SANBORN HEAD

Building Trust. Engineering Success.

Mr. Kevin Bilash
USEPA Region III
Land, Chemicals & Redevelopment Division 3LD20
1650 Arch Street
Philadelphia, PA 19103

May 27, 2022
File No. 4862.04

Re: Marcus Hook Industrial Complex
Monthly Progress Report – May 2022
Area of Interest 7
Marcus Hook, PA

Dear Mr. Bilash:

This monthly progress report is being submitted on behalf of the Evergreen Resource Management Operations (Evergreen) for AOI 7 at the Marcus Hook Industrial Complex (MHIC) in Marcus Hook, Pennsylvania. On December 9, 2021, a Revised Interim Measures (IM) Workplan was submitted to the USEPA to address arsenic in the subsurface at AOI 7. The IM Workplan was approved by the United States Environmental Protection Agency (USEPA) on February 15, 2022. The discussion below provides an update on IM pre-design investigation (PDI) activities.

Activities completed this reporting period

The field activities that were completed during this reporting period (May 2022) include field mobilization, monitoring well installation, pressure transducer deployment, and groundwater sampling activities. The field activities occurred May 11, 2022 through May 12, 2022 for the monitoring well installation activities and from May 24, 2022 through May 26, 2022 for the groundwater sampling activities. Details for these activities are presented below:

Soil Borings and Monitoring Well Installation

- Access to MW-559D and MW-560D was obtained via the adjacent Honeywell property.
- Soil borings MW-559D and MW-560D were advanced to 30 ft bgs to be consistent with other deep monitoring wells at the site.
- The following soil samples were collected from MW-559D and MW-560D to be analyzed at SGS laboratories for:
  - Arsenic and iron analysis (12 samples)
  - Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD), and Total Organic Content (TOC) analysis (6 samples)
  - Grain size analysis (2 samples)

- Soils samples from MW-559D and MW-560D were sent to the treatability laboratory (Terra Systems). Terra Systems homogenized five individual soil samples from MW-560D, MW-608D (two samples at this location), MW-609D, and AOI7-BH-22-001 for use in the Bench Scale Treatability Study. Terra Systems sent a portion of the homogenized sample to SGS for baseline arsenic, COD, BOD, and TOC analysis.
- Monitoring well installation and well development were completed for MW-559D and MW-560D.
- Pressure transducer deployment was completed at:
  - Four shallow monitoring well locations (MW-559, MW-560, MW-531U, MW-606S)
  - Six deep monitoring well locations (MW-608D, MW-606D, MW-532L, MW-609D, MW-559D, MW-560D)
  - The stilling well.
- Survey of one soil boring (AOI7-BH-22-001), four monitoring wells (MW-559D, MW-560D, MW-608D, MW-609D) and the stilling well was completed.
- Groundwater gauging was completed at 55 monitoring wells, two staff gauges and the stilling well.
- A colloidal borescope was deployed in 9 monitoring wells to determine groundwater flow direction based on true North direction as well as the groundwater flow velocity.
- Groundwater sampling was completed at MW-509, MW-509D, MW-531L, MW-532L, MW-533L, MW-56D, MW-559D, MW-560, MW-560D, MW-606S, MW-606D, MW-607D, MW-608D, MW-609D.
  - Nine groundwater samples (MW-531L, MW-532L, MW-56D, MW-559D, MW-560D, MW-606D, MW-607D, MW-608D, MW-609D) were collected to be analyzed at SGS laboratories for:
    - Dissolved arsenic and dissolved iron analysis (plus one field duplicate and MS/MSD pair at MW-532L)
    - Sulfate and sulfide analysis
  - Nine groundwater samples were collected for the bench scale treatability study (MW-509, MW-509D, MW-533L, MW-56D, MW-560, MW-560D, MW-606S, MW-608D, MW-609D) and sent to Terra Systems.

Activities planned for the next reporting period

The activities planned for the next reporting period (June 2022) include the following treatability study activities, as described in the Revised IM Workplan:

- Baseline characterization of groundwater treatability samples
- Titration and soil oxidant demand (SOD) testing
- Reagent screening activities

Deviation from approved activities this reporting period

There were no deviations from the approved activities for this reporting period.

Deviation from approved schedule

The schedule for the major milestones is provided below and the detailed schedule is included in Attachment A.

Task	Schedule
PDI Activities	3/2022 – 5/2022
Bench Scale Treatability Testing	5/2022 – 8/2022
Pilot Testing	8/2022 – 11/2022
IM Performance Monitoring	10/2022 – 11/2023

The April 2022 progress report described the sediment and porewater sampling in the Delaware River which was completed in accordance with the IM Workplan. The sediment and porewater sampling was completed between March 22, 2022 through March 25, 2022 by Sanborn, Head & Associates with their subcontractor Normandeau Associates (Normandeau). The draft results of the sediment and porewater sampling were presented to the USEPA on April 20, 2022 during a teleconference meeting. As requested by the USEPA during the April 20, 2022 meeting, Sanborn Head has prepared a Letter Report summarizing the field methodology and results of the sediment and porewater sampling event which is provided as Attachment B to this monthly progress report.

Very truly yours,
SANBORN, HEAD & ASSOCIATES, INC.

Colleen Costello, PG
Senior Vice President

CSS/CC: css

ATTACHMENTS
Attachment A – Interim Measures Implementation Schedule
Attachment B – Sediment and Porewater Sampling Letter Report

\\conserv1\shdata\4800s\4862.04\Source Files\Monthly Reports\Reports\May_2022\20220527_AOI7_Monthly_USEPA_Report.doc

ATTACHMENT A

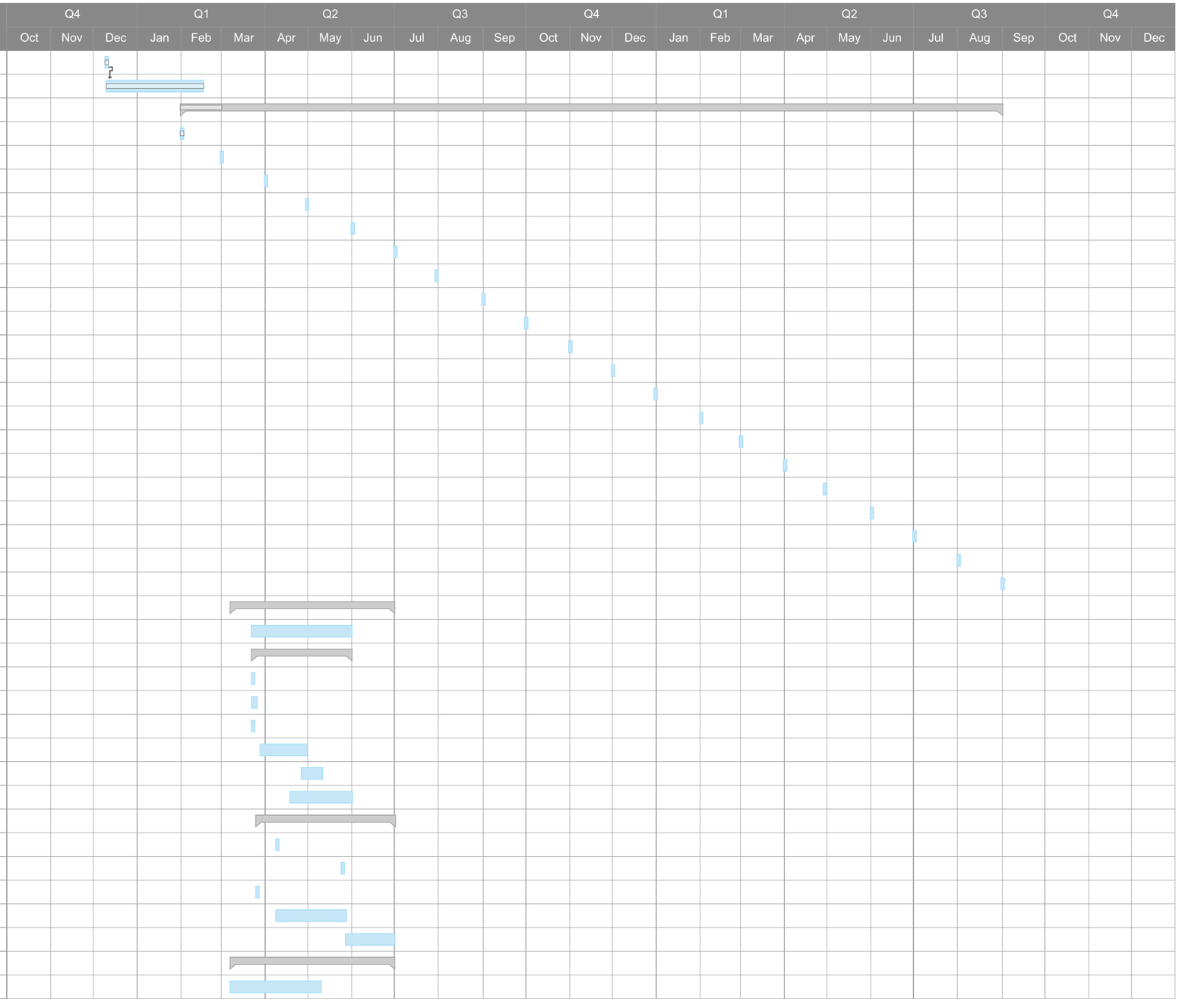
UPDATED INTERIM MEASURES IMPLEMENTATION SCHEDULE

Attachment A

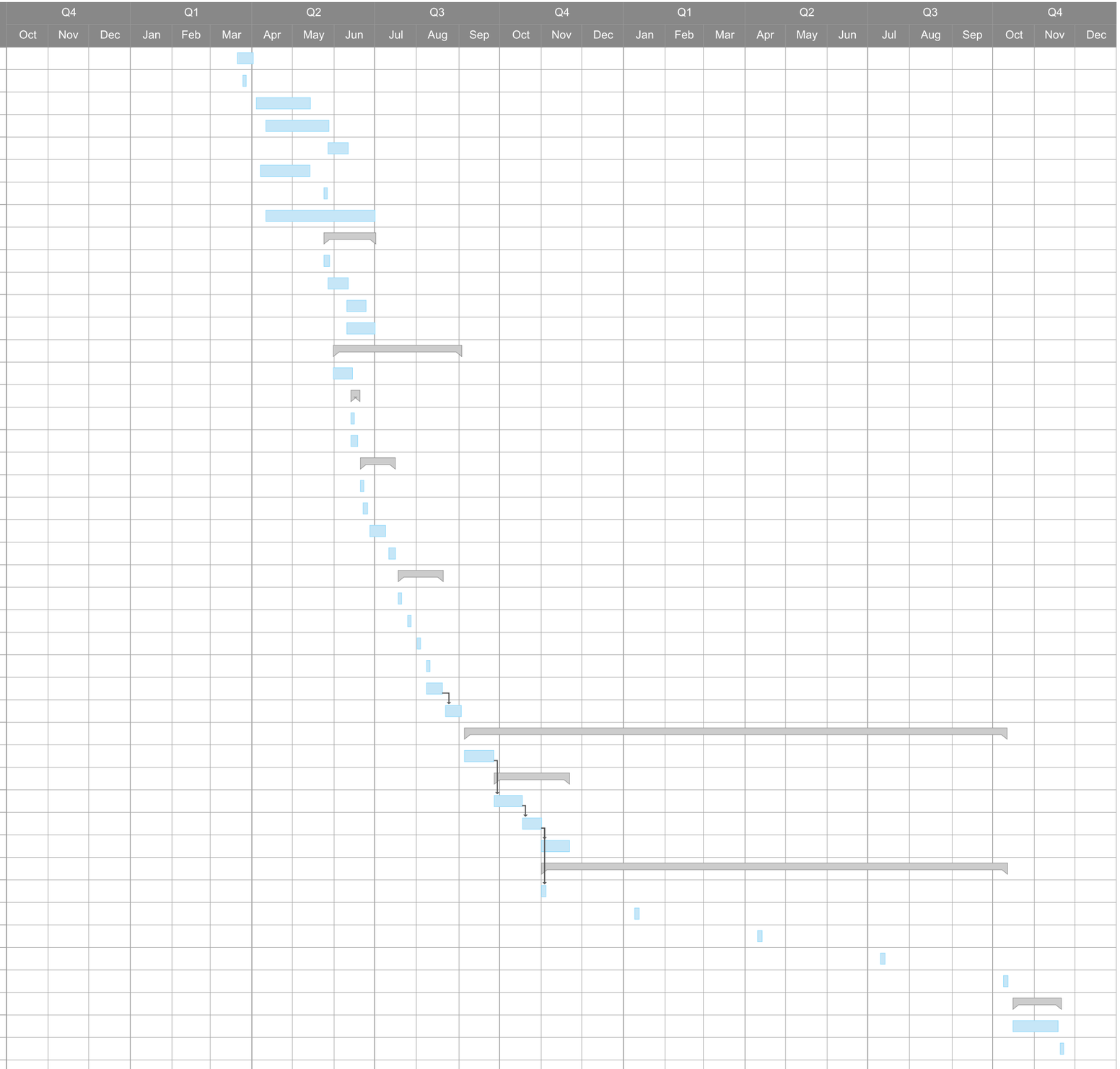
Updated Interim Measures Implementation Schedule

Marcus Hook, Pennsylvania

Task Name	Start	Finish
Submit IM Workplan to EPA	12/09/21	12/09/21
EPA Approval of IM Workplan	12/10/21	02/15/22
Monthly Report to EPA	01/31/22	08/31/23
January 2022 Monthly Report	01/31/22	01/31/22
February 2022 Monthly Report	02/28/22	02/28/22
March 2022 Monthly Report	03/31/22	03/31/22
April 2022 Monthly Report	04/29/22	04/29/22
May 2022 Monthly Report	05/31/22	05/31/22
June 2022 Monthly Report	06/30/22	06/30/22
July 2022 Monthly Report	07/29/22	07/29/22
August 2022 Monthly Report	08/31/22	08/31/22
September 2022 Monthly Report	09/30/22	09/30/22
October 2022 Monthly Report	10/31/22	10/31/22
November 2022 Monthly Report	11/30/22	11/30/22
December 2022 Monthly Report	12/30/22	12/30/22
January 2023 Monthly Report	01/31/23	01/31/23
February 2023 Monthly Report	02/28/23	02/28/23
March 2023 Monthly Report	03/31/23	03/31/23
April 2023 Monthly Report	04/28/23	04/28/23
May 2023 Monthly Report	05/31/23	05/31/23
June 2023 Monthly Report	06/30/23	06/30/23
July 2023 Monthly Report	07/31/23	07/31/23
August 2023 Monthly Report	08/31/23	08/31/23
PDI	03/07/22	06/30/22
PDI Mobilization	03/22/22	05/31/22
Sediment and Porewater Sampling	03/22/22	05/31/22
Field Mobilization	03/22/22	03/22/22
Collection of sediment samples and grab porewater samples	03/22/22	03/25/22
Collection of DGT porewater samples	03/22/22	03/23/22
Laboratory Data Analysis	03/28/22	04/29/22
Data Validation	04/26/22	05/10/22
Data Evaluation	04/18/22	05/31/22
GW Elevation and GW Flow Evaluation	03/25/22	06/30/22
Installation of Transducers	04/08/22	04/08/22
Deployment of Groundwater Flow Meter	05/24/22	05/24/22
Install stilling well	03/25/22	03/25/22
Data Collection	04/08/22	05/27/22
Data Evaluation	05/27/22	06/30/22
Monitoring Well Installations, Soil Borings and Soil Sampling	03/07/22	06/30/22
Obtain Access to Honeywell Property	03/07/22	05/09/22



Task Name	Start	Finish
Delaware Well Permits	03/21/22	04/01/22
Utility Clearance	03/25/22	03/25/22
Soil Borings, Well Installations and Soil Sampling	04/04/22	05/13/22
Laboratory Data Analysis	04/11/22	05/27/22
Data Validation	05/27/22	06/10/22
Well Development	04/07/22	05/13/22
Well and Boring Survey	05/24/22	05/24/22
Data Evaluation	04/11/22	06/30/22
Groundwater Sampling	05/24/22	06/30/22
Groundwater Sampling	05/24/22	05/27/22
Laboratory Data Analysis	05/27/22	06/10/22
Data Validation	06/10/22	06/23/22
Data Evaluation	06/10/22	06/30/22
Bench Scale Treatability Test	05/31/22	09/02/22
Baseline Characterization	05/31/22	06/13/22
Titration and Soil Oxidant Demand Test	06/13/22	06/17/22
Titration	06/13/22	06/13/22
Soil Oxidant Demand Test	06/13/22	06/17/22
Reagent Screening	06/20/22	07/15/22
Test Setup	06/20/22	06/21/22
Initial Test	06/22/22	06/24/22
Modification Test (If Needed)	06/27/22	07/08/22
Evaluation	07/11/22	07/15/22
Rebound Test	07/18/22	08/19/22
Reactor Setup	07/18/22	07/18/22
First Sampling and Replenishing	07/25/22	07/25/22
Second Sampling and Replenishing	08/01/22	08/01/22
Final Sampling	08/08/22	08/08/22
Evaluation	08/08/22	08/19/22
Bench-scale Study Report	08/22/22	09/02/22
Pilot Test	09/05/22	10/11/23
Pilot Study Design	09/05/22	09/26/22
Pilot Study Implementation	09/27/22	11/21/22
Permit	09/27/22	10/17/22
Injection Preparation	10/18/22	10/31/22
Injection Activities	11/01/22	11/21/22
Pilot Study Monitoring	11/01/22	10/11/23
Baseline Sampling	11/01/22	11/03/22
First Performance Monitoring	01/09/23	01/11/23
Second Performance Monitoring	04/10/23	04/12/23
Third Performance Monitoring	07/10/23	07/12/23
Fourth Performance Monitoring	10/09/23	10/11/23
CMS	10/16/23	11/20/23
Design of Final Remedy	10/16/23	11/17/23
Submittal of CMS	11/20/23	11/20/23



ATTACHMENT B

2022 SEDIMENT AND POREWATER SAMPLING LETTER REPORT

SANBORN HEAD

SANBORN HEAD
Building Trust. Engineering Success.

Mr. Kevin Bilash
USEPA Region III
Land, Chemicals & Redevelopment Division 3LD20
1650 Arch Street
Philadelphia, PA 19103

May 27, 2022
File No. 4862.04

Re: 2022 Sediment and Porewater Sampling
Marcus Hook Industrial Complex
Area of Interest 7
Marcus Hook, PA

Dear Mr. Bilash:

1.0 INTRODUCTION

The IM Workplan (approved by the United States Environmental Protection Agency (USEPA) on February 15, 2022) included proposed sediment and porewater sampling activities, including detailed sampling methodology to mimic past sampling efforts by others. This sediment and porewater sampling was completed between March 22, 2022 through March 25, 2022 by Sanborn, Head & Associates (Sanborn Head) with their subcontractor Normandeau Associates (Normandeau) in accordance with the approved IM Workplan. The sediment and porewater samples were collected from the Delaware River in front of Area of Interest 7 (AOI 7) at the Marcus Hook Industrial Complex (MHIC), as shown in Figure 1. As requested by the USEPA on April 20, 2022, this technical memorandum has been prepared to document the sample collection methodology and results of the sediment and porewater sampling activities.

2.0 PREVIOUS SEDIMENT AND POREWATER SAMPLING ACTIVITIES

Previous sediment and porewater sampling activities had been conducted in the Delaware River as part of 2016 investigations along the shoreline of the adjacent Delaware Valley Works (DVW) property and as part of 2018 investigations completed by the US Army Corps of Engineers (USACE) along the shoreline of AOI 7. These events are briefly summarized in this section to provide additional context for sediment and porewater sampling completed by Evergreen in March 2022. Locations of the DVW and USACE sediment and porewater samples are provided in Figure 1. Results from the DVW sediment sampling for arsenic are provided in Figure 2 and results from the DVW and USACE porewater sampling for dissolved arsenic are provided in Figures 3 through 5.

2016 DVW Sediment and Porewater Sampling

As documented in the March 2017*, Supplemental Pathway Investigation Results Report* prepared by Anchor QEA, LLC and summarized in Evergreen's IM Workplan, sediment and porewater sampling was completed at the DVW site to collect data to further assess the fate of arsenic (and other compounds of concern (COCs) not related to the scope of the IM Workplan) in groundwater potentially discharging from the DVW Site to the nearshore sediments of the Delaware River. Sediment samples were collected at ten locations using a Petite Ponar grab and one shallow push core per location (in the 0 to 15 centimeter (cm) interval). The sample locations are shown on Figure 1.

During this sampling event, porewater samples were also collected at the ten sediment sample locations from two sample depths (0 – 10 cm and 11 – 120 cm). Porewater recovery was attempted at multiple locations via micro push point sampler with very limited recovery (less than 50 milliliters [mL]) throughout multiple hours of collection. Various field adjustments were attempted to increase porewater recovery including relocation of the porewater sampler within a one-foot radius and allowing multiple hours for the sampler to remain in place with the tubing system sealed to prevent surface water and atmospheric influence. During attempts to draw from the push points, filter socks became caked with fine-grained sediment and a silty slurry was pulled from various locations with very little water.

The sediment physical data provided from collected geotechnical cores showed a percentage of silt and clay size (reported as percentage of material finer than #200 sieve) ranging from 51.1 to 84.6% in shallow samples and 73.2 to 94.2% in the deeper samples. Field observations of the sediment conditions indicated highly condensed, fine-grain sediments, which caused unsuccessful porewater collection at four out of the ten locations. Anchor QEA submitted a field memorandum to USEPA on November 8, 2016, that identified modifications to the Work Plan requirements for porewater collection, which was approved on November 8, 2016. These modifications included collection of additional sediment cores (one per each of the ten locations) to send to the laboratory for centrifuge analysis to extract and sample porewater. A total of ten porewater samples were extracted for analysis using the centrifuge.

2018 USACE Porewater Sampling

As documented in the *January 2019 Delaware Valley Works Pore Water Sampling Event Report* prepared by the USACE and summarized in Evergreen's IM Workplan, porewater sampling was completed off the AOI 7 shoreline in 2018 by the USACE for the collection of porewater samples (Figure 1) to be analyzed for total and dissolved arsenic. During this sampling event, porewater samples were first attempted to be collected using a disposable, 60 mL plastic syringe attached to Teflon® tubing and a vacuum was placed on the system by pulling the plunger up on the syringe. Filtration of the dissolved arsenic samples was attempted with small cartridge filters affixed to the end of the syringe, but these filters clogged with solids almost immediately, resulting in the submission of unpreserved water samples for laboratory filtration followed by analysis for dissolved arsenic. A total of five samples were collected during the USACE first porewater sampling attempts and only two of these samples were analyzed by the laboratory for total and dissolved arsenic. Three locations (locations 5, 6, and 7 as shown in Figure 1 as USACE-5, USACE-6 and USACE-7) could not be laboratory filtered due to high levels of organic material resulting in no dissolved arsenic samples for these locations.

The USACE then modified their sampling methodology during the second attempt at porewater sampling to use a peristaltic pump instead of the syringe, which allowed for the withdrawal of more porewater and the ability to field filter the dissolved arsenic samples using an in-line filter. The USACE collected three porewater samples (locations 2, 3 and 4) using this method and analyzed samples for total and dissolved arsenic. Even using the peristaltic pump, a sample could not be collected at sample location 1 (see Figure 1) due to

the high silt content in the sediment matrix at this location. Four sampling attempts were completed for this location by the USACE and no sample was able to be collected.

Based on the laboratory's inability to filter the samples from locations 5, 6 and 7 and the inability for the field collection at location 1, no dissolved arsenic porewater concentrations were reported for four out of the nine locations during the two porewater sampling attempts during the 2018 USACE sampling event.

3.0 EVERGREEN MARCH 2022 AOI 7 SEDIMENT AND POREWATER SAMPLING METHODOLOGY

Porewater and sediment samples were collected in the Delaware River, adjacent to the AOI 7 shoreline, to delineate arsenic in porewater to the arsenic groundwater preliminary remediation goal (PRG) of 1,253 micrograms per liter (ug/L) and to delineate arsenic in sediment to the arsenic sediment PRG of 170 micrograms per kilogram (mg/kg) in accordance with the approved IM Workplan. The sediment and porewater sampling was completed between March 22, 2022 and March 25, 2022. Figure 1 shows the sediment and porewater sampling locations from this sampling event. As documented in the IM Workplan, the spacing of the sediment and porewater samples were approximately 90 feet apart, with additional spacing in the vicinity of the Sunoco pipeline, as shown on Figure 1. The locations of Evergreen's 2022 sampling event were selected based on the locations of the porewater samples collected by the USACE in 2018 and the locations of the sediment samples collected by the DVW in 2016.

3.1 Field Mobilization

The Evergreen sampling team traveled by an 18-foot Jon boat equipped with a davit and winch, which was used as the sampling platform for all locations, to the AOI 7 shoreline area from a docking area located underneath the Commodore Barry Bridge near Subaru Park in Chester, Pennsylvania. The Jon boat drafts less than one foot of water which allowed for access to shallow areas during low tide. The boat was positioned as close as possible (within 2 feet) to the proposed location coordinates (as shown on Figure 1) using an on-board survey instrumentation (Trimble GeoXH) and the GPS-determined coordinates recorded for each location, summarized on Table 1. For the first row of samples, each location was evaluated by navigating to the coordinates for each location and then physically verified by one of the samplers walking on the sediment surface to identify the rip rap and the toe of slope (and a soft bottom sediment area) to ensure that the sample was located immediately at the toe of the slope (see Photo 1 in Attachment A). After positioning the boat and documenting the coordinates, the boat bow was anchored, and the sampling took place off the side on the aft deck.

