 | 100 | 100 | 100 | 100 | 100 | 100 |
| Extraction Standard | 13C6-Pentachlorobenzene | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C6-Hexachlorobenzene | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C6-alpha-BHC | 250 | 250 | 250 | 250 | 250 | 250 |
| | d6-gamma-BHC | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C10-Heptachlor | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C10-Oxychlordane | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C10-trans-Nonachlor | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C12-Dieldrin | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C12-Endrin | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C9-Endosulfan-II | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C12-44'-DDE | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C12-44'-DDD | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C12-44'-DDT | 250 | 250 | 250 | 250 | 250 | 250 |
| | d6-Methoxychlor | 250 | 250 | 250 | 250 | 250 | 250 |
| | 13C10-Mirex | 250 | 250 | 250 | 250 | 250 | 250 |
| Injection Standard | 13C12-PCB-9 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 13C12-PCB-52 | 100 | 100 | 100 | 100 | 100 | 100 |
| | 13C12-PCB-101 | 100 | 100 | 100 | 100 | 100 | 100 |

Calibration and Quality Control Limits

The calibration and QC Sample control limits are presented in Table 2 below. For the lowest standard used for initial calibration, and for each calibration verification CS3, the signal to noise ratio for each ion for both labelled and non-labelled analytes must be greater than or equal to 10:1

| | Calibration | | Samples and QC Samples | |
|------------------------------|-------------------|----------------|------------------------|---------------|
| | Initial Cal. %RSD | Cal. Ver. %Exp | LCS % Rec | Samples % Rec |
| Natives | | | | |
| Hexachlorobutadiene | 35 | 70-130 | 5-200 | |
| 1,2,4,5-Tetrachlorobenzene | 35 | 70-130 | 5-200 | |
| 1,2,3,4-Tetrachlorobenzene | 35 | 70-130 | 5-200 | |
| Pentachlorobenzene | 20 | 70-130 | 5-200 | |
| Hexachlorobenzene | 20 | 75-125 | 10-150 | |
| 3,4,5,6-Tetrachloroveratrole | 35 | 70-130 | 20-200 | |
| Pentachloroanisole | 35 | 70-130 | 20-200 | |
| alpha-BHC | 20 | 75-125 | 50-120 | |
| beta-BHC | 35 | 75-125 | 50-120 | |
| gamma-BHC | 20 | 75-125 | 50-120 | |
| delta-BHC | 35 | 75-125 | 50-120 | |
| Pentachloronitrobenzene | 35 | 70-130 | 20-200 | |
| Heptachlor | 20 | 75-125 | 50-120 | |
| Aldrin | 35 | 75-125 | 50-120 | |
| 4,4'-DDNU | 35 | 75-125 | 20-160 | |
| Dacthal | 35 | 50-150 | 20-200 | |
| Chlorpyrifos | 35 | 75-125 | 19-163 | |
| Octachlorostyrene | 35 | 70-130 | 50-175 | |
| Heptachlor Epoxide B | 35 | 70-130 | 20-200 | |
| Heptachlor Epoxide A | 35 | 75-125 | 50-120 | |
| Oxychlordane | 20 | 75-125 | 50-120 | |
| 4,4'-DDMU | 35 | 75-125 | 20-160 | |
| trans-Chlordanne | 35 | 75-125 | 50-120 | |
| cis-Chlordanne | 35 | 75-125 | 50-120 | |
| trans-Nonachlor | 20 | 75-125 | 50-120 | |
| Dieldrin | 20 | 75-125 | 50-120 | |
| Endrin | 20 | 75-125 | 50-120 | |
| cis-Nonachlor | 35 | 75-125 | 50-120 | |
| Endosulfan I | 35 | 75-125 | 50-120 | |
| Endosulfan II | 20 | 75-125 | 5-200 | |
| Endosulfan Sulfate | 35 | 75-125 | 50-200 | |
| 24'-DDE | 35 | 75-125 | 24-123 | |
| 44'-DDE | 20 | 75-125 | 50-120 | |
| 24'-DDD | 35 | 75-125 | 50-120 | |
| 44'-DDD | 20 | 75-125 | 42-120 | |
| 24'-DDT | 35 | 75-125 | 50-120 | |
| 44'-DDT | 20 | 75-125 | 50-120 | |
| Endrin Aldehyde | 35 | 70-130 | 20-200 | |
| Endrin Ketone | 35 | 75-125 | 50-134 | |
| Methoxychlor | 20 | 75-125 | 50-120 | |
| Dicofol | 35 | 50-150 | 20-200 | |
| Mirex | 20 | 75-125 | 50-120 | |
| Parlar-26 | 35 | 70-130 | 20-200 | |
| Parlar-50 | 35 | 70-130 | 20-200 | |
| Parlar-62 | 35 | 70-130 | 20-200 | |

| | | | | | |
|------------------------------|---------------------------|----|--------|--------|--------|
| Laboratory Surrogate | 1,3-Dibromobenzene | 35 | 50-150 | 50-150 | 40-120 |
| | Endrin Ketone | 35 | 50-150 | 50-150 | 40-150 |
| Field Surrogate | 1,3,5-Tribromobenzene | 35 | 50-150 | 50-150 | 60-120 |
| | 1,2,4,5-Tetrabromobenzene | 35 | 50-150 | 50-150 | 60-120 |
| | delta-BHC | 35 | 50-150 | 50-150 | 60-120 |
| GPC Recovery Standard | 13C12-PCB-133 | 35 | 50-150 | 50-150 | 50-120 |
| Extraction Standard | 13C6-Pentachlorobenzene | 35 | 70-130 | 5-120 | 5-120 |
| | 13C6-Hexachlorobenzene | 35 | 70-130 | 5-120 | 5-120 |
| | 13C6-alpha-BHC | 35 | 70-130 | 13-138 | 16-129 |
| | d6-gamma-BHC | 35 | 70-130 | 5-124 | 11-120 |
| | 13C10-Heptachlor | 35 | 70-130 | 5-128 | 5-120 |
| | 13C10-Oxychlordane | 35 | 70-130 | 5-144 | 23-135 |
| | 13C10-trans-Nonachlor | 35 | 70-130 | 17-154 | 36-139 |
| | 13C12-Dieldrin | 35 | 70-130 | 19-161 | 40-151 |
| | 13C12-Endrin | 35 | 70-130 | 20-157 | 35-155 |
| | 13C9-Endosulfan-II | 35 | 70-130 | 5-144 | 15-148 |
| | 13C12-44'-DDE | 35 | 70-130 | 26-169 | 47-160 |
| | 13C12-44'-DDD | 35 | 70-130 | 13-200 | 5-150 |
| | 13C12-44'-DDT | 35 | 70-130 | 13-200 | 5-120 |
| | d6-Methoxychlor | 35 | 70-130 | 8-200 | 5-120 |
| | 13C10-Mirex | 35 | 70-130 | 5-138 | 5-120 |

Additional Continuing Calibration Details:

After initial calibration is established, a CS4 standard is injected as a Continuing Calibration Verification (CCV) at the beginning of every 12 hour shift in which samples are analyzed. If the following performance criteria are met, analysis of samples may proceed:

- Ion abundance ratios are within their respective theoretical limits (see Table 3)
- All targets have a s/n ratio of at least 10:1
- The RT of each analyte is within 15 seconds of that in the initial calibration
- Endin and DDT breakdown is less than 20% (see Section 5.2.4.2)
- The %Diff is within the CCV limits (see Table 2)

If these performance criteria are not met, GC maintenance is performed or the system is adjusted and a new CCV is injected, or a new initial calibration is run.

Mid-run Calibration Verification:

While the EPA 1699 does not require a post-run calibration verification standard to be run, it is recognized that responses and/or relative responses of some targets may change significantly during HRMS analysis due to sample related contamination of GC or MS components. This problem is compounded by chemical dissimilarities between some targets and their quantification reference standards in the case of internal standard quantification. Enhanced quantification and a measure of confidence in sample results obtained during an analytical shift can be attained by injecting a CS4 calibration verification (VER) standard in the middle of, and at the end of a 12-hour run, and quantifying samples against the average of bracketing calibration standards where improved results would be achieved.

a) Mid-Run VER:

If this analysis meets the performance criteria for a pre-run CCV, then all of the samples preceding the mid-run VER can be quantified vs. the initial calibration, and analysis can proceed. If the mid-run VER does not meet pre-run CCV criteria, the preceding samples can be quantified vs. bracketing calibration runs (using the pre-run CCV and mid-run VER as a two-point calibration) and analysis can proceed, provided that the following criteria are met:

- Ion abundance ratios are within their respective theoretical limits (see Table 1) or within 15% of the ratios in the pre-run CCV
- All targets have a s/n ratio of at least 10:1
- The RT of each analyte is within 15 seconds of that in the initial calibration
- Endin and DDT breakdown is less than 20%
- The %RPD of the mid-run VER vs. the pre-run CCV meets the CCV %Diff limits (See Table 2)

If the mid-run VER does not meet the above criteria either, analysis cannot continue without corrective action (samples analyzed after the mid-run VER in an automated sequence must be re-analyzed). The samples preceding the failing mid-run VER may be flagged and reported, but must be assessed for impact on data quality:

- If a failing native target is present in any of the preceding samples above the Method Detection Limit (or above the client's lower required Detection Limit, if known), that sample must be re-analyzed for that target.
- If a failing native target's Estimated Detection Limit is above the Method Detection Limit (or above the client's lower required Detection Limit, if known) due to deterioration of system performance, that sample must be re-analyzed for that target.

a) Post-Run VER:

If this analysis meets the performance criteria for a pre-run CCV, then all of the samples preceding the post-run VER can be quantified vs. the initial calibration. If the post-run VER does not meet pre-run CCV criteria, the preceding samples can be quantified vs. bracketing calibration runs (using the post-run VER and mid-run VER as a two-point calibration) provided that the following criteria are met:

- Ion abundance ratios are within their respective theoretical limits (see Table 1) or within 15% of the ratios in the mid-run CCV
- All targets have a s/n ratio of at least 10:1
- The RT of each analyte is within 15 seconds of that in the initial calibration
- Endin and DDT breakdown is less than 20%
- The %RPD of the post-run VER vs. the mid-run VER meets the CCV %Diff limits (See Table 2)

If the post-run VER does not meet the above criteria either, the samples preceding the failing post-run VER may be flagged and reported, but must be assessed for impact on data quality:

- If a failing native target is present in any of the preceding samples above the Method Detection Limit (or above the client's lower required Detection Limit, if known), that sample must be re-analyzed for that target.
- If a failing native target's Estimated Detection Limit is above the Method Detection Limit (or above the client's lower required Detection Limit, if known) due to deterioration of system performance, that sample must be re-analyzed for that target.

Reporting Limits:

Unless indicated in the otherwise, native target data is reported down to 2.5:1 signal to noise for each isomer grouping for each extract injection. This is consistent to SW846 8290 defined protocols (i.e. EDL or Estimated Detection Limit) and is commonly applied throughout the industry to any and all performance based HRMS methods.

Method Blank:

The method blank levels must be below the response to the lowest calibration standard used for initial calibration.

MS/MSD (where required):

The % relative difference between the MS and MSD spike recoveries should be less than or equal to 20%.

Instrument/Run Performance Criteria:

a) Chromatographic Performance

For the DB-5 column, 44'-DDT and 24'-DDT (or the labelled analogues) must be uniquely resolved to a valley height of less than 60% of the shorter of the two peaks.

b) DDT and Endrin Breakdown

A custom standard (HROCP-GC_BD#1) is injected to measure the breakdown of endrin and DDT during the run. This standard must be injected at the beginning and end of each 12 hour shift, and it is also recommended that it be injected along with the mid-run CCV where used. This standard contains 13C12-4,4'-DDT, 13C12-endrin, and native endrin, endrin aldehyde and endrin ketone.

- For measurement of DDT breakdown, measure the concentration for 13C12-44'-DDE, 13C12-44'-DDD and 13C12-44'-DDT (the labelled DDT is part of the standard, and the labelled DDE and DDD are breakdown products). Calculate breakdown using the following formula:

13C12-44'-DDT % Breakdown =

$$\frac{(\text{concentration of } 13\text{C12-44'-DDD} + \text{concentration of } 13\text{C12-44'-DDE})}{\text{concentration of } 13\text{C12-44'-DDT}} \times 100\%$$

labelled DDT = part of standard; labelled DDE and DDD = breakdown products

- Additionally, measurement of endrin breakdown can be performed. For measurement of endrin breakdown, measure the concentration of endrin, endrin aldehyde, and endrin ketone (these natives are quantified by isotope dilution vs. the 13C12-endrin). Calculate breakdown using the following formula:

Endrin % Breakdown =

$$\frac{(\text{concentration of endrin aldehyde} + \text{concentration of endrin ketone})}{\text{concentration of endrin}} \times 100\%$$

If the breakdown of endrin and/or DDT exceeds 20% in a standard, the targets are decomposing on the inlet or column, and remedial action must be taken (inlet maintenance and trimming of the analytical column) before any valid sample data can be produced. If the breakdown of DDT or endrin in a sample exceeds 20% and there is that native in the sample above the MDL, that sample will have to be reanalyzed for that target (further cleanup or dilution of that sample is recommended before reanalysis).

Breakdown exceedences can be ignored under the following circumstances:

- Where the endrin breakdown fails but DDT breakdown passes and where DDT and/or its metabolites are the only targets.
- Where the DDT breakdown fails but endrin breakdown passes and where endrin and/or its metabolites are the only targets.
- For the determination of other pesticide targets (i.e. non-DDT and non-Endrin and metabolite targets) which have a corresponding labelled extraction/internal standard of exactly the same isomer.

c) Mass Resolution:

At the beginning of and just following the end of each 12 hour run sequence, the instrument must be checked to demonstrate a resolution of 10,000 for each quantification window.

The maximum time between scans within a descriptor is 1 second.

Lock mass deviations to the average response must be less than or equal 20%.

Laboratory Duplicates:

The % relative difference between duplicates should be less than or equal to 25% but only where the response is greater than the low calibration standard.

Analyte Identification Criteria:

Ion Ratio Criteria

For all compounds, a pair of ions with a specific isotopic ratio are being monitored. To have a confirmed positive response to a native or labelled OCP, that ratio must be within the theoretical limits in Table 1, or within 15% of the observed values on the most recent CS4 analysis.

Signal to Noise Criteria

The signal to noise ratio for each quantification and confirmation ion for labelled and non-labelled analytes must be greater than or equal to 10:1 for the initial calibration CS1 and for each calibration verification CS4. For positive identification of a native target in a sample, both ions must have a s/n ratio exceeding 2.5:1.

Matched RT on Peak Maxima

The retention time (RT) of the peak maxima for each pair of quantification ions must be no more than 2 seconds (i.e. 2 scans) difference.

Expected Retention Time (RT)

The peak must be at the expected RT

- within -1/+3 seconds of the labelled standard for natives with their own ¹³C labelled standard
- within +/- 0.008 RRT units of the RRT in the most recent CS4 analysis for targets with their own ²H labelled standard
- within +/- 0.010 RRt units of the RRT in the most recent CS4 analysis for targets without their own labelled standard

As per EPA 1699 Sections 16.5-16.6, it is possible that not all of the positive ID criteria are met. If a pesticide is deemed to be present in this case by the experienced spectroscopist, the result may be flagged as "this result is unconfirmed and must not be used for permitting or regulatory compliance purposes". If the ion abundance ratio criteria are not met, the result must also include an "R" flag.

Table 3: Monitored Masses, Ion Abundance Ratios, and Quantitation/RT References

| Entry | Native Standard | Quantification Method | Quantification vs. Entry #: | Quantitation Ion | Confirmation Ion | Theoretical Ion Abundance ratio | Ion Abundance Ratio Tolerance |
|----------------------------|-----------------|-----------------------|-----------------------------|------------------|------------------|---------------------------------|-------------------------------|
| 1 | 24'-DDE | rel_int | 7 | 246.0003 | 247.9974 | 1.56 | 0.25 |
| 2 | 44'-DDE | rel_int | 7 | 246.0003 | 247.9974 | 1.56 | 0.25 |
| 3 | 24'-DDD | rel_int | 8 | 235.0082 | 237.0053 | 1.56 | 0.25 |
| 4 | 44'-DDD | rel_int | 8 | 235.0082 | 237.0053 | 1.56 | 0.25 |
| 5 | 24'-DDT | rel_int | 9 | 235.0082 | 237.0053 | 1.56 | 0.25 |
| 6 | 44'-DDT | rel_int | 9 | 235.0082 | 237.0053 | 1.56 | 0.25 |
| Extraction Standard | | | | | | | |
| 7 | 13C12-44'-DDE | rel_int | 10 | 258.0405 | 260.0376 | 1.56 | 0.25 |
| 8 | 13C12-44'-DDD | rel_int | 10 | 247.0483 | 249.0454 | 1.56 | 0.25 |
| 9 | 13C12-44'-DDT | rel_int | 10 | 247.0483 | 249.0454 | 1.56 | 0.25 |
| Injection Standard | | | | | | | |
| 10 | 13C12-PCB-52 | abs_int | - | 301.9625 | 303.9597 | 0.77 | 0.15 |

Data Calculations:

a) Analyte Concentrations:

The relative response factor of each target relative to the standard against which it is to be calculated is determined using the area responses of both quantification ions via equation 9.1.

In cases where a native target is calculated against an exact labelled analogue, the quantification will be considered to be by isotope dilution. In other cases, the quantification will be considered to be by internal standard.

$$\text{RRF} = \frac{(A1_t + A2_t) C_s}{(A1_s + A2_s) C_t} \quad \text{Equ. 9.1}$$

Where,

$A1_t + A2_t$ = The areas of the two quantification ions for the target analyte

$A1_s + A2_s$ = The areas of the two quantification ions for the labelled compound against which the target analyte will be calculated.

C_t = The concentration in the calibration standard of the target analyte.

C_s = The concentration in the calibration standard of the labelled compound against which the target will be calculated.

For all analytes to be quantified and from the initial calibration series of standard injections, a table of RRFs is prepared. The relative standard deviation (%RSD, or the coefficient of variance) is checked to confirm that appropriate method criteria has been met as listed in Table 3. The average of the five or six levels of for each analyte, RRF_{av} is applied for quantification of samples according to Equations 9.2 and 9.3 below.

$$\text{Amount in sample (ng)} = \frac{(A1_n + A2_n) Q_l}{(A1_l + A2_l) (\text{RRF}_{av})} \quad \text{Equ. 9.2}$$

$$\text{Concentration in sample (ng/g or ng/L)} = \frac{(A1_n + A2_n) Q_l}{(A1_l + A2_l) (\text{RRF}_{av}) (W_s)} \quad \text{Equ. 9.3}$$

Where,

Q_l = The amount (pg) of labelled compound added to the sample

W_s = The weight (g) or volume (l) of sample

b) Extraction, Clean-up, and Sampling Standard Recovery Calculation:

The extraction, clean-up, and sampling standard recoveries are determined by Equation 9.4 below.

$$\% \text{ Recovery} = (\text{Amount in sample}) / (\text{Amount added to sample}) \times 100 \quad \text{Equ. 9.4}$$

c) Estimated Detection Limit

$$EDL = \frac{2.5 \times H_x \times Q_{es}}{H_{es} \times W \times RRF_{av}}$$

Equ. 9.5

Where,

EDL = estimated detection limit for native targets

H_x = sum of the height of the noise level for each quantification ions for the unlabeled target

H_{es} = Sum of the heights of responses of both quantification ions for the labelled extraction standard.