A stability plate was used as part of the push point sampler so that the push point sampler would not move when deployed from the boat, since the tubing and wave action could potentially pull it loose. High and low tides hours were researched and conveyed to the sampling team before the event. During areas of low tide, the first row of samples could not be reached due to no standing water present, so samples in the second or third row were prioritized during low tide. Sampling during high tide conditions (between five and six feet of standing water) could be conducted at any of the sampling locations because the

Pistoncore and push point sampler were able to reach these depths easily. A summary of field activities that occurred during this mobilization are shown in Table 2 and discussed further below.

3.2 Sediment Sampling Methodology and Collection

The boat was equipped with a davit and winch to deploy a Pistoncore sampler to collect the sediment samples. The Pistoncore sampler was manually driven into the sediment using 3-inch, clear, semi-rigid cellulose acetate butyrate (CAB) tubes to facilitate sediment sampling. The Pistoncore sampler is shown in Attachment A (Photo 2). The 3-inch CAB tubes were used to ensure that sufficient sediment volume was collected to complete the sediment analyses. Each core was driven into the sediment to a depth of approximately one ft below the sediment surface and the top six inches of each core was collected, homogenized, and sampled. Sanborn Head personnel characterized each 0.5 ft core and the sediment logs for each location are provided in Attachment B.

This sampling procedure was repeated for a total of 30 sediment sampling locations. Upon completion of sampling each location, the Pistoncore unit was decontaminated using deionized (DI) water and a detergent (Alconox). New CAB tubes were used for each sediment sample location to avoid any cross contamination. The first row of samples was analyzed upon arrival to the laboratory while the other two rows of samples were placed on hold dependent upon the results of the first row of samples. Second and third row samples were released if needed to delineate a sediment sample result above 170 mg/kg.

3.3 Grab Porewater Sampling Methodology and Collection

Six-foot long push point samplers (used during the USACE and DVW sampling events) were used for sample collection due to the anticipated tidal range. The porewater sampler was attached to a stability plate at approximately 0.5 ft from the bottom of the sampling probe. A retrieval line was attached to the plate and the top of the probe so the sampler could be pulled aboard after the sampling. The probe was lowered to the bottom and relocated as necessary to permit the stability plate to rest firmly on the bottom sediment. The interior probe placement rod was removed and replaced with flexible tubing at the top of the probe. New tubing was used at each location and the push point was decontaminated using water, nitric acid and acetone followed by a final water rinse. Photos of the push point sampler and set up are provided in Attachment A (Photo 3).

Evergreen attempted to collect each porewater sample using the peristaltic pump set up in accordance with the IM Workplan. The first step of this process was to measure water quality parameters using a Myron Ultrameter Model 6P meter (Myron) to obtain field readings for conductivity, oxidation-reduction potential (ORP), pH and temperature. These water quality parameters were collected at least once for every location (and collected more frequently for locations that were re-assessed for porewater collection as discussed below) to verify that the sample represented porewater, not surface water. The Myron meter was calibrated each morning of the sampling event. The collected surface water and porewater quality parameters are shown in Table 3. A 0.45 micron filter was attached to the end of the tubing after water quality parameters were assessed, and a new filter was

used for each location. The dissolved arsenic porewater samples were preserved in 250 mL nitric acid preserved bottles.

The process for the porewater sampling in the IM Workplan allowed for two attempts at each location to collect a porewater sample via push point sampler and peristaltic pump. If the peristaltic pump failed to yield results after two attempts, then a sediment sample was to be collected and sent to the laboratory for centrifugation to extract porewater from sediment. Prior to the sampling event, a teleconference was held on March 17, 2022 with the USEPA to confirm the sediment and porewater sampling approach and to provide a contingency for porewater collection if sufficient porewater samples could not be collected via peristaltic pump. The USEPA agreed with Evergreen's proposed approach which was to not collect a sediment sample for centrifuge analysis at every location which did not produce a porewater sample with the peristaltic pump if sufficient porewater samples were collected to characterize the area. This approach was documented in an email sent to the USEPA on March 21, 2022 and is included in Attachment C.

Porewater samples were able to be collected from four out of 30 locations (PW-11, PW-16, PW-17 and PW-20) within the two allotted attempts via peristaltic pump. Attachment A (Photo 4) shows the difference between a sediment core from PW-01 that could not recover porewater (silty clay) and a sediment core from PW-16 that could recover porewater (silty sand). The following was observed at locations that could not recover porewater in the first two attempts (Photos 5 – 8, provided in Attachment A):

- The push point sampler had clay caked on the sample port;
- Porewater that could be recovered was silt-laden water that would clog the push point sampler and/or 0.45 micron filters; and
- Most porewater locations pulled up approximately 5 to 10 mL of surface water followed by no porewater recovery at all.

The observations noted above (clogged sampling ports, silt-laden water and insufficient porewater volumes) were similar to the observations described during the DVW and USACE field activities to collect porewater that were discussed in Section 2.0.

After the two porewater collection attempts were made at each location resulting in the collection of only 4 porewater samples, Evergreen held a teleconference on March 23, 2022 with the USEPA summarizing the observations from the field sampling and presenting Evergreen's proposed approach to collect additional porewater samples, which consisted of increasing the attempts made using the peristaltic pump to collect porewater samples, increasing the sampling time, decreasing the sample volume and varying the sampling location or depth to facilitate sample collection. The USEPA agreed with Evergreen's proposed approach on the teleconference on March 23, 2022.

Following the revised protocol, additional porewater sample attempts (up to 5 attempts at each location) were completed at PW-01, PW-02, PW-04, PW-05, PW-06, PW-09, PW-10, PW-13, PW-14, PW-15, PW-18, PW-24, PW-25, PW-27, PW-28; for each of these attempts the same field procedures outlined above were followed to ensure that the sample was

representative of porewater and not surface water. During this additional sampling, the following items were varied to attempt to retrieve a porewater sample:

- Sampling at varying depths within a 0.2 to 0.8 ft interval;
- Sampling within a 20-ft radius of the original proposed location;
- Using up to five 0.45 micron filters per sample, since these locations had silt-laden porewater recovery that clogged the filters. Multiple filters were used to obtain porewater samples that could be analyzed for dissolved arsenic by the laboratory;
- After discussions with the laboratory, samples that were less than the 150 mL originally requested for laboratory analysis of dissolved arsenic were collected. This includes the following locations and the volume collected at each location: PW-04 at 80 mL, PW-24 at 70 mL, PW-25 at 30 mL, PW-27 at 90 mL;
- Taking out the screen in the push point sampling port; and
- Allowing for very slow porewater recovery (up to 20 minutes)

Using these modifications, porewater samples were able to be collected at seven of the 15 locations, which took an additional two days of field effort to achieve.

3.4 Centrifuge Sampling Methodology and Collection

In accordance with the IM Workplan, sediment samples that were collected to be analyzed for porewater analysis via the centrifuge method were collected in polypropylene bottles provided by the laboratory and sent to the laboratory. At the laboratory, these sediment samples were placed into capped centrifuge bottles and secured in the centrifuge. Samples were then centrifuged at 9,000 to 12,000 G for 30 minutes to separate the porewater from the sediment. The porewater was then decanted off the top of the sample bottles, filtered using a 0.45 micron filter, and analyzed for dissolved arsenic. A total of 18 porewater samples (plus one field duplicate and one matrix spike/matrix spike duplicate (MS/MSD) pair) were collected using the centrifuge method.

3.5 DGT Porewater Sampling Methodology and Collection

In accordance with the IM Workplan, and due to the low permeability nature of the sediments for the peristaltic pump method and the potential for alteration of dissolved metal results due to the centrifuge method, five of the 30 proposed porewater sampling locations were to be paired with a diffusive gradient in thin film (DGT) passive sampling device. Because of the low volume of porewater samples collected via peristaltic pump, 21 DGTs were deployed during the sampling event, in addition to the additional sampling described in the previous sections.

The DGT sampler used for the passive porewater sampling method was the LSPT-NP sampler, which were purchased from DGT® Research. As described in the IM Workplan, the DGT sampler was recommended for use by the USEPA in the 2016 document *Laboratory, Field, and Analytical Procedures for Using Passive Sampling in the Evaluation of Contaminated Sediments: User's Manual* when collection of porewater samples requires additional exclusion of particulates. This DGT sampler is equipped with a 0.8 millimeter (mm) APA diffusive gel, polyethersulphone filter membrane and a titanium oxide (Metsorb) binding layer to sorb arsenic. The DGT samplers are composed of two functional

layers of material that are stacked and exposed to the sediment: an outer layer consisting of a membrane filter to allow only dissolved species to interact with the second layer, which is a diffusion gel through which the metals diffuse at a known rate and binds to specific metals that pass through the diffusion gel. These materials are secured together in a plastic housing. The pore size of both the filter and hydrogel effectively exclude any particulate metals and colloidal metals.

Prior to use, the DGT samplers were deoxygenated for 24 hours in trace-metal-clean 0.01M NaCl that was gently bubbled with nitrogen gas and sealed in a plastic covering. Each DGT sampler was inserted into the sediment vertically so that the thin film was completely buried in sediment with the center of the thin film area placed approximately 0.5 ft from the sediment surface. In accordance with the LSPT-NP deployment recommendations provided in Attachment D, one day of deployment is appropriate for sample collection, therefore, all DGT samplers were deployed for approximately 24 hours. DGTs were removed gently from the sediment, and any adhered sediment particles were washed off with deionized water. All DGT samplers were stored in a clean plastic bag and refrigerated prior to laboratory analysis. In total, 21 DGT samplers were deployed at proposed porewater locations.

3.6 Summary of Porewater Sample Collection

The collected porewater samples are shown in Table 2 and summarized below:

- 11 porewater locations (plus one field duplicate) were sampled via peristaltic pump method. Note that not enough porewater could be recovered at any of the locations to perform an MS/MSD analysis.
- 18 porewater locations were sampled via centrifuge method with one field duplicate and MS/MSD sample collected.
- 21 porewater locations were sampled via DGT sampler method.

3.7 Laboratory Analysis

All 30 sediment samples were collected and sent to SGS North America, Inc. (SGS) of Dayton, New Jersey for analysis of total arsenic via USEPA SW-846 method 6010. Only the first row of samples was immediately sent for analysis and the second and third row of samples were held unless a sample adjacent to it in the first row exceeded the arsenic in sediment PRG of 170 mg/kg. Accordingly, all ten sediment samples in the first row (SED-01, SED-04, SED-07, SED-10, SED-13, SED-16, SED-19, SED-22, SED-25, SED-28) were analyzed by the laboratory, with an additional three sediment samples (SED-05, SED-14, SED-17) analyzed in the second row to complete delineation. Additionally, four sediment locations (SED-07, SED-10, SED-11, SED-12) were analyzed for sulfate and sulfide via USEPA 9056A and 9034, respectively, to inform the IM design. Field Quality Assurance/Quality Control (QA/QC) samples including one MS/MSD pair and one field duplicate (FD) were collected for arsenic analysis in sediment. In addition, one rinsate equipment blank was collected for the sediment sampling from the Pictoncore following the decontamination process. The water used for the equipment blank was supplied by SGS.

Porewater samples were also collected and sent to SGS for analysis of dissolved arsenic via USEPA SW-846 method 6010. The dissolved arsenic samples collected via the peristaltic pump were field filtered using a 0.45 micron in-line field filter for each location. Centrifuge samples were laboratory filtered using a 0.45 micron filter. The DGT samples were not field filtered and the process for laboratory analysis of the DGT samples is provided in Attachment D. One rinsate equipment blank was collected for dissolved arsenic analysis following the decontamination process of the push point sampler. The water used for the equipment blank was supplied by SGS. Additional field Quality Assurance/Quality Control (QA/QC) samples included one FD for dissolved arsenic analysis from the porewater samples collected via the peristaltic pump. The IM Workplan also included one MS/MSD pair from the porewater collected via peristaltic pump, however, sufficient volume of porewater was not able to be collected at any of the locations to perform this analysis. Porewater samples collected via centrifuge analysis included one field duplicate and one MS/MSD pair as well.

All laboratory reports for sediment and porewater are provided in Attachment E. The QA/QC sample results are included in Tables 4, 6 and 7. Data validation was performed for arsenic in sediment and dissolved arsenic in porewater collected via peristaltic pump, and the reports are provided in Attachment F.

3.8 DGT Calculations for Arsenic Concentrations

Attachment D describes the procedure used to calculate the dissolved arsenic concentrations in porewater based on DGT collection. SGS followed the DGT sample preparation methods provided in Attachment D and analyzed the prepped sample for dissolved arsenic analysis via USEPA method 6010. The output provided in the laboratory DGT report is reported in mass (micrograms, ug) of dissolved arsenic that was recovered from the thin film. Attachment D provides the analyzed arsenic mass values and appropriate input parameters to the equations with an explanation for how each input parameter was chosen to calculate the porewater concentrations in ug/L.

4.0 SEDIMENT AND POREWATER SAMPLING RESULTS

4.1 Sediment Results

Sediment arsenic results are provided in Table 4. In accordance with the IM Workplan, all sediment arsenic results were compared to the arsenic in sediment PRG of 170 mg/kg. The sediment arsenic results are also shown in Figure 2, which includes the 2016 DVW arsenic results for reference. Sediment arsenic concentrations ranged from 41 mg/kg to 353 mg/kg for the 2022 Evergreen samples and 49 mg/kg to 1,830 mg/kg for the 2016 DVW samples. In the first row of samples collected by Evergreen in 2022, three locations (SED-04, SED-13, SED-16) had concentrations greater than 170 mg/kg. Based on those results, the paired second row samples (SED-05, SED-14, SED-17) were released from hold in the laboratory and analyzed for arsenic. All three samples in the second row were below 170 mg/kg, so no other samples from the second or third row were analyzed. In addition, a field duplicate sample was collected at SED-07 and the results were consistent with the primary sample. All sediment samples that were analyzed for arsenic had data validation performed

under level 2B. All arsenic in sediment data was classified as acceptable (with or without qualification). The data validation report is included in Attachment F.

Sulfate and sulfide results in sediment are provided in Table 5. Sulfate concentrations in sediment ranged from 34 mg/kg to 471 mg/kg and sulfide concentrations in sediment were all non-detect (below 8.1 mg/kg). These results suggest oxidizing conditions in the first 0.5 ft of sediment, which is to be expected for shallow sediment, and suggests immobilizing conditions for arsenic in this interval. These results will be used to inform the IM design.

4.2 Porewater

Dissolved arsenic concentrations in porewater collected via the peristaltic pump method are provided in Table 6 and shown in Figure 3. The dissolved arsenic concentrations in porewater from the 11 locations that were able to be collected via peristaltic pump ranged from non-detect to 442 ug/L. These concentrations were well below the arsenic in groundwater PRG of 1,253 ug/L. A field duplicate sample was collected at location PW-20 (75.7 ug/L dissolved arsenic), and the results are consistent with the primary sample (69.3 ug/L). As shown in Figure 3, the higher concentrations of dissolved arsenic in porewater from the 2022 Evergreen sampling event generally correlate with the locations where higher arsenic in sediment was observed in the 2022 sampling event.

Figure 3 shows the dissolved arsenic in porewater results from the 2022 Evergreen sampling event via peristaltic pump method, the 2016 DVW sampling event and the 2018 USACE sampling event. Results for dissolved arsenic in porewater from the 2016 DVW event ranged from 40 ug/L to 417,000 ug/L. The highest dissolved arsenic concentrations were found along the western SWMU 9 shoreline. DVW sample locations toward the AOI 7 shoreline are consistent with results from the 2022 Evergreen sampling event. Results for the five dissolved arsenic in porewater samples from the 2018 USACE event ranged from 382 ug/L to 9,410 ug/L. These results were higher than the 2022 Evergreen results at three locations, USACE-2, -3, and -4, which is discussed further below. Water quality parameters were collected for river and porewater during both the 2022 Evergreen event (Table 3) and the 2018 USACE event (Attachment G). Porewater quality parameters were consistent between the two events and the surface water quality parameters were noticeably different compared to its porewater pair from both the 2018 USACE and 2022 Evergreen sampling, supporting that both sampling events collected porewater samples.

All porewater dissolved arsenic samples collected via peristaltic pump had reduced data validation performed under level 2B. All dissolved arsenic in porewater (collected via peristaltic pump) data was classified as acceptable (with or without qualification).

Results for arsenic in porewater collected via centrifuge analysis are provided in Table 7 and shown in Figure 4. Dissolved arsenic concentrations ranged from 10 ug/L to 163 ug/L, well below the arsenic in groundwater PRG. A field duplicate sample was also collected for centrifuge analysis at location PW-24 and the results are consistent with the primary sample.

Results for arsenic in porewater collected via DGT sampler are provided in Table 8 (calculations for the dissolved arsenic concentration in porewater are provided in Attachment D) and shown in Figure 5. Dissolved arsenic concentrations ranged from non-detect to 93 ug/L, well below the arsenic in groundwater PRG.

4.3 Discussion of Evergreen 2022 Porewater Results and USACE 2018 Porewater Results

As shown on Figure 3, the 2018 USACE sample locations that had results above the 1,253 ug/L PRG (USACE-2, USACE-3 and USACE-4) were delineated via peristaltic pump collected porewater as follows:

- USACE-2 (9,410 ug/L)
  - To the west by USACE-8 (115 ug/L)
  - To the south by PW-09 (10.7 ug/L)
  - To the east by PW-04 (442 ug/L)
- USACE-3 (6,650 ug/L)
  - To the west by PW-04 (442 ug/L)
  - To the south by PW-09 (10.7 ug/L)
  - To the east by PW-16 (7.7 ug/L)
- USACE-4 (3,850 ug/L)
  - To the west by PW-04 (442 ug/L)
  - To the south by PW-14 (47.6 ug/L)
  - To the east by PW-16 (7.7 ug/L)

The 2018 USACE locations that were above the arsenic in groundwater PRG (USACE-2, -3 and -4) are co-located with 2022 Evergreen locations (PW-01, PW-07 and PW-13).

- USACE-2/PW-01 - The dissolved arsenic result from PW-01 was collected via DGT sampler and the dissolved arsenic concentration was 93 ug/L (below the PRG). Note that a porewater sample via peristaltic pump was re-attempted at PW-01 multiple times after the first two attempts and no porewater could be recovered.
- USACE-3/PW-07 - Two dissolved arsenic samples were collected from PW-07, the first sample was collected via centrifuge analysis, since a porewater sample was not able to be collected at this location using the peristaltic pump, and the second sample was collected via the DGT sampler. The dissolved arsenic results from PW-07 were 145 ug/L from the centrifuge method and 23.5 ug/L, from the DGT method.
- USACE-4/PW-13 - The dissolved arsenic result from PW-13 was 278 ug/l, this sample was collected via peristaltic pump and is below the arsenic in groundwater PRG of 1,253 ug/L.

5.0 RECOMMENDATIONS

The 2022 Evergreen sediment and porewater sampling event characterized arsenic in sediment and porewater within three step-out rows of sample locations. All arsenic in sediment samples from the 2022 Evergreen event that are above the arsenic in sediment PRG have been delineated. Porewater sampling was conducted in three different ways to provide characterization within the sample area due to low recovery of porewater via peristaltic pump collection. All porewater sample locations showed dissolved arsenic

values below the arsenic in groundwater PRG across all three porewater collection methods (peristaltic pump, centrifuge analysis, and DGT sampler). In addition, the three USACE porewater sample locations that were sampled in 2018, which had reported dissolved arsenic results above the arsenic in groundwater PRG (1,253 ug/L), have been delineated by porewater samples collected during the 2022 Evergreen event via peristaltic pump (as well as the other two methods). In addition, 2022 Evergreen samples that were co-located with previous samples by others indicated arsenic below the PRG in the 2022 samples. Because arsenic in sediment and dissolved arsenic in porewater have been fully characterized and delineated off the AOI 7 shoreline, the recommendation for AOI 7 IM activities is for no further sediment and porewater sampling. In addition, since all 2022 porewater results are below the PRG of 1,253 ug/l, no additional remedial efforts to remediate groundwater to protect porewater appear warranted for AOI 7.

CSS/CC: css

Enclosures

TABLES

Table 1 Sediment and Porewater Sample Location Coordinates
Table 2 Summary of Completed Field Activities (March 22, 2022 - March 25, 2022)
Table 3 Surface Water and Porewater Quality Parameters
Table 4 Sediment Results – Arsenic
Table 5 Sediment Results – Sulfate/Sulfide
Table 6 Porewater Results – Dissolved Arsenic via Peristaltic Pump Method
Table 7 Porewater Results – Dissolved Arsenic via Centrifuge Method
Table 8 Porewater Results – Dissolved Arsenic via DGT Method

FIGURES

Figure 1 Sediment and Porewater Sample Locations – 2022
Figure 2 Arsenic in Sediment Results
Figure 3 Dissolved Arsenic in Porewater Results – Peristaltic Pump Collection
Figure 4 Dissolved Arsenic in Porewater Results – Centrifuge Collection
Figure 5 Dissolved Arsenic in Porewater Results – DGT Collection

ATTACHMENTS

Attachment A Field Photo Log
Attachment B Sediment Logs
Attachment C USEPA Correspondence
Attachment D DGT Methodology and Calculations
Attachment E Laboratory Reports
Attachment F Data Validation Report
Attachment G USACE 2018 Water Quality Parameters Table

TABLES

Table 1
Sediment and Porewater Sample Location Coordinates
AOI 7, Marcus Hook Industrial Complex

Sample Location	X Coordinate	Y Coordinate
SED-01/PW-01	2620987.27	180262.9754
SED-02/PW-02	2621036.105	180189.2672
SED-03/PW-03	2621084.94	180101.8212
SED-04/PW-04	2621063.457	180320.4392
SED-05/PW-05	2621120.708	180240.9511
SED-06/PW-06	2621175.023	180157.2023
SED-07/PW-07	2621158.77	180372.1057
SED-08/PW-08	2621205.681	180296.6777
SED-09/PW-09	2621260.663	180207.878
SED-10/PW-10	2621239.82	180415.8317
SED-11/PW-11	2621288.564	180344.0264
SED-12/PW-12	2621342.488	180261.0065
SED-13/PW-13	2621324.389	180481.3985
SED-14/PW-14	2621373.407	180398.6536
SED-15/PW-15	2621424.716	180310.2413
SED-16/PW-16	2621410.682	180536.1051
SED-17/PW-17	2621460.912	180458.266
SED-18/PW-18	2621518.184	180364.3275
SED-19/PW-19	2621495.205	180587.6679
SED-20/PW-20	2621545.252	180513.5224
SED-21/PW-21	2621601.445	180414.3537
SED-22/PW-22	2621577.106	180637.7636
SED-23/PW-23	2621630.888	180557.8586
SED-24/PW-24	2621680.06	180465.661
SED-25/PW-25	2621756.892	180748.4009
SED-26/PW-26	2621802.991	180674.6428
SED-27/PW-27	2621862.92	180574.7618
SED-28/PW-28	2621829.114	180791.4267
SED-29/PW-29	2621881.359	180708.4485
SED-30/PW-30	2621939.751	180623.934

Notes:

1. Location coordinates are based off of NAD 1983 (StatePlane_Pennsylvania_South_FIPS_3702_Feet)

2, Coordinates were collected via an on-board GPS system (Trimble GeoXH).

Table 2
Summary of Completed Field Activities
(March 22, 2022 - March 25, 2022)
AOI 7, Marcus Hook Industrial Complex

Date	Sediment	Porewater via Peristaltic Pump	Porewater via Centrifuge	Porewater via DGT	Other Activities
3/22/2022	• 10 sediment samples collected for arsenic analysis; 1 field duplicate and MS/MSD collected • 2 sediment samples collected for sulfate and sulfide analysis	• 10 porewater samples attempted with no recovery	• 3 sediment samples collected for centrifuge analysis	• 3 DGTs deployed	• None
3/23/2025	• 17 sediment samples collected for arsenic analysis • 2 sediment samples collected for sulfate and sulfide analysis	• 15 porewater samples attempted with no recovery • 2 porewater samples collected via peristaltic pump	• 7 sediment samples collected for centrifuge analysis ; 1 field duplicate and MS/MSD collected	• 9 DGTs deployed • 3 DGTs collected after 24 hours of deployment	• None
3/24/2022	• 3 sediment samples collected for arsenic analysis	•1 porewater samples attempted with no recovery and 5 locations re-attempted for porewater collection with no recovery •2 porewater samples collected via peristaltic pump and 3 locations re-attempted for porewater collection with success; 1 field duplicate collected	• 5 sediment samples collected for centrifuge analysis	• 9 DGTs deployed • 9 DGTs collected after 24 hours of deployment	• None
3/25/2022	• None	• 3 locations re-attempted for porewater collection with no recovery • 4 locations re-attempted for porewater collection with success	• 3 sediment samples collected for centrifuge analysis	• 9 DGTs collected after 24 hours of deployment	• 2-inch PVC pipe stilling well installed at Dock 3 location

Notes:
1. MS/MSD - matrix spike/matrix spike duplicate
   DGT - diffusive gradient in thin film sampler
   PVC - polyvinyl chloride
2. All porewater samples were analyzed for dissolved arsenic only.

Table 3
Surface Water and Porewater Quality Parameters
AOI 7, Marcus Hook Industrial Complex

Sample Location	Day	Time	Water Type	Temperature (°C)	Conductivity (uS/cm)	ORP (mV)	pH
PW-01	3/22/2022	8:40	River	11	324.8	213	7.85
			PW	--	--	--	--
PW-02	3/22/2022	12:10	River	14.6	288.6	237	7.89
			PW	--	--	--	--
PW-03	3/23/2022	10:10	River	8.7	316.3	218.8	7.55
			PW	--	--	--	--
PW-04	3/25/2022	10:15	River	9.2	344.6	254	7.51
			PW	8.8	1689	-149	6.73
PW-05	3/22/2022	12:25	River	13.8	300	175	7.69
			PW	--	--	--	--
PW-06	3/23/2022	9:50	River	8.5	358	164	7.85
			PW	--	--	--	--
PW-07	3/22/2022	10:25	River	11.6	331	212	7.94
			PW	--	--	--	--
PW-08	3/22/2022	12:40	River	12.6	326.8	169	7.63
			PW	--	--	--	--
PW-09	3/25/2022	8:50	River	10.7	309.5	241	7.32
			PW	10.3	1782	-122	6.82
PW-10	3/22/2022	10:45	River	12.6	323.2	170	7.63
			PW	--	--	--	--
PW-11	3/23/2022	12:15	River	12.5	303.7	350	7.58
			PW	12	1361.2	-91	7.47
PW-12	3/23/2022	10:30	River	8.9	299.7	214	7.59
			PW	--	--	--	--
PW-13	3/25/2022	11:15	River	8.9	311.7	187	7.62
			PW	8.4	1770.3	-115	6.61
PW-14	3/25/2022	11:45	River	9.1	303.6	205	7.88
			PW	8.5	1271	-155	6.49
PW-15	3/23/2022	11:40	River	10.8	341.2	228	7.66
			PW	--	--	--	--
PW-16	3/23/2022	7:40	River	7.9	305.3	244	7.57
			PW	8	1102.5	-166	7.46
PW-17	3/24/2022	8:35	River	9.4	308.4	199	7.36
			PW	8.8	1646.9	-117	6.62
PW-18	3/23/2022	11:25	River	9.7	290.5	230	7.34
			PW	--	--	--	--
PW-19	3/23/2022	9:05	River	7.8	301.6	251	7.73
			PW	--	--	--	--
PW-20	3/24/2022	8:15	River	9.5	308.9	216	7.78
			PW	8.5	1475	-66	7.31
PW-21	3/23/2022	13:15	River	12.5	267.3	198	7.61
			PW	--	--	--	--

Table 3
Surface Water and Porewater Quality Parameters
AOI 7, Marcus Hook Industrial Complex

Sample Location	Day	Time	Water Type	Temperature (°C)	Conductivity (uS/cm)	ORP (mV)	pH
PW-22	3/23/2022	8:45	River	8	326.2	216	7.74
			PW	--	--	--	--
PW-23	3/24/2022	7:55	River	9.7	307.6	192	7.67
			PW	--	--	--	--
PW-24	3/25/2022	11:15	River	11.5	318.2	123	7.44
			PW	11	1692	-78	6.68
PW-25	3/25/2022	10:50	River	11.3	347	200	7.41
			PW	10.8	2213	-102	7.39
PW-26	3/22/2022	13:35	River	15.5	310.2	200	7.46
			PW	--	--	--	--
PW-27	3/25/2022	7:50	River	8.6	302.3	197	7.74
			PW	10.7	1520.2	-163	6.54
PW-28	3/22/2022	13:05	River	14.9	368.2	195	7.58
			PW	--	--	--	--
PW-29	3/23/2022	9:30	River	8.3	294	222	7.49
			PW	--	--	--	--
PW-30	3/23/2022	13:40	River	12.3	268.2	166	7.81
			PW	--	--	--	--

Notes:
1. Temperature is reported in degrees Celcius (°C).
2. Conductivity is reported in microSiemens per centimeter (uS/cm).
3. Oxidation reduction potential (ORP) values are reported in millivolts (mV).
4. pH values are reported in standard units (s.u.).
5. Sample locations where porewater was not collected via peristaltic pump are represented by "--".

Table 4
Sediment Results - Arsenic
AOI 7, Marcus Hook Industrial Complex

Sample Location	Sample Date	Sample Type	Concentrations in mg/kg
			Arsenic
Arsenic in Sediment PRG			**170**
SED-01	03/22/22	N	102
SED-04	03/22/22	N	**353**
SED-05	03/22/22	N	92.6
SED-07	03/22/22	N	92.3 J
SED-07	03/22/22	FD	52.9 J
SED-10	03/22/22	N	60.2
SED-13	03/23/22	N	**198**
SED-14	03/23/22	N	18.7
SED-16	03/23/22	N	**227**
SED-17	03/24/22	N	15.6
SED-19	03/23/22	N	62.6
SED-22	03/23/22	N	87.8
SED-25	03/22/22	N	132
SED-28	03/22/22	N	41.0
Equipment Blank (ug/L)	03/24/22	EB	<3.0

Notes:
1. Samples were collected by Sanborn Head personnel on the dates indicated and were analyzed by SGS North America, Inc (SGS) of Dayton, New Jersey for metals by USEPA Method 6010D. A sample type of "N" indicates a normal sample. A sample type of "FD" indicates a field duplicate sample. A sample type of "EB" indicates an equipment blank sample.

2. **Bolded** values indicate an exceedance of the arsenic in sediment preliminary remediation goal (PRG).This PRG was developed by Honeywell International, Inc. (Honeywell) for the protection of sediment.

"<" indicates the analyte is not detected above laboratory reporting limits.

"J" indicates the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

"ug/L" indicates micrograms per liter.

"mg/kg" indicates milligrams per kilogram.

3. Data validation was performed on the samples provided in this table by Environmental Standards, Inc of Valley Forge, Pennsylvania. All results were considered acceptable, with the understanding of the potential uncertainty (bias) in the qualified results. In some cases, Environmental Standards assigned the qualifiers noted above to the data. Refer to the Data Validation Summary Reports for further details.

Table 5
Sediment Results - Sulfate/Sulfide
AOI 7, Marcus Hook Industrial Complex

Sample Location	Sample Date	Sample Type	Sediment	
			Sulfate	Sulfide
			(mg/kg)	(mg/kg)
SED-07	03/22/22	N	<34	<6.7
SED-10	03/22/22	N	<39	<8.1
SED-11	03/23/22	N	471	<7.2
SED-12	03/23/22	N	351	<6.8

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated and were analyzed by SGS North America, Inc. (Dayton) of Dayton, NJ for sulfate and sulfide by USEPA Method 9056A and 9030, respectively. A sample type of "N" indicates a normal sample.

2. "<" indicates the analyte is not detected above laboratory reporting limits.

3. No data validation was conducted on the sulfate and sulfide analytical results in sediment samples.

4. Sulfate and sulfide data is reported in milligrams per kilogram (mg/kg).

Table 6
Porewater Results – Dissolved Arsenic via Peristaltic Pump Method
AOI 7, Marcus Hook Industrial Complex

Sample Location	Sample Date	Sample Type	Dissolved Arsenic (ug/L)
Groundwater PRG (ug/L)			**1,253**
PW-04	03/24/22	N	442
PW-09	03/25/22	N	10.7
PW-11	03/23/22	N	<3.0
PW-13	03/24/22	N	276
PW-14	03/24/22	N	47.6
PW-16	03/23/22	N	7.7
PW-17	03/24/22	N	71.5
PW-20	03/24/22	N	69.3
	03/24/22	FD	75.7
PW-24	03/25/22	N	32.7
PW-25	03/25/22	N	178
PW-27	03/25/22	N	11
Equipment Blank	03/25/22	EB	<3

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated and were analyzed by SGS North America, Inc. (SGS) of Dayton, New Jersey for dissolved arsenic by USEPA Method 6010D. A sample type of "N" indicates a normal sample. A sample of "FD" indicates a field duplicate. A sample type of "EB" indicates an equipment blank sample.

2. The "Groundwater PRG" is a preliminary remediation goal (PRG) for dissolved arsenic in groundwater developed by Honeywell International, Inc. (Honeywell) for the protection of porewater.

3. "<" indicates the analyte is not detected above laboratory reporting limits. "ug/L" indicates micrograms per liter.

4. Data validation was performed on the samples provided in this table by Environmental Standards, Inc of Valley Forge, Pennsylvania. All results were considered acceptable, with the understanding of the potential uncertainty (bias) in the qualified results. Refer to the Data Validation Summary Reports for further details.

Table 7
Porewater Results – Dissolved Arsenic via Centrifuge Method
AOI 7, Marcus Hook Industrial Complex

Sample Location	Sample Date	Sample Type	Dissolved Arsenic (ug/L)
Groundwater PRG (ug/L)			**1,253**
PW-02	03/25/22	N	124
PW-03	03/23/22	N	10.0
PW-04	03/24/22	N	163
PW-05	03/22/22	N	31.8
PW-07	03/22/22	N	145
PW-09	03/25/22	N	10.0
PW-11	03/24/22	N	73.0
PW-13	03/23/22	N	71.0
PW-15	03/23/22	N	34.4
PW-16	03/24/22	N	68.3
PW-17	03/24/22	N	48.6
PW-19	03/23/22	N	131
PW-20	03/24/22	N	102
PW-21	03/23/22	N	18.8
PW-23	03/25/22	N	33.2
PW-24	03/23/22	N	19.6
	03/23/22	FD	15.3
PW-25	03/22/22	N	75.0
PW-27	03/23/22	N	14.5

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated and were analyzed by SGS North America, Inc. (Dayton) of Dayton, NJ for dissolved arsenic by USEPA Method 6010D. A sample type of "N" indicates a normal sample. A sample of "FD" indicates a field duplicate. Dissolved arsenic values are reported in micrograms per liter (ug/L).

2. The "Groundwater PRG" is a preliminary remediation goal (PRG) for dissolved arsenic in groundwater developed by Honeywell International, Inc. (Honeywell) for the protection of porewater.

3. "<" indicates the analyte is not detected above laboratory reporting limits.

4. No data validation was conducted on the dissolved arsenic analytical results in porewater collected via centrifuge analysis.

Table 8
Porewater Results – Dissolved Arsenic via DGT Method
AOI 7, Marcus Hook Industrial Complex

Sample Location	Sample Date	Sample Type	Dissolved Arsenic	
			Mass	Concentration
			(ug)	(ug/L)
Groundwater PRG (ug/L)			---	**1,253**
PW-01	03/25/22	N	9.5	93.0
PW-02	03/25/22	N	<1	9.8
PW-03	03/24/22	N	<1	9.8
PW-04	03/25/22	N	4.0	39.2
PW-05	03/23/22	N	<1	9.8
PW-07	03/23/22	N	2.4	23.5
PW-08	03/25/22	N	<1	9.8
PW-09	03/25/22	N	<1	9.8
PW-11	03/24/22	N	<1	9.8
PW-13	03/24/22	N	2.4	23.5
PW-15	03/24/22	N	<1	9.8
PW-16	03/24/22	N	3.7	36.2
PW-17	03/25/22	N	<1	9.8
PW-19	03/24/22	N	1.5	14.7
PW-20	03/25/22	N	<1	9.8
PW-21	03/24/22	N	<1	9.8
PW-23	03/25/22	N	<1	9.8
PW-24	03/24/22	N	<1	9.8
PW-25	03/23/22	N	<1	9.8
PW-27	03/24/22	N	<1	9.8
PW-28	03/25/22	N	2.2	21.5

Notes:
1. Samples were collected by Sanborn Head personnel on the dates indicated and were analyzed by SGS North America, Inc. (Dayton) of Dayton, NJ for dissolved arsenic by USEPA Method 6010D. A sample type of "N" indicates a normal sample.

2. The "Groundwater PRG" is a preliminary remediation goal (PRG) for dissolved arsenic in groundwater developed by Honeywell International, Inc. (Honeywell) for the protection of porewater.

3. "<" indicates the analyte is not detected above laboratory reporting limits.

4. No data validation was conducted on the dissolved arsenic analytical results in porewater collected using the diffusive gradient in thin film (DGT) samplers.

5. Samples were analyzed in the lab for mass of dissolved arsenic in micrograms (ug) that adhered to the DGT film and calculations were carried out using the DGT manufacturer's procedures to get a concentration (microgram per liter, ug/L) from the mass analyzed at the lab. Calculations are provided in Attachment D).

FIGURES

© 2022 SANBORN, HEAD & ASSOCIATES, INC.

Last Edited By: mfuerte

Path: P:\4800s\4862.00\Graphics Files\ArcGIS\Figures\202205 May EPA Report\Sed and PW_Sampling.mxd

Figure 1

Sediment and Porewater Sample Locations – 2022

Evergreen

Marcus Hook, Pennsylvania

Drawn By:	M. Fuerte
Designed By:	C. Shepsko
Reviewed By:	C. Costello
Project No:	4862.04
Date:	May, 2022

Notes

1. AOI 7 well locations provided by Stanport data portal, August 2021.

2. Aerial imagery sourced from Pennsylvania Spatial Data Access, 2018 - 2020 - Pennsylvania Emergency Management Agency Orthoimagery.

3. SWMU 9 located based on SWMU 9 Data Summary Report, Wood, 2020.

4. USACE 2 through USACE 9 porewater sample locations were taken from the coordinates provided in Table 1 under “USACE Coordinates” of the January 2019 “Delaware Valley Works Pore Water Sampling Event” by the U.S. Army Corps of Engineers. USACE 1 coordinates were not provided in this document because a sample was not taken at this location.

5. DVW-16-001 through DVW-16-010 are dual sediment and porewater locations that were taken from the coordinates provided in Figure 1 of the March 2017 “Supplemental Pathway Investigation Results Report” by Anchor QEA, LLC. These locations are represented by orange squares.

6. SED/PW-01 through SED/PW-30 are dual sediment and porewater locations collected by Evergreen in March 2022 that were located based on an on-board GPS system (Trimble GeoXH). These locations are represented by green squares.

7. Sunoco offshore pipeline georeferenced from "Supplemental Study Area Sediment Investigation Report, Delaware Works Property". Location is approximate.

8. The bulkhead, remedial systems, sheet pile wall and well locations were provided by Stantec in Figure I-3 “Phillips Island Remediation System Site Plan” from July 2019.

Legend (continued)

- Monitoring Well
- Recovery Well
- Remediation Well
- Soil Boring
- Staff Gauge
- Current and Historic Arsenic in Groundwater Above 1,253 µg/L
- Sunoco Pipeline
- Bulkhead
- Sheet Pile Wall
- Remediation Systems
- AOI-7 Boundary
- SWMU 9 Boundary

Legend

- Evergreen 2022 sediment and porewater sample location
- USACE Porewater Location
- DVW Sediment and Porewater Sample Location

137.568.75 0 137.5 275 Feet

SANBORN HEAD

© 2022 SANBORN, HEAD & ASSOCIATES, INC.

Last Edited By: mfuerte

Path: P:\4800s\4862.00\Graphics Files\ArcGIS\Figures\202205 May EPA Report\Sed Results.mxd

Figure 2

Arsenic in Sediment Results

Evergreen

Marcus Hook, Pennsylvania

Drawn By:	M. Fuerte
Designed By:	C. Shepsko
Reviewed By:	C. Costello
Project No:	4862.04
Date:	May, 2022

Notes

1. AOI 7 well locations provided by Stanport data portal, August 2021.

2. Aerial imagery sourced from Pennsylvania Spatial Data Access, 2018 - 2020 - Pennsylvania Emergency Management Agency Orthoimagery.

3. SWMU 9 located based on SWMU 9 Data Summary Report, Wood, 2020.

4. DVW-16-001 through DVW-16-010 are dual sediment and porewater locations that were taken from the coordinates provided in Figure 1 of the March 2017 “Supplemental Pathway Investigation Results Report” by Anchor QEA, LLC. These locations are represented by diamonds.

5. SED-01 through SED-30 are sediment samples collected by Evergreen in March 2022. These locations are represented by squares.

6. Sunoco offshore pipeline georeferenced from "Supplemental Study Area Sediment Investigation Report, Delaware Works Property". Location is approximate.

7. The bulkhead, remedial systems, sheet pile wall and well locations were provided by Stantec in Figure I-3 “Phillips Island Remediation System Site Plan” from July 2019.

8. "NA" indicates a sample was collected in the field but not analyzed.

9. The preliminary remediation goal (PRG) for arsenic in sediment is 170 mg/kg.

Legend (continued)

- Monitoring Well
- Recovery Well
- Remediation Well
- Soil Boring
- Staff Gauge
- Current and Historic Arsenic in Groundwater Above 1,253 µg/L
- Sunoco Pipeline
- Bulkhead
- Sheet Pile Wall
- Remediation Systems
- AOI-7 Boundary
- SWMU 9 Boundary

Legend

- 12 — Evergreen 2022 sediment sample, arsenic result (mg/kg) below 170 mg/kg
- 200 — Evergreen 2022 sediment sample, arsenic result (mg/kg) above 170 mg/kg
- NA — Evergreen 2022 sediment sample, field sample collected but not analyzed
- 12 — DVW 2016 sediment sample, arsenic result (mg/kg) below 170 mg/kg
- 200 — DVW 2016 sediment sample, arsenic result (mg/kg) above 170 mg/kg

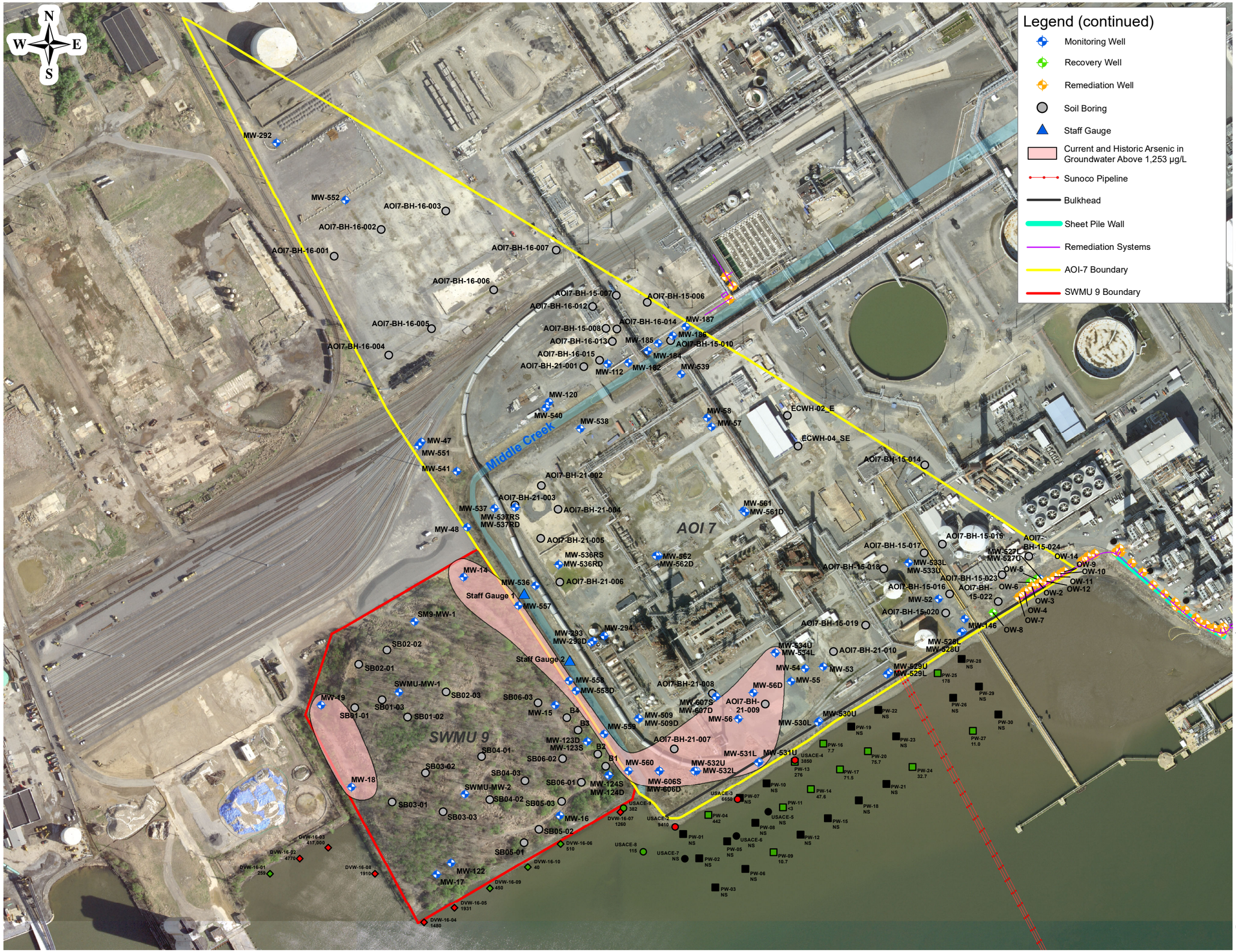
137.568.75 0 137.5 275 Feet

SANBORN HEAD

© 2022 SANBORN, HEAD & ASSOCIATES, INC.

Last Edited By: cshepsko

Path: P:\4800s\4862.00\Graphics Files\ArcGIS\Figures\202205 May EPA Report\PW Results.mxd



Legend (continued)

- Monitoring Well
- Recovery Well
- Remediation Well
- Soil Boring
- Staff Gauge
- Current and Historic Arsenic in Groundwater Above 1,253 µg/L
- Sunoco Pipeline
- Bulkhead
- Sheet Pile Wall
- Remediation Systems
- AOI-7 Boundary
- SWMU 9 Boundary

Figure 3

Dissolved Arsenic in Porewater Results - Peristaltic Pump Collection

Evergreen

Marcus Hook, Pennsylvania

Drawn By:	M. Fuerte
Designed By:	C. Shepsko
Reviewed By:	C. Costello
Project No:	4862.04
Date:	May, 2022

Notes

1. AOI 7 well locations provided by Stanport data portal, August 2021.

2. Aerial imagery sourced from Pennsylvania Spatial Data Access, 2018 - 2020 - Pennsylvania Emergency Management Agency Orthoimagery.

3. SWMU 9 located based on SWMU 9 Data Summary Report, Wood, 2020.

4. USACE 2 through USACE 9 porewater sample locations were taken from the coordinates provided in Table 1 under "USACE Coordinates" of the January 2019 "Delaware Valley Works Pore Water Sampling Event" by the U.S. Army Corps of Engineers. USACE 1 coordinates were not provided in this document because a sample was not taken at this location. These locations are represented by circles.

5. DVW-16-001 through DVW-16-010 are dual sediment and porewater locations that were taken from the coordinates provided in Figure 1 of the March 2017 "Supplemental Pathway Investigation Results Report" by Anchor QEA, LLC. These locations are represented by diamonds.

6. PW-01 through PW-30 are porewater samples collected by Evergreen in March 2022 via peristaltic pump. These locations are represented by squares.

7. Sunoco offshore pipeline georeferenced from "Supplemental Study Area Sediment Investigation Report, Delaware Works Property". Location is approximate.

8. The bulkhead, remedial systems, sheet pile wall and well locations were provided by Stantec in Figure I-3 "Phillips Island Remediation System Site Plan" from July 2019.

9. "NS" indicates a location was not sampled via peristaltic pump.

10. All concentrations in ug/L.

11. The preliminary remediation goal (PRG) for arsenic in groundwater is 1253 ug/L.

Legend

- $_{12}$ Evergreen 2022 porewater sample, arsenic result (ug/L) below 1253 ug/L
- $_{NS}$ Evergreen 2022 porewater sample not collected via peristaltic pump
- $_{12}$ USACE 2018 porewater sample, arsenic result (ug/L) below 1253 ug/L
- $_{1500}$ USACE 2018 porewater sample, arsenic result (ug/L) above 1253 ug/L
- $_{NS}$ USACE 2018 porewater sample not analyzed for dissolved arsenic
- $_{12}$ DVW 2016 porewater sample, arsenic result (ug/L) below 1253 ug/L
- $_{1500}$ DVW 2016 porewater sample, arsenic result (ug/L) above 1253 ug/L

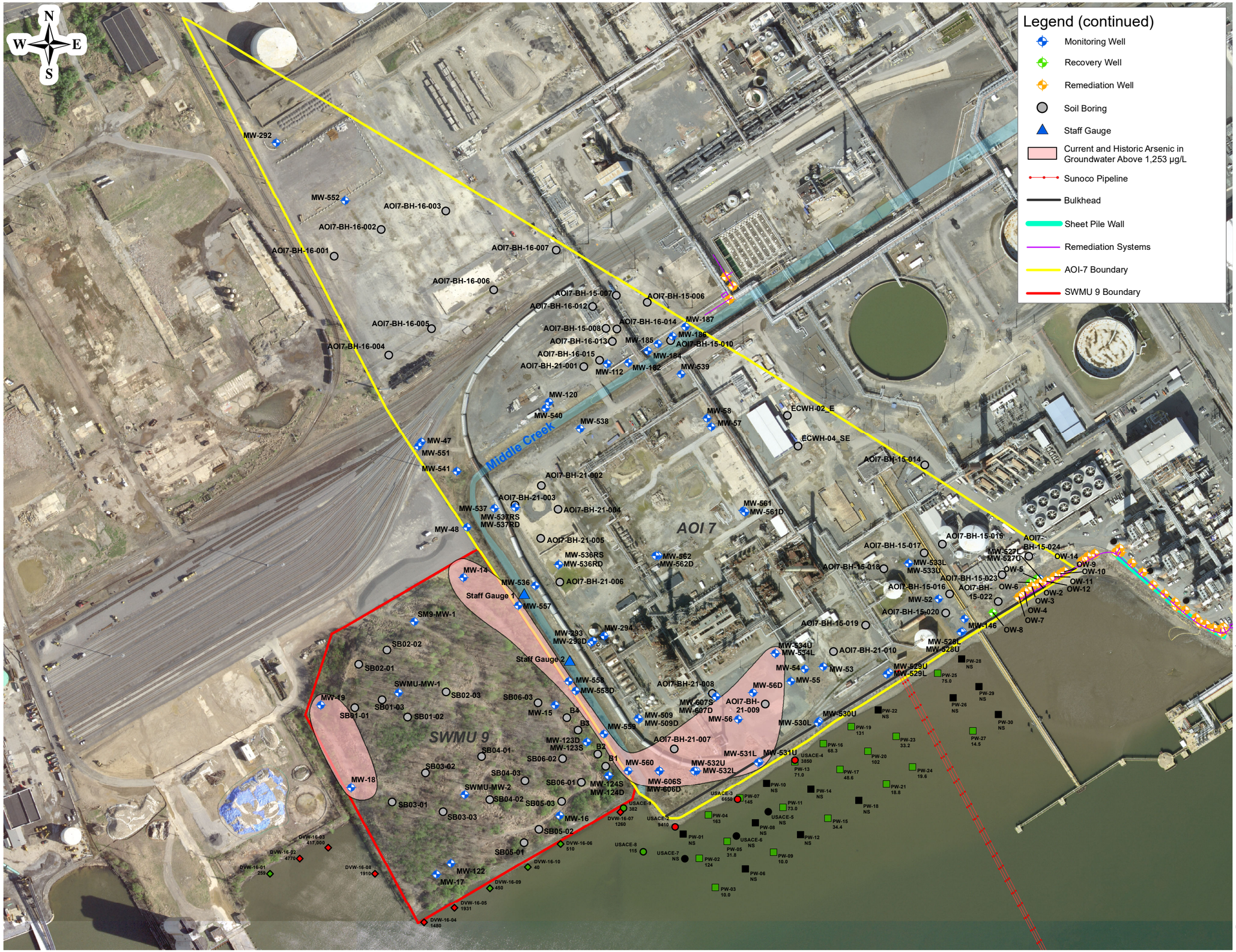
137.5 68.75 0 137.5 275 Feet

SANBORN HEAD

© 2022 SANBORN, HEAD & ASSOCIATES, INC.