W = weight of volume of sample

RRF_{av} = average relative response factor

Q_{es} = Amount of extraction standard added

Chromatogram Annotation Codes

All manually integrated peaks are expanded and reprinted with the following annotations:

| | |
|--------------------|--------|
| * Analyst Initials | AA |
| * Date | YYMMDD |
| * integration code | CC |

The Syntax is:

Example:

AAYYMMDDCC

SK111220MB

| Code | Mnemonic | Description |
|-------------|----------------------------|--|
| MB | Manual Baseline | The peak was manually integrated because the initial baseline was determined incorrectly by the software |
| MS | Manual Split | The peak was manually integrated because the peak was incorrectly or not split by the software |
| MJ/MC | Manual Join/Manual Combine | The peak was manually integrated because the peak was split by the software and the peak should be integrated as a single peak |
| MA | Manual Add | The peak was manually integrated because the signal:noise ratio was judged to be >2.5 |
| MD | Manual Delete | The peak was excluded because the signal:noise ratio was judged to be <2.5 |
| MX | Manual Exclude | The peak was excluded due to an interference |
| MT | Manual Time | The peak retention time was manually chosen |

The following explanatory annotation codes may appear on the chromatograms of peaks that have been reviewed:

| Code | Mnemonic | Description |
|-------------|--|---|
| + | Detected Peak | A peak was detected at this mass and retention time that was above 2.5:1 signal to noise |
| < | Below Detection Limit | The signal at this mass and retention time was below 2.5:1 signal to noise |
| EMPC | Estimated Maximum Possible Concentration | The signal at this mass and retention time is an interference such that the target compound could not be confirmed |
| X-RT | Not Detected due to Retention Time non-conformance | The signal at this retention time could not be used to positively identify the target compound because of retention time non-conformance (apex of quantification and confirmation ions do not maximize within the same two seconds, or the retention time of the peak does not fall within the expected range with respect to its labeled analogue) |
| X-LOC | Not Detected due to interference from a higher level of chlorination | The signal at this retention time is attributable to a fragment from a co-eluting compound at a higher level of chlorination, and cannot be used to positively identify the target. The result is expressed as an Estimated Maximum Possible Concentration (EMPC) |
| X-DPE | Not Detected due to diphenyl ether interference | The signal at this retention time is attributable to interference from a chlorinated diphenyl ether, and cannot be used to positively identify the target. The result is expressed as an Estimated Maximum Possible Concentration (EMPC) |
| X-IF | Not Detected due to interference | The signal at this retention time is attributable to a co-eluting interference, and cannot be used to positively identify the target. The result is expressed as an Estimated Maximum Possible Concentration (EMPC) |



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SVOC DATA PACKAGE

SECTION 4: CALIBRATION DATA

Including:

- for Multi-Point Calibration(s)
 - Multi-Point Calibration Tables
 - Individual Quantitation Reports

- for Continuing Calibration(s)
 - Individual Quantitation Reports

ALS Life sciences

Calibration Summary Report

Calibration Level Filename Run Date

| | | |
|------|-------------|-------------------|
| CS-1 | 6-180828A02 | 28-Aug-2018 18:13 |
| CS-2 | 6-180828A01 | 28-Aug-2018 17:56 |
| CS-3 | 6-180828A06 | 28-Aug-2018 19:33 |
| CS-4 | 6-180828A05 | 28-Aug-2018 19:13 |
| CS-5 | 6-180828A04 | 28-Aug-2018 18:53 |
| CS-6 | 6-180828A03 | 28-Aug-2018 18:33 |

Approved: *R. Bakhtiari*
--e-signature--
31-Aug-2018

Relative Response Factors

| Target Analytes | CS-1 | CS-2 | CS-3 | CS-4 | CS-5 | CS-6 | Mean | % RSD |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2,4'-DDE | 1.419 | 1.442 | 1.264 | 1.383 | 1.456 | 1.459 | 1.404 | 5% |
| 4,4'-DDE | 1.275 | 1.259 | 1.125 | 1.175 | 1.198 | 1.155 | 1.198 | 5% |
| 2,4'-DDD | 1.284 | 1.338 | 1.170 | 1.248 | 1.307 | 1.273 | 1.270 | 5% |
| 4,4'-DDD | 1.288 | 1.331 | 1.189 | 1.186 | 1.251 | 1.211 | 1.243 | 5% |
| 2,4'-DDT | 1.289 | 1.242 | 1.099 | 1.223 | 1.163 | 1.157 | 1.196 | 6% |
| 4,4'-DDT | 1.251 | 1.148 | 1.019 | 1.074 | 1.084 | 1.065 | 1.107 | 7% |

Extraction Standards

| | | | | | | | | |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-----|
| 4,4'-DDE, 13C12- | 0.970 | 0.940 | 1.013 | 0.968 | 1.004 | 1.053 | 0.991 | 4% |
| 4,4'-DDD, 13C12- | 0.614 | 0.618 | 0.690 | 0.672 | 0.715 | 0.789 | 0.683 | 10% |
| 4,4'-DDT, 13C12- | 0.366 | 0.361 | 0.437 | 0.408 | 0.468 | 0.501 | 0.424 | 13% |

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS1-065**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180828A02 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 28-Aug-2018 18:13 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.89 | 1.62 | 2.00 | 1.32E+05 | 1.419 |
| 4,4'-DDE | 11.42 | 1.59 | 2.00 | 1.18E+05 | 1.275 |
| 2,4'-DDD | 11.59 | 1.66 | 2.00 | 7.54E+04 | 1.284 |
| 4,4'-DDD | 12.1 | 1.63 | 2.00 | 7.56E+04 | 1.288 |
| 2,4'-DDT | 12.16 | 1.63 | 2.00 | 4.51E+04 | 1.289 |
| 4,4'-DDT | 12.6 | 1.63 | 2.00 | 4.38E+04 | 1.251 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.42 | 1.56 | 250.00 | 1.16E+07 | 0.970 |
| 4,4'-DDD, 13C12- | 12.09 | 1.55 | 250.00 | 7.34E+06 | 0.614 |
| 4,4'-DDT, 13C12- | 12.59 | 1.54 | 250.00 | 4.37E+06 | 0.366 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.55 | 0.80 | 100.00 | 4.78E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS2-065**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180828A01 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 28-Aug-2018 17:56 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.89 | 1.56 | 7.50 | 5.13E+05 | 1.442 |
| 4,4'-DDE | 11.42 | 1.53 | 7.50 | 4.48E+05 | 1.259 |
| 2,4'-DDD | 11.59 | 1.61 | 7.50 | 3.13E+05 | 1.338 |
| 4,4'-DDD | 12.1 | 1.58 | 7.50 | 3.11E+05 | 1.331 |
| 2,4'-DDT | 12.15 | 1.56 | 7.50 | 1.70E+05 | 1.242 |
| 4,4'-DDT | 12.59 | 1.60 | 7.50 | 1.57E+05 | 1.148 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.55 | 250.00 | 1.18E+07 | 0.940 |
| 4,4'-DDD, 13C12- | 12.09 | 1.57 | 250.00 | 7.79E+06 | 0.618 |
| 4,4'-DDT, 13C12- | 12.59 | 1.59 | 250.00 | 4.55E+06 | 0.361 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.55 | 0.80 | 100.00 | 5.04E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS3-065**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180828A06 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 28-Aug-2018 19:33 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.89 | 1.57 | 20.00 | 1.18E+06 | 1.264 |
| 4,4'-DDE | 11.42 | 1.56 | 20.00 | 1.05E+06 | 1.125 |
| 2,4'-DDD | 11.59 | 1.62 | 20.00 | 7.43E+05 | 1.170 |
| 4,4'-DDD | 12.1 | 1.61 | 20.00 | 7.55E+05 | 1.189 |
| 2,4'-DDT | 12.15 | 1.60 | 20.00 | 4.42E+05 | 1.099 |
| 4,4'-DDT | 12.59 | 1.65 | 20.00 | 4.09E+05 | 1.019 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.54 | 250.00 | 1.17E+07 | 1.013 |
| 4,4'-DDD, 13C12- | 12.09 | 1.58 | 250.00 | 7.94E+06 | 0.690 |
| 4,4'-DDT, 13C12- | 12.59 | 1.58 | 250.00 | 5.02E+06 | 0.437 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.55 | 0.81 | 100.00 | 4.60E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS4-065**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180828A05 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 28-Aug-2018 19:13 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.55 | 50.00 | 2.96E+06 | 1.383 |
| 4,4'-DDE | 11.41 | 1.57 | 50.00 | 2.52E+06 | 1.175 |
| 2,4'-DDD | 11.58 | 1.62 | 50.00 | 1.86E+06 | 1.248 |
| 4,4'-DDD | 12.09 | 1.60 | 50.00 | 1.76E+06 | 1.186 |
| 2,4'-DDT | 12.15 | 1.61 | 50.00 | 1.10E+06 | 1.223 |
| 4,4'-DDT | 12.59 | 1.63 | 50.00 | 9.69E+05 | 1.074 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.54 | 250.00 | 1.07E+07 | 0.968 |
| 4,4'-DDD, 13C12- | 12.08 | 1.59 | 250.00 | 7.43E+06 | 0.672 |
| 4,4'-DDT, 13C12- | 12.58 | 1.57 | 250.00 | 4.51E+06 | 0.408 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.81 | 100.00 | 4.42E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS5-065**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180828A04 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 28-Aug-2018 18:53 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.55 | 150.00 | 1.05E+07 | 1.456 |
| 4,4'-DDE | 11.41 | 1.57 | 150.00 | 8.61E+06 | 1.198 |
| 2,4'-DDD | 11.58 | 1.61 | 150.00 | 6.69E+06 | 1.307 |
| 4,4'-DDD | 12.09 | 1.61 | 150.00 | 6.40E+06 | 1.251 |
| 2,4'-DDT | 12.15 | 1.61 | 150.00 | 3.89E+06 | 1.163 |
| 4,4'-DDT | 12.58 | 1.62 | 150.00 | 3.63E+06 | 1.084 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.55 | 250.00 | 1.20E+07 | 1.004 |
| 4,4'-DDD, 13C12- | 12.08 | 1.58 | 250.00 | 8.53E+06 | 0.715 |
| 4,4'-DDT, 13C12- | 12.58 | 1.56 | 250.00 | 5.58E+06 | 0.468 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.80 | 100.00 | 4.77E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS6-065**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180828A03 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 28-Aug-2018 18:33 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.57 | 400.00 | 3.14E+07 | 1.459 |
| 4,4'-DDE | 11.41 | 1.56 | 400.00 | 2.49E+07 | 1.155 |
| 2,4'-DDD | 11.58 | 1.62 | 400.00 | 2.06E+07 | 1.273 |
| 4,4'-DDD | 12.09 | 1.62 | 400.00 | 1.96E+07 | 1.211 |
| 2,4'-DDT | 12.15 | 1.60 | 400.00 | 1.19E+07 | 1.157 |
| 4,4'-DDT | 12.59 | 1.62 | 400.00 | 1.09E+07 | 1.065 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.55 | 250.00 | 1.35E+07 | 1.053 |
| 4,4'-DDD, 13C12- | 12.08 | 1.57 | 250.00 | 1.01E+07 | 0.789 |
| 4,4'-DDT, 13C12- | 12.58 | 1.56 | 250.00 | 6.41E+06 | 0.501 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.80 | 100.00 | 5.12E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Summary Report

Calibration Level Filename Run Date

| | | |
|------|-------------|-------------------|
| CS-1 | 6-180827B09 | 27-Aug-2018 21:10 |
| CS-2 | 6-180827B08 | 27-Aug-2018 20:50 |
| CS-3 | 6-180827B07 | 27-Aug-2018 20:30 |
| CS-4 | 6-180827B05 | 27-Aug-2018 19:49 |
| CS-5 | 6-180827B04 | 27-Aug-2018 19:29 |
| CS-6 | 6-180827B03 | 27-Aug-2018 19:13 |

Approved: *R. Bakhtiari*
--e-signature--
31-Aug-2018

Relative Response Factors

| Target Analytes | CS-1 | CS-2 | CS-3 | CS-4 | CS-5 | CS-6 | Mean | % RSD |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2,4'-DDE | 1.384 | 1.482 | 1.298 | 1.475 | 1.498 | 1.508 | 1.441 | 6% |
| 4,4'-DDE | 1.212 | 1.293 | 1.145 | 1.207 | 1.208 | 1.165 | 1.205 | 4% |
| 2,4'-DDD | 1.276 | 1.329 | 1.176 | 1.323 | 1.322 | 1.303 | 1.288 | 5% |
| 4,4'-DDD | 1.300 | 1.367 | 1.249 | 1.315 | 1.303 | 1.274 | 1.301 | 3% |
| 2,4'-DDT | 1.248 | 1.350 | 1.123 | 1.269 | 1.237 | 1.202 | 1.238 | 6% |
| 4,4'-DDT | 1.186 | 1.217 | 1.056 | 1.136 | 1.123 | 1.107 | 1.138 | 5% |

Extraction Standards

| | | | | | | | | |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|----|
| 4,4'-DDE, 13C12- | 0.940 | 0.905 | 0.952 | 0.892 | 0.949 | 0.969 | 0.935 | 3% |
| 4,4'-DDD, 13C12- | 0.738 | 0.728 | 0.751 | 0.690 | 0.784 | 0.839 | 0.755 | 7% |
| 4,4'-DDT, 13C12- | 0.486 | 0.478 | 0.503 | 0.448 | 0.531 | 0.564 | 0.502 | 8% |

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS1-064**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180827B09 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 27-Aug-2018 21:10 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.89 | 1.60 | 2.00 | 1.38E+05 | 1.384 |
| 4,4'-DDE | 11.43 | 1.61 | 2.00 | 1.20E+05 | 1.212 |
| 2,4'-DDD | 11.6 | 1.61 | 2.00 | 9.96E+04 | 1.276 |
| 4,4'-DDD | 12.1 | 1.68 | 2.00 | 1.01E+05 | 1.300 |
| 2,4'-DDT | 12.16 | 1.66 | 2.00 | 6.41E+04 | 1.248 |
| 4,4'-DDT | 12.6 | 1.60 | 2.00 | 6.09E+04 | 1.186 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.42 | 1.54 | 250.00 | 1.24E+07 | 0.940 |
| 4,4'-DDD, 13C12- | 12.1 | 1.58 | 250.00 | 9.75E+06 | 0.738 |
| 4,4'-DDT, 13C12- | 12.59 | 1.59 | 250.00 | 6.42E+06 | 0.486 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.55 | 0.80 | 100.00 | 5.28E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS2-064**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180827B08 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 27-Aug-2018 20:50 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.89 | 1.57 | 7.50 | 5.52E+05 | 1.482 |
| 4,4'-DDE | 11.42 | 1.60 | 7.50 | 4.82E+05 | 1.293 |
| 2,4'-DDD | 11.59 | 1.63 | 7.50 | 3.98E+05 | 1.329 |
| 4,4'-DDD | 12.1 | 1.64 | 7.50 | 4.09E+05 | 1.367 |
| 2,4'-DDT | 12.15 | 1.64 | 7.50 | 2.66E+05 | 1.350 |
| 4,4'-DDT | 12.59 | 1.63 | 7.50 | 2.40E+05 | 1.217 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.54 | 250.00 | 1.24E+07 | 0.905 |
| 4,4'-DDD, 13C12- | 12.09 | 1.57 | 250.00 | 9.99E+06 | 0.728 |
| 4,4'-DDT, 13C12- | 12.59 | 1.59 | 250.00 | 6.56E+06 | 0.478 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.55 | 0.79 | 100.00 | 5.49E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS3-064**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180827B07 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 27-Aug-2018 20:30 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.56 | 20.00 | 1.23E+06 | 1.298 |
| 4,4'-DDE | 11.41 | 1.58 | 20.00 | 1.08E+06 | 1.145 |
| 2,4'-DDD | 11.58 | 1.61 | 20.00 | 8.77E+05 | 1.176 |
| 4,4'-DDD | 12.09 | 1.61 | 20.00 | 9.31E+05 | 1.249 |
| 2,4'-DDT | 12.14 | 1.64 | 20.00 | 5.61E+05 | 1.123 |
| 4,4'-DDT | 12.58 | 1.64 | 20.00 | 5.27E+05 | 1.056 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.54 | 250.00 | 1.18E+07 | 0.952 |
| 4,4'-DDD, 13C12- | 12.08 | 1.59 | 250.00 | 9.32E+06 | 0.751 |
| 4,4'-DDT, 13C12- | 12.58 | 1.58 | 250.00 | 6.24E+06 | 0.503 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.79 | 100.00 | 4.96E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS4-064**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180827B05 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 27-Aug-2018 19:49 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.56 | 50.00 | 3.68E+06 | 1.475 |
| 4,4'-DDE | 11.41 | 1.58 | 50.00 | 3.01E+06 | 1.207 |
| 2,4'-DDD | 11.58 | 1.61 | 50.00 | 2.55E+06 | 1.323 |
| 4,4'-DDD | 12.09 | 1.62 | 50.00 | 2.54E+06 | 1.315 |
| 2,4'-DDT | 12.14 | 1.61 | 50.00 | 1.59E+06 | 1.269 |
| 4,4'-DDT | 12.58 | 1.63 | 50.00 | 1.43E+06 | 1.136 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.53 | 250.00 | 1.25E+07 | 0.892 |
| 4,4'-DDD, 13C12- | 12.08 | 1.57 | 250.00 | 9.65E+06 | 0.690 |
| 4,4'-DDT, 13C12- | 12.58 | 1.56 | 250.00 | 6.27E+06 | 0.448 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.79 | 100.00 | 5.60E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS5-064**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180827B04 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 27-Aug-2018 19:29 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.89 | 1.58 | 150.00 | 1.11E+07 | 1.498 |
| 4,4'-DDE | 11.42 | 1.59 | 150.00 | 8.94E+06 | 1.208 |
| 2,4'-DDD | 11.59 | 1.63 | 150.00 | 8.08E+06 | 1.322 |
| 4,4'-DDD | 12.09 | 1.61 | 150.00 | 7.96E+06 | 1.303 |
| 2,4'-DDT | 12.15 | 1.61 | 150.00 | 5.12E+06 | 1.237 |
| 4,4'-DDT | 12.59 | 1.61 | 150.00 | 4.65E+06 | 1.123 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.54 | 250.00 | 1.23E+07 | 0.949 |
| 4,4'-DDD, 13C12- | 12.09 | 1.58 | 250.00 | 1.02E+07 | 0.784 |
| 4,4'-DDT, 13C12- | 12.59 | 1.59 | 250.00 | 6.90E+06 | 0.531 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.55 | 0.79 | 100.00 | 5.20E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS6-064**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180827B03 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 27-Aug-2018 19:13 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.56 | 400.00 | 3.11E+07 | 1.508 |
| 4,4'-DDE | 11.42 | 1.57 | 400.00 | 2.40E+07 | 1.165 |
| 2,4'-DDD | 11.59 | 1.63 | 400.00 | 2.32E+07 | 1.303 |
| 4,4'-DDD | 12.09 | 1.63 | 400.00 | 2.27E+07 | 1.274 |
| 2,4'-DDT | 12.15 | 1.61 | 400.00 | 1.44E+07 | 1.202 |
| 4,4'-DDT | 12.59 | 1.63 | 400.00 | 1.33E+07 | 1.107 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.41 | 1.54 | 250.00 | 1.29E+07 | 0.969 |
| 4,4'-DDD, 13C12- | 12.09 | 1.58 | 250.00 | 1.11E+07 | 0.839 |
| 4,4'-DDT, 13C12- | 12.58 | 1.58 | 250.00 | 7.49E+06 | 0.564 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.78 | 100.00 | 5.32E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Summary Report

Calibration Level Filename Run Date

| | | |
|------|-------------|-------------------|
| CS-1 | 6-180830A07 | 30-Aug-2018 11:38 |
| CS-2 | 6-180830A06 | 30-Aug-2018 11:20 |
| CS-3 | 6-180830A11 | 30-Aug-2018 13:01 |
| CS-4 | 6-180830A10 | 30-Aug-2018 12:41 |
| CS-5 | 6-180830A09 | 30-Aug-2018 12:21 |
| CS-6 | 6-180830A08 | 30-Aug-2018 12:04 |