Last Edited By: cshepsko

Path: P:\4800s\4862.00\Graphics Files\ArcGIS\Figures\202205 May EPA Report\PW Results_Cent.mxd



Legend (continued)

- Monitoring Well
- Recovery Well
- Remediation Well
- Soil Boring
- Staff Gauge
- Current and Historic Arsenic in Groundwater Above 1,253 µg/L
- Sunoco Pipeline
- Bulkhead
- Sheet Pile Wall
- Remediation Systems
- AOI-7 Boundary
- SWMU 9 Boundary

Figure 4

Dissolved Arsenic in Porewater Results - Centrifuge Collection

Evergreen

Marcus Hook, Pennsylvania

Drawn By:	M. Fuerte
Designed By:	C. Shepsko
Reviewed By:	C. Costello
Project No:	4862.04
Date:	May, 2022

Notes

1. AOI 7 well locations provided by Stanport data portal, August 2021.

2. Aerial imagery sourced from Pennsylvania Spatial Data Access, 2018 - 2020 - Pennsylvania Emergency Management Agency Orthoimagery.

3. SWMU 9 located based on SWMU 9 Data Summary Report, Wood, 2020.

4. USACE 2 through USACE 9 porewater sample locations were taken from the coordinates provided in Table 1 under "USACE Coordinates" of the January 2019 "Delaware Valley Works Pore Water Sampling Event" by the U.S. Army Corps of Engineers. USACE 1 coordinates were not provided in this document because a sample was not taken at this location. These locations are represented by circles.

5. DVW-16-001 through DVW-16-010 are dual sediment and porewater locations that were taken from the coordinates provided in Figure 1 of the March 2017 "Supplemental Pathway Investigation Results Report" by Anchor QEA, LLC. These locations are represented by diamonds.

6. PW-01 through PW-30 are porewater samples collected by Evergreen in March 2022 via centrifuge analysis. These locations are represented by squares.

7. Sunoco offshore pipeline georeferenced from "Supplemental Study Area Sediment Investigation Report, Delaware Works Property". Location is approximate.

8. The bulkhead, remedial systems, sheet pile wall and well locations were provided by Stantec in Figure I-3 "Phillips Island Remediation System Site Plan" from July 2019.

9. "NS" indicates a location was not sampled via centrifuge collection.

10. All concentrations in ug/L.

11. The preliminary remediation goal (PRG) for arsenic in groundwater is 1253 ug/L.

Legend

- $_{12}$ Evergreen 2022 porewater sample, arsenic result (ug/L) below 1253 ug/L
- $_{NS}$ Evergreen 2022 porewater sample not collected via centrifuge analysis
- $_{12}$ USACE 2018 porewater sample, arsenic result (ug/L) below 1253 ug/L
- $_{1500}$ USACE 2018 porewater sample, arsenic result (ug/L) above 1253 ug/L
- $_{NS}$ USACE 2018 porewater sample not analyzed for dissolved arsenic
- $_{12}$ DVW 2016 porewater sample, arsenic result (ug/L) below 1253 ug/L
- $_{1500}$ DVW 2016 porewater sample, arsenic result (ug/L) above 1253 ug/L

137.5 68.75 0 137.5 275 Feet

SANBORN HEAD

© 2022 SANBORN, HEAD & ASSOCIATES, INC.

Last Edited By: cshepsko

Path: P:\4800s\4862.00\Graphics Files\ArcGIS\Figures\202205 May EPA Report\PW Results_DGT.mxd

Figure 5

Dissolved Arsenic in Porewater Results - DGT Collection

Evergreen

Marcus Hook, Pennsylvania

Drawn By:	M. Fuerte
Designed By:	C. Shepsko
Reviewed By:	C. Costello
Project No:	4862.04
Date:	May, 2022

Legend (continued)

- Monitoring Well
- Recovery Well
- Remediation Well
- Soil Boring
- Staff Gauge
- Current and Historic Arsenic in Groundwater Above 1,253 µg/L
- Sunoco Pipeline
- Bulkhead
- Sheet Pile Wall
- Remediation Systems
- AOI-7 Boundary
- SWMU 9 Boundary

Notes

1. AOI 7 well locations provided by Stanport data portal, August 2021.

2. Aerial imagery sourced from Pennsylvania Spatial Data Access, 2018 - 2020 - Pennsylvania Emergency Management Agency Orthoimagery.

3. SWMU 9 located based on SWMU 9 Data Summary Report, Wood, 2020.

4. USACE 2 through USACE 9 porewater sample locations were taken from the coordinates provided in Table 1 under "USACE Coordinates" of the January 2019 "Delaware Valley Works Pore Water Sampling Event" by the U.S. Army Corps of Engineers. USACE 1 coordinates were not provided in this document because a sample was not taken at this location. These locations are represented by circles.

5. DVW-16-001 through DVW-16-010 are dual sediment and porewater locations that were taken from the coordinates provided in Figure 1 of the March 2017 "Supplemental Pathway Investigation Results Report" by Anchor QEA, LLC. These locations are represented by diamonds.

6. PW-01 through PW-30 are porewater samples collected by Evergreen in March 2022 via diffusive gradient in thin film (DGT) sampler. These locations are represented by squares.

7. Sunoco offshore pipeline georeferenced from "Supplemental Study Area Sediment Investigation Report, Delaware Works Property". Location is approximate.

8. The bulkhead, remedial systems, sheet pile wall and well locations were provided by Stantec in Figure I-3 "Phillips Island Remediation System Site Plan" from July 2019.

9. "NS" indicates a location was not sampled via DGT sampler.

10. All concentrations in ug/L.

11. The preliminary remediation goal (PRG) for arsenic in groundwater is 1253 ug/L.

Legend

- 12 — Evergreen 2022 porewater sample, arsenic result (ug/L) below 1253 ug/L
- NS — Evergreen 2022 porewater sample not collected via DGT sampler
- 12 — USACE 2018 porewater sample, arsenic result (ug/L) below 1253 ug/L
- 1500 — USACE 2018 porewater sample, arsenic result (ug/L) above 1253 ug/L
- NS — USACE 2018 porewater sample not analyzed for dissolved arsenic
- 12 — DVW 2016 porewater sample, arsenic result (ug/L) below 1253 ug/L
- 1500 — DVW 2016 porewater sample, arsenic result (ug/L) above 1253 ug/L

137.5 68.75 0 137.5 275 Feet

SANBORN HEAD

ATTACHMENT A

FIELD PHOTO LOG

ATTACHMENT A: FIELD PHOTO LOG

Photo 1. Location of toe of slope for SED-13.

Photo 2. Pistoncore sampler with 3-inch CAB tubes during SED-17 sampling.

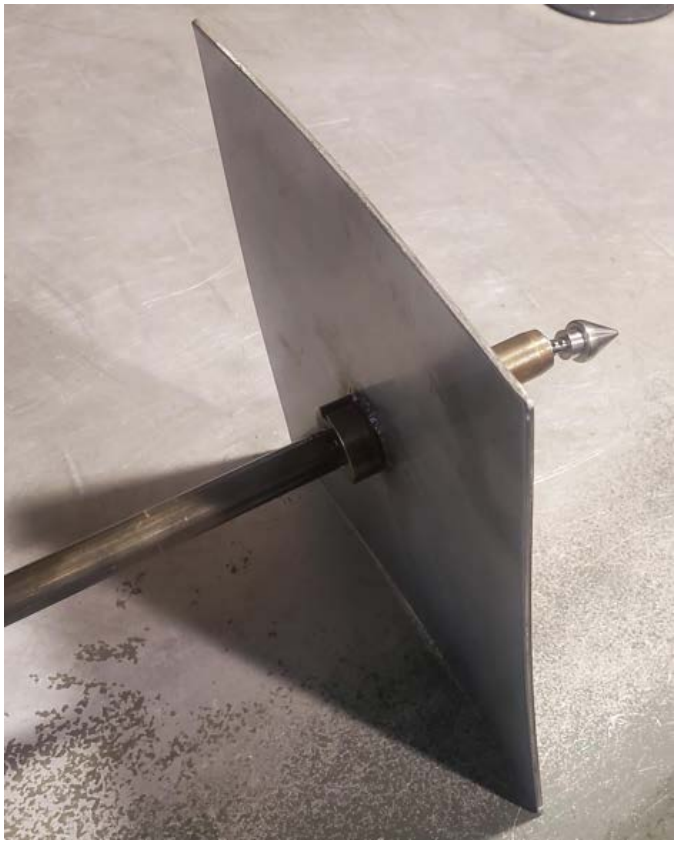


Photo 3. Push-point sampler with stability plate.

Photo 4. Sediment cores showing the silty clay material (to the left from SED/PW-01) that restricted porewater extraction and the sandy silt materials (to the right from SED/PW-16) that allowed porewater extraction via peristaltic pump.

Photo 5. Push-point sampler with peristaltic pump tubing showing no porewater extraction at PW-30.

Photo 6. (On the left) Push-point sampler covered in clay that restricted porewater extraction at PW-06. **(On the right)** Silt that had settled in a sediment bottle after porewater extraction at PW-14.

Photo 7. Silty porewater extracted via peristaltic pump at PW-20.

Photo 8. Clogged 0.45 micron filter that was inline with the peristaltic pump tubing at PW-25.

ATTACHMENT B

SEDIMENT LOGS

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-01

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-01	0 - 0.8		-----0"----- SAND -----0.8"-----	(0" to 0.8"): Soft, brown, SAND. Saturated.	
2		0.8 - 6		SILTY CLAY	(0.8" to 6"): Firm, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-02

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-02	0 - 0.5		-----0"----- SAND -----0.5"-----	(0" to 0.5"): Soft, brown, SAND. Saturated.	
2		0.5 - 6		SILTY CLAY	(0.5" to 6"): Firm, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-03

Sampling Method: PistonCore® Sampler

Contractor:
Normandeau Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-03	0 - 0.2		-----0"----- SAND -----0.2"-----	(0" to 0.2"): Soft, brown, SAND. Saturated.	
2		0.2 - 6		SILTY CLAY	(0.2" to 6"): Firm, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-04

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-04	0 - 0.5		-----0"----- SAND -----0.5"-----	(0" to 0.5"): Soft, brown, SAND. Saturated.	
2		0.5 - 6		SILTY CLAY	(0.5" to 6"): Firm, dark gray/ black, Silty CLAY with some sand. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-05

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-05	0 - 0.8		-----0"----- SAND -----0.8"-----	(0" to 0.8"): Soft, brown, SAND. Saturated.	
2		0.8 - 6		SILTY CLAY	(0.8" to 6"): Firm, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-06

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-06	0 - 0.3		-----0"----- SAND -----0.3"-----	(0" to 0.3"): Soft, brown, SAND. Saturated.	
2		0.3 - 6		SILTY CLAY	(0.3" to 6"): Soft, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-07

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-07	0 - 0.9		-----0"----- SAND -----0.9"-----	(0" to 0.9"): Soft, brown, SAND. Saturated.	
2		0.9 - 6		SILTY CLAY	(0.9" to 6"): Firm, dark gray/ black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-08

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-08	0 - 0.5		-----0"----- SAND -----0.5"-----	(0" to 0.5"): Soft, brown, SAND. Saturated.	
2		0.5 - 6		SILTY CLAY	(0.5" to 6"): Firm, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-09

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-09	0 - 0.3		-----0"----- SAND -----0.3"-----	(0" to 0.3"): Soft, brown, SAND. Saturated.	
2		0.3 - 6		SILTY CLAY	(0.3" to 6"): Soft, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-10

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-10	0 - 1		-----0"----- SAND -----1"-----	(0" to 1"): Soft, brown, SAND. Saturated.	
2		1 - 6		SILTY CLAY	(1" to 6"): Firm, dark gray, Silty CLAY with some gravel and shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-11

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-11	0 - 0.4		-----0"----- SAND -----0.4"-----	(0" to 0.4"): Soft, brown, SAND. Saturated.	
2		0.4 - 6		SILTY SAND	(0.4" to 6"): Firm, dark gray/black, Silty CLAY with some sand. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

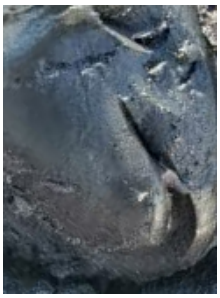
Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-12

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-12	0 - 1.2		-----0"----- SAND -----1.2"-----	(0" to 1.2"): Soft, brown, SAND. Saturated.	
2		1.2 - 6		SILTY CLAY	(1.2" to 6"): Firm, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-13

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-13	0 - 1.8		-----0"----- SAND -----1.8"-----	(0" to 1.8"): Soft, brown, SAND. Saturated.	
2		1.8 - 6		SILTY CLAY	(1.8" to 6"): Soft, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-14

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-14	0 - 0.6		-----0"----- SAND -----0.6"-----	(0" to 0.6"): Soft, brown, SAND. Saturated.	
2		0.6 - 6		SILTY CLAY	(0.6" to 6"): Soft, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-15

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-15	0 - 1.1		-----0"----- SAND -----1.1"-----	(0" to 1.1"): Soft, brown, SAND. Saturated.	
2		1.1 - 6		SILTY CLAY	(1.1" to 6"): Firm, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-16

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-16	0 - 0.9		-----0"----- SAND -----0.9"-----	(0" to 0.9"): Soft, brown, SAND. Saturated.	
2		0.9 - 6		SILT	(0.9" to 6"): Soft, dark gray SILT. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-17

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/24/22
Logged By: C. Shepsko

Date Finished: 03/24/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-17	0 - 0.3		-----0"----- SAND -----0.3"-----	(0" to 0.3"): Soft, brown, SAND. Saturated.	
2		0.3 - 6		SILTY CLAY	(0.3" to 6"): Soft, dark gray silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-18

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-18	0 - 0.5		-----0"----- SAND -----0.5"-----	(0" to 0.5"): Soft, brown, SAND. Saturated.	
2		0.5 - 6		SILTY CLAY	(0.5" to 6"): Firm, dark gray, silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-19

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-19	0 - 0.8		-----0"----- SAND -----0.8"-----	(0" to 0.8"): Soft, brown, SAND. Saturated.	
2		0.8 - 6		SILTY CLAY	(0.8" to 6"): Firm, dark gray, silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-20

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/24/22
Logged By: C. Shepsko

Date Finished: 03/24/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-20	0 - 0.4		-----0"----- SAND -----0.4"-----	(0" to 0.4"): Soft, brown, SAND. Saturated.	
2		0.4 - 6		SILTY CLAY	(0.4" to 6"): Soft, dark gray, silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-21

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-21	0 - 0.7		-----0"----- SAND -----0.7"-----	(0" to 0.7"): Soft, brown, SAND. Saturated.	
2		0.7 - 6		SILTY CLAY	(0.7" to 6"): Soft, dark gray/black, Silty CLAY with shell fragments. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-22

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-22	0 - 0.5		-----0"----- SAND -----0.5"-----	(0" to 0.5"): Soft, brown, SAND. Saturated.	
2		0.5 - 6		SILTY CLAY	(0.5" to 6"): Firm, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-23

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/24/22
Logged By: C. Shepsko

Date Finished: 03/24/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-23	0 - 0.9		-----0"----- SAND -----0.9"-----	(0" to 0.9"): Soft, brown, SAND. Saturated.	
2		0.9 - 6		SILTY CLAY	(0.9" to 6"): Firm, dark gray silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-24

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-24	0 - 1.1		-----0"----- SAND -----1.1"-----	(0" to 1.1"): Soft, brown, SAND. Saturated.	
2		1.1 - 6		SILTY CLAY	(1.1" to 6"): Soft, dark gray/black, Silty CLAY with some sand. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-25

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-25	0 - 0.4		-----0"----- SAND -----0.4"-----	(0" to 0.4"): Soft, brown, SAND. Saturated.	
2		0.4 - 6		SILTY CLAY	(0.4" to 6"): Soft, dark gray/black, Silty CLAY with some sand. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

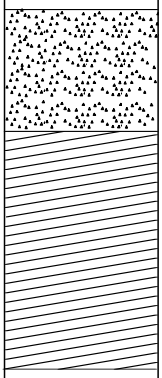
Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-26

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-26	0 - 2		-----0"----- SAND -----2"-----	(0" to 2"): Soft, brown, SAND. Saturated.	
2						
		2 - 6		SILTY CLAY	(2" to 6"): Firm, dark gray/black, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-27

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-27	0 - 0.4		-----0"----- SAND -----0.4"-----	(0" to 0.4"): Soft, brown, SAND. Saturated.	
2		0.4 - 6		SILTY CLAY	(0.4" to 6"): Firm, dark gray/black, Silty CLAY with some sand. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-28

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/22/22
Logged By: C. Shepsko

Date Finished: 03/22/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-28	0 - 0.2		-----0"----- SAND -----0.2"-----	(0" to 0.2"): Soft, brown, SAND. Saturated.	
2		0.2 - 6		SILTY CLAY	(0.2" to 6"): Firm, dark gray, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-29

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-29	0 - 0.4		-----0"----- SAND -----0.4"-----	(0" to 0.4"): Soft, brown, SAND. Saturated.	
2		0.4 - 6		SILTY CLAY	(0.4" to 6"): Firm, dark gray, Silty CLAY. Saturated.	
4						
6				-----6"-----		

SANBORN HEAD

Sanborn, Head & Associates, Inc.

Project: Evergreen/Marcus Hook Industrial Complex
Location: Marcus Hook, PA
Project No.: 4862.04

Log of Sediment Core: SED-30

Sampling Method: PistonCore® Sampler

Contractor: Normandeau
Date Started: 03/23/22
Logged By: C. Shepsko

Date Finished: 03/23/22
Checked By: C. Costello

Depth (in)	Sample Information		Stratum		Geologic Description	Photo
	Sample No.	Depth (in)	Log	Description		
0	SED-30	0 - 0.5		-----0"----- SAND -----0.5"-----	(0" to 0.5"): Soft, brown, SAND. Saturated.	
2		0.5 - 6		SILTY CLAY	(0.5" to 6"): Firm, dark gray, Silty CLAY. Saturated.	
4						
6				-----6"-----		

ATTACHMENT C

USEPA CORRESPONDENCE

Chelsey Shepsko

From: Bilash, Kevin <Bilash.Kevin@epa.gov>
Sent: Wednesday, March 23, 2022 7:16 AM
To: Colleen Costello
Cc: DOERR, TIFFANI L; Chelsey Shepsko
Subject: RE: AOI 7 Porewater and Sediment Sampling

Colleen,

Thank you for the summary. EPA agrees with your conclusions and approves the slight modification to the sampling protocol.

Thank you,

Kevin Bilash
US EPA Region III
Land, Chemicals & Redevelopment Division 3LD20
1650 Arch Street
Philadelphia, PA 19103
Tel: 215-814-2796
Fax: 215-814-3113

From: Colleen Costello <ccostello@sanbornhead.com>
Sent: Monday, March 21, 2022 5:05 PM
To: Bilash, Kevin <Bilash.Kevin@epa.gov>
Cc: DOERR, TIFFANI L <tldoerr@evergreenresmgt.com>; Chelsey Shepsko <cshepsko@sanbornhead.com>
Subject: AOI 7 Porewater and Sediment Sampling

Kevin – Thank you for your and Ruth's time on March 17, 2022 to discuss the upcoming sediment and porewater sampling for AOI 7 at MHIC. As we discussed, this email is to document the conclusions that we reached during our call in relation to the sediment and porewater sampling. Evergreen and their contractor, Sanborn Head, will follow the approved Revised IM Workplan and make 2 attempts to collect porewater samples at each location. If a porewater sample can not be collected, the sampling team will move onto the next location. As discussed, the proposed sample density is sufficient enough to allow for multiple locations to be eliminated and still provide sufficient data. Although not anticipated, if it appears that a significant number of porewater samples can not be collected, then the sampling team will collect a sample to be analyzed via centrifuge analysis, following the procedure in the Revised IM Workplan. This is a change in the procedures described in the IM Workplan which stated that a sample for centrifuge analysis would be collected at every location where a porewater sample could not be collected.

Thank-you
Colleen

Colleen Costello
Senior Vice President

SANBORN | HEAD & ASSOCIATES, INC
M 215.439.7888 | 1015 Virginia Drive, Suite 100, Fort Washington, PA 19034

Click here to follow us on LinkedIn | Twitter | Facebook | sanbornhead.com

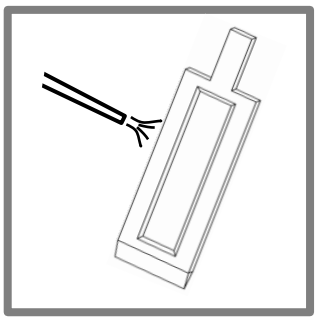
This message and any attachments are intended for the individual or entity named above and may contain privileged or confidential information. If you are not the intended recipient, please do not forward, copy, print, use or disclose this communication to others; please notify the sender by replying to this message and then delete the message and any attachments.

ATTACHMENT D

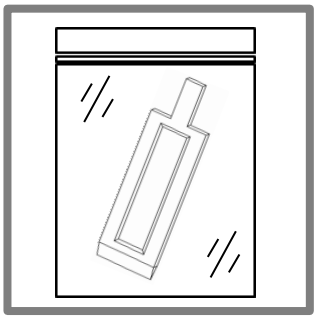
DGT METHODOLOGY AND CALCULATIONS

Procedure for analyzing DGT samples

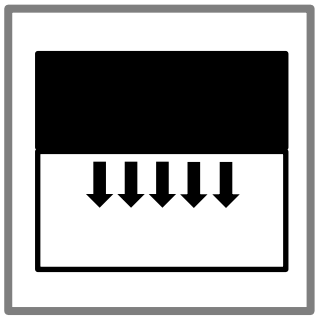
DGT Recovery and Sample Treatment



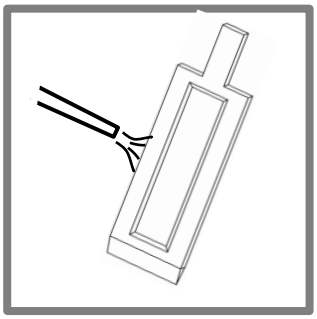
1. After retrieving the DGT device from the deployment environment thoroughly rinse the DGT probe with ultrapure water from a wash bottle.



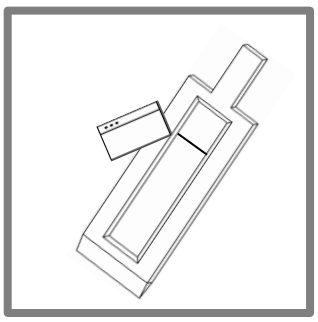
2. Place in a clean plastic bag for storage and transportation back to the lab for sample treatment.



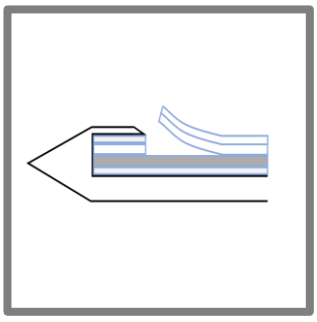
3. For analytes at trace concentrations, all sample treatment should be carried out in a laminar flow hood to avoid contaminating the sample.



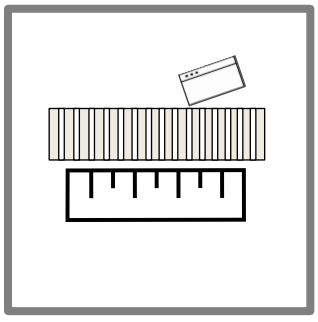
4. Remove from the plastic bag and thoroughly rinse the device with ultrapure water.



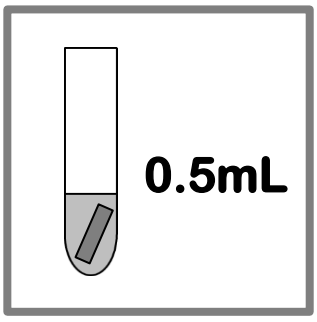
5. To mark the gel position, make a small cut through the filter and gel layers at the sediment/water interface mark using a Teflon coated blade. Then, cut the gels and the filter membranes along the window edges without disassembling the probe.



6. Remove the top filter membrane and the diffusive gel.



7. Carefully lift the resin gel together with the bottom filter membrane out of the window and lay them alongside an acid cleaned plastic ruler on a clean flat surface. Cut the resin gel at the resolution required (no less than 1 mm).



8. Put each gel strip into a centrifuge micro tube (0.5ml or 1.5 ml) and add the appropriate elution solution. The exact procedure for each probe type and analyte should then be followed.

Calculation

The mass, M, of analyte accumulated on the slice of binding layer eluted, of volume, V^{bl}, is calculated from the measured concentration of analyte, c_e, in the eluent, of initial volume V_e, remembering to take into account any subsequent dilution.

$$M = \frac{c_e(V^{bl} + V_e)}{f_e}$$

Where c_e is in nmol mL^{-1} or ng mL^{-1}, and V^{bl} and V^{bl} are in mL, M is in nmol or ng.