Approved: *R. Bakhtiari*
--e-signature--
31-Aug-2018

Relative Response Factors

| Target Analytes | CS-1 | CS-2 | CS-3 | CS-4 | CS-5 | CS-6 | Mean | % RSD |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2,4'-DDE | 1.360 | 1.482 | 1.322 | 1.419 | 1.498 | 1.464 | 1.424 | 5% |
| 4,4'-DDE | 1.072 | 1.163 | 1.032 | 1.114 | 1.124 | 1.090 | 1.099 | 4% |
| 2,4'-DDD | 1.157 | 1.280 | 1.168 | 1.210 | 1.259 | 1.249 | 1.221 | 4% |
| 4,4'-DDD | 1.136 | 1.249 | 1.126 | 1.133 | 1.226 | 1.141 | 1.169 | 5% |
| 2,4'-DDT | 1.095 | 1.216 | 1.086 | 1.237 | 1.172 | 1.185 | 1.165 | 5% |
| 4,4'-DDT | 0.986 | 1.097 | 0.986 | 1.066 | 1.051 | 1.038 | 1.037 | 4% |
| Extraction Standards | | | | | | | | |
| 4,4'-DDE, 13C12- | 0.551 | 0.535 | 0.558 | 0.528 | 0.539 | 0.554 | 0.544 | 2% |
| 4,4'-DDD, 13C12- | 0.441 | 0.431 | 0.474 | 0.454 | 0.480 | 0.518 | 0.466 | 7% |
| 4,4'-DDT, 13C12- | 0.306 | 0.293 | 0.339 | 0.314 | 0.345 | 0.370 | 0.328 | 9% |

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS1-067**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180830A07 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 30-Aug-2018 11:38 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.87 | 1.53 | 2.00 | 5.80E+04 | 1.360 |
| 4,4'-DDE | 11.4 | 1.57 | 2.00 | 4.57E+04 | 1.072 |
| 2,4'-DDD | 11.57 | 1.51 | 2.00 | 3.95E+04 | 1.157 |
| 4,4'-DDD | 12.08 | 1.49 | 2.00 | 3.88E+04 | 1.136 |
| 2,4'-DDT | 12.14 | 1.43 | 2.00 | 2.60E+04 | 1.095 |
| 4,4'-DDT | 12.58 | 1.58 | 2.00 | 2.34E+04 | 0.986 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.39 | 1.52 | 250.00 | 5.33E+06 | 0.551 |
| 4,4'-DDD, 13C12- | 12.07 | 1.56 | 250.00 | 4.27E+06 | 0.441 |
| 4,4'-DDT, 13C12- | 12.57 | 1.56 | 250.00 | 2.97E+06 | 0.306 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.53 | 0.78 | 100.00 | 3.87E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS2-067**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180830A06 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 30-Aug-2018 11:20 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.57 | 7.50 | 2.28E+05 | 1.482 |
| 4,4'-DDE | 11.41 | 1.57 | 7.50 | 1.79E+05 | 1.163 |
| 2,4'-DDD | 11.58 | 1.59 | 7.50 | 1.59E+05 | 1.280 |
| 4,4'-DDD | 12.09 | 1.59 | 7.50 | 1.55E+05 | 1.249 |
| 2,4'-DDT | 12.14 | 1.59 | 7.50 | 1.02E+05 | 1.216 |
| 4,4'-DDT | 12.58 | 1.61 | 7.50 | 9.23E+04 | 1.097 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.53 | 250.00 | 5.13E+06 | 0.535 |
| 4,4'-DDD, 13C12- | 12.08 | 1.54 | 250.00 | 4.13E+06 | 0.431 |
| 4,4'-DDT, 13C12- | 12.58 | 1.58 | 250.00 | 2.81E+06 | 0.293 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.78 | 100.00 | 3.84E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS3-067**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180830A11 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 30-Aug-2018 13:01 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.56 | 20.00 | 5.38E+05 | 1.322 |
| 4,4'-DDE | 11.41 | 1.53 | 20.00 | 4.20E+05 | 1.032 |
| 2,4'-DDD | 11.58 | 1.64 | 20.00 | 4.04E+05 | 1.168 |
| 4,4'-DDD | 12.09 | 1.62 | 20.00 | 3.89E+05 | 1.126 |
| 2,4'-DDT | 12.14 | 1.63 | 20.00 | 2.68E+05 | 1.086 |
| 4,4'-DDT | 12.59 | 1.66 | 20.00 | 2.44E+05 | 0.986 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.53 | 250.00 | 5.09E+06 | 0.558 |
| 4,4'-DDD, 13C12- | 12.08 | 1.54 | 250.00 | 4.32E+06 | 0.474 |
| 4,4'-DDT, 13C12- | 12.58 | 1.55 | 250.00 | 3.09E+06 | 0.339 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.77 | 100.00 | 3.65E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS4-067**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180830A10 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 30-Aug-2018 12:41 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.87 | 1.55 | 50.00 | 1.44E+06 | 1.419 |
| 4,4'-DDE | 11.41 | 1.54 | 50.00 | 1.13E+06 | 1.114 |
| 2,4'-DDD | 11.58 | 1.61 | 50.00 | 1.06E+06 | 1.210 |
| 4,4'-DDD | 12.09 | 1.61 | 50.00 | 9.90E+05 | 1.133 |
| 2,4'-DDT | 12.14 | 1.61 | 50.00 | 7.48E+05 | 1.237 |
| 4,4'-DDT | 12.58 | 1.63 | 50.00 | 6.45E+05 | 1.066 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.53 | 250.00 | 5.09E+06 | 0.528 |
| 4,4'-DDD, 13C12- | 12.08 | 1.56 | 250.00 | 4.37E+06 | 0.454 |
| 4,4'-DDT, 13C12- | 12.58 | 1.57 | 250.00 | 3.02E+06 | 0.314 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.77 | 100.00 | 3.85E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS5-067**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180830A09 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 30-Aug-2018 12:21 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. Time | Ion Ratio | Concentration | Response | RRF |
|-----------------|--------------|--------------|---------------|----------|-------|
| | | | ng/mL | | |
| 2,4'-DDE | 10.88 | 1.54 | 150.00 | 4.87E+06 | 1.498 |
| 4,4'-DDE | 11.41 | 1.57 | 150.00 | 3.66E+06 | 1.124 |
| 2,4'-DDD | 11.58 | 1.61 | 150.00 | 3.65E+06 | 1.259 |
| 4,4'-DDD | 12.09 | 1.61 | 150.00 | 3.55E+06 | 1.226 |
| 2,4'-DDT | 12.14 | 1.58 | 150.00 | 2.44E+06 | 1.172 |
| 4,4'-DDT | 12.58 | 1.58 | 150.00 | 2.19E+06 | 1.051 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.52 | 250.00 | 5.42E+06 | 0.539 |
| 4,4'-DDD, 13C12- | 12.08 | 1.57 | 250.00 | 4.83E+06 | 0.480 |
| 4,4'-DDT, 13C12- | 12.58 | 1.56 | 250.00 | 3.47E+06 | 0.345 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.78 | 100.00 | 4.02E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Calibration Report

ALS Sample ID **H6-18-CS6-067**
 Analysis Method EPA 1699 (mod)
 Analysis Type Calibration

| | | | | |
|-------------------------|------------------|---------------------------|-------------------------------|--|
| Filename 6-180830A08 | Inst # HRMS-6 | Column HP5MSUSR163634H | Run Date 30-Aug-2018 12:04 | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
|-------------------------|------------------|---------------------------|-------------------------------|--|

| Target Analytes | Ret. | Ion | Concentration | Response | RRF |
|-----------------|-------|-------|---------------|----------|-------|
| | Time | Ratio | ng/mL | | |
| 2,4'-DDE | 10.87 | 1.54 | 400.00 | 1.42E+07 | 1.464 |
| 4,4'-DDE | 11.41 | 1.55 | 400.00 | 1.05E+07 | 1.090 |
| 2,4'-DDD | 11.58 | 1.60 | 400.00 | 1.13E+07 | 1.249 |
| 4,4'-DDD | 12.09 | 1.59 | 400.00 | 1.03E+07 | 1.141 |
| 2,4'-DDT | 12.14 | 1.60 | 400.00 | 7.66E+06 | 1.185 |
| 4,4'-DDT | 12.58 | 1.60 | 400.00 | 6.71E+06 | 1.038 |

Extraction Standards

| | | | | | |
|-------------------------|-------|------|--------|----------|-------|
| 4,4'-DDE, 13C12- | 11.4 | 1.51 | 250.00 | 6.05E+06 | 0.554 |
| 4,4'-DDD, 13C12- | 12.08 | 1.57 | 250.00 | 5.65E+06 | 0.518 |
| 4,4'-DDT, 13C12- | 12.58 | 1.57 | 250.00 | 4.04E+06 | 0.370 |

Labeled Injection Standards

| | | | | |
|--------------------------|------|------|--------|----------|
| 13C12-PCB-52 (IS) | 9.54 | 0.77 | 100.00 | 4.37E+06 |
|--------------------------|------|------|--------|----------|

ALS Life sciences

Second Source Calibration Verification Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-RS1-065 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |
| Sample Matrix | QC | Split Ratio | 1 | |

Run Information
Run 1

| | |
|---------------------|------------------------|
| Filename | 6-180828A07 |
| Run Date | 28-Aug-18 19:54 |
| Final Volume | 1020 uL |
| Dilution Factor | 1 |
| Analysis Units | % |
| Instrument - Column | HRMS-6 HP5MSUSR163634H |

| Target Analytes | ng/mL | Limits | | |
|----------------------|-------|-----------|-------|--------|
| | | Ret. Time | % Rec | Flags |
| 2,4'-DDE | 0 | | | |
| 4,4'-DDE | 150 | 11.42 | 92 | 75-125 |
| 2,4'-DDD | 0 | | | |
| 4,4'-DDD | 150 | 12.10 | 95 | 75-125 |
| 2,4'-DDT | 0 | | | |
| 4,4'-DDT | 150 | 12.59 | 92 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.41 | 104 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.09 | 104 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 110 | 70-130 |

ALS Life sciences

Second Source Calibration Verification Report

| | | | | |
|--------------------|----------------|-----------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-RS1-067 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |
| Sample Matrix | QC | Split Ratio | 1 | |

Run Information
Run 1

| | |
|---------------------|------------------------|
| Filename | 6-180830A12 |
| Run Date | 30-Aug-18 13:21 |
| Final Volume | 1020 uL |
| Dilution Factor | 1 |
| Analysis Units | % |
| Instrument - Column | HRMS-6 HP5MSUSR163634H |

| Target Analytes | ng/mL | Limits | | |
|----------------------|-------|-----------|-------|--------|
| | | Ret. Time | % Rec | Flags |
| 2,4'-DDE | 0 | | | |
| 4,4'-DDE | 150 | 11.41 | 94 | 75-125 |
| 2,4'-DDD | 0 | | | |
| 4,4'-DDD | 150 | 12.09 | 94 | 75-125 |
| 2,4'-DDT | 0 | | | |
| 4,4'-DDT | 150 | 12.58 | 95 | 75-125 |
| Extraction Standards | | | | |
| | ng/mL | | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 100 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 104 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 104 | 70-130 |

ALS Life sciences

Second Source Calibration Verification Report

| | | | | |
|--------------------|----------------|----------------------|-----|---|
| Sample Name | CCV | Sampling Date | n/a | <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 </div> |
| ALS Sample ID | H6-18-RS1-064 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |
| Sample Matrix | QC | Split Ratio | 1 | |

Run Information
Run 1

| | |
|---------------------|------------------------|
| Filename | 6-180827B10 |
| Run Date | 27-Aug-18 21:30 |
| Final Volume | 1020 uL |
| Dilution Factor | 1 |
| Analysis Units | % |
| Instrument - Column | HRMS-6 HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | | |
|----------------------|-------|-------|--------|--------|---|
| | | Time | % Rec | Flags | |
| 2,4'-DDE | 0 | | | | |
| 4,4'-DDE | 150 | 11.42 | 93 | 75-125 | |
| 2,4'-DDD | 0 | | | | |
| 4,4'-DDD | 150 | 12.09 | 95 | 75-125 | M |
| 2,4'-DDT | 0 | | | | M |
| 4,4'-DDT | 150 | 12.59 | 95 | 75-125 | |
| Extraction Standards | | ng/mL | | | |
| 4,4'-DDE, 13C12- | 250 | 11.41 | 102 | 70-130 | |
| 4,4'-DDD, 13C12- | 250 | 12.09 | 105 | 70-130 | |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 111 | 70-130 | |

M Indicates that a peak has been manually integrated.

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0837 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180827B55 | |
| Run Date | 28-Aug-18 12:36 | |
| Final Volume | 1020 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | |
|----------------------|-------|-------|--------|--------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.88 | 105 | 75-125 |
| 4,4'-DDE | 50 | 11.41 | 108 | 75-125 |
| 2,4'-DDD | 50 | 11.58 | 104 | 75-125 |
| 4,4'-DDD | 50 | 12.09 | 110 | 75-125 |
| 2,4'-DDT | 50 | 12.15 | 106 | 75-125 |
| 4,4'-DDT | 50 | 12.59 | 110 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.41 | 122 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 135 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 126 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0839 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180827B77 | |
| Run Date | 28-Aug-18 16:59 | |
| Final Volume | 1020 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | |
|----------------------|-------|-------|--------|--------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.89 | 107 | 75-125 |
| 4,4'-DDE | 50 | 11.42 | 110 | 75-125 |
| 2,4'-DDD | 50 | 11.59 | 113 | 75-125 |
| 4,4'-DDD | 50 | 12.10 | 110 | 75-125 |
| 2,4'-DDT | 50 | 12.16 | 115 | 75-125 |
| 4,4'-DDT | 50 | 12.60 | 108 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.42 | 116 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.09 | 104 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.59 | 90 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0841 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 | | | | | |
|------------------------|------------------------|--------------|--|--|--|--|--|
| Filename | 6-180828A08 | | | | | | |
| Run Date | 28-Aug-18 20:16 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Analysis Units | % | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |

| Target Analytes | ng/mL | Ret. | Limits | |
|-----------------------------|--------------|--------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.88 | 100 | 75-125 |
| 4,4'-DDE | 50 | 11.41 | 99 | 75-125 |
| 2,4'-DDD | 50 | 11.58 | 100 | 75-125 |
| 4,4'-DDD | 50 | 12.09 | 97 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 108 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 97 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 95 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 95 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 96 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0843 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180828A33 | |
| Run Date | 29-Aug-18 04:39 | |
| Final Volume | 1020 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | |
|----------------------|-------|-------|--------|--------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.89 | 100 | 75-125 |
| 4,4'-DDE | 50 | 11.42 | 100 | 75-125 |
| 2,4'-DDD | 50 | 11.59 | 96 | 75-125 |
| 4,4'-DDD | 50 | 12.10 | 102 | 75-125 |
| 2,4'-DDT | 50 | 12.15 | 99 | 75-125 |
| 4,4'-DDT | 50 | 12.59 | 99 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.41 | 102 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.09 | 113 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.59 | 119 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0845 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 | | | | | |
|------------------------|------------------------|--------------|--|--|--|--|--|
| Filename | 6-180828A56 | | | | | | |
| Run Date | 29-Aug-18 12:22 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Analysis Units | % | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |

| Target Analytes | ng/mL | Ret. | Limits | |
|-----------------------------|--------------|--------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.87 | 103 | 75-125 |
| 4,4'-DDE | 50 | 11.41 | 101 | 75-125 |
| 2,4'-DDD | 50 | 11.58 | 94 | 75-125 |
| 4,4'-DDD | 50 | 12.08 | 100 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 102 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 101 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 98 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 122 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.57 | 135 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0853 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 | | | | | |
|------------------------|------------------------|--------------|--|--|--|--|--|
| Filename | 6-180830A13 | | | | | | |
| Run Date | 30-Aug-18 13:46 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Analysis Units | % | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |

| Target Analytes | ng/mL | Ret. | Limits | |
|-----------------------------|--------------|--------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.88 | 100 | 75-125 |
| 4,4'-DDE | 50 | 11.41 | 100 | 75-125 |
| 2,4'-DDD | 50 | 11.58 | 99 | 75-125 |
| 4,4'-DDD | 50 | 12.09 | 101 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 99 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 100 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 97 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 99 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 100 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0855 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 | | | | | |
|------------------------|------------------------|--------------|--|--|--|--|--|
| Filename | 6-180830A30 | | | | | | |
| Run Date | 30-Aug-18 19:24 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Analysis Units | % | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |

| Target Analytes | ng/mL | Ret. | Limits | |
|-----------------------------|--------------|--------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.87 | 98 | 75-125 |
| 4,4'-DDE | 50 | 11.40 | 99 | 75-125 |
| 2,4'-DDD | 50 | 11.57 | 99 | 75-125 |
| 4,4'-DDD | 50 | 12.08 | 100 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 101 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 101 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 97 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 93 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.57 | 90 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0847 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180828A68 | |
| Run Date | 29-Aug-18 16:24 | |
| Final Volume | 1020 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | |
|----------------------|-------|-------|--------|--------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.88 | 101 | 75-125 |
| 4,4'-DDE | 50 | 11.41 | 100 | 75-125 |
| 2,4'-DDD | 50 | 11.58 | 103 | 75-125 |
| 4,4'-DDD | 50 | 12.09 | 102 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 104 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 101 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 92 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 85 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 80 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0857 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180830A59 | |
| Run Date | 31-Aug-18 05:07 | |
| Final Volume | 1000 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | |
|----------------------|-------|-------|--------|--------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.87 | 98 | 75-125 |
| 4,4'-DDE | 50 | 11.41 | 99 | 75-125 |
| 2,4'-DDD | 50 | 11.58 | 106 | 75-125 |
| 4,4'-DDD | 50 | 12.09 | 97 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 105 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 99 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 93 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 64 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.58 | 56 | 70-130 |

ALS Life sciences

Continuing Calibration Report

| | | | | |
|--------------------|----------------|----------------------|-----|--|
| Sample Name | CCV | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | H6-18-CCV-0859 | Extraction Date | n/a | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | CCV | Percent Solid | n/a | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180830A89 | |
| Run Date | 31-Aug-18 15:10 | |
| Final Volume | 1000 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng/mL | Ret. | Limits | |
|----------------------|-------|-------|--------|--------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 50 | 10.87 | 101 | 75-125 |
| 4,4'-DDE | 50 | 11.40 | 100 | 75-125 |
| 2,4'-DDD | 50 | 11.57 | 106 | 75-125 |
| 4,4'-DDD | 50 | 12.08 | 99 | 75-125 |
| 2,4'-DDT | 50 | 12.14 | 108 | 75-125 |
| 4,4'-DDT | 50 | 12.58 | 98 | 75-125 |
| Extraction Standards | | ng/mL | | |
| 4,4'-DDE, 13C12- | 250 | 11.40 | 91 | 70-130 |
| 4,4'-DDD, 13C12- | 250 | 12.08 | 74 | 70-130 |
| 4,4'-DDT, 13C12- | 250 | 12.57 | 63 | 70-130 |



1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 5: QC SAMPLE DATA

Including:

- Laboratory Method Blank Analysis Reports
- Laboratory Control Sample Analysis Reports
- Matrix Spike Analysis Reports
- Other QC Sample Analysis Reports (where applicable)

ALS Life sciences

Laboratory Method Blank Analysis Report

| Sample Name | Method Blank | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|----------------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|----------|-------|---------|---------|-------|--------|------|----------|-------|---------|---------|---|--|------|----------|-------|---------|--------|-----|--|------|----------|-------|---------|--------|-----|--|------|----------|-------|---------|--------|-------|--------|------|----------|-------|--------|--------|-----|--|------|
| ALS Sample ID | WG2845105-1 | Extraction Date | 20-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 7.21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Blank | Percent Solid | 100.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180827B61 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 28-Aug-18 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.88</td> <td><0.0020</td> <td>0.00071</td> <td>M,J,R</td> <td>0.0020</td> <td>0.28</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.41</td> <td>0.00572</td> <td>0.00085</td> <td>J</td> <td></td> <td>0.28</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.58</td> <td>0.00505</td> <td>0.0014</td> <td>M,J</td> <td></td> <td>0.28</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>0.00696</td> <td>0.0014</td> <td>M,J</td> <td></td> <td>0.28</td> </tr> <tr> <td>2,4'-DDT</td> <td>12.14</td> <td><0.0076</td> <td>0.0014</td> <td>M,J,R</td> <td>0.0076</td> <td>0.28</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.58</td> <td>0.0213</td> <td>0.0025</td> <td>M,J</td> <td></td> <td>0.28</td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.88 | <0.0020 | 0.00071 | M,J,R | 0.0020 | 0.28 | 4,4'-DDE | 11.41 | 0.00572 | 0.00085 | J | | 0.28 | 2,4'-DDD | 11.58 | 0.00505 | 0.0014 | M,J | | 0.28 | 4,4'-DDD | 12.09 | 0.00696 | 0.0014 | M,J | | 0.28 | 2,4'-DDT | 12.14 | <0.0076 | 0.0014 | M,J,R | 0.0076 | 0.28 | 4,4'-DDT | 12.58 | 0.0213 | 0.0025 | M,J | | 0.28 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | <0.0020 | 0.00071 | M,J,R | 0.0020 | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 0.00572 | 0.00085 | J | | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | 0.00505 | 0.0014 | M,J | | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 0.00696 | 0.0014 | M,J | | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.14 | <0.0076 | 0.0014 | M,J,R | 0.0076 | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.0213 | 0.0025 | M,J | | 0.28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">4,4'-DDE, 13C12-</td> <td style="width: 15%;">125</td> <td style="width: 15%;">11.40</td> <td style="width: 15%;">79</td> <td style="width: 15%;">21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>82</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>75</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 79 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 82 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 75 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 79 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 82 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 75 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Laboratory Control Sample Analysis Report

| | | | | |
|--------------------|----------------------------------|----------------------|-----------|--|
| Sample Name | Laboratory Control Sample | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | WG2845105-2 | Extraction Date | 20-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | LCS | Percent Solid | 49.5% | |

| Run Information | | Run 1 |
|------------------------|-----------------|-----------------|
| Filename | 6-180827B58 | |
| Run Date | 28-Aug-18 13:36 | |
| Final Volume | 1020 uL | |
| Dilution Factor | 1 | |
| Analysis Units | % | |
| Instrument - Column | HRMS-6 | HP5MSUSR163634H |

| Target Analytes | ng | Ret. | Limits | |
|-----------------------------|-----------|-------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 25 | 10.89 | 115 | 50-120 |
| 4,4'-DDE | 25 | 11.42 | 108 | 50-120 |
| 2,4'-DDD | 25 | 11.59 | 123 | 42-120 |
| 4,4'-DDD | 25 | 12.09 | 105 | 42-120 |
| 2,4'-DDT | 25 | 12.15 | 119 | 50-120 |
| 4,4'-DDT | 25 | 12.59 | 108 | 50-120 |
| Extraction Standards | | ng | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 81 | 21-125 |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 74 | 13-200 |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 70 | 13-200 |

ALS Life sciences

Laboratory Method Blank Analysis Report

| Sample Name | Method Blank | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|-----------|--|------------------|---|-------|--|--------|---|------|--|-------|---|------------------|--|-------|--------|-------|-----|-----|--|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|-------|------|-----|----------|-------|-------|-------|-----|-----|--|----------|-------|-------|-------|-------|------|-----|----------|-------|-------|-------|-----|-----|--|
| ALS Sample ID | WG2847435-1 | Extraction Date | 13-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Blank | Percent Solid | n/a | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 16:23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 10%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th style="width: 15%;">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/L</th> <th>ng/L</th> <th>Flags</th> <th>ng/L</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.86</td> <td>0.0969</td> <td>0.022</td> <td>M,J</td> <td>2.0</td> <td></td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>0.185</td> <td>0.028</td> <td>M,J</td> <td>2.0</td> <td></td> </tr> <tr> <td>2,4'-DDD</td> <td>11.57</td> <td><0.13</td> <td>0.038</td> <td>M,J,R</td> <td>0.13</td> <td>2.0</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td>0.132</td> <td>0.039</td> <td>M,J</td> <td>2.0</td> <td></td> </tr> <tr> <td>2,4'-DDT</td> <td>12.13</td> <td><0.16</td> <td>0.039</td> <td>M,J,R</td> <td>0.16</td> <td>2.0</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.391</td> <td>0.072</td> <td>M,J</td> <td>2.0</td> <td></td> </tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | Time | ng/L | ng/L | Flags | ng/L | LQL | 2,4'-DDE | 10.86 | 0.0969 | 0.022 | M,J | 2.0 | | 4,4'-DDE | 11.40 | 0.185 | 0.028 | M,J | 2.0 | | 2,4'-DDD | 11.57 | <0.13 | 0.038 | M,J,R | 0.13 | 2.0 | 4,4'-DDD | 12.08 | 0.132 | 0.039 | M,J | 2.0 | | 2,4'-DDT | 12.13 | <0.16 | 0.039 | M,J,R | 0.16 | 2.0 | 4,4'-DDT | 12.57 | 0.391 | 0.072 | M,J | 2.0 | |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/L | ng/L | Flags | ng/L | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.86 | 0.0969 | 0.022 | M,J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 0.185 | 0.028 | M,J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.57 | <0.13 | 0.038 | M,J,R | 0.13 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | 0.132 | 0.039 | M,J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | 12.13 | <0.16 | 0.039 | M,J,R | 0.16 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.391 | 0.072 | M,J | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td>4,4'-DDE, 13C12-</td> <td>125</td> <td>11.39</td> <td>59</td> <td>21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.07</td> <td>61</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.57</td> <td>53</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.39 | 59 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.07 | 61 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.57 | 53 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 59 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 61 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 53 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">EDL</td> <td>Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</td> </tr> <tr> <td style="width: 15%;">LQL</td> <td>Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</td> </tr> <tr> <td style="width: 15%;">M</td> <td>Indicates that a peak has been manually integrated.</td> </tr> <tr> <td style="width: 15%;">J</td> <td>Indicates that a target analyte was detected below the calibrated range.</td> </tr> <tr> <td style="width: 15%;">R</td> <td>Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</td> </tr> <tr> <td style="width: 15%;">EMPC</td> <td>Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</td> </tr> </table> | | | | | EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | M | Indicates that a peak has been manually integrated. | J | Indicates that a target analyte was detected below the calibrated range. | R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL | Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LQL | Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | Indicates that a peak has been manually integrated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J | Indicates that a target analyte was detected below the calibrated range. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Laboratory Control Sample Analysis Report

| | | | | |
|--------------------|----------------------------------|-----------------|-----------|--|
| Sample Name | Laboratory Control Sample | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | WG2847435-2 | Extraction Date | 13-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | LCS | Percent Solid | n/a | |

| Run Information | | Run 1 | | | | | |
|------------------------|------------------------|--------------|--|--|--|--|--|
| Filename | 6-180830A18 | | | | | | |
| Run Date | 30-Aug-18 15:23 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Analysis Units | % | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |

| Target Analytes | ng | Ret. | Limits | |
|-----------------------------|-----------|-------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 25 | 10.87 | 111 | 50-120 |
| 4,4'-DDE | 25 | 11.41 | 101 | 50-120 |
| 2,4'-DDD | 25 | 11.58 | 108 | 42-120 M |
| 4,4'-DDD | 25 | 12.08 | 97 | 42-120 |
| 2,4'-DDT | 25 | 12.14 | 107 | 50-120 |
| 4,4'-DDT | 25 | 12.58 | 99 | 50-120 |
| Extraction Standards | | ng | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 65 | 21-125 |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 68 | 13-200 |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 65 | 13-200 |

M Indicates that a peak has been manually integrated.

ALS Life sciences

Laboratory Method Blank Analysis Report

| Sample Name | Method Blank | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|-----------|--|------|------|-------|-----|------|--|--|------|------|------|-------|------|----------|-------|--------|--------|-----|------|----------|-------|--------|--------|-----|------|----------|-------|---------|--------|--------------|------|----------|-------|--------|--------|-----|------|----------|-----------|---------|--------|---|------|----------|-------|--------|-------|-----|------|
| ALS Sample ID | WG2848035-1 | Extraction Date | 21-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.25 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Blank | Percent Solid | 100.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180828A38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 29-Aug-18 06:20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Ret.</th> <th style="text-align: left;">Conc.</th> <th style="text-align: left;">EDL</th> <th style="text-align: left;">EMPC</th> <th style="text-align: left;"></th> </tr> <tr> <th style="text-align: left;"></th> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> <th style="text-align: left;">ng/g</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.89</td> <td>0.0246</td> <td>0.0060</td> <td>M,J</td> <td>0.33</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.42</td> <td>0.0481</td> <td>0.0070</td> <td>M,J</td> <td>0.33</td> </tr> <tr> <td>2,4'-DDD</td> <td>11.59</td> <td><0.0099</td> <td>0.0096</td> <td>M,J,R 0.0099</td> <td>0.33</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.09</td> <td>0.0137</td> <td>0.0069</td> <td>M,J</td> <td>0.33</td> </tr> <tr> <td>2,4'-DDT</td> <td>Not Found</td> <td><0.0071</td> <td>0.0071</td> <td>U</td> <td>0.33</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.59</td> <td>0.0347</td> <td>0.015</td> <td>M,J</td> <td>0.33</td> </tr> </tbody> </table> | | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | 2,4'-DDE | 10.89 | 0.0246 | 0.0060 | M,J | 0.33 | 4,4'-DDE | 11.42 | 0.0481 | 0.0070 | M,J | 0.33 | 2,4'-DDD | 11.59 | <0.0099 | 0.0096 | M,J,R 0.0099 | 0.33 | 4,4'-DDD | 12.09 | 0.0137 | 0.0069 | M,J | 0.33 | 2,4'-DDT | Not Found | <0.0071 | 0.0071 | U | 0.33 | 4,4'-DDT | 12.59 | 0.0347 | 0.015 | M,J | 0.33 |
| | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.89 | 0.0246 | 0.0060 | M,J | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.42 | 0.0481 | 0.0070 | M,J | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.59 | <0.0099 | 0.0096 | M,J,R 0.0099 | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 0.0137 | 0.0069 | M,J | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Found | <0.0071 | 0.0071 | U | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.59 | 0.0347 | 0.015 | M,J | 0.33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.41 | 16 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.09 | 31 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 23 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. U Indicates that this compound was not detected above the EDL. J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Laboratory Control Sample Analysis Report

| | | | | |
|--------------------|----------------------------------|-----------------|-----------|--|
| Sample Name | Laboratory Control Sample | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | WG2848035-2 | Extraction Date | 21-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | LCS | Percent Solid | 50.3% | |

| Run Information | | Run 1 | | | | | |
|------------------------|------------------------|--------------|--|--|--|--|--|
| Filename | 6-180830A16 | | | | | | |
| Run Date | 30-Aug-18 14:43 | | | | | | |
| Final Volume | 1020 uL | | | | | | |
| Dilution Factor | 1 | | | | | | |
| Analysis Units | % | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | |

| Target Analytes | ng | Ret. | Limits | |
|-----------------------------|-----------|-------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 25 | 10.87 | 129 | 50-120 |
| 4,4'-DDE | 25 | 11.40 | 96 | 50-120 |
| 2,4'-DDD | 25 | 11.57 | 102 | 42-120 |
| 4,4'-DDD | 25 | 12.08 | 97 | 42-120 |
| 2,4'-DDT | 25 | 12.14 | 89 | 50-120 |
| 4,4'-DDT | 25 | 12.58 | 100 | 50-120 |
| Extraction Standards | | ng | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 24 | 21-125 |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 47 | 13-200 |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 33 | 13-200 |

ALS Life sciences

Laboratory Method Blank Analysis Report

| Sample Name | Method Blank | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|-----------|--|-------|-------|-----|------|--|--|------|------|------|-------|------|-----|----------|-------|--------|-------|-------|-------|-----|----------|-------|--------|-------|-----|--|-----|----------|---------|--------|-------|---|--|-----|----------|-------|--------|-------|-------|-------|-----|----------|---------|--------|-------|---|--|-----|----------|-------|-------|-------|-----|--|-----|
| ALS Sample ID | WG2848060-1 | Extraction Date | 22-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 5.68 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Blank | Percent Solid | 100.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A36 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 30-Aug-18 21:24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1020 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Target Analytes <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 15%;">Ret.</th> <th style="text-align: left; width: 15%;">Conc.</th> <th style="text-align: left; width: 15%;">EDL</th> <th colspan="3" style="text-align: left;">EMPC</th> </tr> <tr> <th style="text-align: left;">Time</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">Flags</th> <th style="text-align: left;">ng/g</th> <th style="text-align: left;">LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td> <td>10.87</td> <td><0.046</td> <td>0.024</td> <td>M,J,R</td> <td>0.046</td> <td>1.8</td> </tr> <tr> <td>4,4'-DDE</td> <td>11.40</td> <td>0.0789</td> <td>0.031</td> <td>M,J</td> <td></td> <td>1.8</td> </tr> <tr> <td>2,4'-DDD</td> <td>NotFind</td> <td><0.039</td> <td>0.039</td> <td>U</td> <td></td> <td>1.8</td> </tr> <tr> <td>4,4'-DDD</td> <td>12.08</td> <td><0.068</td> <td>0.049</td> <td>M,J,R</td> <td>0.068</td> <td>1.8</td> </tr> <tr> <td>2,4'-DDT</td> <td>NotFind</td> <td><0.049</td> <td>0.049</td> <td>U</td> <td></td> <td>1.8</td> </tr> <tr> <td>4,4'-DDT</td> <td>12.57</td> <td>0.291</td> <td>0.073</td> <td>M,J</td> <td></td> <td>1.8</td> </tr> </tbody> </table> | | | | | Ret. | Conc. | EDL | EMPC | | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.87 | <0.046 | 0.024 | M,J,R | 0.046 | 1.8 | 4,4'-DDE | 11.40 | 0.0789 | 0.031 | M,J | | 1.8 | 2,4'-DDD | NotFind | <0.039 | 0.039 | U | | 1.8 | 4,4'-DDD | 12.08 | <0.068 | 0.049 | M,J,R | 0.068 | 1.8 | 2,4'-DDT | NotFind | <0.049 | 0.049 | U | | 1.8 | 4,4'-DDT | 12.57 | 0.291 | 0.073 | M,J | | 1.8 |
| Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.87 | <0.046 | 0.024 | M,J,R | 0.046 | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.40 | 0.0789 | 0.031 | M,J | | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | NotFind | <0.039 | 0.039 | U | | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.08 | <0.068 | 0.049 | M,J,R | 0.068 | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | NotFind | <0.049 | 0.049 | U | | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.57 | 0.291 | 0.073 | M,J | | 1.8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards | ng | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.39 | 67 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.07 | 61 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 57 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample. LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions. M Indicates that a peak has been manually integrated. U Indicates that this compound was not detected above the EDL. J indicates that a target analyte was detected below the calibrated range. R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMPC | Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Laboratory Control Sample Analysis Report

| | | | | |
|--------------------|----------------------------------|-----------------|-----------|--|
| Sample Name | Laboratory Control Sample | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | WG2848060-2 | Extraction Date | 22-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | LCS | Percent Solid | 50.0% | |

| Run Information | | Run 1 |
|------------------------|------------------------|-----------------|
| Filename | | 6-180830A33 |
| Run Date | | 30-Aug-18 20:24 |
| Final Volume | 1020 | µL |
| Dilution Factor | | 5 |
| Analysis Units | | % |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | |

| Target Analytes | ng | Ret. | Limits | |
|-----------------------------|-----------|-------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 25 | 10.87 | 98 | 50-120 |
| 4,4'-DDE | 25 | 11.40 | 90 | 50-120 |
| 2,4'-DDD | 25 | 11.58 | 104 | 42-120 M |
| 4,4'-DDD | 25 | 12.08 | 88 | 42-120 M |
| 2,4'-DDT | 25 | 12.14 | 105 | 50-120 M |
| 4,4'-DDT | 25 | 12.58 | 101 | 50-120 M |
| Extraction Standards | | ng | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 72 | 21-125 |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 63 | 13-200 |
| 4,4'-DDT, 13C12- | 125 | 12.57 | 60 | 13-200 |

M Indicates that a peak has been manually integrated.