This mass can be used to calculate the mean flux from the sediment to the DGT slice of gel, of area A_p, in the device for the deployment time, t (in seconds).

DGT Research Ltd
Skelmorlie, Bay Horse Rd, Quernmore, Lancaster, Lancashire, LA2 0QJ
Phone : +44 (1524) 593899, 2nd Phone : 01524 751451
Email : info@dgtresearch.com

$$F = M/A_p t$$

The DGT equation can be used to calculate the mean concentration at the surface of the device during the deployment time.

$$c_{\mathrm{DGT}} = \frac{M\Delta_g}{D^{\mathrm{mdl}} A_p t}$$

Δ_g (also known as δ_g) (usually 0.094 cm) is the total thickness of the materials in the diffusion layer (diffusive gel and filter membrane).
D_{mdl} (cm^2 s^{-1}) is the diffusion coefficient of analyte in the material diffusion layer (diffusive gel and filter membrane) for the deployment temperature (see diffusion coefficients).

Use the recommended units shown above to facilitate easy calculation.

A key consideration is the meaning of c_{DGT}. Because DGT continually removes analyte, its concentration at the surface of the DGT device may be lowered during the course of the deployment. In some sediments the analyte may be continually resupplied to solution from the solid phase. When this effective buffering is substantial, the measured c_{DGT} is close to the concentration in the porewaters, c_{pw}, at the same location. Comparison of c_{DGT} with c_{pw} can provide information on the dynamics of analyte exchange between porewater and solid phase. A detailed account of the dynamic processes existing when DGT is deployed in sediments can be found in Chapter 7 of the DGT book (see reference below). Note that spatially resolved concentration maxima in porewater concentrations are faithfully represented by DGT (Sochaczewski et al, 2009).

References

Diffusive Gradients in Thin-Films for Environmental Measurements, Ed. W. Davison, Cambridge University Press, 2016, Cambridge.
Chapters in this book, which are particularly relevant are:

1. Introduction to DGT (covers the basic principles)
   William Davison and Hao Zhang
2. Principles of measurements in simple solutions (explains procedures for calculations)
   William Davison and Hao Zhang
3. Diffusion layer properties (provides and critiques diffusion coefficients)
   William Davison and Hao Zhang
4. Binding layer properties (provides properties including elution efficiencies for a range of binding agents and analytes)
   William W. Bennett, Maja Arsic, Jared G. Panther, David T. Welsh, and Peter R. Teasdale
7. Principles and applications in soils and sediments (considers the equations and models describing the dynamics)
   Nik Lehto
8. Measurement at high spatial resolution (describes the evolution and recent developments of high resolution measurements in 1 and 2D)
   Jakob Santner and Paul N. Williams
10. Practicalities of working with DGT (practical issues such as deployment, quality control and sensitivity)
   Dianne F. Jolley, Sean Mason, Yue Gao and Hao Zhang

Prime publications for sediments:

W. Davison, H. Zhang and G. W. Grime, Performance characteristics of gel probes used for measuring the chemistry of porewaters, *Environ. Sci. Technol*. **28**: (1994), 1623-1632.

L. Sochaczewski, W. Davison, H. Zhang and W. Tych, Understanding small scale features in DGT measurements in sediments, *Environ. Chem*.**6**: (2009), 477-485.

M. Harper, W. Davison, H. Zhang, H. and W. Tych, Solid phase to solution kinetics in sediments and soils interpreted from DGT measured fluxes, *Geochim. Cosmochim. Acta.* **62**: (1998), 2757-2770.

G. R. Fones, W. Davison, and J. Hamilton-Taylor, (2004) The fine scale remobilisation of metals in the surface sediment of the North East Atlantic. *Cont. Shelf Res*., **24**: (2004), 1485-1504.

N. J. Lehto, M. Larsen, H. Zhang, R. N. Glud, W. Davison, A mesocosm study of oxygen and trace metal dynamics in sediment microniches of reactive organic material, Sci. Rep. **7**: (2017).

Table D.1

Dissolved Arsenic in Porewater Calculations using DGT Samplers

Input Parameters			
Parameter	**Symbol**	**Value**	**Units**
Volume of Gel	V^{bl}	1	mL
Volume of Eluent	V_e	50	mL
Dilution factor	f_e	1	
Concentration of analyte	C_e	Analyzed in lab	
Mass of Analyte	M	Analyzed in lab	
Thickness of diffusion layer	Δg	0.094	cm
Diffusion Coefficient	D^{mdl}	2.87	cm^2/s
Surface Area of Gel Film	A_p	38.7096	cm^2
Time of Deployment	t	86400	s
Concentration of Dissolved As	C_{DGT}	Calculated	

Notes:

1. Equations to calculate the concentration of dissolved arsenic (As) using the DGT sampler are provided from the DGT manufacturer and shown below:

$$M = \frac{c_e(V^{bl} + V_e)}{f_e} \qquad C_{DGT} = \frac{M\Delta_g}{D^{mdl}A_p t}$$

2. The laboratory (SGS in Dayton, NJ) carried out the analysis for the concentration of arsenic on the film and completed calculations for the mass of arsenic on the film based on the DGT manufacturer's procedures.

3. The thickness of the diffusion layer value and surface area of the gel film value are provided by the DGT manufacturer.

4. The diffusion coefficient for arsenic across the film was provided in a table by the DGT manufacturer and a conservative value was chosen based on diffusion at varying temperatures.

5. Time of deployment was 24 hours (86400 seconds) for each DGT.

6. mL - milliliter s - seconds ug - microgram
cm - centimeter cm2 - square centimeter L - liter

Sample Location	M (ug)	C_{DGT} (ug/L)
PW-01	9.5	93.0
PW-02	1	9.8
PW-03	1	9.8
PW-04	4	39.2
PW-05	1	9.8
PW-07	2.4	23.5
PW-08	1	9.8
PW-09	1	9.8
PW-11	1	9.8
PW-13	2.4	23.5
PW-15	1	9.8
PW-16	3.7	36.2
PW-17	1	9.8
PW-19	1.5	14.7
PW-20	1	9.8
PW-21	1	9.8
PW-23	1	9.8
PW-24	1	9.8
PW-25	1	9.8
PW-27	1	9.8
PW-28	2.2	21.5

ATTACHMENT E

LABORATORY REPORTS

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SANHPAFW: Marcus Hook, PA

4862.02

SGS Job Number: JD41762

Sampling Dates: 03/22/22 - 03/25/22

Report to:

Sanborn Head & Associates, Inc.
1015 Virginia Drive Suite 100
Fort Washington, PA 19034
swhitney@sanbornhead.com; cshepsko@sanbornhead.com

ATTN: Chelsey Shepsko

Total number of pages in report: **683**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Table of Contents

Section 1: Sample Summary 4
Section 2: Case Narrative/Conformance Summary 11
Section 3: Summary of Hits 14
Section 4: Sample Results 19
4.1: JD41762-1: AOI7-SED-25_20220322 20
4.2: JD41762-3: AOI7-SED-10_20220322 21
4.3: JD41762-4: AOI7-SED-07_20220322 22
4.4: JD41762-5: AOI7-SED-05_20220322 23
4.5: JD41762-6: AOI7-SED-07_FD_20220322 24
4.6: JD41762-7: AOI7-SED-04_20220322 25
4.7: JD41762-8: AOI7-SED-01_20220322 26
4.8: JD41762-13F: AOI7-PW-05_20220322 27
4.9: JD41762-14F: AOI7-PW-07_20220322 28
4.10: JD41762-15F: AOI7-PW-25_20220322 29
4.11: JD41762-16F: AOI7-PW-16_20220323 30
4.12: JD41762-17F: AOI7-PW-11_20220323 31
4.13: JD41762-18F: AOI7-PW-24_20220323 32
4.14: JD41762-19F: AOI7-PW-24_FD_20220323 33
4.15: JD41762-20F: AOI7-PW-15_20220323 34
4.16: JD41762-21F: AOI7-PW-21_20220323 35
4.17: JD41762-22F: AOI7-PW-27_20220323 36
4.18: JD41762-23F: AOI7-PW-13_20220323 37
4.19: JD41762-24F: AOI7-PW-03_20220323 38
4.20: JD41762-25F: AOI7-PW-19_20220323 39
4.21: JD41762-26: AOI7-SED-13_20220323 40
4.22: JD41762-27: AOI7-SED-16_20220323 41
4.23: JD41762-28: AOI7-SED-28_20220322 42
4.24: JD41762-30: AOI7-SED-03_20220323 43
4.25: JD41762-32: AOI7-SED-19_20220323 44
4.26: JD41762-33: AOI7-SED-14_20220323 45
4.27: JD41762-39: AOI7-SED-22_20220323 46
4.28: JD41762-46: AOI7-SED-17_20220324 47
4.29: JD41762-47F: AOI7-PW-17_20220324_A 48
4.30: JD41762-48F: AOI7-PW-13_20220324 49
4.31: JD41762-49F: AOI7-PW-20_20220324_A 50
4.32: JD41762-50F: AOI7-PW-20_FD_20220324_A 51
4.33: JD41762-51F: AOI7-PW-04_20220324_A 52
4.34: JD41762-52F: AOI7-PW-14_20220324 53
4.35: JD41762-53F: AOI7-PW-11_20220324 54
4.36: JD41762-55F: AOI7-PW-16_20220324 55
4.37: JD41762-56F: AOI7-EB-01_20220324 56
4.38: JD41762-57F: AOI7-PW-17_20220324 57

Table of Contents

4.39: JD41762-58F: AOI7-PW-20_20220324 58
4.40: JD41762-59F: AOI7-PW-04_20220324 59
4.41: JD41762-81: AOI7-EB-02_20220325 60
4.42: JD41762-84F: AOI7-PW-23_20220325 61
4.43: JD41762-85F: AOI7-PW-02_20220325 62
4.44: JD41762-86F: AOI7-PW-09_20220325 63
4.45: JD41762-87F: AOI7-PW-27_20220325_A 64
4.46: JD41762-88F: AOI7-PW-09_20220325_A 65
4.47: JD41762-89F: AOI7-PW-24_20220325_A 66
4.48: JD41762-90F: AOI7-PW-25_20220325_A 67
Section 5: Misc. Forms 68
5.1: Chain of Custody 69
5.2: Sample Tracking Chronicle 93
5.3: Internal Chain of Custody 100
Section 6: Metals Analysis - QC Data Summaries 116
6.1: Inst QC MA52118: As 117
6.2: Inst QC MA52132: As 140
6.3: Inst QC MA52135: As 169
6.4: Inst QC MA52141: As 195
6.5: Inst QC MA52146: As 258
6.6: Inst QC MA52155: As 285
6.7: Inst QC MA52164: As 326
6.8: Inst QC MA52201: As 352
6.9: Inst QC MA52204: As 374
6.10: Inst QC MA52222: As 401
6.11: Inst QC MA52223: As 423
6.12: Inst QC MA52224: As 447
6.13: Inst QC MA52233: As 510
6.14: Inst QC MA52240: As 536
6.15: Inst QC MA52241: As 556
6.16: Prep QC MP31902: As 584
6.17: Prep QC MP31934: As 594
6.18: Prep QC MP31947: As 604
6.19: Prep QC MP31989: As 616
6.20: Prep QC MP32014: As 626
6.21: Prep QC MP32191: As 636
6.22: Prep QC MP32253: As 646
6.23: Prep QC MP32280: As 656
6.24: Prep QC MP32331: As 668
Section 7: General Chemistry - QC Data Summaries 680
7.1: Percent Solids Raw Data Summary 681

SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-1	03/22/22	13:15	CSS	03/22/22	SO	Sediment	AOI7-SED-25_20220322
JD41762-2	03/22/22	13:35	CSS	03/22/22	SO	Sediment	AOI7-SED-26_20220322
JD41762-3	03/22/22	10:40	CSS	03/22/22	SO	Sediment	AOI7-SED-10_20220322
JD41762-4	03/22/22	10:10	CSS	03/22/22	SO	Sediment	AOI7-SED-07_20220322
JD41762-4D	03/22/22	10:10	CSS	03/22/22	SO	Soil Dup/MSD	AOI7-SED-07_MSD_20220322
JD41762-4S	03/22/22	10:10	CSS	03/22/22	SO	Soil Matrix Spike	AOI7-SED-07_MS_20220322
JD41762-5	03/22/22	12:20	CSS	03/22/22	SO	Sediment	AOI7-SED-05_20220322
JD41762-6	03/22/22	10:10	CSS	03/22/22	SO	Sediment	AOI7-SED-07_FD_20220322
JD41762-7	03/22/22	08:40	CSS	03/22/22	SO	Sediment	AOI7-SED-04_20220322
JD41762-8	03/22/22	09:20	CSS	03/22/22	SO	Sediment	AOI7-SED-01_20220322
JD41762-9	03/22/22	12:10	CSS	03/22/22	SO	Sediment	AOI7-SED-02_20220322
JD41762-10	03/22/22	12:35	CSS	03/22/22	SO	Sediment	AOI7-SED-08_20220322
JD41762-13	03/22/22	12:20	CSS	03/22/22	SO	Soil	AOI7-PW-05_20220322

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-13F	03/22/22	12:20	CSS	03/22/22	AQ	Water Filtered	AOI7-PW-05_20220322
JD41762-14	03/22/22	10:10	CSS	03/22/22	SO	Soil	FOI7-PW-07_20220322
JD41762-14F	03/22/22	10:10	CSS	03/22/22	AQ	Water Filtered	AOI7-PW-07_20220322
JD41762-15	03/22/22	13:15	CSS	03/22/22	SO	Soil	AOI7-PW-25_20220322
JD41762-15F	03/22/22	13:15	CSS	03/22/22	AQ	Water Filtered	AOI7-PW-25_20220322
JD41762-16F	03/23/22	07:50	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-16_20220323
JD41762-17F	03/23/22	12:15	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-11_20220323
JD41762-18	03/23/22	12:45	CSS	03/23/22	SO	Soil	AOI7-PW-24_20220323
JD41762-18D	03/23/22	12:45	CSS	03/23/22	SO	Soil Dup/MSD	AOI7-PW-24_MSD_20220323
JD41762-18DF	03/23/22	12:45	CSS	03/23/22	AQ	Water Dup/MSD	AOI7-PW-24_MSD_20220323
JD41762-18F	03/23/22	12:45	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-24_20220323
JD41762-18S	03/23/22	12:45	CSS	03/23/22	SO	Soil Matrix Spike	AOI7-PW-24_MS_20220323
JD41762-18SF	03/23/22	12:45	CSS	03/23/22	AQ	Water Matrix Spike	AOI7-PW-24_MS_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SGS North America Inc.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-19	03/23/22	12:45	CSS	03/23/22	SO	Soil	AOI7-PW-24_FD_20220323
JD41762-19F	03/23/22	12:45	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-24_FD_20220323
JD41762-20	03/23/22	11:35	CSS	03/23/22	SO	Soil	AOI7-PW-15_20220323
JD41762-20F	03/23/22	11:35	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-15_20220323
JD41762-21	03/23/22	13:10	CSS	03/23/22	SO	Soil	AOI7-PW-21_20220323
JD41762-21F	03/23/22	13:10	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-21_20220323
JD41762-22	03/23/22	13:45	CSS	03/23/22	SO	Soil	AOI7-PW-27_20220323
JD41762-22F	03/23/22	13:45	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-27_20220323
JD41762-23	03/23/22	08:10	CSS	03/23/22	SO	Soil	AOI7-PW-13_20220323
JD41762-23F	03/23/22	08:10	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-13_20220323
JD41762-24	03/23/22	10:05	CSS	03/23/22	SO	Soil	AOI7-PW-03_20220323
JD41762-24F	03/23/22	10:05	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-03_20220323
JD41762-25	03/23/22	09:00	CSS	03/23/22	SO	Soil	AOI7-PW-19_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SGS North America Inc.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-25F	03/23/22	09:00	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-19_20220323
JD41762-26	03/23/22	08:10	CSS	03/23/22	SO	Sediment	AOI7-SED-13_20220323
JD41762-27	03/23/22	07:50	CSS	03/23/22	SO	Sediment	AOI7-SED-16_20220323
JD41762-28	03/22/22	13:00	CSS	03/23/22	SO	Sediment	AOI7-SED-28_20220322
JD41762-30	03/23/22	10:05	CSS	03/23/22	SO	Sediment	AOI7-SED-03_20220323
JD41762-32	03/23/22	09:00	CSS	03/23/22	SO	Sediment	AOI7-SED-19_20220323
JD41762-33	03/23/22	12:00	CSS	03/23/22	SO	Sediment	AOI7-SED-14_20220323
JD41762-34	03/23/22	11:35	CSS	03/23/22	SO	Sediment	AOI7-SED-15_20220323
JD41762-35	03/23/22	11:20	CSS	03/23/22	SO	Sediment	AOI7-SED-18_20220323
JD41762-36	03/23/22	09:45	CSS	03/23/22	SO	Sediment	AOI7-SED-06_20220323
JD41762-37	03/23/22	09:25	CSS	03/23/22	SO	Sediment	AOI7-SED-29_20220323
JD41762-38	03/23/22	13:10	CSS	03/23/22	SO	Sediment	AOI7-SED-21_20220323
JD41762-39	03/23/22	08:40	CSS	03/23/22	SO	Sediment	AOI7-SED-22_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SGS North America Inc.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-40	03/23/22	12:45	CSS	03/23/22	SO	Sediment	AOI7-SED-24_20220323
JD41762-41	03/23/22	13:45	CSS	03/23/22	SO	Sediment	AOI7-SED-27_20220323
JD41762-42	03/23/22	10:45	CSS	03/23/22	SO	Sediment	AOI7-SED-09_20220323
JD41762-43	03/23/22	13:35	CSS	03/23/22	SO	Sediment	AOI7-SED-30_20220323
JD41762-44	03/24/22	07:50	CSS	03/24/22	SO	Sediment	AOI7-SED-23_20220324
JD41762-45	03/24/22	08:15	CSS	03/24/22	SO	Sediment	AOI7-SED-20_20220324
JD41762-46	03/24/22	08:35	CSS	03/24/22	SO	Sediment	AOI7-SED-17_20220324
JD41762-47F	03/24/22	08:35	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-17_20220324_A
JD41762-48F	03/24/22	11:20	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-13_20220324
JD41762-49F	03/24/22	08:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-20_20220324_A
JD41762-50F	03/24/22	08:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-20_FD_20220324_A
JD41762-51F	03/24/22	10:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-04_20220324_A
JD41762-52F	03/24/22	11:45	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-14_20220324

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SGS North America Inc.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-53	03/24/22	13:30	CSS	03/24/22	SO	Soil	AOI7-PW-11_20220324
JD41762-53F	03/24/22	13:30	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-11_20220324
JD41762-54	03/24/22	07:50	CSS	03/24/22	SO	Soil	AOI7-PW-23_20220324
JD41762-55	03/24/22	13:45	CSS	03/24/22	SO	Soil	AOI7-PW-16_20220324
JD41762-55F	03/24/22	13:45	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-16_20220324
JD41762-56F	03/24/22	14:15	CSS	03/24/22	AQ	Equip Blank Filtered	AOI7-EB-01_20220324
JD41762-57	03/24/22	08:35	CSS	03/24/22	SO	Soil	AOI7-PW-17_20220324
JD41762-57F	03/24/22	08:35	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-17_20220324
JD41762-58	03/24/22	08:15	CSS	03/24/22	SO	Soil	AOI7-PW-20_20220324
JD41762-58F	03/24/22	08:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-20_20220324
JD41762-59	03/24/22	10:15	CSS	03/24/22	SO	Soil	AOI7-PW-04_20220324
JD41762-59F	03/24/22	10:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-04_20220324
JD41762-81	03/25/22	11:50	CSS	03/25/22	AQ	Equipment Blank	AOI7-EB-02_20220325

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-82	03/25/22	07:50	CSS	03/25/22	SO	Soil	AOI7-PW-27_20220325
JD41762-83	03/25/22	09:20	CSS	03/25/22	SO	Soil	AOI7-PW-21_20220325
JD41762-84	03/25/22	09:40	CSS	03/25/22	SO	Soil	AOI7-PW-23_20220325
JD41762-84F	03/25/22	09:40	CSS	03/25/22	AQ	Water Filtered	AOI7-PW-23_20220325
JD41762-85	03/25/22	09:00	CSS	03/25/22	SO	Soil	AOI7-PW-02_20220325
JD41762-85F	03/25/22	09:00	CSS	03/25/22	AQ	Water Filtered	AOI7-PW-02_20220325
JD41762-86	03/25/22	08:50	CSS	03/25/22	SO	Soil	AOI7-PW-09_20220325
JD41762-86F	03/25/22	08:50	CSS	03/25/22	AQ	Water Filtered	AOI7-PW-09_20220325
JD41762-87F	03/25/22	07:50	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-27_20220325_A
JD41762-88F	03/25/22	08:50	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-09_20220325_A
JD41762-89F	03/25/22	11:15	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-24_20220325_A
JD41762-90F	03/25/22	10:50	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-25_20220325_A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Sunoco/Evergreen **Job No:** JD41762

Site: SANHPAFW: Marcus Hook, PA **Report Date** 4/21/2022 12:13:01 P

Between 03/22/2022 and 03/25/2022, 48 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD41762 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals Analysis By Method SW846 6010D

Matrix: AQ **Batch ID:** MP31934

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-16FMS, JD41762-16FMSD, JD41762-16FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP31934-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-14F for Arsenic: Elevated sample detection limit due to limited volume.

Matrix: AQ **Batch ID:** MP31989

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-48FMS, JD41762-48FMSD, JD41762-48FSDL were used as the QC samples for metals.

Matrix: AQ **Batch ID:** MP32014

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-17FMS, JD41762-17FMSD, JD41762-17FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP32014-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-47F for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD41762-23F for Arsenic: Elevated sample detection limit due to difficult sample matrix.

Matrix: AQ **Batch ID:** MP32191

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-18FMS, JD41762-18FMSD, JD41762-18FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP32191-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-86F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-13F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-20F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-84F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-24F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-85F for Arsenic: Elevated sample detection limit due to limited volume.

Metals Analysis By Method SW846 6010D

Matrix: AQ **Batch ID:** MP32253

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD42841-1MS, JD42841-1MSD, JD42841-1SDL were used as the QC samples for metals.

Matrix: SO **Batch ID:** MP31902

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-4MS, JD41762-4MSD, JD41762-4SDL were used as the QC samples for metals.

Matrix: SO **Batch ID:** MP31947

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41893-1MS, JD41893-1MSD, JD41893-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP31947-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-27 for Arsenic: Elevated detection limit due to dilution required for high interfering element.