ALS Life sciences

Laboratory Method Blank Analysis Report

| Sample Name | Method Blank | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|----------------------|-----------|--|------------------|------|-------|-----|--------|------------------|------|-------|------|-------|------------------|-----|----------|-------|--------|-------|-----|-----|----------|-------|--------|-------|-----|-----|----------|-------|--------|-------|-------|-------|----------|-------|-------|-------|-----|-----|----------|---------|--------|-------|---|-----|----------|-------|-------|-------|-----|-----|
| ALS Sample ID | WG2848066-1 | Extraction Date | 23-Aug-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 6.07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Type | Blank | Percent Solid | 100.0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample Matrix | QC | Split Ratio | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Information | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Filename | 6-180830A65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Run Date | 31-Aug-18 07:07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Volume | 1000 uL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dilution Factor | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis Units | ng/g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 15%;">Target Analytes</th> <th style="width: 15%;">Ret.</th> <th style="width: 15%;">Conc.</th> <th style="width: 15%;">EDL</th> <th colspan="2">EMPC</th> </tr> <tr> <th>Time</th> <th>ng/g</th> <th>ng/g</th> <th>Flags</th> <th>ng/g</th> <th>LQL</th> </tr> </thead> <tbody> <tr> <td>2,4'-DDE</td><td>10.88</td><td>0.0337</td><td>0.010</td><td>M,J</td><td>1.6</td></tr> <tr> <td>4,4'-DDE</td><td>11.41</td><td>0.0742</td><td>0.013</td><td>M,J</td><td>1.6</td></tr> <tr> <td>2,4'-DDD</td><td>11.58</td><td><0.078</td><td>0.019</td><td>M,J,R</td><td>0.078</td></tr> <tr> <td>4,4'-DDD</td><td>12.09</td><td>0.115</td><td>0.028</td><td>M,J</td><td>1.6</td></tr> <tr> <td>2,4'-DDT</td><td>Not Fnd</td><td><0.028</td><td>0.028</td><td>U</td><td>1.6</td></tr> <tr> <td>4,4'-DDT</td><td>12.58</td><td>0.299</td><td>0.048</td><td>M,J</td><td>1.6</td></tr> </tbody> </table> | | | | | Target Analytes | Ret. | Conc. | EDL | EMPC | | Time | ng/g | ng/g | Flags | ng/g | LQL | 2,4'-DDE | 10.88 | 0.0337 | 0.010 | M,J | 1.6 | 4,4'-DDE | 11.41 | 0.0742 | 0.013 | M,J | 1.6 | 2,4'-DDD | 11.58 | <0.078 | 0.019 | M,J,R | 0.078 | 4,4'-DDD | 12.09 | 0.115 | 0.028 | M,J | 1.6 | 2,4'-DDT | Not Fnd | <0.028 | 0.028 | U | 1.6 | 4,4'-DDT | 12.58 | 0.299 | 0.048 | M,J | 1.6 |
| Target Analytes | Ret. | Conc. | EDL | EMPC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Time | ng/g | ng/g | Flags | ng/g | LQL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDE | 10.88 | 0.0337 | 0.010 | M,J | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | 11.41 | 0.0742 | 0.013 | M,J | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDD | 11.58 | <0.078 | 0.019 | M,J,R | 0.078 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | 12.09 | 0.115 | 0.028 | M,J | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2,4'-DDT | Not Fnd | <0.028 | 0.028 | U | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | 12.58 | 0.299 | 0.048 | M,J | 1.6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Extraction Standards ng <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">4,4'-DDE, 13C12-</td> <td style="width: 20%;">125</td> <td style="width: 20%;">11.40</td> <td style="width: 20%;">68</td> <td style="width: 20%;">21-125</td> </tr> <tr> <td>4,4'-DDD, 13C12-</td> <td>125</td> <td>12.08</td> <td>50</td> <td>5-150</td> </tr> <tr> <td>4,4'-DDT, 13C12-</td> <td>125</td> <td>12.58</td> <td>43</td> <td>5-120</td> </tr> </table> | | | | | 4,4'-DDE, 13C12- | 125 | 11.40 | 68 | 21-125 | 4,4'-DDD, 13C12- | 125 | 12.08 | 50 | 5-150 | 4,4'-DDT, 13C12- | 125 | 12.58 | 43 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 68 | 21-125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 50 | 5-150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 43 | 5-120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>EDL Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.</p> <p>LQL Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.</p> <p>M Indicates that a peak has been manually integrated.</p> <p>J indicates that a target analyte was detected below the calibrated range.</p> <p>R Indicates that the ion abundance ratio for this compound did not meet the acceptance criterion.</p> <p>EMPC Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALS Life sciences

Laboratory Control Sample Analysis Report

| | | | | |
|--------------------|----------------------------------|-----------------|-----------|--|
| Sample Name | Laboratory Control Sample | Sampling Date | n/a | Approved: <i>R. Bakhtiari</i> --e-signature-- 31-Aug-2018 |
| ALS Sample ID | WG2848066-2 | Extraction Date | 23-Aug-18 | |
| Analysis Method | EPA 1699 (mod) | Sample Size | 1 | |
| Analysis Type | LCS | Percent Solid | 50.2% | |

| Run Information | | Run 1 |
|------------------------|------------------------|-----------------|
| Filename | | 6-180830A62 |
| Run Date | | 31-Aug-18 06:07 |
| Final Volume | 1000 | uL |
| Dilution Factor | | 5 |
| Analysis Units | | % |
| Instrument - Column | HRMS-6 HP5MSUSR163634H | |

| Target Analytes | ng | Ret. | Limits | |
|-----------------------------|-----------|-------------|---------------|--------------|
| | | Time | % Rec | Flags |
| 2,4'-DDE | 25 | 10.88 | 107 | 50-120 |
| 4,4'-DDE | 25 | 11.41 | 99 | 50-120 |
| 2,4'-DDD | 25 | 11.58 | 112 | 42-120 |
| 4,4'-DDD | 25 | 12.09 | 96 | 42-120 |
| 2,4'-DDT | 25 | 12.14 | 100 | 50-120 |
| 4,4'-DDT | 25 | 12.59 | 95 | 50-120 |
| Extraction Standards | | ng | | |
| 4,4'-DDE, 13C12- | 125 | 11.40 | 68 | 21-125 |
| 4,4'-DDD, 13C12- | 125 | 12.08 | 47 | 13-200 |
| 4,4'-DDT, 13C12- | 125 | 12.58 | 42 | 13-200 |



1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 6: INTERNAL RECORDS

Including:

- Prep Logs
 - Independent calculation checks
 - Others as listed below:
-
-
-
-
-
-
-
-
-
-
-

Extraction Workup Sheet

| | | | | |
|----------------------------|---------------|------------------|-----------------|--|
| Batch ID: | WG2845105 | Analysis: | Sediments - OCP | |
| BU-TM-1110 Overall HR Prep | | | | |
| Analyst: | Radhika Menon | Date: | 20-Aug-2018 | |

| SUBSAMPLING | | |
|--------------------|-------------------------------|--------------------|
| Sample I.D. | Client I.D. | Subsample Size (g) |
| WG2845105-1 | Method Blank | 10.13 |
| WG2845105-2 | Laboratory Control Sample | 10.18 |
| WG2845105-3 | Extraction and Injection STD. | — |
| L2142228-21 | PDI-SC-S254-4TO6 | 10.13 |
| L2142228-22 | PDI-SC-S254-6TO8 | 10.36 |
| L2142228-23 | PDI-SC-S254-12TO14 | 10.05 |
| L2142228-24 | PDI-SC-S228-0TO2.3 | 10.27 |
| L2144849-1 | PDI-SC-S222-5TO7.2D | 10.01 |
| WG2845105-4 | Duplicate(L2144849-1) | 10.05 |
| L2144849-2 | PDI-SC-S222-7.2TO9.2 | 10.17 |
| L2144849-3 | PDI-SC-S222-9.2TO11.2 | 10.27 |
| L2144849-4 | PDI-SC-S222-11.2TO13.2 | 10.22 |
| L2144849-5 | PDI-SC-S222-13.2TO15.2 | 10.08 |
| L2144849-6 | PDI-SC-S248-0TO2 | 10.15 |
| L2144849-7 | PDI-SC-S248-2TO4 | 10.10 |
| L2144849-8 | PDI-SC-S248-4TO6.2 | 10.21 |
| L2144849-48 | PDI-SC-S226-6TO8 | 10.07 |
| L2144849-49 | PDI-SC-S226-10TO12 | 10.12 |
| L2144849-50 | PDI-SC-S226-8TO10 | 10.02 |
| L2144849-51 | PDI-SC-S226-0TO2 | 10.26 |
| L2144849-52 | PDI-SC-S226-2TO4 | 10.20 |
| L2144849-53 | PDI-SC-S226-12TO14 | 10.22 |
| L2144849-54 | PDI-SC-S226-4TO6 | 10.26 |
| L2144849-55 | PDI-SC-S226-14TO15.8 | 10.22 |
| | | |

BATCH TRACKING

| | |
|--------------------------|------------------------|
| Date/Time/Initials | RM 20-Aug-18 1:00pm |
| Subsampling: | RM 20-Aug-18 1:00pm |
| Balance ID | 3955 |
| Client Labels Checked: | RM 20-Aug-18 1:00pm |
| Samples Spiked | RM 20-Aug-18 3:30pm |
| Soxhlet start time: | 20-Aug-18 RM 4:00pm |
| Soxhlet reflux properly: | RM 20-Aug-18 4:00pm |
| Soxhlet end time: | 21-Aug-18 RM 8:00AM |
| Rotovap + temp check: | AP 21-Aug-18 |
| Sili Column: | AP 21-Aug-18 |
| Mini Acid | MM 22-Aug-18 |
| Robo-Vialing: | — |
| Update to LIMS: | MM MM |

Batch ID: WG2845105

DX Extraction Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2845105-1 | 20 | ✓ |
| WG2845105-2 | 20 | ✓ |
| WG2845105-3 | 20 | ✓ |
| L2142228-21 | 20 | ✓ |
| L2142228-22 | 20 | ✓ |
| L2142228-23 | 20 | ✓ |
| L2142228-24 | 20 | ✓ |
| L2144849-1 | 20 | ✓ |
| WG2845105-4 | 20 | ✓ |
| L2144849-2 | 20 | ✓ |
| L2144849-3 | 20 | ✓ |
| L2144849-4 | 20 | ✓ |
| L2144849-5 | 20 | ✓ |
| L2144849-6 | 20 | ✓ |
| L2144849-7 | 20 | ✓ |
| L2144849-8 | 20 | ✓ |
| L2144849-48 | 20 | ✓ |
| L2144849-49 | 20 | ✓ |
| L2144849-50 | 20 | ✓ |
| L2144849-51 | 20 | ✓ |
| L2144849-52 | 20 | ✓ |
| L2144849-53 | 20 | ✓ |
| L2144849-54 | 20 | ✓ |
| L2144849-55 | 20 | ✓ |

Syringe ID

137

Standard:

HROCP-ES#1- 024D

Spike Date:

20 Aug 2018

Spike Witnessing

Chemist's Initials

RM

Witness's Initials

LN

Witness's Initials

LN

Witness's Initials

LN

Correct Syringe Obtained:

Correct Standard Obtained:

Correct Technique Followed:

| | |
|-----------|-----------|
| Batch ID: | WG2845105 |
|-----------|-----------|

DX Native Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2845105-2 | 20 | ✓ |
| WG2845105-3 | 20 | ✓ |
| | 20 | |
| | 20 | |

Syringe ID

20L

Standard:

HROCP-NS#2- 001A

Date &
Initials:

20 Aug 2018 RM

DX Injection Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2845105-1 | 20 | ✓ |
| WG2845105-2 | 20 | ✓ |
| WG2845105-3 | 20 | ✓ |
| L2142228-21 | 20 | ✓ |
| L2142228-22 | 20 | ✓ |
| L2142228-23 | 20 | ✓ |
| L2142228-24 | 20 | ✓ |
| L2144849-1 | 20 | ✓ |
| WG2845105-4 | 20 | ✓ |
| L2144849-2 | 20 | ✓ |
| L2144849-3 | 20 | ✓ |
| L2144849-4 | 20 | ✓ |
| L2144849-5 | 20 | ✓ |
| L2144849-6 | 20 | ✓ |
| L2144849-7 | 20 | ✓ |
| L2144849-8 | 20 | ✓ |
| L2144849-48 | 20 | ✓ |
| L2144849-49 | 20 | ✓ |
| L2144849-50 | 20 | ✓ |
| L2144849-51 | 20 | ✓ |
| L2144849-52 | 20 | ✓ |
| L2144849-53 | 20 | ✓ |
| L2144849-54 | 20 | ✓ |
| L2144849-55 | 20 | ✓ |
| | 20 | |

Syringe ID

196

Standard:

HROCP-IS#1- 01SE

Date &
Initials:

22-Aug-2018 MM

Chemist's Initials

MM

Chemist's Initials

MM

Chemist's Initials

MM

Correct Technique Followed:

Procedure:

This batchsheet is a guideline only. Please see test procedure for complete set of instructions.

SubSampling

-
- Subsample 10g weight wet (5g dry weight)
- Spike the samples with Extraction/Native Standards.
- Soxhlet extract in DCM for 16 hours.
- Rotovap down to ~4mL. Transfer with hexane rinses to ctube.
- Reduce gently to 1mL

Sili Column (Column does not contain carbon)

- Load sample with 3x1mL hexane rinses
 - F1 = 25 mL of Hexane
 - F2 = 50mL of 1:1 DCM:Hexane
- Reduce sili-column F2 to 1mL.

Mini Acid Silica Column

- Load sample with 3x1mL hexane rinses
 - Elute with 15 ml of DCM

Robo-vial

- Reduce to 1mL
- Vortex well and transfer to robo-vial without rinses.
- Spike with Injection standard. Mark level and submit. **FV=1020uL**

Reagent Lot Numbers:

| Reagent | Lot# | Manufacturer |
|-----------------|------------------|--------------|
| Acetone | 103158 | |
| Hexane | 102920 | |
| DCM | 103443 | |
| Toluene | 103253 | |
| Nonane | ORG-WAKONON- 040 | |
| 1:1 DCM:HEX | ORG-DH2- 308 | |
| Sodium Sulphate | ORG-SSU-1967 | |
| Acid Silica | ORG-ASI- 7857 | |
| Neutral Silica | ORG-NSI- 1742 | |
| Alumina | ORG-ALU- 398 | |
| Chromacarb | ORG-CC- _____ | |
| Corn Oil | ORG-CO- _____ | |

Deactivated Silica ORG-DHS270-211,212

Comments:

Transfer L214228-22 into new flask 21-Aug-18 JP
 L214449-2 + -9 samples contained water - rotoevaporated, then transferred
 into large C-tubes. Split sample from water into smaller C-tube.
 21-Aug-18 JP

| WG: | Prep Analyst: | | | | |
|---------------|---------------|------------------|---------------|-----------|--|
| Analysis: | Date: | | | | |
| | Very Good | Meets Method Req | Some Outliers | Very Poor | Comments / Was spl/batch sent for rework? Why? |
| MB | | | | | |
| LCS | | | | | |
| DUP | | | | | |
| ES rec | | | | | |

Extraction Workup Sheet

| | | | |
|----------------------------|---------------|------------------|-----------------|
| Batch ID: | WG2848035 | Analysis: | Sediments - OCP |
| BU-TM-1110 Overall HR Prep | | | |
| Analyst: | Radhika Menon | Date: | 21-Aug-2018 |

| SUBSAMPLING | | |
|--------------------|-------------------------------|--------------------|
| Sample I.D. | Client I.D. | Subsample Size (g) |
| WG2848035-1 | Method Blank | 10.00 |
| WG2848035-2 | Laboratory Control Sample | 10.00 |
| WG2848035-3 | Extraction and Injection STD. | — |
| L2144849-9 | PDI-SC-S139-0TO2 | 10.07 |
| WG2848035-4 | Duplicate(L2144849-9) | 10.17 |
| L2144849-10 | PDI-SC-S139-2TO4.1 | 10.22 |
| L2144849-11 | PDI-SC-S139-4.1TO5.9 | 10.19 |
| L2144849-12 | PDI-SC-S139-4.1TO5.9D | 10.04 |
| L2144849-13 | PDI-SC-S176-0TO2 | 10.33 |
| L2144849-14 | PDI-SC-S176-2TO4 | 10.24 |
| L2144849-15 | PDI-SC-S176-4TO5.5 | 10.31 |
| L2144849-16 | PDI-SC-S176-5.5TO7.5 | 10.07 |
| L2144849-17 | PDI-SC-S176-7.5TO9.6 | 10.25 |
| L2144849-18 | PDI-SC-S188-0TO1.5 | 10.14 |
| L2144849-56 | PDI-SC-S222-0TO2 | 10.27 |
| L2144849-57 | PDI-SC-S222-2TO4 | 10.05 |
| L2144849-58 | PDI-SC-S222-4TO5 | 10.18 |
| L2144849-59 | PDI-SC-S222-5TO7.2 | 10.14 |
| L2144849-60 | PDI-SC-S117-0TO2 | 10.21 |
| L2144849-61 | PDI-SC-S117-2TO4 | 10.51 |
| L2144849-62 | PDI-SC-S117-4TO6 | 10.06 |
| L2144849-63 | PDI-SC-S219-0TO2 | 10.10 |
| L2144849-64 | PDI-SC-S219-2TO4 | 10.00 |
| L2144849-65 | PDI-SC-S219-4TO5.2 | 10.31 |
| | | |

BATCH TRACKING

| | Date/Time/Initials |
|--------------------------|--|
| Subsampling: | RM 9:00AM 21-Aug-2018 |
| Balance ID | 3955 |
| Client Labels Checked: | RM 9:00 21-Aug-2018 |
| Samples Spiked | RM 3:45PM 21-Aug-2018 |
| Soxhlet start time: | RM 4:25PM 21-Aug-2018 |
| Soxhlet reflux properly: | RM 4:15PM 21-Aug-2018 |
| Soxhlet end time: | 22-Aug-2018 8:00AM NA |
| Rotovap + temp check: | JAZ |
| Sili Column: | JAZ |
| Mini Acid | NA 23-Aug-18 1:00 PM |
| | — |
| | — |
| Robo-Vialing: | — |
| Update to LIMS: | NA 23-Aug-18 3:00PM NA 23-Aug-18 4:00PM |

10.15 21-Aug-2018
RM

* See comments

Batch ID: WG2848035

| DX Extraction Standard: | | |
|-------------------------|-------------|-------------|
| Sample I.D. | Volume (ul) | (Checkmark) |
| WG2848035-1 | 20 | ✓ |
| WG2848035-2 | 20 | ✓ |
| WG2848035-3 | 20 | ✓ |
| L2144849-9 | 20 | ✓ |
| WG2848035-4 | 20 | ✓ |
| L2144849-10 | 20 | ✓ |
| L2144849-11 | 20 | ✓ |
| L2144849-12 | 20 | ✓ |
| L2144849-13 | 20 | ✓ |
| L2144849-14 | 20 | ✓ |
| L2144849-15 | 20 | ✓ |
| L2144849-16 | 20 | ✓ |
| L2144849-17 | 20 | ✓ |
| L2144849-18 | 20 | ✓ |
| L2144849-56 | 20 | ✓ |
| L2144849-57 | 20 | ✓ |
| L2144849-58 | 20 | ✓ |
| L2144849-59 | 20 | ✓ |
| L2144849-60 | 20 | ✓ |
| L2144849-61 | 20 | ✓ |
| L2144849-62 | 20 | ✓ |
| L2144849-63 | 20 | ✓ |
| L2144849-64 | 20 | ✓ |
| L2144849-65 | 20 | ✓ |
| | 20 | |

Syringe ID

137

Standard:

HROCP-ES#1- 024E

Spike Date:

21 Aug 2018

Spike Witnessing

Chemist's Initials

RM

Witness's Initials

AN

Witness's Initials

AN

Witness's Initials

AN

Correct Syringe Obtained:

AN

Correct Standard Obtained:

AN

Correct Technique Followed:

AN

| | |
|-----------|-----------|
| Batch ID: | WG2848035 |
|-----------|-----------|

DX Native Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848035-2 | 20 | ✓ |
| WG2848035-3 | 20 | ✓ |
| | 20 | |
| | 20 | |

Syringe ID

202

Standard:

HROCP-NS#2- 001A

Date &
Initials:

21 Aug 2018

RM

DX Injection Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848035-1 | 20 | ✓ |
| WG2848035-2 | 20 | ✓ |
| WG2848035-3 | 20 | ✓ |
| L2144849-9 | 20 | ✓ |
| WG2848035-4 | 20 | ✓ |
| L2144849-10 | 20 | ✓ |
| L2144849-11 | 20 | ✓ |
| L2144849-12 | 20 | ✓ |
| L2144849-13 | 20 | ✓ |
| L2144849-14 | 20 | ✓ |
| L2144849-15 | 20 | ✓ |
| L2144849-16 | 20 | ✓ |
| L2144849-17 | 20 | ✓ |
| L2144849-18 | 20 | ✓ |
| L2144849-56 | 20 | ✓ |
| L2144849-57 | 20 | ✓ |
| L2144849-58 | 20 | ✓ |
| L2144849-59 | 20 | ✓ |
| L2144849-60 | 20 | ✓ |
| L2144849-61 | 20 | ✓ |
| L2144849-62 | 20 | ✓ |
| L2144849-63 | 20 | ✓ |
| L2144849-64 | 20 | ✓ |
| L2144849-65 | 20 | ✓ |
| | 20 | |

Syringe ID

0196

Standard:

HROCP-IS#1- 015D

Date &
Initials:

23-Aug-2018

NA

Chemist's Initials

NA

Chemist's Initials

NA

Chemist's Initials

NA

Correct Technique Followed:

NA

Procedure:

This batchsheet is a guideline only. Please see test procedure for complete set of instructions.

SubSampling

-
- Subsample 10g weight wet (5g dry weight)
- Spike the samples with Extraction/Native Standards.
- Soxhlet extract in DCM for 16 hours.
- Rotovap down to ~4ml. Transfer with hexane rinses to ctube.
- Reduce gently to 1mL

Sili Column (Column does not contain carbon)

- Load sample with 3x1mL hexane rinses
 - F1 = 25 mL of Hexane
 - F2 = 50mL of 1:1 DCM:Hexane
- Reduce sili-column F2 to 1mL.

Mini Acid Silica Column

- Load sample with 3x1mL hexane rinses
 - Elute with 15 ml of DCM

Robo-vial

- Reduce to 1mL
- Vortex well and transfer to robo-vial without rinses.
- Spike with Injection standard. Mark level and submit. **FV=1020uL**

Reagent Lot Numbers:

| Reagent | Lot# | Manufacturer |
|-----------------|------------------|--------------|
| Acetone | 182575 | |
| Hexane | 102920 | |
| DCM | 103443 | |
| Toluene | 103253 | |
| Nonane | ORG-WAKONON- 040 | |
| 1:1 DCM:HEX | ORG-DH2- | |
| Sodium Sulphate | ORG-SSU- 142 | |
| Acid Silica | ORG-ASI- 7840 | |
| Neutral Silica | ORG-NSI- 1908 | |
| Alumina | ORG-ALU- | |
| Chromacarb | ORG-CC- | |
| Corn Oil | ORG-CO- | |

Comments:

* samples looked very dirty when gone through mini acid columns. mini acid columns turned almost black. NA 23-AUG-2018

** This sample took very long to go through the acid column too. NA 23-Aug-18

| WG: | Prep Analyst: | | | | |
|---------------|---------------|-------------------|---------------|-----------|--|
| Analysis: | Date: | | | | |
| | Very Good | Meets Method Req. | Some Outliers | Very Poor | Comments / Was spi/batch sent for rework? Why? |
| MB | | | | | |
| LCS | | | | | |
| DUP | | | | | |
| ES rec | | | | | |

0

0

Batch ID: WG2847435

Analysis: OCP (HR) - water

BU-TP-2115 Taste and Odour in Water Prep

Analyst: Mark McHugh

Date: 13-Aug-18

***** EXTRACT HOLD TIME 5 DAYS *****

SUBSAMPLING

BATCH TRACKING

Date/Time/Initials

**Bottle Volume
Marked
Client Labels
Checked:**

— 1 —

Samples spiked: 13-Aug-18 / 12:15PM
MSM
Liquid/Liquid

三

Rotovap Reduction: **MAUG-1E**
Rotovap Temp Verified: **JAG**

• • •

N-Evap Reduction: 14 AUG 2018
N-Evap Temp Verified: 14 AUG 2018

Sili-column: 14 AUG 2018
Mini Acid → A2
column: 15-Aug-2018 DA

卷之三

Robovial: 15-Aug-2018
OA

LIMS updated: 15-Aug-2018
DA

Batch ID: WG2847435

OCP Injection Standard:

(Checkmark)

**Syringe
ID:**

196

Standard: HROCP-IS#1- 015F

Date & Initials: 15-Aug-2018 DA

Witness's Initials

Correct Syringe Obtained:

DA

Witness's Initials

Correct Standard Obtained:

DF

Correct Technique Followed:

104

Reagents:

Reagent Lot Numbers:

| Reagent | Lot# | Manufacturer |
|-----------------------|----------------|--------------|
| Acetone | 182575 | |
| Hexane | 183263 | |
| DCM | 103443 | Calcden |
| Toluene | 103253 | |
| Nonane | ORG-WAKONON- — | |
| 1:1 DCM:HEX | ORG-DH2- 508 | |
| Sodium Sulphate | ORG-SSU- 1898 | Calcden |
| Acid Silica | ORG-ASI- 7817 | |
| Neutral Silica | ORG-NSI- 1738 | |
| Alumina | ORG-ALU- — | |
| 2% Deactivated Silica | ORG-2%DAS- 204 | |
| Chromacarb | ORG-CC- 227 | |

Procedure:**Extraction:**

*Note: this batchsheet is a guideline only. See Test Procedure for complete set of instructions.

- Sample Size = 1L (Mark bottle so that exact volume can be determined.)
- Standards added to 1mL Acetone, and then added to sep funnel with 2 acetone rinses, then swirled.
- Extracted with 3x 100mL DCM, then dried over sodium sulphate.
- Reduce to ~5mL (Don't go below 5mL in volume on the roto-vap)
- Transfer to a c-tube (calibrated at 1ml level) with 3x2mL DCM.
- Blow down to exactly 1mL.

Sili Column - Load sample with 3x1mL hexane rinses

- F1 = 25 mL of Hexane
- F2 = 50mL of 1:1 DCM:Hexane

-reduce F2 to 1ml**Mini Acid Silica Column**

- Load sample with 3x1mL hexane rinses
 - Elute with 15 ml of DCM
- Reduce to 1ml, vortex and transfer to robovial (without rinses) Mark level.
- Spike injection standard and submit FV=1020ul

Approval of Deviation from Standard Method

Procedure does not deviate from Standard Method.

(Batch Writer): _____

Procedure does deviate from Standard Method. Approved (Supervisor/Manager): _____

Comments:

**** Protect samples from light as much as possible. ****

**** Samples must submit to instruments within 5 days of extraction ****

| WG: | | Prep Analyst: | | | |
|-----------|-----------|------------------|---------------|-----------|--|
| Analysis: | | Date: | | | |
| | Very Good | Meets Method Req | Some Outliers | Very Poor | Comments / Was spl/batch sent for rework? Why? |
| MB | | | | | |
| LCS | | | | | |
| DUP | | | | | |
| ES rec | | | | | |

Extraction Workup Sheet

| Batch ID: | WG2848060 | Analysis: |
|----------------------------|-------------------------------|--------------------|
| BU-TM-1110 Overall HR Prep | | Sediments - OCP |
| Analyst: | Radhika Munon | Date: |
| SUBSAMPLING | | |
| Sample I.D. | Client I.D. | Subsample Size (g) |
| WG2848060-1 | Method Blank | 10.06 |
| WG2848060-2 | Laboratory Control Sample | 10.12 |
| WG2848060-3 | Extraction and Injection STD. | — |
| L2144849-19 | PDI-SC-S213-0TO2 | 10.04 |
| WG2848060-4 | Duplicate(L2144849-19) | 10.25 |
| L2144849-20 | PDI-SC-S213-2TO4 | 10.25 |
| L2144849-36 | PDI-SC-S191-4TO6 | 10.15 |
| L2144849-37 | PDI-SC-S191-6TO8.1 | 10.11 |
| L2144849-38 | PDI-SC-S192-0TO1.5 | 10.02 |
| L2144849-39 | PDI-SC-S192-1.5TO3 | 10.20 |
| L2144849-40 | PDI-SC-S192-3TO4.2 | 10.00 |
| L2144849-41 | PDI-SC-S198-0TO2 | 10.04 |
| L2144849-42 | PDI-SC-S198-2TO4 | 10.03 |
| L2144849-43 | PDI-SC-S198-2TO4D | 10.08 |
| L2144849-44 | PDI-SC-S198-4TO6 | 10.11 |
| L2144849-45 | PDI-SC-S198-6TO8 | 10.07 |
| L2144849-46 | PDI-SC-S198-8TO10 | 10.27 |
| L2144849-47 | PDI-SC-S198-10TO11.8 | 10.01 |
| L2144849-66 | PDI-SC-S105-0TO2 | 10.04 |
| L2144849-67 | PDI-SC-S105-2TO4 | 10.27 |
| L2144849-68 | PDI-SC-S105-4TO5.6 | 10.24 |
| L2144849-69 | PDI-SC-S105-5.6TO6.6 | 10.06 |
| L2144849-70 | PDI-SC-S191-0TO2 | 10.12 |
| L2144849-71 | PDI-SC-S191-2TO4 | 10.08 |
| | | |

| | |
|--------------------------|--------------------------|
| BATCH TRACKING | |
| Date/Time/Initials | |
| Subsampling: | RM 22-Aug-18 11:00AM |
| Balance ID | 3955 |
| Client Labels Checked: | RM 22-Aug-18 |
| Samples Spiked | RM 22-Aug-18 |
| Soxhlet start time: | RM 4:15PM 22-Aug-2018 |
| Soxhlet reflux properly: | RM 4:15PM 22-Aug-2018 |
| Soxhlet end time: | RM 8:30AM 23-Aug-2018 |
| Rotovap + temp check: | AP 23-Aug-18 |
| Sili Column: | AP 23-Aug-18 |
| Mini Acid | NA 24-Aug-18 12:00pm |
| Robo-Vialing: | / |
| Update to LIMS: | NA 24-Aug-18 2:14pm |
| | NA 24-Aug-18 4:30pm |

| | |
|-----------|-----------|
| Batch ID: | WG2848060 |
|-----------|-----------|

DX Extraction Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848060-1 | 20 | ✓ |
| WG2848060-2 | 20 | ✓ |
| WG2848060-3 | 20 | ✓ |
| L2144849-19 | 20 | ✓ |
| WG2848060-4 | 20 | ✓ |
| L2144849-20 | 20 | ✓ |
| L2144849-36 | 20 | ✓ |
| L2144849-37 | 20 | ✓ |
| L2144849-38 | 20 | ✓ |
| L2144849-39 | 20 | ✓ |
| L2144849-40 | 20 | ✓ |
| L2144849-41 | 20 | ✓ |
| L2144849-42 | 20 | ✓ |
| L2144849-43 | 20 | ✓ |
| L2144849-44 | 20 | ✓ |
| L2144849-45 | 20 | ✓ |
| L2144849-46 | 20 | ✓ |
| L2144849-47 | 20 | ✓ |
| L2144849-66 | 20 | ✓ |
| L2144849-67 | 20 | ✓ |
| L2144849-68 | 20 | ✓ |
| L2144849-69 | 20 | ✓ |
| L2144849-70 | 20 | ✓ |
| L2144849-71 | 20 | ✓ |
| | 20 | |

Syringe ID

137

Standard:

HROCP-ES#1- OL4C

Spike Date:

22 Aug 2018

Spike Witnessing

Chemist's Initials

RM

Witness's Initials

NB

Witness's Initials

NB

Witness's Initials

NB

Correct Syringe Obtained:

Correct Standard Obtained:

Correct Technique Followed:

Batch ID: WG2848060

DX Native Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848060-2 | 20 | ✓ |
| WG2848060-3 | 20 | ✓ |
| | 20 | |
| | 20 | |

Syringe ID

202

Standard:

HROCP-NS#2- 001A

Date &
Initials:

22 Aug 2018 RM

DX Injection Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848060-1 | 20 | ✓ |
| WG2848060-2 | 20 | ✓ |
| WG2848060-3 | 20 | ✓ |
| L2144849-19 | 20 | ✓ |
| WG2848060-4 | 20 | ✓ |
| L2144849-20 | 20 | ✓ |
| L2144849-36 | 20 | ✓ |
| L2144849-37 | 20 | ✓ |
| L2144849-38 | 20 | ✓ |
| L2144849-39 | 20 | ✓ |
| L2144849-40 | 20 | ✓ |
| L2144849-41 | 20 | ✓ |
| L2144849-42 | 20 | ✓ |
| L2144849-43 | 20 | ✓ |
| L2144849-44 | 20 | ✓ |
| L2144849-45 | 20 | ✓ |
| L2144849-46 | 20 | ✓ |
| L2144849-47 | 20 | ✓ |
| L2144849-66 | 20 | ✓ |
| L2144849-67 | 20 | ✓ |
| L2144849-68 | 20 | ✓ |
| L2144849-69 | 20 | ✓ |
| L2144849-70 | 20 | ✓ |
| L2144849-71 | 20 | ✓ |

Syringe ID

196

Standard:

HROCP-IS#1- 015D

Date &
Initials:

22-Aug-2018 NA

Chemist's Initials

NA

Chemist's Initials

NA

Chemist's Initials

NA

Correct Technique Followed:

Procedure:

This batchsheet is a guideline only. Please see test procedure for complete set of instructions.

SubSampling

-
- Subsample 10g weight wet (5g dry weight)
- Spike the samples with Extraction/Native Standards.
- Soxhlet extract in DCM for 16 hours.
- Rotovap down to ~4ml. Transfer with hexane rinses to ctube.
- Reduce gently to 1mL

Sili Column (Column does not contain carbon)

- Load sample with 3x1mL hexane rinses
 - F1 = 25 mL of Hexane
 - F2 = 50mL of 1:1 DCM:Hexane
- Reduce sili-column F2 to 1mL.

Mini Acid Silica Column

- Load sample with 3x1mL hexane rinses
 - Elute with 15 ml of DCM

Robo-vial

- Reduce to 1mL
- Vortex well and transfer to robo-vial without rinses.
- Spike with Injection standard. Mark level and submit. **FV=1020uL**

| Reagent Lot Numbers: | | Manufacturer |
|----------------------|--------------------|--------------|
| Reagent | Lot# | |
| Acetone | 142575 | |
| Hexane | 143263 | |
| DCM | 103500 | |
| Toluene | 103253 | |
| Nonane | ORG-WAKONON- 404 | |
| 1:1 DCM:HEX | ORG-DH2- 578 | |
| Sodium Sulphate | ORG-SSU- 1903 | |
| Acid Silica | ORG-ASI- 7841 | |
| Neutral Silica | ORG-NSI- 1743 | |
| Alumina | ORG-ALU- 399 | |
| Chromacarb | ORG-CC- | |
| Corn Oil | ORG-CO- 403 | |
| Deactivated Silica | ORG-DAS#70- 212213 | |

Comments:

L2144849-38 went below vials on rotov - bulked with
 Hexane & proceeded as normal 28 Aug 18 AP
 L2144849-69 + L2144849-66 - Sili columns bottomed out 23 Aug 18 AP

| WG: | | Prep Analyst: _____ | | | |
|-----------|-----------|---------------------|---------------|--------------|---|
| Analysis: | | Date: _____ | | | |
| | Very Good | Meets Method Req | Some Outliers | Very Poor | Comments / Was spl/batch sent for rework? Why? |
| MB | | | | | |
| LCS | | | | | |
| DUP | | | | | |
| ES rec | | | | | |

Extraction Workup Sheet

| Batch ID: | WG2848066 | Analysis: | Sediments - OCP |
|----------------------------|-------------------------------|--------------------|--|
| BU-TM-1110 Overall HR Prep | | | |
| Analyst: | Radhika Menon | Date: | 23-Aug-2018 |
| SUBSAMPLING | | | BATCH TRACKING |
| Sample I.D. | Client I.D. | Subsample Size (g) | |
| WG2848066-1 | Method Blank | 10.05 | Date/Time/Initials RM 10:30AM 23-Aug-2018 |
| WG2848066-2 | Laboratory Control Sample | 10.06 | Subsampling: 3955 |
| WG2848066-3 | Extraction and Injection STD. | — | Balance ID Client Labels Checked: |
| L2144849-21 | PDI-SC-S213-4TO6 | 10.15 | Samples Spiked RM 10:30AM 23-Aug-2018 |
| L2144849-22 | PDI-SC-S213-6TO8 | 10.04 | Soxhlet start time: RM 3:30PM 23-Aug-2018 |
| L2144849-23 | PDI-SC-S213-8TO10 | 10.24 | Soxhlet reflux properly: RM 4:00PM 23-Aug-2018 |
| L2144849-24 | PDI-SC-S213-10TO11.8 | 10.11 | Soxhlet end time: RM 8:00AM 24-Aug-2018 |
| L2144849-25 | PDI-SC-S213-11.8TO12.8 | 10.10 | Rotovap + temp check: AP 04-Aug-18 |
| L2144849-26 | PDI-SC-S098-0TO1.3 | 10.22 | Sili Column: AP 04-Aug-18 |
| L2144849-27 | PDI-SC-S098-1.3TO3.3 | 10.22 | Mini Acid 27-Aug-18 11:23:00AM MSM |
| L2144849-28 | PDI-SC-S098-3.3TO5.3 | 10.18 | — |
| L2144849-29 | PDI-SC-S098-3.3TO5.3D | 10.22 | — |
| L2144849-30 | PDI-SC-S098-5.3TO7.2 | 10.28 | — |
| L2144849-31 | PDI-SC-S098-7.2TO8.2 | 10.26 | — |
| L2146267-1 | PDI-SC-S103-0TO2 | 10.01 | — |
| WG2848066-4 | Duplicate(L2146267-1) | 10.01 | — |
| L2146267-2 | PDI-SC-S103-2TO4 | 10.05 | Sp.t.f.: MSM |
| L2146267-3 | PDI-SC-S103-4TO6 | 10.24 | Robo-Vialing: MSM |
| L2146267-4 | PDI-SC-S103-6TO8 | 10.08 | MSM |
| L2146267-5 | PDI-SC-S103-8TO9.7 | 10.29 | Update to LIMS: MSM |
| L2146267-6 | PDI-SC-S103-9.7TO10.7 | 10.22 | |
| L2146267-7 | PDI-SC-S103-10.7TO13.4 | 10.36 | |
| L2146267-8 | PDI-SC-S238-0TO2 | 10.01 | |
| L2146267-9 | PDI-SC-S238-2TO4 | 10.03 | |
| | | | |

 See Instructions

| | |
|-----------|-----------|
| Batch ID: | WG2848066 |
|-----------|-----------|

DX Extraction Standard:

| Sample I.D. | Volume (ul) | (Checkmark) |
|-------------|-------------|-------------|
| WG2848066-1 | 20 | ✓ |
| WG2848066-2 | 20 | ✓ |
| WG2848066-3 | 20 | ✓ |
| L2144849-21 | 20 | ✓ |
| L2144849-22 | 20 | ✓ |
| L2144849-23 | 20 | ✓ |
| L2144849-24 | 20 | ✓ |
| L2144849-25 | 20 | ✓ |
| L2144849-26 | 20 | ✓ |
| L2144849-27 | 20 | ✓ |
| L2144849-28 | 20 | ✓ |
| L2144849-29 | 20 | ✓ |
| L2144849-30 | 20 | ✓ |
| L2144849-31 | 20 | ✓ |
| L2146267-1 | 20 | ✓ |
| WG2848066-4 | 20 | ✓ |
| L2146267-2 | 20 | ✓ |
| L2146267-3 | 20 | ✓ |
| L2146267-4 | 20 | ✓ |
| L2146267-5 | 20 | ✓ |
| L2146267-6 | 20 | ✓ |
| L2146267-7 | 20 | ✓ |
| L2146267-8 | 20 | ✓ |
| L2146267-9 | 20 | ✓ |
| | 20 | |

Syringe ID

137

Standard:

HROCP-ES#1- 0244

Spike Date:

23 Aug 2018

Spike Witnessing

Chemist's Initials

RM

Chemist:

Witness's Initials

GN

Witness:

Witness's Initials

EW

Correct Syringe Obtained:

Witness's Initials

GN

Correct Standard Obtained:

Witness's Initials

EW

Correct Technique Followed:

Witness's Initials

GN

Batch ID: WG2848066

DX Native Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848066-2 | 20 | ✓ |
| WG2848066-3 | 20 | ✓ |
| | 20 | |
| | 20 | |

Syringe ID

203

Standard:

HROCP-NS#2- 001A

Date &
Initials:

23 Aug 2018 RM

DX Injection Standard:

| Sample I.D. | Volume (ul) | (Checkmark) Spiked |
|-------------|-------------|-----------------------|
| WG2848066-1 | 20 | ✓ |
| WG2848066-2 | 20 | ✓ |
| WG2848066-3 | 20 | ✓ |
| L2144849-21 | 20 | ✓ |
| L2144849-22 | 20 | ✓ |
| L2144849-23 | 20 | ✓ |
| L2144849-24 | 20 | ✓ |
| L2144849-25 | 20 | ✓ |
| L2144849-26 | 20 | ✓ |
| L2144849-27 | 20 | ✓ |
| L2144849-28 | 20 | ✓ |
| L2144849-29 | 20 | ✓ |
| L2144849-30 | 20 | ✓ |
| L2144849-31 | 20 | ✓ |
| L2146267-1 | 20 | ✓ |
| WG2848066-4 | 20 | ✓ |
| L2146267-2 | 20 | ✓ |
| L2146267-3 | 20 | ✓ |
| L2146267-4 | 20 | ✓ |
| L2146267-5 | 20 | ✓ |
| L2146267-6 | 20 | ✓ |
| L2146267-7 | 20 | ✓ |
| L2146267-8 | 20 | ✓ |
| L2146267-9 | 20 | ✓ |
| | 20 | |

Syringe ID

0196

Standard:

HROCP-IS#1- 01SD

Date &
Initials:

27-Aug-18 MSM

Chemist's Initials

MSM

Chemist's Initials

MSM

Chemist's Initials

MSM

Correct Technique Followed:

Procedure:

This batchsheet is a guideline only. Please see test procedure for complete set of instructions.