Matrix: SO **Batch ID:** MP32280

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD42834-2MS, JD42834-2MSD, JD42834-2SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP32280-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP32331

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD42270-3MS, JD42270-3PS, JD42270-3SDL, JD42270-3MSD were used as the QC samples for metals.
- Matrix Spike Duplicate Recovery(s) for Arsenic are outside control limits. Probable cause due to matrix interference.
- RPD(s) for MSD for Arsenic are outside control limits for sample MP32331-S2. High rpd due to possible sample nonhomogeneity.
- JD41762-5 for Arsenic: Elevated detection limit due to dilution required for high interfering element.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO **Batch ID:** GN27548

- Sample(s) JD41762-4DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN27623

- Sample(s) JD41848-1DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN28112

- Sample(s) JD42470-25RDUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-1	**AOI7-SED-25_20220322**					
Arsenic		132	3.1		mg/kg	SW846 6010D
JD41762-3	**AOI7-SED-10_20220322**					
Arsenic		60.2	2.5		mg/kg	SW846 6010D
JD41762-4	**AOI7-SED-07_20220322**					
Arsenic		92.3	3.9		mg/kg	SW846 6010D
JD41762-5	**AOI7-SED-05_20220322**					
Arsenic [a]		92.6	5.7		mg/kg	SW846 6010D
JD41762-6	**AOI7-SED-07_FD_20220322**					
Arsenic		52.9	3.8		mg/kg	SW846 6010D
JD41762-7	**AOI7-SED-04_20220322**					
Arsenic		353	2.6		mg/kg	SW846 6010D
JD41762-8	**AOI7-SED-01_20220322**					
Arsenic		102	4.1		mg/kg	SW846 6010D
JD41762-13F	**AOI7-PW-05_20220322**					
Arsenic [b]		31.8	6.0		ug/l	SW846 6010D
JD41762-14F	**AOI7-PW-07_20220322**					
Arsenic [b]		145	7.5		ug/l	SW846 6010D
JD41762-15F	**AOI7-PW-25_20220322**					
Arsenic		75.0	6.0		ug/l	SW846 6010D
JD41762-16F	**AOI7-PW-16_20220323**					
Arsenic		7.7	3.0		ug/l	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-17F	**AOI7-PW-11_20220323**					
No hits reported in this sample.						
JD41762-18F	**AOI7-PW-24_20220323**					
Arsenic		19.6	3.0		ug/l	SW846 6010D
JD41762-19F	**AOI7-PW-24_FD_20220323**					
Arsenic		15.3	3.0		ug/l	SW846 6010D
JD41762-20F	**AOI7-PW-15_20220323**					
Arsenic [b]		34.4	6.0		ug/l	SW846 6010D
JD41762-21F	**AOI7-PW-21_20220323**					
Arsenic		18.8	3.0		ug/l	SW846 6010D
JD41762-22F	**AOI7-PW-27_20220323**					
Arsenic		14.5	3.0		ug/l	SW846 6010D
JD41762-23F	**AOI7-PW-13_20220323**					
Arsenic [c]		71.0	6.0		ug/l	SW846 6010D
JD41762-24F	**AOI7-PW-03_20220323**					
Arsenic [b]		10.0	6.0		ug/l	SW846 6010D
JD41762-25F	**AOI7-PW-19_20220323**					
Arsenic		131	6.0		ug/l	SW846 6010D
JD41762-26	**AOI7-SED-13_20220323**					
Arsenic		198	3.1		mg/kg	SW846 6010D
JD41762-27	**AOI7-SED-16_20220323**					
Arsenic [a]		227	4.6		mg/kg	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-28	**AOI7-SED-28_20220322**					
Arsenic		41.0	4.3		mg/kg	SW846 6010D
JD41762-30	**AOI7-SED-03_20220323**					
Arsenic		29.9	3.1		mg/kg	SW846 6010D
JD41762-32	**AOI7-SED-19_20220323**					
Arsenic		62.6	3.2		mg/kg	SW846 6010D
JD41762-33	**AOI7-SED-14_20220323**					
Arsenic		18.7	3.5		mg/kg	SW846 6010D
JD41762-39	**AOI7-SED-22_20220323**					
Arsenic		87.8	4.2		mg/kg	SW846 6010D
JD41762-46	**AOI7-SED-17_20220324**					
Arsenic		15.6	3.4		mg/kg	SW846 6010D
JD41762-47F	**AOI7-PW-17_20220324_A**					
Arsenic [a]		71.5	6.0		ug/l	SW846 6010D
JD41762-48F	**AOI7-PW-13_20220324**					
Arsenic		276	3.0		ug/l	SW846 6010D
JD41762-49F	**AOI7-PW-20_20220324_A**					
Arsenic		69.3	3.0		ug/l	SW846 6010D
JD41762-50F	**AOI7-PW-20_FD_20220324_A**					
Arsenic		75.7	3.0		ug/l	SW846 6010D
JD41762-51F	**AOI7-PW-04_20220324_A**					
Arsenic		442	3.0		ug/l	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-52F	**AOI7-PW-14_20220324**					
Arsenic		47.6	3.0		ug/l	SW846 6010D
JD41762-53F	**AOI7-PW-11_20220324**					
Arsenic		73.0	3.0		ug/l	SW846 6010D
JD41762-55F	**AOI7-PW-16_20220324**					
Arsenic		68.3	3.0		ug/l	SW846 6010D
JD41762-56F	**AOI7-EB-01_20220324**					
No hits reported in this sample.						
JD41762-57F	**AOI7-PW-17_20220324**					
Arsenic		48.6	3.0		ug/l	SW846 6010D
JD41762-58F	**AOI7-PW-20_20220324**					
Arsenic		102	3.0		ug/l	SW846 6010D
JD41762-59F	**AOI7-PW-04_20220324**					
Arsenic		163	6.0		ug/l	SW846 6010D
JD41762-81	**AOI7-EB-02_20220325**					
No hits reported in this sample.						
JD41762-84F	**AOI7-PW-23_20220325**					
Arsenic [b]		33.2	6.0		ug/l	SW846 6010D
JD41762-85F	**AOI7-PW-02_20220325**					
Arsenic [b]		124	6.0		ug/l	SW846 6010D
JD41762-86F	**AOI7-PW-09_20220325**					
Arsenic [b]		10.0	6.0		ug/l	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-87F	**AOI7-PW-27_20220325_A**					
Arsenic		11.0	3.0		ug/l	SW846 6010D
JD41762-88F	**AOI7-PW-09_20220325_A**					
Arsenic		10.7	3.0		ug/l	SW846 6010D
JD41762-89F	**AOI7-PW-24_20220325_A**					
Arsenic		32.7	3.0		ug/l	SW846 6010D
JD41762-90F	**AOI7-PW-25_20220325_A**					
Arsenic		178	6.0		ug/l	SW846 6010D

(a) Elevated detection limit due to dilution required for high interfering element.
(b) Elevated sample detection limit due to limited volume.
(c) Elevated sample detection limit due to difficult sample matrix.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AOI7-SED-25_20220322		
Lab Sample ID:	JD41762-1	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	43.3
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	132	3.1	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-10_20220322		
Lab Sample ID:	JD41762-3	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	53.1
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	60.2	2.5	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-07_20220322		
Lab Sample ID:	JD41762-4	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	51.3
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	92.3	3.9	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-05_20220322		
Lab Sample ID:	JD41762-5	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	47.4
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	92.6	5.7	mg/kg	2	04/14/22	04/15/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52241
(2) Prep QC Batch: MP32331

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-07_FD_20220322		
Lab Sample ID:	JD41762-6	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	53.5
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	52.9	3.8	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-04_20220322		
Lab Sample ID:	JD41762-7	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	50.7
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	353	2.6	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-01_20220322		
Lab Sample ID:	JD41762-8	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	48.5
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	102	4.1	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-05_20220322		
Lab Sample ID:	JD41762-13F	**Date Sampled:**	03/22/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/22/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	31.8	6.0	ug/l	1	04/08/22	04/11/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52204
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-07_20220322		
Lab Sample ID:	JD41762-14F	**Date Sampled:**	03/22/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/22/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	145	7.5	ug/l	1	03/26/22	03/29/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31934

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-25_20220322		
Lab Sample ID:	JD41762-15F	**Date Sampled:**	03/22/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/22/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	75.0	6.0	ug/l	1	03/26/22	03/29/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31934

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-16_20220323		
Lab Sample ID:	JD41762-16F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.7	3.0	ug/l	1	03/26/22	03/29/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31934

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-11_20220323		
Lab Sample ID:	JD41762-17F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-24_20220323		
Lab Sample ID:	JD41762-18F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	19.6	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-24_FD_20220323		
Lab Sample ID:	JD41762-19F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	15.3	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-15_20220323		
Lab Sample ID:	JD41762-20F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	34.4	6.0	ug/l	1	04/08/22	04/11/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52204
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-21_20220323		
Lab Sample ID:	JD41762-21F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	18.8	3.0	ug/l	1	04/08/22	04/11/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52204
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-27_20220323		
Lab Sample ID:	JD41762-22F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	14.5	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-13_20220323		
Lab Sample ID:	JD41762-23F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	71.0	6.0	ug/l	1	03/31/22	04/04/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52164
(2) Prep QC Batch: MP32014

(a) Elevated sample detection limit due to difficult sample matrix.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-03_20220323		
Lab Sample ID:	JD41762-24F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	10.0	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-19_20220323		
Lab Sample ID:	JD41762-25F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	131	6.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-13_20220323		
Lab Sample ID:	JD41762-26	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	45.0
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	198	3.1	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-16_20220323		
Lab Sample ID:	JD41762-27	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	57.0
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	227	4.6	mg/kg	2	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52135
(2) Prep QC Batch: MP31947

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-28_20220322		
Lab Sample ID:	JD41762-28	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	46.1
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	41.0	4.3	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-03_20220323		
Lab Sample ID:	JD41762-30	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	61.0
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	29.9	3.1	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-19_20220323		
Lab Sample ID:	JD41762-32	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	40.5
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	62.6	3.2	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-14_20220323		
Lab Sample ID:	JD41762-33	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	54.3
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	18.7	3.5	mg/kg	1	04/13/22	04/14/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52233
(2) Prep QC Batch: MP32280

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-22_20220323		
Lab Sample ID:	JD41762-39	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	49.9
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	87.8	4.2	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-17_20220324		
Lab Sample ID:	JD41762-46	**Date Sampled:**	03/24/22
Matrix:	SO - Sediment	**Date Received:**	03/24/22
		Percent Solids:	56.8
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	15.6	3.4	mg/kg	1	04/13/22	04/14/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52233
(2) Prep QC Batch: MP32280

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-17_20220324_A		
Lab Sample ID:	JD41762-47F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	71.5	6.0	ug/l	2	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-13_20220324		
Lab Sample ID:	JD41762-48F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	276	3.0	ug/l	1	03/30/22	03/31/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52146
(2) Prep QC Batch: MP31989

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-20_20220324_A		
Lab Sample ID:	JD41762-49F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	69.3	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-20_FD_20220324_A		
Lab Sample ID:	JD41762-50F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	75.7	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-04_20220324_A		
Lab Sample ID:	JD41762-51F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	442	3.0	ug/l	1	03/30/22	03/31/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52146
(2) Prep QC Batch: MP31989

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-14_20220324		
Lab Sample ID:	JD41762-52F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	47.6	3.0	ug/l	1	04/12/22	04/13/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52223
(2) Prep QC Batch: MP32253

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-11_20220324		
Lab Sample ID:	JD41762-53F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	73.0	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-16_20220324		
Lab Sample ID:	JD41762-55F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	68.3	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-EB-01_20220324		
Lab Sample ID:	JD41762-56F	**Date Sampled:**	03/24/22
Matrix:	AQ - Equip Blank Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	03/30/22	03/31/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52146
(2) Prep QC Batch: MP31989

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-17_20220324		
Lab Sample ID:	JD41762-57F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	48.6	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-20_20220324		
Lab Sample ID:	JD41762-58F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	102	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-04_20220324		
Lab Sample ID:	JD41762-59F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	163	6.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-EB-02_20220325		
Lab Sample ID:	JD41762-81	**Date Sampled:**	03/25/22
Matrix:	AQ - Equipment Blank	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-23_20220325		
Lab Sample ID:	JD41762-84F	**Date Sampled:**	03/25/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	33.2	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-02_20220325		
Lab Sample ID:	JD41762-85F	**Date Sampled:**	03/25/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	124	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-09_20220325		
Lab Sample ID:	JD41762-86F	**Date Sampled:**	03/25/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	10.0	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-27_20220325_A		
Lab Sample ID:	JD41762-87F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	11.0	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-09_20220325_A		
Lab Sample ID:	JD41762-88F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	10.7	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-24_20220325_A		
Lab Sample ID:	JD41762-89F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	32.7	3.0	ug/l	1	03/31/22	04/04/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52164
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-25_20220325_A		
Lab Sample ID:	JD41762-90F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	178	6.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SED

JD41762

VP-031422-240

SGS

CHAIN OF CUSTODY

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

FED-EX Tracking #

Bottle Order Control #

SGS Quote # 2022 219

SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates

Street Address: 1015 Virginia Dr, Suite 100

City / State / Zip: Fort Washington, PA, 19034

Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com

Phone #: 603-415-6159 Fax #:

Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook

Street: 100 Green Street

City / State: Marcus Hook, PA 19061

Project #: 4862.02

Client Purchase Order #:

Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates

Street Address: 20 Foundry Street

City / State / Zip: Concord, NH, 03301

Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
1	AOI7-SED-25.20220322		03/22/22	13:15	CSS												1		Dissolved	D22
2	AOI7-SED-26-20220322			13:35	CSS												1		3 on hold	
3	AOI7-SED-10.20220322			10:40	CSS												1			
	~~AOI7-SED-07-20220322~~			~~10:10~~	~~CSS~~												~~1~~			
4	AOI7-SED-DUP-20220322			10:10	CSS												1			
	AOI7-SED-OS7-MS.20220322			10:10													1			
	AOI7-SED-OS7-MSD.20220322			10:10													1			
5	AOI7-SED-OS.20220322			12:20													1		3 on hold	
6	AOI7-SED-DUP-FD.20220322			10:10													1			
7	AOI7-SED-04.20220322			08:40													1			
8	AOI7-SED-01.20220322			09:20													1			
9	AOI7-SED-02.20220322			12:10													1		3 on hold	
10	AOI7-SED-05.20220322			12:35													1		3 on hold	

Turnaround Time (Business days)

Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced x REDT1
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summery
NJ Reduced = Results + QC Summery + Partial Raw data

NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA EQuIS
Other

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:46	Received By: 1	Relinquished By: 2	Date Time: 3/22/22 1732	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / On Ice	Cooler Temp. 3.5°C

Initial Assessment BB-3A

Label Verification

JD41762: Chain of Custody
Page 1 of 24

JD41762

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2 2

FED-EX Tracking #
SGS Quote # 2022 219
Bottle Order Control #
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington, State: PA, Zip: 19034
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts
Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by centrifuge								LAB USE ONLY
11	A017-SED-10.20220322		03/22/22	10:40	CDS											1	1									
12	A017-SED-07.20220322			10:10												1	1									
13	A017-PW-05.20220322			12:20														1								ON HOLD
14	A017-PW-007.20220322			10:10														1								
15	A017-PW-25_20220322			13:15														1								

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Turnaround Time (Business days)

Data Deliverable Information

Comments / Special Instructions

X Std. 10 Business Days
5 Day RUSH
4 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Commercial "A" (Level 1) NYASP Category A
Commercial "B" (Level 2) X NYASP Category B
FULLT1 (Level 3+4) State Forms
NJ Reduced X EDD Format SHA EQuIS
Commercial "C" Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Chelsey Shepsko	14:40	1 [signature]	2 [signature]	3/22/22 17:33	2 [signature]
3		3	4		4
5		5	Custody Seal #	Intact Not intact	Preserved where applicable On Ice Cooler Temp. X 3.5 C/F

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

5.1

5

JD41762: Chain of Custody
Page 2 of 24

SGS Sample Receipt Summary

Job Number: JD41762 **Client:** SANBORN HEAD & ASSOCIATES, INC. **Project:** SANHPAFW: MARCUS HOOK, PA

Date / Time Received: 3/22/2022 5:33:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

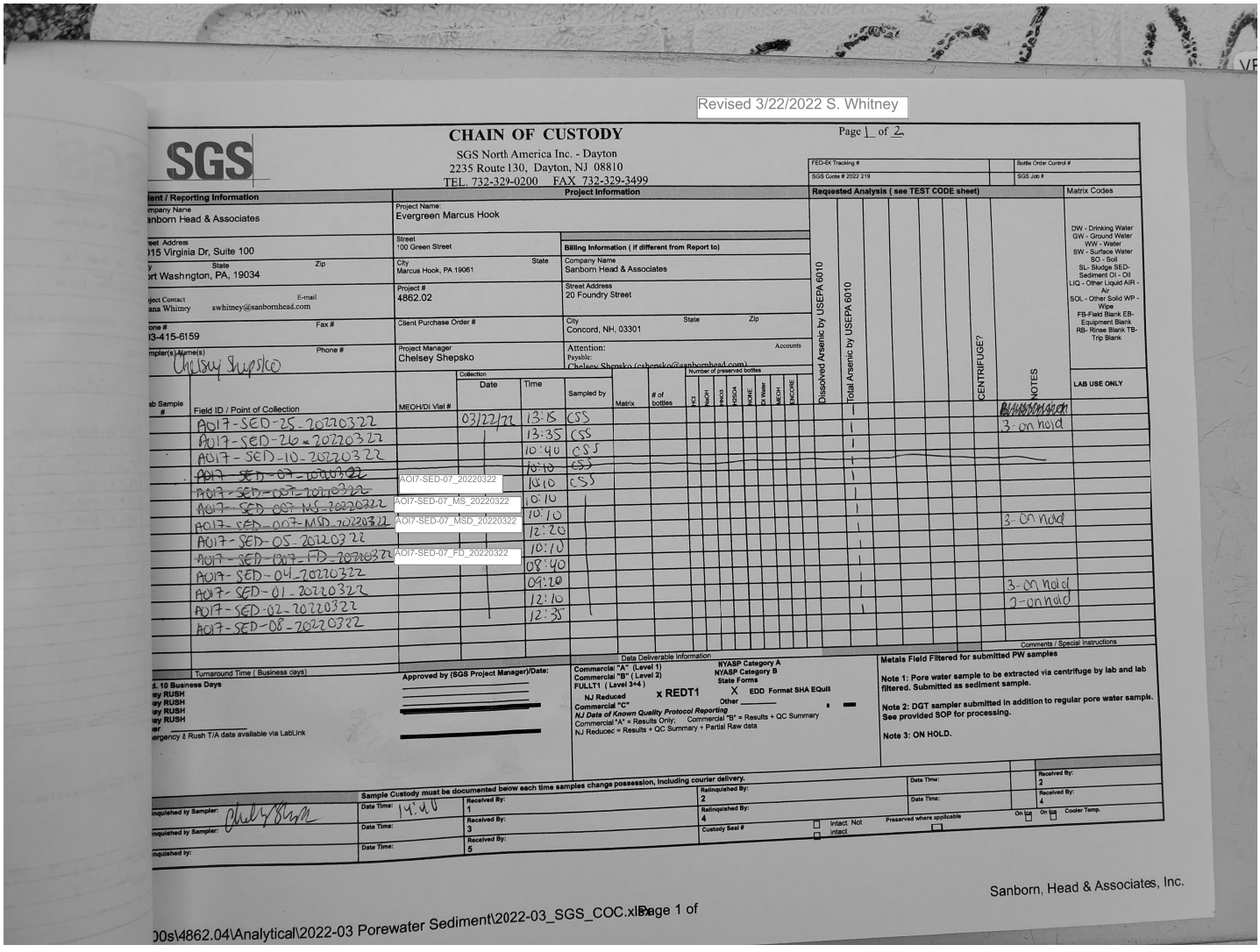
Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17



Revised 3/22/2022 S. Whitney

CHAIN OF CUSTODY

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Client / Reporting Information: Company Name: Sanborn Head & Associates; Street Address: 215 Virginia Dr, Suite 100; City/State/Zip: Fort Washington, PA, 19034; Project Contact: Dana Whitney; E-mail: swhitney@sanbornhead.com; Phone #: 913-415-6159; Fax #; Sampler(s) Name(s): Chelsey Shepsko

Project Information: Project Name: Evergreen Marcus Hook; Street: 100 Green Street; City/State: Marcus Hook, PA 19061; Project #: 4862.02; Client Purchase Order #; Project Manager: Chelsey Shepsko

Billing Information (if different from Report to): Company Name: Sanborn Head & Associates; Street Address: 20 Foundry Street; City/State/Zip: Concord, NH, 03301; Attention: Chelsey Shepsko (cshepsko@sanbornhead.com); Accounts Payable:

FED-EX Tracking #; Bottle Order Control #; SGS Quote # 2022 219; SGS Job #

Requested Analysis (see TEST CODE sheet): Dissolved Arsenic by USEPA 6010; Total Arsenic by USEPA 6010; CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl, NaOH, H2SO4, H2SO4, NONE, DI Water, MEOH, ENCORE	NOTES	LAB USE ONLY
	AOI7-SED-25-20220322		03/22/22	13:15	CSS				3-on hold	
	AOI7-SED-26-20220322			13:35	CSS					
	AOI7-SED-10-20220322			10:40	CSS					
	~~AOI7-SED-07-20220322~~	AOI7-SED-07_20220322		10:10	CSS					
	AOI7-SED-007-20220322			10:10						
	AOI7-SED-007-MS-20220322	AOI7-SED-07_MS_20220322		10:10						
	AOI7-SED-007-MSD-20220322	AOI7-SED-07_MSD_20220322		12:20					3-on hold	
	AOI7-SED-05-20220322			10:10						
	AOI7-SED-007-FD-20220322	AOI7-SED-07_FD_20220322		08:40						
	AOI7-SED-04-20220322			09:20						
	AOI7-SED-01-20220322			12:10					3-on hold	
	AOI7-SED-02-20220322			12:35					3-on hold	
	AOI7-SED-08-20220322									

Comments / Special Instructions

Turnaround Time (Business days): 10 Business Days; RUSH; RUSH; RUSH; Other; Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information: Commercial "A" (Level 1); Commercial "B" (Level 2); FULLT1 (Level 3+4); NJ Reduced; Commercial "C"; NJ Data of Known Quality Protocol Reporting; Commercial "A" = Results Only; Commercial "B" = Results + QC Summary; NJ Reducec = Results + QC Summary + Partial Raw data; NYASP Category A; NYASP Category B; State Forms; x REDT1; X EDD Format SHA EQuIS; Other

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

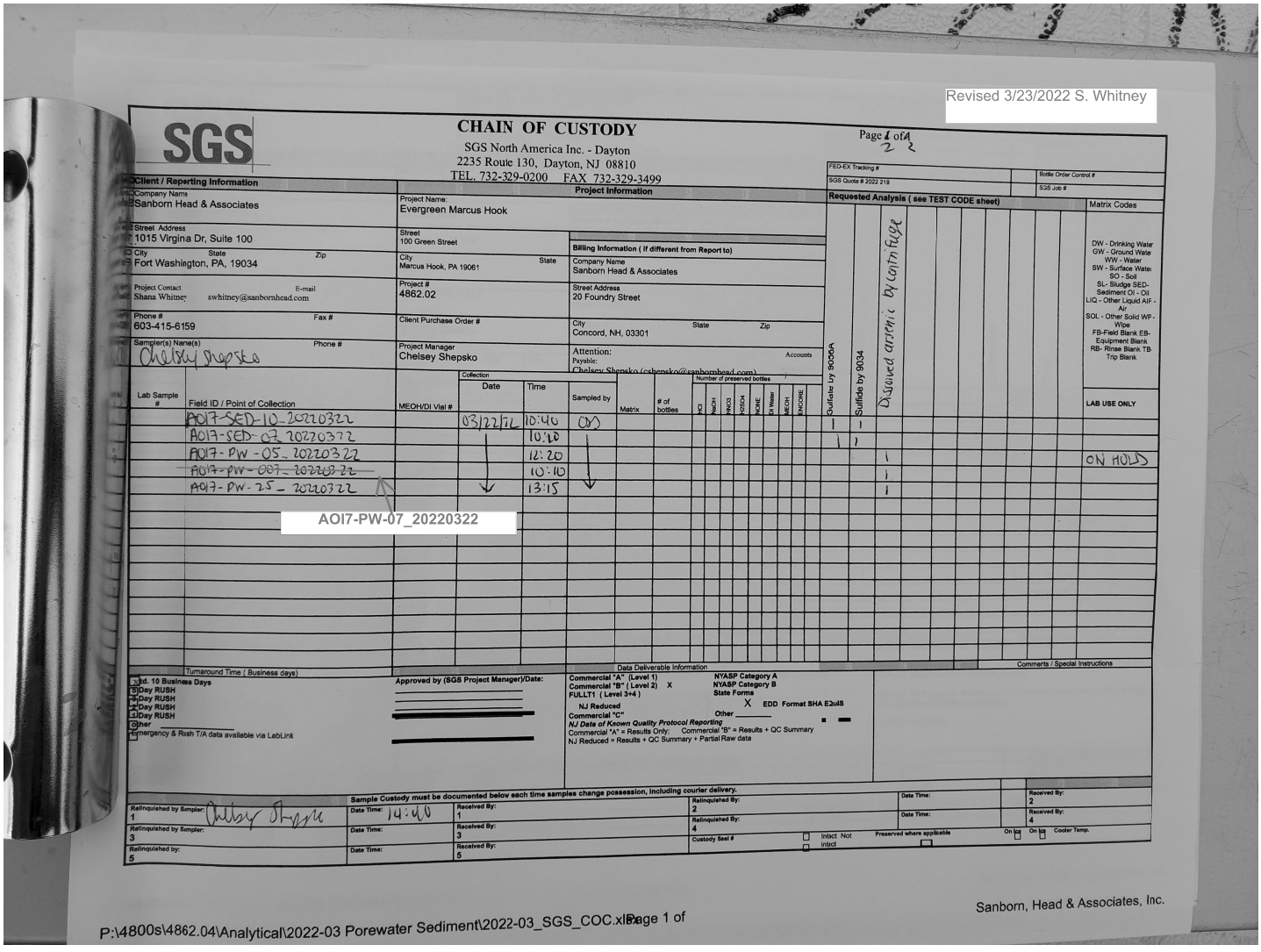
Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time: 14:00	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable

On Ice / Cooler Temp.

Sanborn, Head & Associates, Inc.



Revised 3/23/2022 S. Whitney

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 1015 Virgina Dr, Suite 100
City: Fort Washington, PA, 19034 State: Zip:
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIF - Air; SOL - Other Solid WF - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by Lumifuge	LAB USE ONLY
	AOI7-SED-10_20220322		03/22/22	10:40	CMS											1	1		
	AOI7-SED-07_20220322			10:20												1	1		
	AOI7-PW-05_20220322			12:20														1	ON HOLD
	AOI7-PW-007_20220322			10:10														1	
	AOI7-PW-25_20220322			13:15														1	

AOI7-PW-07_20220322

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2) X
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA E2ul8
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:40	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact Not intact	Preserved where applicable	On Ice	On Ice	Cooler Temp.

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

5.1.5

Job Change Order: JD41762

Requested Date:	3/24/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/24/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-13

Dept:

TAT: 7

AOI7-PW-05_20220322

Change:

Please create new -F sample for lab filtered volume and place on HOL

==========

==========

Sample #: JD41762-14, -15

Dept:

TAT: 7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/24/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/24/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-11, -12

Dept:

TAT: 7

Change:
Please move to -A job

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/25/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/25/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-29,-31

Dept:

TAT: 7

Change:
Please move to -A job

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/25/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

6w
SO

VP-031422-240

SGS CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of

JD 41762

FED-EX Tracking #
Bottle Order Control #
SGS Quote # 2022 219
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington, State: PA, Zip: 19034
Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159, Fax #:
Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, State: PA 19061
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, State: NH, Zip: 03301
Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Dissolved Arsenic by USEPA 6010
Total Arsenic by USEPA 6010
CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
16F	AOI7-PW-16_20220323		3/23/22	07:50	CS	GW	1			1						1				AS
17F	AOI7-PW-11_20220323			12:15			1			1						1			3 on hold	D24
18	AOI7-PW-24-20220323			12:45			1			1		1				1		X	on hold	
19	AOI7-PW-24-FD_20220323			12:45			1			1		1				1		X	on hold	
20	AOI7-PW-24-MS_20220323			12:45			1			1		1				1		X	on hold	
21	AOI7-PW-24-MSD_20220323			12:45			1			1		1				1		X	on hold	
22	AOI7-PW-15_20220323			11:35			1			1		1				1		X	on hold	
23	AOI7-PW-21_20220323			13:10			1			1		1				1		X	on hold	
24	AOI7-PW-27-20220323			13:45			1			1		1				1		X	on hold	
25	AOI7-PW-12_20220323			08:10			1			1		1				1		X		
26	AOI7-PW-03_20220323			10:05			1			1		1				1		X	on hold	
27	AOI7-PW-19_20220323			09:00			1					1				1		X		
28	AOI7-SED-13_20220323			08:10		SO	1					1					1			
29	AOI7-SED-16_20220323			07:50		SO	1					1					1			
30	AOI7-SED-28_20220322		3/22/22	13:00		SO	1										1			

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULL1T (Level 3+4)
NJ Reduced
x REDT1
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA EQuIS
Other

Comments / Special Instructions
Metals Field Filtered for submitted PW samples
Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.
Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.
Note 3: ON HOLD.

Field Assessment GC 2A
Label Verification

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	3/23/22 15:00	1	2	17:35	2
3		3	4		4
5		5	Custody Seal #	Intact / Not Intact	Preserved where applicable: On Ice / Cooler Temp.

CTO 27

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 2 of 2

JD 41762

FED-EX Tracking #:
Bottle Order Control #:
SGS Quote # 2022 219
SGS Job #:

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington, PA, 19034 State: Zip:
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB-Equipment Blank; RB- Rinse Blank TB-Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	MeOH	NaOH	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	Sulfate / Sulfide	CENTRIFUGE?	NOTES	LAB USE ONLY
29 31	AD17-SED-12_20220323		03/23/22	10:25	CSS		2					2					1	1		On hold for arsenic only	
30 32	AD17-SED-03_20220323			10:05			1					1					1				
31 33	AD17-SED-11_20220323			12:15			2					2					1	1		on hold for arsenic only	
32 34	AD17-SED-19_20220323			09:00			1					1					1				
33 35	AD17-SED-14_20220323			12:00			1					1					1			on hold	
34 36	AD17-SED-15_20220323			11:35			1					1					1			on hold	
35 37	AD17-SED-18_20220323			11:26			1					1					1			on hold	
36 38	AD17-SED-06_20220323			09:45			1					1					1			on hold	
37 39	AD17-SED-29_20220323			09:25			1					1					1			on hold	
38 40	AD17-SED-21_20220323			13:10			1					1					1			on hold	
39 41	AD17-SED-22_20220323			08:40			1					1					1				
40 42	AD17-SED-24_20220323			12:45			1					1					1			on hold	
41 43	AD17-SED-27_20220323			13:45			1					1					1			on hold	
42 44	AD17-SED-09_20220323			15:45			1					1					1			on hold	
43 45	AD17-SED-30_20220323			13:35			1					1					1			on hold	

Turnaround Time (Business days)

Approved by (SGS Project Manager)/Date:

- Std. 10 Business Days
- 10Day RUSH
- 5Day RUSH
- 2Day RUSH
- 1Day RUSH
- Other
- Emergency & Rush T/A data available via LabLink

Data Deliverable Information

Commercial "A" (Level 1) NYASP Category A
Commercial "B" (Level 2) NYASP Category B
FULL T1 (Level 3+4) State Forms
NJ Reduced x REDT1 X EDD Format SHA EQuIS
Commercial "C" Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 3/23/22 15:00	Received By: 1	Relinquished By: 2	Date Time: 3/23/22 17:30	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice	On Ice	Cooler Temp.

CIP 2.7

SGS

EHSA-QAC-0023-04-FORM-Standard COC

SO
GW
EB

CHAIN OF CUSTODY

Reference JD41762

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking #
Bottle Order Control # VP-031422-240
SGS Quote #
SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact / E-mail: Shana Whitney swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko
Phone #: 732-830-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA 19061
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord, NH, 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved Arsenic by USEPA 6010
Total Arsenic by USEPA + 6010
ON HOLD?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA + 6010	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
44	A017-SED-23-20220324		03/24/22	7:50	CSS	G		SO	1					1					1	X		1310
45	A017-SED-20-20220324			8:15				SO	1					1					1	X		A5
46	A017-SED-17-20220324			8:35				SO	1					1					1	X		
47	A017-PW-17-20220324			8:35				GW	2			1		1				1		X	X	
48	A017-PW-13-20220324			11:20					1			1						1				
49	A017-PW-20-20220324			8:15					2			1		1				1		X	X	
50	A017-PW-20-FD-20220324			8:15					1			1						1		X		
51	A017-PW-04-20220324			10:15					2			1		1				1			X	Filter in lab
52	A017-PW-14-20220324			11:45					1			1						1		X		Filter in lab
53	A017-PW-11-20220324			13:30					1					1						X	X	
54	A017-PW-23-20220324			7:50					1					1						X	X	
55	A017-PW-16-20220324			13:45					1					1							X	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

VERIFIED 3B SM
Verified By:

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered submitted as sediment sample.

Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	3/24/22 16:00	1 [signature]	2 [signature]	3/24/22 1831	2 Jeema Patel
3		3	4		4
5		5	Custody Seal #	Therm ID:	On Ice / Cooler Temp. °C

☐ Intact ☐ Not intact ☐ Absent ☐ See Sample Receipt Summary ☒ 3.2 CIP

5.1
5

JD41762: Chain of Custody
Page 11 of 24

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

Page 2 of 2

FED-EX Tracking #	Bottle Order Control #
SGS Quote #	SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact / E-mail: Shana Whitney swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s) / Phone #: Chelsey Shepsko 732-850-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 4862-04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord NH 03301
Attention: Chelsey Shepsko (cshepsko@sanborn.head.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
56	A017-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted as a DGT sampler. See provided SOP for processing
Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Chelsey Shepsko	3/24/22 16:00	1 [signature]	2 [signature]	3/24/22 1831	2 Jeemit Patel
3		3	4		4
5		5			

Custody Seal # ☐ Intact ☐ Not intact ☐ Absent

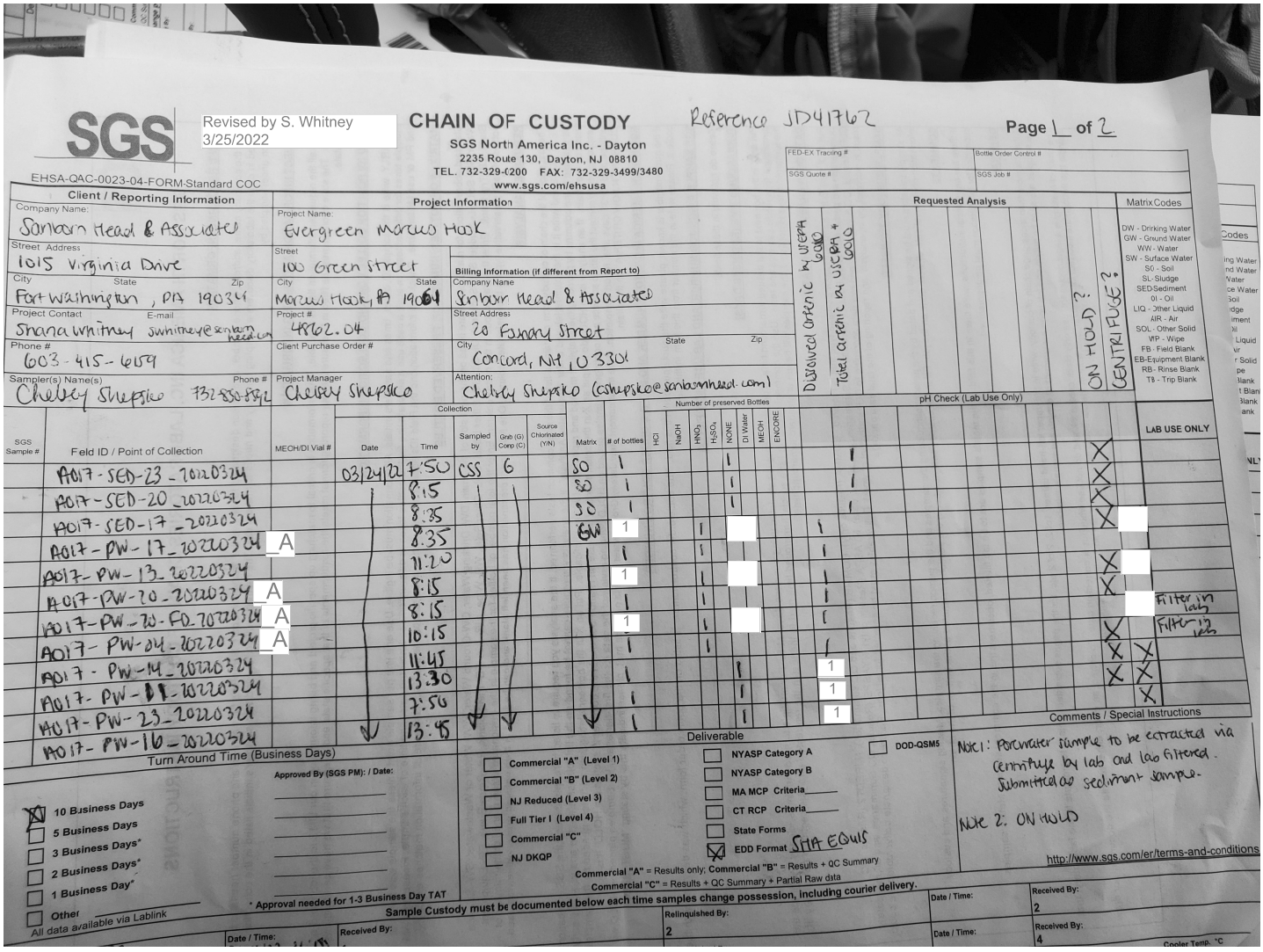
Therm ID: See Sample Receipt Summary

On Ice ☑ Cooler Temp. °C 3.2 CIP

5.1

5

JD41762: Chain of Custody
Page 12 of 24



SGS

Revised by S. Whitney
3/25/2022

CHAIN OF CUSTODY

Reference JD41762

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #:

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact / E-mail: Shana Whitney swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s) / Phone #: Chelsey Shepsko 732-850-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA 19061
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord, NH, 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by USEPA 6010
Total arsenic by USEPA + 6010
ON HOLD?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED - Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WIP - Wipe
FB - Field Blank
EB - Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MECH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MECOH	ENCORE	pH Check (Lab Use Only)														LAB USE ONLY
	A017-SED-23-20220324		03/24/22	7:50	CSS	G		SO	1					1						1										X		
	A017-SED-20-20220324			8:15				SO	1					1						1										X		
	A017-SED-17-20220324			8:35				SO	1					1						1										X		
	A017-PW-17-20220324	A		8:35				GW	1			1						1												X		
	A017-PW-13-20220324			11:20					1			1						1														
	A017-PW-20-20220324	A		8:15					1			1						1												X		
	A017-PW-20-FD-20220324	A		8:15					1			1						1												X		
	A017-PW-04-20220324	A		10:15					1			1						1														Filter in lab
	A017-PW-14-20220324			11:45					1			1						1												X		Filter in lab
	A017-PW-11-20220324			13:30					1						1					1										X	X	
	A017-PW-23-20220324			7:50					1						1					1										X	X	
	A017-PW-16-20220324			13:45					1						1					1											X	

Turn Around Time (Business Days)

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

Approved By (SGS PM): / Date:

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [X] EDD Format SHA EQuis
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: ON HOLD

http://www.sgs.com/er/terms-and-conditions

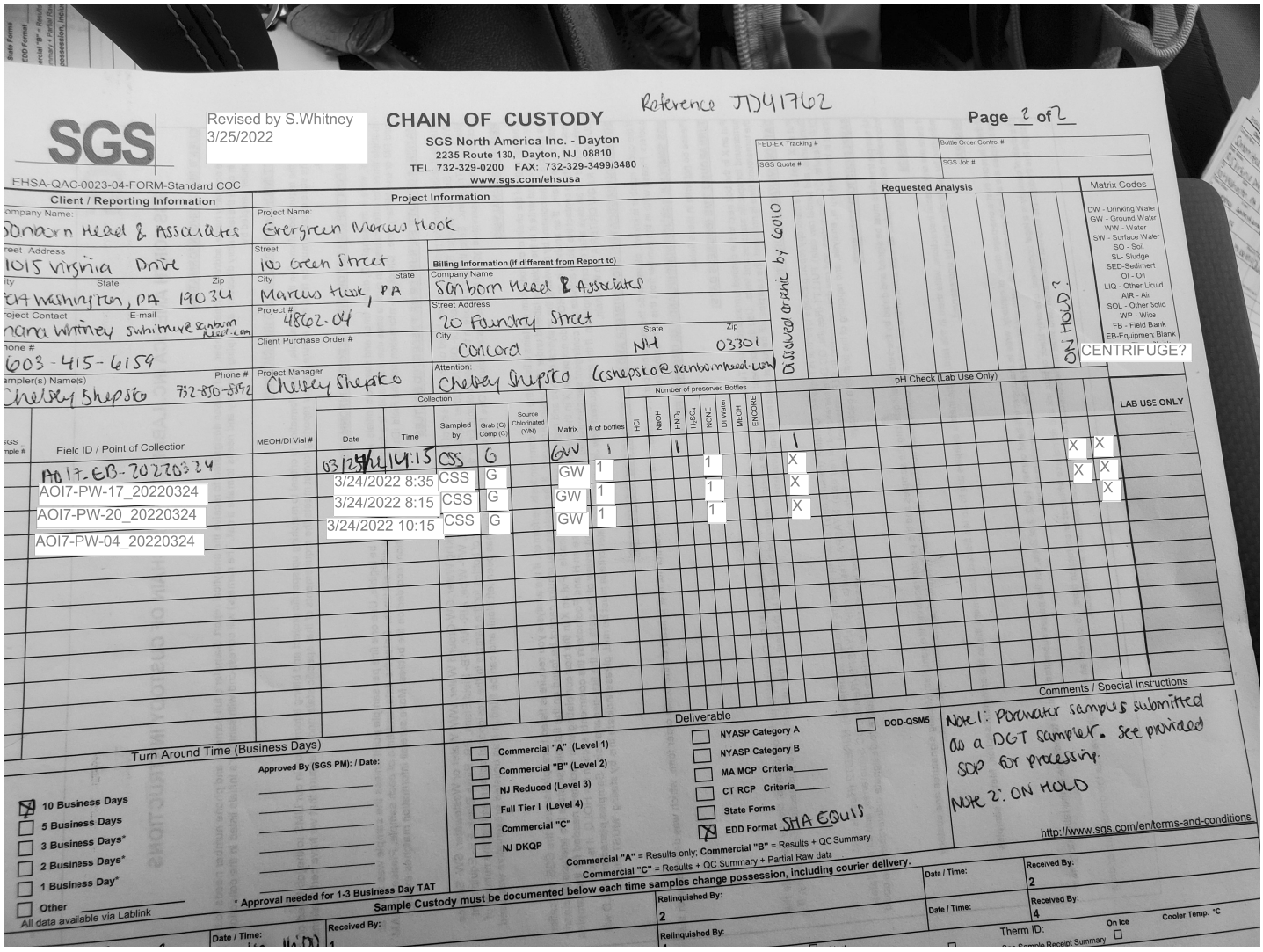
Sample Custody must be documented below each time samples change possession, including courier delivery.

Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
		2		2
				4

Cooler Temp. °C

JD41762: Chain of Custody
Page 13 of 24

Reference JD41762



Revised by S.Whitney
3/25/2022

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 2 of 2

FED-EX Tracking #
Bottle Order Control #
SGS Quote #
SGS Job #

EHSA-QAC-0023-04-FORM-Standard COC

Cliert / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact / E-mail: Nana Whitney swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko
Phone #: 732-850-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 4862-04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord NH 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Bank; EB-Equipment Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)			LAB USE ONLY
	AOI7-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	X	X	
	AOI7-PW-17_20220324		3/24/2022 8:35		CSS	G		GW	1					1				X	X	X	
	AOI7-PW-20_20220324		3/24/2022 8:15		CSS	G		GW	1					1				X		X	
	AOI7-PW-04_20220324		3/24/2022 10:15		CSS	G		GW	1					1				X			

Turn Around Time (Business Days)

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

Approved By (SGS PM): / Date:

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted as a DGT sampler. See provided SOP for processing.
Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Date / Time: | Received By: 1 | Relinquished By: 2 | Date / Time: | Received By: 2 | Date / Time: | Received By: 4

Therm ID: | On Ice | Cooler Temp. °C

See Sample Receipt Summary

JD41762: Chain of Custody
Page 14 of 24

82 of 683

JD41762

GW

Reference JD41762

PIN

CHAIN OF CUSTODY

Page 1 of 3

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
Bottle Order Control #: VP-031482-240
SGS Quote #:
SGS Job #: JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington PA 19034
Project Contact / E-mail: Shane Whitney
Phone #: 603-415-6159
Sampler(s) Name(s) / Phone #: Chelsey Shupsko 732-850-8582
Project Manager: Chelsey Shupsko

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 48807.04
Client Purchase Order #:

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord NH 03301
Attention: Chelsey Shupsko, cshupsko@sanbornhead.com

Requested Analysis

Dissolved arsenic by 6010

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	DGT Sample?	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
60	AOI7-PW-27-DGT-20220324		03/24/22	14:05	CSS	G		GW	1					1				1	X	X		B10
61	AOI7-PW-16-DGT-20220324		03/24/22	09:05					1					1				1	X			A35
62	AOI7-PW-19-DGT-20220324		03/24/22	09:07					1					1				1	X			G-FIR
63	AOI7-PW-13-DGT-20220324		03/24/22	09:00					1					1				1	X			
64	AOI7-PW-15-DGT-20220324		03/24/22	11:50					1					1				1	X	X		
65	AOI7-PW-07-DGT-20220323		03/23/22	11:00					1					1				1	X			
66	AOI7-PW-05-DGT-20220323		03/23/22	12:25					1					1				1	X	X		
67	AOI7-PW-25-DGT-20220323		03/23/22	13:25					1					1				1	X			
68	AOI7-PW-11-DGT-20220324		03/24/22	12:30					1					1				1	X	X		
69	AOI7-PW-21-DGT-20220324		03/24/22	13:55					1					1				1	X	X		
70	AOI7-PW-03-DGT-20220324		03/24/22	10:20					1					1				1	X	X		
71	AOI7-PW-24-DGT-20220324		03/24/22	14:00	↓	↓		↓	1					1				1	X	X		

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment VG 2A
Label Verification

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format SMA EGUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished By:	Date / Time:	Received By:
1	Chelsey Shupsko	03/25/22 11:15	James Kuss
2			Keith Mordell
3			
4			
5			

Custody Seal # ☐ Intact ☐ Not intact ☐ Absent

Therm ID: See Sample Receipt Summary

☐ On Ice

Cooler Temp. °C: 3.8

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job # JD41762

Client / Reporting Information

Company Name: Sunborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shana Whitney E-mail:
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8892

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 48621.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sunborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko, cshepsko@sunbornhead.com

Requested Analysis

Dissolved arsenic by 6010
Total arsenic by 6010
DOT sample?
On Hold?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) / Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	Total arsenic by 6010	DOT sample?	On Hold?	CENTRIFUGE?	LAB USE ONLY
72	AOI7-PW-23-DGT-20220325		03/25/22	9:55	CSS	G		GW	1					1					1		X	X		
73	AOI7-PW-20-DGT-20220325			9:55					1					1					1		X	X		
74	AOI7-PW-17-DGT-20220325			10:02					1					1					1		X	X		
75	AOI7-PW-25-DGT-20220325			9:50					1					1					1		X			
76	AOI7-PW-08-DGT-20220325			10:05					1					1					1		X	X		
77	AOI7-PW-09-DGT-20220325			10:03					1					1					1		X	X		
78	AOI7-PW-02-DGT-20220325			9:10					1					1					1		X	X		
79	AOI7-PW-01-DGT-20220325			10:10					1					1					1		X			
80	AOI7-PW-04-DGT-20220325			10:07					1					1					1		X			
81	AOI7-EB-02-20220325			11:50					1			1							1	1				

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [ ] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only, Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1		03/25/22 1425	1	2		2
3			3	4		4
5			5	Custody Seal #	Intact / Not intact / Absent	Therm ID: / On Ice / Cooler Temp. °C / See Sample Receipt Summary

Reference JD41762

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 3 of 3

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
Bottle Order Control #:
SGS Quote #:
SGS Job #: JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact: Shang Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-5592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis: Dissolved arsenic by 6010; ON HOLD; CENTRIFUGE

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL- Sludge, SED-Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB - Field Blank, EB-Equipment Blank, RB - Rinse Blank, TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved arsenic by 6010	ON HOLD	CENTRIFUGE	LAB USE ONLY
82	A017-PW-27_20220325		03/25/22	07:50	CSS	G		GW	1					1				1	X	X	
83	A017-PW-21_20220325			09:20					1					1				1	X	X	
84	A017-PW-23_20220325			09:40					2					2				2	X	X	
85	A017-PW-02_20220325			09:00					2					2				2	X	X	
86	A017-PW-09_20220325			08:50					2					2				2	X	X	
87	A017-PW-27_20220325_A			07:50					1			1						1	X		
88	A017-PW-09_20220325_A			08:50					1			1						1	X		
89	A017-PW-24_20220325_A			11:15					1			1						1	X		
90	A017-PW-25_20220325_A		↓	10:50	↓	↓		↓	1			1						1			

Turn Around Time (Business Days)

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Approved By (SGS PM): / Date:

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	03/25/22 14:05	1 [signature]	2		2
3		3	4		4
5		5	Custody Seal # ☐ Intact ☐ Not intact ☐ Absent	Therm ID: On Ice ☐ See Sample Receipt Summary	Cooler Temp. °C

5.1

5

JD41762: Chain of Custody
Page 17 of 24

Job Change Order: JD41762

Requested Date:	3/28/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/28/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-56

Dept:

TAT: 7

AOI7-EB_20220324

Change:
Revise ID to AOI7-EB-01_20220324

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/28/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-23, -25, -59
Dept:	
TAT:	7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF and AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date: 3/29/2022 **Received Date:** 3/22/2022

Account Name: Sunoco/Evergreen **Due Date:** 3/29/2022

Project Description: SANHPAFW: Marcus Hook, PA **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD41762-17F,-47F,-49F,-50F,-52F,-87F-88F,-89F **Change:** Off HOLD for AS

Dept:

TAT: 7

==========

Sample #: JD41762-13 **Change:** Off HOLD for CENTRIFUGE

Dept:

TAT: 7

AOI7-PW-05_20220322

==========

Sample #: JD41762-13F **Change:** Off HOLD for FILTERMET, AS

Dept:

TAT: 7

AOI7-PW-05_20220322

==========

Sample #: JD41762-60,-64,-66,-68 to -74, -76 to-78 **Change:** Off HOLD for SPECIALPREP

Dept:

TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-18,-18D,-18S,-19 to-22,-24	**Change:**
Dept:		Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS
TAT:	7	

==========

==========

Sample #:	JD41762-53,-55,-57,-58,-84,-85,-86	**Change:**
Dept:		Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS
TAT:	7	

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	4/11/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/11/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-5, -33, -46

Dept:

TAT: 7

Change:
Off HOLD for SOL104, AS

==========

Above Changes Per: Shana Whitney **Date/Time:** 4/11/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	4/14/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/14/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-60 to -80
Dept:	
TAT:	7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF and AS

==========

Above Changes Per: VP **Date/Time:** 4/14/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	4/20/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/20/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-60 to -80, -60F to -80F

Change:

Please move to the separate job

Dept:

TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 4/20/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762: Chain of Custody
Page 24 of 24