SubSampling



- Subsample 10g weight wet (5g dry weight)
- Spike the samples with Extraction/Native Standards.
- Soxhlet extract in DCM for 16 hours.
- Rotovap down to ~4mL Transfer with hexane rinses to ctube.
- Reduce gently to 1mL

Sili Column (Column does not contain carbon)

- Load sample with 3x1mL hexane rinses
 - F1 = 25 mL of Hexane
 - F2 = 50mL of 1:1 DCM:Hexane
- Reduce sili-column F2 to 1mL.

Mini Acid Silica Column

- Load sample with 3x1mL hexane rinses
 - Elute with 15 ml of DCM

Robo-vial

- Reduce to 1mL
- Vortex well and transfer to robo-vial without rinses.
- Spike with injection standard. Mark level and submit. FV=1020uL

- reduce to 5mL and spike IS
- transfer 1mL to robovial and submit FV=1000uL
- transfer remaining 4mL to supelco vial and Archive.

Reagent Lot Numbers:

| Reagent | Lot# | Manufacturer |
|-----------------|----------------|--------------|
| Acetone | 103158 | Caledon |
| Hexane | 189263 | Fisher |
| DCM | 103502 | Caledon |
| Toluene | 103283 | Caledon |
| Nonane | ORG-WAKONON- — | |
| 1:1 DCM:HEX | ORG-DH2- | |
| Sodium Sulphate | ORG-SSU- 19110 | Caledon |
| Acid Silica | ORG-ASI- 7817 | Caledon |
| Neutral Silica | ORG-NSI- 1744 | Caledon |
| Alumina | ORG-ALU- — | |
| Chromacarb | ORG-CC- — | |
| Corn Oil | ORG-CO- — | |

Deactivated Silica ORG-DAS2% - 213,214,215,212

Comments:

| |
|--|
| |
| |
| |
| |
| |

| WG: | | Prep Analyst: | | | |
|-----------|-----------|------------------|---------------|-----------|--|
| Analysis: | | Date: | | | |
| | Very Good | Meets Method Req | Some Outliers | Very Poor | Comments / Was spl/batch sent for rework? Why? |
| MB | | | | | |
| LCS | | | | | |
| DUP | | | | | |
| ES rec | | | | | |

ALS Life sciences

Sample Calculation Report

CS3 RRF Check

| | | | | | | |
|-----|----------------------|---------------------------|-------------------------------|----------------------|--|-----------------------------------|
| | Response of 4,4'-DDE | x | Concentration of 13C2-4,4'DDE | | | |
| RRF | = | Response of 13C12-4,4'DDE | | Concentration of DDE | | |
| | | 1049291.90 | | 250.00 | | |
| RRF | = | 11661127.00 | | 20 | | = 1.12 |
| | | | | | | Value from TargetLynx 1.13 |

Calculation of 4,4'-DDE amount in L2144849-1

| | | | | | | |
|--------|----------------------|---|-----------------------------|------------|-------------|-------------|
| ng = | Response of 4,4'-DDE | x | ng of 13C12-4,4'-DDE spiked | | | |
| | | | Response of 13C12-4,4'DDE | Mean RRF | * | Sample Size |
| | | | 1024101.6 | 125 | * | 8.03 |
| ng/g = | 1024101.6 | x | 1.20 | * | 23.8 | 23.8 |
| | | | 558356.8 | | | |

Calculation of 13C12-4,4'-DDE Recovery in L2144849-1

| | | | | | | | | |
|------------|---|----------------------------|---|--------------------------|-----------|------------|---------------|-------------|
| % Recovery | = | Response of 13C12-4,4'-DDE | x | ng of 13C12-PCB-52 | * | 100 | | |
| | | | | Response of 13C12-PCB-52 | Mean RRF | * | Amount Spiked | |
| | | | | 558356.8 | 50 | * | 100 | |
| % Recovery | = | 558356.8 | x | 0.99 | * | 125 | = 70 | 70 % |
| | | 319957.1 | | | | | | |

| |
|---|
| Approved: R. Bakhtiari --e-signature-- 31-Aug-2018 |
|---|

ALS Life sciences

Sample Calculation Report

CS3 RRF Check

$$\text{RRF} = \frac{\text{Response of } 4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-4,4'\text{DDE}} \times \frac{\text{Concentration of } 13\text{C}2-4,4'\text{DDE}}{\text{Concentration of DDE}}$$

Approved:

R. Bakhtiari
--e-signature--
31-Aug-2018

$$\text{RRF} = \frac{419954.60}{5086542.30} \times \frac{250.00}{20} = 1.03 \quad \text{Value from TargetLyn} \quad \text{x}$$

Calculation of 4,4'-DDE amount in L2144849-32

$$\text{ng} = \frac{\text{Response of } 4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-4,4'\text{DDE}} \times \frac{\text{ng of } 13\text{C}12-4,4'\text{-DDE spiked}}{\text{Mean RRF}} * \text{ Sample Size}$$

$$\text{ng/g} = \frac{1695.3}{198838.1} \times \frac{125}{1.10} * 0.93 = 1.04 \quad \text{1.04}$$

Calculation of 13C12-4,4'-DDE Recovery in L2144849-32

$$\% \text{ Recovery} = \frac{\text{Response of } 13\text{C}12-4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-\text{PCB-52}} \times \frac{\text{ng of } 13\text{C}12-\text{PCB-52}}{\text{Mean RRF}} * \frac{100}{\text{Amount Spiked}}$$

$$\% \text{ Recovery} = \frac{198838.1}{1968402.4} \times \frac{50}{0.54} * \frac{100}{125} = 7 \quad 7 \%$$

ALS Life sciences

Sample Calculation Report

CS3 RRF Check

$$\text{RRF} = \frac{\text{Response of } 4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-4,4'\text{DDE}} \times \frac{\text{Concentration of } 13\text{C}2-4,4'\text{DDE}}{\text{Concentration of DDE}}$$

Approved: *R. Bakhtiari*
--e-signature--
31-Aug-2018

Calculated Value Value from TargetLynx

$$\text{RRF} = \frac{1049291.90}{11661127.00} \times \frac{250.00}{20} = 1.125 \quad 1.125$$

Calculation of 4,4'-DDE amount in L2144849-9

$$\text{ng} = \frac{\text{Response of } 4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-4,4'\text{DDE}} \times \frac{\text{ng of } 13\text{C}12-4,4'\text{-DDE spiked}}{\text{Mean RRF}} * \text{ Sample Size}$$

$$\text{ng/g} = \frac{250098.3}{347440.5} \times \frac{125}{1.20} * 4.41 = 17.0 \quad 17.0$$

Calculation of 13C12-4,4'-DDE Recovery in L2144849-9

$$\% \text{ Recovery} = \frac{\text{Response of } 13\text{C}12-4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-\text{PCB-52}} \times \frac{\text{ng of } 13\text{C}12-\text{PCB-52}}{\text{Mean RRF}} * \frac{100}{\text{Amount Spiked}}$$

$$\% \text{ Recovery} = \frac{347440.5}{428996.9} \times \frac{50}{0.99} * \frac{100}{125} = 33 \quad 33 \%$$

ALS Life sciences

Sample Calculation Report

CS3 RRF Check

| | | | | | |
|-----|---|---|---|---|---|
| | | | | Approved: | R. Bakhtiari |
| | | | | --e-signature-- | |
| | | | | 31-Aug-2018 | |
| RRF | = | Response of 4,4'-DDE Response of 13C12-4,4'DDE | x | Concentration of 13C2-4,4'DDE Concentration of DDE | Calculated Value Value from TargetLynx |
| RRF | = | 419954.60 5086542.30 | x | 250.00 20 | = 1.03 1.03 |

Calculation of 4,4'-DDE amount in L2144849-19

| | | | | | |
|--------|---|---|---|---|-------------|
| ng = | Response of 4,4'-DDE Response of 13C12-4,4'DDE | x | ng of 13C12-4,4'-DDE spiked Mean RRF | * | Sample Size |
| ng/g = | 36472.6 310192.9 | x | 125 1.10 | * | 3.51 |

Calculation of 13C12-4,4'-DDE Recovery in L2144849-19

| | | | | | | |
|------------|---|--|---|--------------------------------|---|------------------------|
| % Recovery | = | Response of 13C12-4,4'-DDE Response of 13C12-PCB-52 | x | ng of 13C12-PCB-52 Mean RRF | * | 100 * Amount Spiked |
| % Recovery | = | 310192.9 285296.2 | x | 50 0.54 | * | 100 * 125 |

ALS Life sciences

Sample Calculation Report

CS3 RRF Check

$$\text{RRF} = \frac{\text{Response of } 4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-4,4'\text{DDE}} \times \frac{\text{Concentration of } 13\text{C}2-4,4'\text{DDE}}{\text{Concentration of DDE}}$$

Approved: *R. Bakhtiari*
--e-signature--
31-Aug-2018

| | | |
|--|------------------|-----------------------|
| | Calculated Value | Value from TargetLynx |
| | 1.03 | 1.03 |

$$\text{RRF} = \frac{419954.60}{5086542.30} \times \frac{250.00}{20} = 1.03$$

Calculation of 4,4'-DDE amount in L2144849-21

$$\text{ng} = \frac{\text{Response of } 4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-4,4'\text{DDE}} \times \frac{\text{ng of } 13\text{C}12-4,4'\text{-DDE spiked}}{\text{Mean RRF}} * \text{Sample Size}$$

$$\text{ng/g} = \frac{75117.5}{320441.8} \times \frac{125}{1.10} * 4.33 = 6.15$$

Calculation of 13C12-4,4'-DDE Recovery in L2144849-21

$$\% \text{ Recovery} = \frac{\text{Response of } 13\text{C}12-4,4'\text{-DDE}}{\text{Response of } 13\text{C}12-\text{PCB-52}} \times \frac{\text{ng of } 13\text{C}12-\text{PCB-52}}{\text{Mean RRF}} * \frac{100}{\text{Amount Spiked}}$$

$$\% \text{ Recovery} = \frac{320441.8}{293130.7} \times \frac{50}{0.54} * \frac{100}{125} = 80$$



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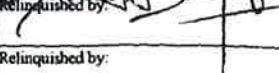
SVOC DATA PACKAGE

SECTION 7: SHIPPING/RECEIVING DOCUMENTS

Including:

- Airbills
- Chain-of-Custody Records
- Sample Log-in Sheet(s) - where applicable
- Others as listed below:

L2144849

| <p>ALS-Burlington 1435 Norjohn Court Unit 1 Burlington, Ontario Canada L7L 0E6 Ph: 1-905-331-3111 Fax: 0</p> | | <p>SUBSURFACE SEDIMENT CHAIN OF CUSTODY</p> | | | | | | | | | | | | | |
|---|----------|--|--------------------------------|----------------------------------|---------------------|---|--------------------|---|--|---|---|----|------------------------|----|--|
| <p>Client Contact</p> <p>AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1-(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Subsurface Sediment Sample Type:</p> | | <p>Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 Analysis Turnaround Time Calendar (C) or Work Days (W) W</p> | | | | <p>Site Contact: Jennifer Ray Laboratory Contact: Whitney Davis</p> | | | <p>Date: 8/9/18 Carrier: FedEx</p> | | <p>COC No: 1 of 6 pages</p> | | | | |
| | | <p><input checked="" type="checkbox"/> 21 days</p> <p><input type="checkbox"/> Other _____</p> | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Sample Identification | | Sample Date | Sample Time | Matrix | QC Sample | Sampler's Initials | Total No. of Cont. | Fraction | Preservative: DD ₂ only | | | | Sample Specific Notes: | | |
| PDI-SC-S222 - 5 to 7.2D | 8/7/2018 | 10:00 | SC | 1 | ED | 2 | | x | | | | | | 1 | |
| PDI-SC-S222 - 7.2 to 9.2 | 8/7/2018 | 10:05 | SC | MS/MSD | ED | | | x | | | | | | 2 | |
| PDI-SC-S222 - 9.2 to 11.2 | 8/7/2018 | 10:10 | SC | | ED | | | x | | | | | | 3 | |
| PDI-SC-S222 - 11.2 to 13.2 | 8/7/2018 | 10:15 | SC | | ED | | | x | | | | | | 4 | |
| PDI-SC-S222 - 13.2 to 15.2 | 8/7/2018 | 10:20 | SC | | ED | | | x | | | | | | 5 | |
| PDI-SC-S248 - 0 to 2 | 8/7/2018 | 16:45 | SC | | ED | | | x | | | | | | 6 | |
| PDI-SC-S248 - 2 to 4 | 8/7/2018 | 16:50 | SC | | ED | | | x | | | | | | 7 | |
| PDI-SC-S248 - 4 to 6.2 | 8/7/2018 | 16:55 | SC | | ED | | | x | | | | | | 8 | |
| PDI-SC-S139 - 0 to 2 | 8/7/2018 | 14:20 | SC | | ED | | | x | | | | | | 9 | |
| PDI-SC-S139 - 2 to 4.1 | 8/7/2018 | 14:25 | SC | MS/MSD | ED | | | x | | | | | | 10 | |
| PDI-SC-S139 - 4.1 to 5.9 | 8/7/2018 | 14:30 | SC | | ED | 2 | | x | | | | | | 11 | |
| PDI-SC-S139 - 4.1 to 5.9D | 8/7/2018 | 14:30 | SC | | ED | 2 | | x | | | | | | 12 | |
| Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=Amber glass, G=glass, RC=Resin Container Preservative: HCl = Hydrochloric Acid, H ₃ PO ₄ = Phosphoric Acid, HNO ₃ = Nitric Acid | | | | | | | | AG | AG | WMG | WMG | AG | | | |
| Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered) | | | | | | | | Sample Disposal | | | | | | | |
| | | | | | | | | <input type="checkbox"/> Return To Client | <input checked="" type="checkbox"/> Disposal By Lab | <input checked="" type="checkbox"/> Archive For 12 Months | | | | | |
| Special Instructions/QC Requirements & Comments: | | | | | | | | | | | | | | | |
|  | | Company: AECOM | Date/Time: 8/10/18 0940 | Received by: FedEx | Company: | Date/Time: | | | | | | | | | |
|  | | Company: | Date/Time: | Received by: AARON BURTON | Company: ALS | Date/Time: 11-Aug-2018 12:30 | | | | | | | | | |
|  | | Company: | Date/Time: | Received by: | Company: | Date/Time: | | | | | | | | | |

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ALS-Burlington
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Burlington, Ontario Canada L7L 0E6
Ph: 1-905-331-3111 Fax: 0

SUBSURFACE SEDIMENT CHAIN OF CUSTODY

| Client Contact | | Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 | | Site Contact: Jennifer Ray Laboratory Contact: Whitney Davis | | Date: 8/9/18 Carrier: FedEx | COC No: 1 2 of 6 pages | | | |
|---|-------------|--|--------|---|--------------------|--------------------------------|---------------------------|---|---|---|
| AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 | | Analysis Turnaround Time Calendar (C) or Work Days (W) W | | | | | | | | |
| Phone: (206) 438-2700 Fax: 1-(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling | | <input checked="" type="checkbox"/> 21 days | | | | | | | | |
| Portland, OR Project #: 60566335 Study: Subsurface Sediment | | <input type="checkbox"/> Other _____ | | | | | | | | |
| Sample Type: | | | | | | | | | | |
| Sample Identification | Sample Date | Sample Time | Matrix | QC Sample | Sampler's Initials | Total No. of Cont. | Fraction | Pesticides DDX only | Sample Specific Notes: | |
| PDI-SC-S176 - 0 to 2 | 8/8/2018 | 16:20 | SC | | ED | 2 | x | | 13 | |
| PDI-SC-S176 - 2 to 4 | 8/8/2018 | 16:25 | SC | | ED | 2 | x | | 14 | |
| PDI-SC-S176 - 4 to 5.5 | 8/8/2018 | 16:30 | SC | | ED | 2 | x | | 15 | |
| PDI-SC-S176 - 5.5 to 7.5 | 8/8/2018 | 16:35 | SC | | ED | 2 | x | | 16 | |
| PDI-SC-S176 - 7.5 to 9.6 | 8/8/2018 | 16:40 | SC | | ED | 2 | x | | 17 | |
| PDI-SC-S188 - 0 to 1.5 | 8/8/2018 | 17:00 | SC | | ED | 2 | x | | 18 | |
| PDI-SC-S213 - 0 to 2 | 8/9/2018 | 9:50 | SC | | ED | 2 | x | | 19 | |
| PDI-SC-S213 - 2 to 4 | 8/9/2018 | 9:55 | SC | | ED | 2 | x | | 20 | |
| PDI-SC-S213 - 4 to 6 | 8/9/2018 | 10:00 | SC | | ED | 2 | x | | 21 | |
| PDI-SC-S213 - 6 to 8 | 8/9/2018 | 10:05 | SC | | ED | 2 | x | | 22 | |
| PDI-SC-S213 - 8 to 10 | 8/9/2018 | 10:10 | SC | | ED | 2 | x | | 23 | |
| PDI-SC-S213 - 10 to 11.8 | 8/9/2018 | 10:15 | SC | | ED | 2 | x | | 24 | |
| Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Container Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid | | | | | | | | AG AG WMG WMG AG | | |
| Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered) | | | | | | | | Sample Disposal | | |
| | | | | | | | | <input type="checkbox"/> Return To Client | <input checked="" type="checkbox"/> Disposal By Lab | <input checked="" type="checkbox"/> Archive For 12 Months |
| Special Instructions/QC Requirements & Comments: | | | | | | | | | | |

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|--|----------------|-------------------------|----------------------------------|--------------|------------------------------|
| Relinquished by: <i>Brett J. Chon</i> | Company: AECOM | Date/Time: 8/10/18 0940 | Received by: FedEx | Company: ALS | Date/Time: 11-Aug-2018 12:30 |
| Relinquished by: | Company: | Date/Time: | Received by: <i>Aaron Burton</i> | Company: | Date/Time: |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |

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SUBSURFACE SEDIMENT CHAIN OF CUSTODY

| Client Contact | | Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 | | Site Contact: Jennifer Ray Laboratory Contact: Whitney Davis | | Date: 8/9/18 Carrier: FedEx | | COC No: 1 <i>3 of 6 pages</i> | | | | | | |
|---|-------------|---|--------|---|--------------------|--------------------------------|----------|----------------------------------|--------------------|------------------------|--|---|---|---|
| AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1-(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling | | Analysis Turnaround Time Calendar (C) or Work Days (W) <input checked="" type="checkbox"/> W | | | | | | | | | | | | |
| Portland, OR Project #: 60566335 Study: Subsurface Sediment Sample Type: | | <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other _____ | | | | | | | | | | | | |
| Sample Identification | Sample Date | Sample Time | Matrix | QC Sample | Sampler's Initials | Total No. of Cont. | Fraction | Pesticides, DDx only | WQ-Part., DDx only | Sample Specific Notes: | | | | |
| PDI-SC-S213 - 11.6 | 8/9/2018 | 10:20 | SC | | ED | 2 | | x | | 25 | | | | |
| PDI-SC-S098 - 0 to 1.3 | 8/9/2018 | 12:00 | SC | | ED | 2 | | x | | 26 | | | | |
| PDI-SC-S098 - 1.3 to 3.3 | 8/9/2018 | 12:05 | SC | | ED | 2 | | x | | 27 | | | | |
| PDI-SC-S098 - 3.3 to 5.3 | 8/9/2018 | 12:10 | SC | | ED | 2 | | x | | 28 | | | | |
| PDI-SC-S098 - 3.3 to 5.3D | 8/9/2018 | 12:10 | SC | | ED | 2 | | x | | 29 | | | | |
| PDI-SC-S098 - 5.3 to 7.2 | 8/9/2018 | 12:15 | SC | | ED | 2 | | x | | 30 | | | | |
| PDI-SC-S098 - 7.2 to 8.2 | 8/9/2018 | 12:20 | SC | | ED | 2 | | x | | 31 | | | | |
| PDI-RB-SS-180807 | 8/7/2018 | 13:00 | W | | ED | 2 | | x | | 32 | | | | |
| PDI-RB-SS-180808 | 8/8/2018 | 10:55 | W | | ED | 2 | | x | | 33 | | | | |
| PDI-RB-SS-180809 | 8/9/18 | 8:00 | W | AC | ED | 2 | | x | | 34 | | | | |
| PDI-RB-SS-180806 | 8/6/18 | 16:00 | W | | ED | 2 | | x | | 35 | | | | |
| Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Cole Preservative: HCl = Hydrochloric Acid, H ₃ PO ₄ = Phosphoric Acid, HNO ₃ = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered) | | | | | | | | | | | | Sample Disposal | | |
| | | | | | | | | | | | | <input type="checkbox"/> Return To Client | <input checked="" type="checkbox"/> Disposal By Lab | <input checked="" type="checkbox"/> Archive For 12 Months |
| Special Instructions/QC Requirements & Comments: | | | | | | | | | | | | | | |

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| Relinquished by: <i>Karen Fletcher</i> | Company: AECOM | Date/Time: 8/10/18 0940 | Received by: FedEx | Company: | Date/Time: |
| Relinquished by: | Company: | Date/Time: | Received by: APRIL BURTON | Company: ALS | Date/Time: 11-Aug-2018 12:30 |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |

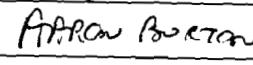
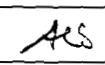
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SUBSURFACE SEDIMENT CHAIN OF CUSTODY

| Client Contact | | Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 | | Site Contact: Jennifer Ray Laboratory Contact: Whitney Davis | | Date: 8/9/18 Carrier: FedEx | COC No: 1 4 of 6 pages | | | | |
|--|-------------|---|--------|---|--------------------|--------------------------------|---|---|---|-----|----|
| AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling | | Analysis Turnaround Time Calendar (C) or Work Days (W) W | | | | | | | | | |
| Portland, OR Project #: 60566335 Study: Subsurface Sediment Sample Type: | | <input checked="" type="checkbox"/> 21 days <input type="checkbox"/> Other _____ | | | | | | | | | |
| Sample Identification | Sample Date | Sample Time | Matrix | QC Sample | Sampler's Initials | Total No. of Cont. | Fraction | Pesticides DBs only | Sample Specific Notes: | | |
| PDI-SC-S191 - 4 to 6 | 8/8/2018 | 10:25 | SC | | ED | 2 | | x | 30 | | |
| PDI-SC-S191 - 6 to 8.1 | 8/8/2018 | 10:30 | SC | | ED | 2 | | x | 37 | | |
| PDI-SC-S192 - 0 to 1.5 | 8/8/2018 | 11:20 | SC | | ED | 2 | | x | 38 | | |
| PDI-SC-S192 - 1.5 to 3 | 8/8/2018 | 11:25 | SC | | ED | 2 | | x | 39 | | |
| PDI-SC-S192 - 3 to 4.2 | 8/8/2018 | 11:30 | SC | | ED | 2 | | x | 40 | | |
| PDI-SC-S198 - 0 to 2 | 8/8/2018 | 14:45 | SC | | ED | 2 | | x | 41 | | |
| PDI-SC-S198 - 2 to 4 | 8/8/2018 | 14:50 | SC | | ED | 2 | | x | 42 | | |
| PDI-SC-S198 - 2 to 4D | 8/8/2018 | 14:50 | SC | | ED | 2 | | x | 43 | | |
| PDI-SC-S198 - 4 to 6 | 8/8/2018 | 14:55 | SC | | ED | 2 | | x | 44 | | |
| PDI-SC-S198 - 6 to 8 | 8/8/2018 | 15:00 | SC | | ED | 2 | | x | 45 | | |
| PDI-SC-S198 - 8 to 10 | 8/8/2018 | 15:05 | SC | | ED | 2 | | x | 46 | | |
| PDI-SC-S198 - 10 to 11.8 | 8/8/2018 | 15:10 | SC | | ED | 2 | | x | 47 | | |
| Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Coil Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered) | | | | | | | AG | AG | WMG | WMG | AG |
| Special Instructions/QC Requirements & Comments: | | | | | | | Sample Disposal | | | | |
| | | | | | | | <input type="checkbox"/> Return To Client | <input checked="" type="checkbox"/> Disposal By Lab | <input checked="" type="checkbox"/> Archive For 12 Months | | |

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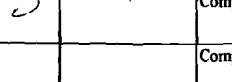
| | | | | | |
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| Relinquished by:  | Company: AECOM | Date/Time: 8/10/18 0940 | Received by: FedEx | Company:  | Date/Time: |
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SUBSURFACE SEDIMENT CHAIN OF CUSTODY

| Client Contact | | Project Contact: Amy Dahl / Chelsey Cook Tel: (206) 438-2261 / (206) 438-2010 | | Site Contact: Jennifer Ray Laboratory Contact: Whitney Davis | | Date: 8/9/18 Carrier: FedEx | COC No: 1 5 of 6 pages | | | | | | | | | | |
|--|-------------|--|--------|---|--------------------|--------------------------------|-------------------------------------|-----------------------|--|--|--|--|---|---|---|-----|----|
| AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 | | Analysis Turnaround Time Calendar (C) or Work Days (W) W | | | | | | | | | | | | | | | |
| Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling | | <input checked="" type="checkbox"/> 21 days | | | | | | | | | | | | | | | |
| Portland, OR Project #: 60566335 Study: Subsurface Sediment | | <input type="checkbox"/> Other _____ | | | | | | | | | | | | | | | |
| Sample Type: | | | | | | | | | | | | | | | | | |
| Sample Identification | Sample Date | Sample Time | Matrix | QC Sample | Sampler's Initials | Total No. of Cont. | Fraction | Particulates DDX only | | | | | Sample Specific Notes: | | | | |
| PDI-SC-S226 - 6 to 8 | 8/6/2018 | 15:05 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 48 | | | | |
| PDI-SC-S226 - 10 to 12 | 8/6/2018 | 15:15 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 49 | | | | |
| PDI-SC-S226 - 8 to 10 | 8/6/2018 | 15:10 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 50 | | | | |
| PDI-SC-S226 - 0 to 2 | 8/6/2018 | 14:50 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 51 | | | | |
| PDI-SC-S226 - 2 to 4 | 8/6/2018 | 14:55 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 52 | | | | |
| PDI-SC-S226 - 12 to 14 | 8/6/2018 | 15:20 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 53 | | | | |
| PDI-SC-S226 - 4 to 6 | 8/6/2018 | 15:00 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 54 | | | | |
| PDI-SC-S226 - 14 to 15.8 | 8/6/2018 | 15:25 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 55 | | | | |
| PDI-SC-S222 - 0 to 2 | 8/7/2018 | 9:45 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 56 | | | | |
| PDI-SC-S222 - 2 to 4 | 8/7/2018 | 9:50 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 57 | | | | |
| PDI-SC-S222 - 4 to 5 | 8/7/2018 | 9:55 | SC | | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 58 | | | | |
| PDI-SC-S222 - 5 to 7.2 | 8/7/2018 | 10:00 | SC | <input checked="" type="checkbox"/> | ED | 2 | <input checked="" type="checkbox"/> | | | | | | 59 | | | | |
| Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Container Preservative: HCl = Hydrochloric Acid, H ₃ PO ₄ = Phosphoric Acid, HNO ₃ = Nitric Acid | | | | | | | | | | | | | AG | AG | WMG | WMG | AG |
| Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered) | | | | | | | | | | | | | Sample Disposal | | | | |
| | | | | | | | | | | | | | <input type="checkbox"/> Return To Client | <input checked="" type="checkbox"/> Disposal By Lab | <input checked="" type="checkbox"/> Archive For 12 Months | | |
| Special Instructions/QC Requirements & Comments: | | | | | | | | | | | | | | | | | |

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| Relinquished by:  | Company: AECOM | Date/Time: 8/10/18 0940 | Received by: FedEx | Company: | Date/Time: |
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| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |

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**SUBSURFACE SEDIMENT
CHAIN OF CUSTODY**

Client Contact
AECOM
1111 3rd Ave Suite 1600
Seattle, WA 98101
Phone: (206) 438-2700 Fax: 1-(866) 495-5288
Project Name: Portland Harbor Pre-Remedial Design
Investigation and Baseline Sampling

Portland, OR
Project #: 60566335 Study: Subsurface Sediment
Sample Type:

Project Contact: Amy Dahl / Chelsey Cook
Tel: (206) 438-2261 / (206) 438-2010

Analysis Turnaround Time

Calendar (C) or Work Days (W) W

21 days

Other _____

Site Contact: Jennifer Ray

Laboratory Contact: Whitney Davis

Date: 8/9/18

Carrier: FedEx

COC No: 1

6 of 6 pages

| Sample Identification | Sample Date | Sample Time | Matrix | QC Sample | Sampler's Initials | Total No. of Cont. | Fraction | Pesticides, DDX only | | | | | Sample Specific Notes: |
|--------------------------|-------------|-------------|--------|-----------|--------------------|--------------------|----------|----------------------|-----|-----|-----|-----|------------------------|
| | | | | | | | | DDX | DDX | DDX | DDX | DDX | |
| PDI-SC-S117 - 0 to 2 | 8/7/2018 | 16:00 | SC | | ED | | | x | | | | | 60 |
| PDI-SC-S117 - 2 to 4 | 8/7/2018 | 16:05 | SC | | ED | | | x | | | | | 61 |
| PDI-SC-S117 - 4 to 6 | 8/7/2018 | 16:10 | SC | | ED | | | x | | | | | 62 |
| PDI-SC-S219 - 0 to 2 | 8/7/2018 | 11:40 | SC | | ED | | | x | | | | | 63 |
| PDI-SC-S219 - 2 to 4 | 8/7/2018 | 11:45 | SC | | ED | | | x | | | | | 64 |
| PDI-SC-S219 - 4 to 5.2 | 8/7/2018 | 11:50 | SC | | ED | | | x | | | | | 65 |
| PDI-SC-S105 - 0 to 2 | 8/8/2018 | 8:55 | SC | | ED | | | x | | | | | 66 |
| PDI-SC-S105 - 2 to 4 | 8/8/2018 | 9:00 | SC | MS/MSD | ED | | | x | | | | | 67 |
| PDI-SC-S105 - 4 to 5.6 | 8/8/2018 | 9:05 | SC | | ED | | | x | | | | | 68 |
| PDI-SC-S105 - 5.6 to 6.6 | 8/8/2018 | 9:10 | SC | | ED | | | x | | | | | 69 |
| PDI-SC-S191 - 0 to 2 | 8/8/2018 | 10:15 | SC | | ED | | | x | | | | | 70 |
| PDI-SC-S191 - 2 to 4 | 8/8/2018 | 10:20 | SC | | ED | | | x | | | | | 71 |

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Cole

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal

Return To Client

Disposal By Lab

Retain For 12 Months

Special Instructions/QC Requirements & Comments:

| | | | | | |
|----------------------|----------------|-------------------------|---------------------------|--------------|----------------------------|
| Relinquished by: | Company: AECOM | Date/Time: 8/10/18 0940 | Received by: FedEx | Company: | Date/Time: |
| Relinquished by: | Company: | Date/Time: | Received by: AARON BURTON | Company: | Date/Time: 11-Aug-18 12:30 |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: ALS | Date/Time: |

6.8°C

ORIGIN ID:MRIA (971) 373-1622
JENNIFER RAY
AECOM
1115 SE CARUTHERS ST
PORTLAND, OR 97214
UNITED STATES US

SHIP DATE: 10AUG18
ACTWGT: 47.40 LB
CAD: 006994577/SSFE1904
DIMS: 25x13x13 IN
BILL THIRD PARTY

Part # 59297-4894577-132519

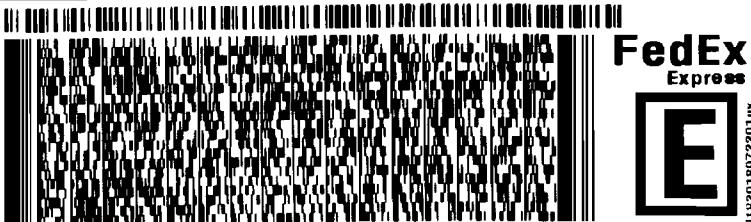
To LYNNE WRONA
ALS ENVIRONMENTAL
F/O FEDERAL EXPRESS DEPOT

CHEEKTOWAGA NY 14225

(905) 331-3111
TNU:
PO:

REF:

DEPT:



1 of 4

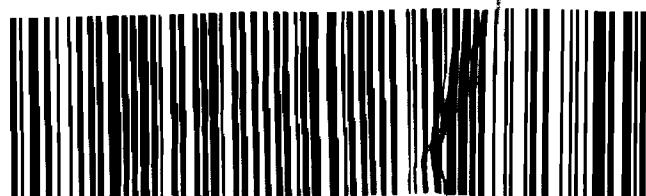
TRK# 0201 7822 4841 6775

MASTER

XO BUFA

SATURDAY 10:00A
FIRST OVERNIGHT

14225
NY-US BUF



ORIGIN ID:MRIA (971) 373-1622
JENNIFER RAY
AECOM
1115 SE CARUTHERS ST
PORTLAND, OR 97214
UNITED STATES US

SHIP DATE: 10AUG18
ACTWGT: 55.10 LB
CAD: 006994577/SSFE1904
DIMS: 25x13x13 IN
BILL THIRD PARTY

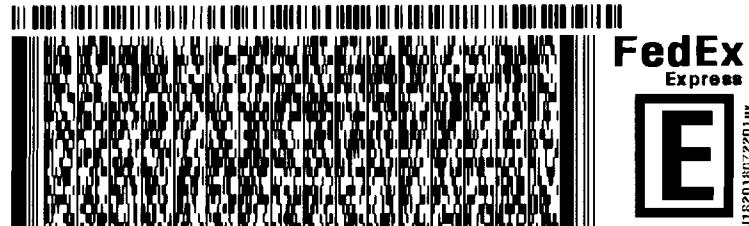
To LYNNE WRONA
ALS ENVIRONMENTAL
F/O FEDERAL EXPRESS DEPOT

CHEEKTOWAGA NY 14225

(905) 331-3111
TNU:
PO:

REF:

DEPT:



2 of 4

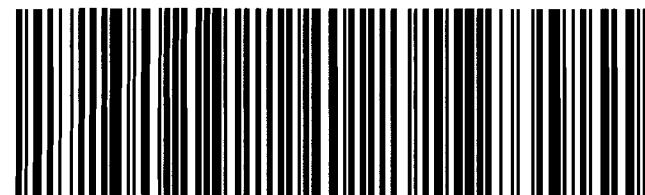
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Met# 7822 4841 6776

0201

XO BUFA

SATURDAY 10:00A
FIRST OVERNIGHT

14225
NY-US BUF



ORIGIN ID:MRIA (971) 373-1622
JENNIFER RAY
AECOM
1115 SE CARUTHERS ST
PORTLAND, OR 97214
UNITED STATES US

SHIP DATE: 10AUG18
ACTWT: 50.00 LB
CAD: 006894577/SSFE1904
DIMS: 25x13x13 IN
BILL THIRD PARTY

Part # 156297-8834485817235

TO LYNNE WRONA
ALS ENVIRONMENTAL
F/O FEDERAL EXPRESS DEPOT

CHEEKTOWAGA NY 14225

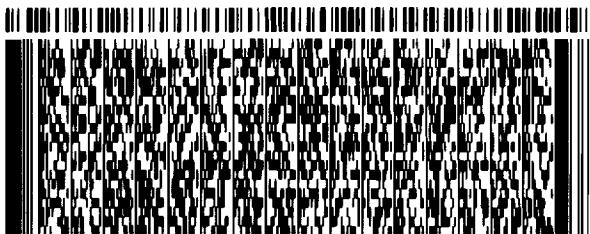
(905) 331-3111

INU:

PO:

REF:

DEPT:



3 of 4

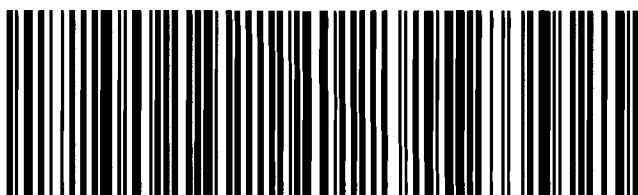
MPS# 7822 4841 6797
0263
Metr# 7822 4841 6775

SATURDAY 10:00A
FIRST OVERNIGHT

0201

XO BUFA

14225
NY-US BUF



ORIGIN ID:MRIA (971) 373-1622
JENNIFER RAY
AECOM
1115 SE CARUTHERS ST
PORTLAND, OR 97214
UNITED STATES US

SHIP DATE: 10AUG18
ACTWT: 50.80 LB
CAD: 006894577/SSFE1904
DIMS: 25x13x13 IN
BILL THIRD PARTY

Part # 156297-8834485817235

05/19

TO LYNNE WRONA
ALS ENVIRONMENTAL
F/O FEDERAL EXPRESS DEPOT

CHEEKTOWAGA NY 14225

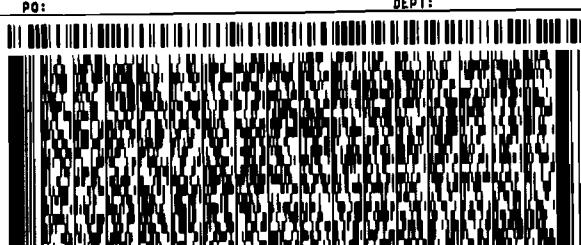
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PO:

REF:

DEPT:



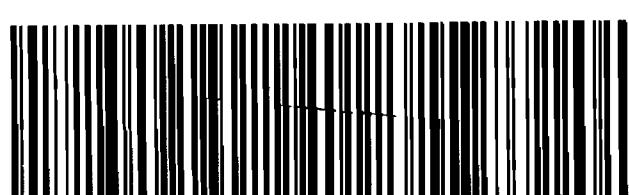
4 of 4

MPS# 7822 4841 6801
0263
Metr# 7822 4841 6775

SATURDAY 10:00A
FIRST OVERNIGHT

0201

14225
NY-US BUF



Sample Receiving Log

| Date/Time Received | Client ID | Number/Description of Containers | Temp. on Receipt* | Condition of Samples, Courier & Tracking Information | Receiver's Initials | Date/Time Login Completed | Submission ID | Sample ID Range |
|---|-----------|--|-------------------|--|---------------------|---------------------------|---------------|-----------------|
| 11-Aug-2018 12:30 | Aecom | 134 x jars of sediment 8 x 1L amber bottles | 6.8°C | Good ReEx / 1st International 7822 4841 6775 | MJ | 11-Aug-2018 13:55 | L2144849 | -1-71 |
| *Temperatures were recorded using: <input checked="" type="checkbox"/> Oakton infraPro' dedicated I.R. gun (serial #97800270) <input type="checkbox"/> Other (specify): _____ | | | | | | | | |

BU-FM-0261c v02 Sample Receiving Log

Date Issued: 21 Aug 2017

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