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-1	Collected: 22-MAR-22 13:15 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-25_20220322						
JD41762-1	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-1	SW846 6010D	25-MAR-22 09:00	ND	24-MAR-22	SF	AS
JD41762-3	Collected: 22-MAR-22 10:40 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-10_20220322						
JD41762-3	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-3	SW846 6010D	25-MAR-22 09:05	ND	24-MAR-22	SF	AS
JD41762-4	Collected: 22-MAR-22 10:10 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-07_20220322						
JD41762-4	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-4	SW846 6010D	25-MAR-22 08:50	ND	24-MAR-22	SF	AS
JD41762-5	Collected: 22-MAR-22 12:20 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-05_20220322						
JD41762-5	SM2540 G 18TH ED MOD	11-APR-22 15:49	BG			SOL104
JD41762-5	SW846 6010D	15-APR-22 13:41	ND	14-APR-22	SF	AS
JD41762-6	Collected: 22-MAR-22 10:10 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-07_FD_20220322						
JD41762-6	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-6	SW846 6010D	25-MAR-22 09:10	ND	24-MAR-22	SF	AS
JD41762-7	Collected: 22-MAR-22 08:40 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-04_20220322						
JD41762-7	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-7	SW846 6010D	25-MAR-22 09:25	ND	24-MAR-22	SF	AS
JD41762-8	Collected: 22-MAR-22 09:20 By: CSS		Received: 22-MAR-22		By: JK	
AOI7-SED-01_20220322						
JD41762-8	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-8	SW846 6010D	25-MAR-22 09:30	ND	24-MAR-22	SF	AS
JD41762-26	Collected: 23-MAR-22 08:10 By: CSS		Received: 23-MAR-22 By: JK			
	AOI7-SED-13_20220323					
JD41762-26	SM2540 G 18TH ED MOD	07-APR-22 17:12	BG			SOL104
JD41762-26	SW846 6010D	29-MAR-22 09:34	ND	28-MAR-22	SF	AS
JD41762-27	Collected: 23-MAR-22 07:50 By: CSS		Received: 23-MAR-22 By: JK			
	AOI7-SED-16_20220323					
JD41762-27	SM2540 G 18TH ED MOD	07-APR-22 17:12	BG			SOL104
JD41762-27	SW846 6010D	29-MAR-22 16:39	ND	28-MAR-22	SF	AS
JD41762-28	Collected: 22-MAR-22 13:00 By: CSS		Received: 23-MAR-22 By: JK			
	AOI7-SED-28_20220322					
JD41762-28	SM2540 G 18TH ED MOD	07-APR-22 17:12	BG			SOL104
JD41762-28	SW846 6010D	29-MAR-22 09:54	ND	28-MAR-22	SF	AS
JD41762-30	Collected: 23-MAR-22 10:05 By: CSS		Received: 23-MAR-22 By: JK			
	AOI7-SED-03_20220323					
JD41762-30	SM2540 G 18TH ED MOD	07-APR-22 17:12	BG			SOL104
JD41762-30	SW846 6010D	29-MAR-22 09:59	ND	28-MAR-22	SF	AS
JD41762-32	Collected: 23-MAR-22 09:00 By: CSS		Received: 23-MAR-22 By: JK			
	AOI7-SED-19_20220323					
JD41762-32	SM2540 G 18TH ED MOD	07-APR-22 17:12	BG			SOL104
JD41762-32	SW846 6010D	29-MAR-22 10:04	ND	28-MAR-22	SF	AS
JD41762-33	Collected: 23-MAR-22 12:00 By: CSS		Received: 23-MAR-22 By: JK			
	AOI7-SED-14_20220323					
JD41762-33	SM2540 G 18TH ED MOD	14-APR-22 15:49	BG			SOL104
JD41762-33	SW846 6010D	14-APR-22 10:51	ND	13-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-39	Collected: 23-MAR-22 08:40 By: CSS AOI7-SED-22_20220323		Received: 23-MAR-22 By: JK			
JD41762-39	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-39	SW846 6010D	29-MAR-22 10:09	ND	28-MAR-22	SF	AS
JD41762-46	Collected: 24-MAR-22 08:35 By: CSS AOI7-SED-17_20220324		Received: 24-MAR-22 By: JP			
JD41762-46	SM2540 G 18TH ED MOD	12-APR-22 15:49	BG			SOL104
JD41762-46	SW846 6010D	14-APR-22 10:56	ND	13-APR-22	AK	AS
JD41762-81	Collected: 25-MAR-22 11:50 By: CSS AOI7-EB-02_20220325		Received: 25-MAR-22 By: KG			
JD41762-81	SW846 6010D	01-APR-22 09:18	ND	31-MAR-22	SF	AS
JD41762-13F	Collected: 22-MAR-22 12:20 By: CSS AOI7-PW-05_20220322		Received: 22-MAR-22 By: JK			
JD41762-13F	SW846 6010D	11-APR-22 08:17	ND	08-APR-22	AK	AS
JD41762-14F	Collected: 22-MAR-22 10:10 By: CSS AOI7-PW-07_20220322		Received: 22-MAR-22 By: JK			
JD41762-14F	SW846 6010D	29-MAR-22 11:05	ND	26-MAR-22	SF	AS
JD41762-15F	Collected: 22-MAR-22 13:15 By: CSS AOI7-PW-25_20220322		Received: 22-MAR-22 By: JK			
JD41762-15F	SW846 6010D	29-MAR-22 11:10	ND	26-MAR-22	SF	AS
JD41762-16F	Collected: 23-MAR-22 07:50 By: CSS AOI7-PW-16_20220323		Received: 23-MAR-22 By: JK			
JD41762-16F	SW846 6010D	29-MAR-22 10:54	ND	26-MAR-22	SF	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-17K	Collected: 23-MAR-22 12:15 By: CSS AOI7-PW-11_20220323			Received: 23-MAR-22	By: JK	
JD41762-17I	SW846 6010D	01-APR-22 09:08	ND	31-MAR-22	SF	AS
JD41762-18K	Collected: 23-MAR-22 12:45 By: CSS AOI7-PW-24_20220323			Received: 23-MAR-22	By: JK	
JD41762-18I	SW846 6010D	09-APR-22 07:53	ND	08-APR-22	AK	AS
JD41762-19K	Collected: 23-MAR-22 12:45 By: CSS AOI7-PW-24_FD_20220323			Received: 23-MAR-22	By: JK	
JD41762-19I	SW846 6010D	09-APR-22 08:09	ND	08-APR-22	AK	AS
JD41762-20K	Collected: 23-MAR-22 11:35 By: CSS AOI7-PW-15_20220323			Received: 23-MAR-22	By: JK	
JD41762-20I	SW846 6010D	11-APR-22 08:22	ND	08-APR-22	AK	AS
JD41762-21K	Collected: 23-MAR-22 13:10 By: CSS AOI7-PW-21_20220323			Received: 23-MAR-22	By: JK	
JD41762-21I	SW846 6010D	11-APR-22 08:27	ND	08-APR-22	AK	AS
JD41762-22K	Collected: 23-MAR-22 13:45 By: CSS AOI7-PW-27_20220323			Received: 23-MAR-22	By: JK	
JD41762-22I	SW846 6010D	09-APR-22 08:35	ND	08-APR-22	AK	AS
JD41762-23K	Collected: 23-MAR-22 08:10 By: CSS AOI7-PW-13_20220323			Received: 23-MAR-22	By: JK	
JD41762-23I	SW846 6010D	04-APR-22 10:48	ND	31-MAR-22	SF	AS
JD41762-24K	Collected: 23-MAR-22 10:05 By: CSS AOI7-PW-03_20220323			Received: 23-MAR-22	By: JK	
JD41762-24I	SW846 6010D	09-APR-22 08:40	ND	08-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-25F	Collected: 23-MAR-22 09:00 By: CSS AOI7-PW-19_20220323			Received: 23-MAR-22	By: JK	
JD41762-25I	SW846 6010D	01-APR-22 09:28	ND	31-MAR-22	SF	AS
JD41762-47F	Collected: 24-MAR-22 08:35 By: CSS AOI7-PW-17_20220324_A			Received: 24-MAR-22	By: JP	
JD41762-47I	SW846 6010D	01-APR-22 11:05	ND	31-MAR-22	SF	AS
JD41762-48F	Collected: 24-MAR-22 11:20 By: CSS AOI7-PW-13_20220324			Received: 24-MAR-22	By: JP	
JD41762-48I	SW846 6010D	31-MAR-22 08:12	ND	30-MAR-22	AK	AS
JD41762-49F	Collected: 24-MAR-22 08:15 By: CSS AOI7-PW-20_20220324_A			Received: 24-MAR-22	By: JP	
JD41762-49I	SW846 6010D	01-APR-22 09:54	ND	31-MAR-22	SF	AS
JD41762-50F	Collected: 24-MAR-22 08:15 By: CSS AOI7-PW-20_FD_20220324_A			Received: 24-MAR-22	By: JP	
JD41762-50I	SW846 6010D	09-APR-22 08:45	ND	08-APR-22	AK	AS
JD41762-51F	Collected: 24-MAR-22 10:15 By: CSS AOI7-PW-04_20220324_A			Received: 24-MAR-22	By: JP	
JD41762-51I	SW846 6010D	31-MAR-22 08:22	ND	30-MAR-22	AK	AS
JD41762-52F	Collected: 24-MAR-22 11:45 By: CSS AOI7-PW-14_20220324			Received: 24-MAR-22	By: JP	
JD41762-52I	SW846 6010D	13-APR-22 12:16	ND	12-APR-22	SF	AS
JD41762-53F	Collected: 24-MAR-22 13:30 By: CSS AOI7-PW-11_20220324			Received: 24-MAR-22	By: JP	
JD41762-53I	SW846 6010D	09-APR-22 08:50	ND	08-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-55F	Collected: 24-MAR-22 13:45 By: CSS AOI7-PW-16_20220324		Received: 24-MAR-22 By: JP			
JD41762-55I	SW846 6010D	09-APR-22 08:55	ND	08-APR-22	AK	AS
JD41762-56F	Collected: 24-MAR-22 14:15 By: CSS AOI7-EB-01_20220324		Received: 24-MAR-22 By: JP			
JD41762-56I	SW846 6010D	31-MAR-22 08:27	ND	30-MAR-22	AK	AS
JD41762-57F	Collected: 24-MAR-22 08:35 By: CSS AOI7-PW-17_20220324		Received: 24-MAR-22 By: KG			
JD41762-57I	SW846 6010D	09-APR-22 09:01	ND	08-APR-22	AK	AS
JD41762-58F	Collected: 24-MAR-22 08:15 By: CSS AOI7-PW-20_20220324		Received: 24-MAR-22 By: KG			
JD41762-58I	SW846 6010D	09-APR-22 09:06	ND	08-APR-22	AK	AS
JD41762-59F	Collected: 24-MAR-22 10:15 By: CSS AOI7-PW-04_20220324		Received: 24-MAR-22 By: KG			
JD41762-59I	SW846 6010D	01-APR-22 09:59	ND	31-MAR-22	SF	AS
JD41762-84F	Collected: 25-MAR-22 09:40 By: CSS AOI7-PW-23_20220325		Received: 25-MAR-22 By: KG			
JD41762-84I	SW846 6010D	09-APR-22 09:11	ND	08-APR-22	AK	AS
JD41762-85F	Collected: 25-MAR-22 09:00 By: CSS AOI7-PW-02_20220325		Received: 25-MAR-22 By: KG			
JD41762-85I	SW846 6010D	09-APR-22 09:31	ND	08-APR-22	AK	AS
JD41762-86F	Collected: 25-MAR-22 08:50 By: CSS AOI7-PW-09_20220325		Received: 25-MAR-22 By: KG			
JD41762-86I	SW846 6010D	09-APR-22 09:37	ND	08-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-87F	Collected: 25-MAR-22 07:50 By: CSS AOI7-PW-27_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-87I	SW846 6010D	01-APR-22 10:04	ND	31-MAR-22	SF	AS
JD41762-88F	Collected: 25-MAR-22 08:50 By: CSS AOI7-PW-09_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-88I	SW846 6010D	01-APR-22 10:09	ND	31-MAR-22	SF	AS
JD41762-89F	Collected: 25-MAR-22 11:15 By: CSS AOI7-PW-24_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-89I	SW846 6010D	04-APR-22 10:53	ND	31-MAR-22	SF	AS
JD41762-90F	Collected: 25-MAR-22 10:50 By: CSS AOI7-PW-25_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-90I	SW846 6010D	01-APR-22 10:19	ND	31-MAR-22	SF	AS

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-1.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-1.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-1.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-1.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-1.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-1.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-1.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-1.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-1.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-1.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-1.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-1.1
JD41762-1.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-1.1
JD41762-1.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-2.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-3.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-3.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-3.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-3.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-3.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-3.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-3.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-3.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-3.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-3.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-3.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-3.1
JD41762-3.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-3.1
JD41762-3.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-4.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-4.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-4.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-4.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-4.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-4.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-4.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-4.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-4.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-4.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-4.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-4.1
JD41762-4.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-4.1
JD41762-4.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-4.2	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-4.3	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-5.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-5.1	Secured Storage	Benjamin Gaines	04/12/22 10:27	Retrieve from Storage
JD41762-5.1	Benjamin Gaines	Secured Staging Area	04/12/22 10:27	Return to Storage
JD41762-5.1	Secured Staging Area	Benjamin Gaines	04/12/22 10:28	Retrieve from Storage
JD41762-5.1	Benjamin Gaines	Secured Storage	04/12/22 13:36	Return to Storage
JD41762-5.1	Tyler Strong	Secured Staging Area	04/12/22 20:36	Return to Storage
stage				
JD41762-5.1	Secured Staging Area	Alyssa Koshy	04/13/22 08:51	Retrieve from Storage
JD41762-5.1	Alyssa Koshy	Secured Storage	04/13/22 12:28	Return to Storage
JD41762-5.1	Secured Storage	Todd Shoemaker	04/14/22 14:21	Retrieve from Storage
JD41762-5.1	Todd Shoemaker	Secured Staging Area	04/14/22 14:21	Return to Storage
JD41762-5.1	Secured Staging Area	Alyssa Koshy	04/14/22 14:33	Retrieve from Storage
JD41762-5.1	Alyssa Koshy	Secured Storage	04/14/22 14:46	Return to Storage
JD41762-5.1.1	Alyssa Koshy	Metals Digestion	04/13/22 11:32	Digestate from JD41762-5.1
JD41762-5.1.1	Metals Digestion	Alyssa Koshy	04/13/22 11:32	Digestate from JD41762-5.1
JD41762-5.1.1	Alyssa Koshy	Metals Digestate Storage	04/13/22 11:32	Return to Storage
JD41762-5.1.2	Alyssa Koshy	Metals Digestion	04/14/22 14:43	Digestate from JD41762-5.1
JD41762-5.1.2	Metals Digestion	Alyssa Koshy	04/14/22 14:44	Digestate from JD41762-5.1
JD41762-5.1.2	Alyssa Koshy	Metals Digestate Storage	04/14/22 14:44	Return to Storage
JD41762-6.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-6.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-6.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-6.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-6.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-6.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-6.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-6.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-6.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-6.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-6.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-6.1
JD41762-6.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-6.1
JD41762-6.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-7.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-7.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-7.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-7.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-7.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-7.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-7.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-7.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-7.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-7.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-7.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-7.1
JD41762-7.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-7.1
JD41762-7.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-8.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-8.1	Secured Storage	Alyssa Koshy	03/24/22 09:58	Retrieve from Storage
JD41762-8.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-8.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-8.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-8.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-8.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-8.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-8.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-8.1
JD41762-8.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-8.1

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-8.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-9.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-10.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-13.1	Germain Cruz	Secured Storage	03/23/22 17:24	Return to Storage
JD41762-13F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-13F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-13F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-13F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-13F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-13F.1
JD41762-13F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-13F.1
JD41762-13F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-14.1	Germain Cruz	Secured Storage	03/23/22 17:24	Return to Storage
JD41762-14.1	Secured Storage	Dave Hunkele	03/24/22 07:42	Retrieve from Storage
JD41762-14.1	Dave Hunkele	Secured Staging Area	03/24/22 07:43	Return to Storage
JD41762-14.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:04	Retrieve from Storage
JD41762-14.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-14F.1	Secured Storage	Bisma Rizvi	03/25/22 16:59	Retrieve from Storage
JD41762-14F.1	Bisma Rizvi	Secured Storage	03/26/22 11:59	Return to Storage
JD41762-14F.1.1	Bisma Rizvi	Metals Digestion	03/25/22 17:00	Digestate from JD41762-14F.1
JD41762-14F.1.1	Metals Digestion	Bisma Rizvi	03/25/22 17:01	Digestate from JD41762-14F.1
JD41762-14F.1.1	Bisma Rizvi	Metals Digestate Storage	03/25/22 17:01	Return to Storage
JD41762-15.1	Germain Cruz	Secured Storage	03/23/22 17:24	Return to Storage
JD41762-15.1	Secured Storage	Dave Hunkele	03/24/22 07:42	Retrieve from Storage
JD41762-15.1	Dave Hunkele	Secured Staging Area	03/24/22 07:43	Return to Storage
JD41762-15.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:04	Retrieve from Storage
JD41762-15.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-15F.1	Secured Storage	Bisma Rizvi	03/25/22 16:59	Retrieve from Storage
JD41762-15F.1	Bisma Rizvi	Secured Storage	03/26/22 11:59	Return to Storage
JD41762-15F.1.1	Bisma Rizvi	Metals Digestion	03/25/22 17:00	Digestate from JD41762-15F.1
JD41762-15F.1.1	Metals Digestion	Bisma Rizvi	03/25/22 17:01	Digestate from JD41762-15F.1
JD41762-15F.1.1	Bisma Rizvi	Metals Digestate Storage	03/25/22 17:01	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-16F.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-16F.1	Secured Storage	Todd Shoemaker	03/25/22 15:52	Retrieve from Storage
JD41762-16F.1	Todd Shoemaker	Secured Staging Area	03/25/22 15:52	Return to Storage
JD41762-16F.1	Secured Staging Area	Bisma Rizvi	03/25/22 16:37	Retrieve from Storage
JD41762-16F.1	Bisma Rizvi	Secured Storage	03/26/22 11:59	Return to Storage
JD41762-16F.1.1	Bisma Rizvi	Metals Digestion	03/25/22 17:00	Digestate from JD41762-16F.1
JD41762-16F.1.1	Metals Digestion	Bisma Rizvi	03/25/22 17:01	Digestate from JD41762-16F.1
JD41762-16F.1.1	Bisma Rizvi	Metals Digestate Storage	03/25/22 17:01	Return to Storage
JD41762-17F.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-17F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-17F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-17F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-17F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-17F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-17F.1
JD41762-17F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-17F.1
JD41762-17F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-18.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-18.2	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-18.3	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-18F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-18F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-18F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-18F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-18F.2	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-18F.2	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-18F.2	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-18F.2	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-18F.2.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-18F.2
JD41762-18F.2.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-18F.2
JD41762-18F.2.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-19.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-19F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-19F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-19F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-19F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-19F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-19F.1
JD41762-19F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-19F.1
JD41762-19F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-20.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-20F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
JD41762-20F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-20F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-20F.1
JD41762-20F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-20F.1
JD41762-20F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-21.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-21F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-21F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-21F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-21F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-21F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-21F.1
JD41762-21F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-21F.1
JD41762-21F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-22.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-22F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-22F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-22F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-22F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-22F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-22F.1
JD41762-22F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-22F.1
JD41762-22F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-23.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-23F.1	Secured Storage	Dave Hunkele	03/29/22 15:11	Retrieve from Storage
JD41762-23F.1	Dave Hunkele	Secured Staging Area	03/29/22 15:12	Return to Storage
JD41762-23F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-23F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-23F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-23F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-23F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-23F.1
JD41762-23F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-23F.1
JD41762-23F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-24.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-24F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-24F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-24F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-24F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-24F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-24F.1
JD41762-24F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-24F.1
JD41762-24F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-25.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-25F.1	Secured Storage	Dave Hunkele	03/29/22 15:11	Retrieve from Storage
JD41762-25F.1	Dave Hunkele	Secured Staging Area	03/29/22 15:12	Return to Storage
JD41762-25F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-25F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-25F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-25F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-25F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-25F.1
JD41762-25F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-25F.1
JD41762-25F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-26.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-26.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-26.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-26.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-26.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-26.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-26.1
JD41762-26.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-26.1
JD41762-26.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-26.1
JD41762-26.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-27.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-27.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-27.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-27.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-27.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-27.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-27.1
JD41762-27.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-27.1
JD41762-27.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-27.1
JD41762-27.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-28.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-28.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-28.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-28.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-28.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-28.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-28.1
JD41762-28.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-28.1
JD41762-28.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-28.1
JD41762-28.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-29.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-29.1	Secured Storage	Todd Shoemaker	03/28/22 14:04	Retrieve from Storage
JD41762-29.1	Todd Shoemaker	Secured Staging Area	03/28/22 14:04	Return to Storage
JD41762-29.1	Secured Staging Area	Joseph Dye	03/28/22 14:07	Retrieve from Storage
JD41762-29.1	Joseph Dye	Secured Storage	03/28/22 15:07	Return to Storage
JD41762-29.2	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-29.2	Secured Storage	Todd Shoemaker	03/25/22 14:30	Retrieve from Storage
JD41762-29.2	Todd Shoemaker	Secured Staging Area	03/25/22 14:30	Return to Storage
JD41762-29.2	Secured Staging Area	Mahendra Patel	03/26/22 09:54	Retrieve from Storage
JD41762-29.2	Mahendra Patel	Secured Storage	03/26/22 13:07	Return to Storage
JD41762-29.2	Secured Storage	Todd Shoemaker	03/28/22 09:50	Retrieve from Storage
JD41762-29.2	Todd Shoemaker	Secured Staging Area	03/28/22 09:50	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-29.2	Secured Staging Area	Mahendra Patel	03/28/22 18:44	Retrieve from Storage
JD41762-29.2	Mahendra Patel	Secured Storage	03/29/22 08:26	Return to Storage
JD41762-30.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-30.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-30.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-30.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-30.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-30.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-30.1
JD41762-30.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-30.1
JD41762-30.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-30.1
JD41762-30.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-31.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-31.1	Secured Storage	Todd Shoemaker	03/28/22 14:04	Retrieve from Storage
JD41762-31.1	Todd Shoemaker	Secured Staging Area	03/28/22 14:04	Return to Storage
JD41762-31.1	Secured Staging Area	Joseph Dye	03/28/22 14:07	Retrieve from Storage
JD41762-31.1	Joseph Dye	Secured Storage	03/28/22 15:07	Return to Storage
JD41762-31.2	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-31.2	Secured Storage	Todd Shoemaker	03/25/22 14:30	Retrieve from Storage
JD41762-31.2	Todd Shoemaker	Secured Staging Area	03/25/22 14:30	Return to Storage
JD41762-31.2	Secured Staging Area	Mahendra Patel	03/26/22 09:54	Retrieve from Storage
JD41762-31.2	Mahendra Patel	Secured Storage	03/26/22 13:07	Return to Storage
JD41762-31.2	Secured Storage	Todd Shoemaker	03/28/22 09:50	Retrieve from Storage
JD41762-31.2	Todd Shoemaker	Secured Staging Area	03/28/22 09:50	Return to Storage
JD41762-31.2	Secured Staging Area	Mahendra Patel	03/28/22 18:44	Retrieve from Storage
JD41762-31.2	Mahendra Patel	Secured Storage	03/29/22 08:26	Return to Storage
JD41762-32.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-32.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-32.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-32.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-32.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-32.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-32.1
JD41762-32.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-32.1
JD41762-32.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-32.1
JD41762-32.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-33.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-33.1	Secured Storage	Benjamin Gaines	04/12/22 10:27	Retrieve from Storage
JD41762-33.1	Benjamin Gaines	Secured Staging Area	04/12/22 10:27	Return to Storage
JD41762-33.1	Secured Staging Area	Benjamin Gaines	04/12/22 10:28	Retrieve from Storage
JD41762-33.1	Benjamin Gaines	Secured Storage	04/12/22 13:36	Return to Storage
JD41762-33.1	Tyler Strong	Secured Staging Area	04/12/22 20:36	Return to Storage
stage				
JD41762-33.1	Secured Staging Area	Alyssa Koshy	04/13/22 08:51	Retrieve from Storage
JD41762-33.1	Alyssa Koshy	Secured Storage	04/13/22 12:28	Return to Storage
JD41762-33.1.1	Alyssa Koshy	Metals Digestion	04/13/22 11:32	Digestate from JD41762-33.1
JD41762-33.1.1	Metals Digestion	Alyssa Koshy	04/13/22 11:32	Digestate from JD41762-33.1
JD41762-33.1.1	Alyssa Koshy	Metals Digestate Storage	04/13/22 11:32	Return to Storage
JD41762-34.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-35.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-36.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-37.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-38.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-39.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-39.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-39.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-39.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-39.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-39.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-39.1
JD41762-39.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-39.1
JD41762-39.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-39.1
JD41762-39.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-40.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-41.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-42.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-43.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-44.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-45.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-46.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-46.1	Secured Storage	Benjamin Gaines	04/12/22 10:27	Retrieve from Storage
JD41762-46.1	Benjamin Gaines	Secured Staging Area	04/12/22 10:27	Return to Storage
JD41762-46.1	Secured Staging Area	Benjamin Gaines	04/12/22 10:28	Retrieve from Storage
JD41762-46.1	Benjamin Gaines	Secured Storage	04/12/22 13:36	Return to Storage
JD41762-46.1	Tyler Strong	Secured Staging Area	04/12/22 20:36	Return to Storage
stage				
JD41762-46.1	Secured Staging Area	Alyssa Koshy	04/13/22 08:51	Retrieve from Storage
JD41762-46.1	Alyssa Koshy	Secured Storage	04/13/22 12:28	Return to Storage
JD41762-46.1.1	Alyssa Koshy	Metals Digestion	04/13/22 11:32	Digestate from JD41762-46.1
JD41762-46.1.1	Metals Digestion	Alyssa Koshy	04/13/22 11:32	Digestate from JD41762-46.1
JD41762-46.1.1	Alyssa Koshy	Metals Digestate Storage	04/13/22 11:32	Return to Storage
JD41762-47.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-47.2	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-47F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-47F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-47F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-47F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-47F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-47F.1
JD41762-47F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-47F.1
JD41762-47F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-48.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-48.1	Secured Storage	Alyssa Koshy	03/29/22 16:06	Retrieve from Storage
JD41762-48.1	Secured Storage	Benjamin Gaines	03/29/22 16:34	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-48.1	Benjamin Gaines	Secured Staging Area	03/29/22 16:35	Return to Storage
JD41762-48.1	Secured Staging Area	Alyssa Koshy	03/30/22 08:44	Retrieve from Storage
JD41762-48.1	Alyssa Koshy	Secured Storage	03/30/22 12:07	Return to Storage
JD41762-48.1.1	Alyssa Koshy	Metals Digestion	03/30/22 10:56	Digestate from JD41762-48.1
JD41762-48.1.1	Metals Digestion	Alyssa Koshy	03/30/22 10:57	Digestate from JD41762-48.1
JD41762-48.1.1	Alyssa Koshy	Metals Digestate Storage	03/30/22 10:57	Return to Storage
JD41762-49.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-49.2	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-49F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-49F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-49F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-49F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-49F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-49F.1
JD41762-49F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-49F.1
JD41762-49F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-50.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-50F.1	Secured Storage	Dave Hunkele	04/08/22 07:08	Retrieve from Storage
JD41762-50F.1	Dave Hunkele	Secured Staging Area	04/08/22 07:08	Return to Storage
JD41762-50F.1	Secured Staging Area	Alyssa Koshy	04/08/22 08:21	Retrieve from Storage
JD41762-50F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-50F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-50F.1
JD41762-50F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-50F.1
JD41762-50F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-51.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-51.1	Secured Storage	Alyssa Koshy	03/29/22 16:06	Retrieve from Storage
JD41762-51.1	Secured Storage	Benjamin Gaines	03/29/22 16:34	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-51.1	Benjamin Gaines	Secured Staging Area	03/29/22 16:35	Return to Storage
JD41762-51.1	Secured Staging Area	Alyssa Koshy	03/30/22 08:44	Retrieve from Storage
JD41762-51.1	Alyssa Koshy	Secured Storage	03/30/22 12:07	Return to Storage
JD41762-51.1.1	Alyssa Koshy	Metals Digestion	03/30/22 10:56	Digestate from JD41762-51.1
JD41762-51.1.1	Metals Digestion	Alyssa Koshy	03/30/22 10:57	Digestate from JD41762-51.1
JD41762-51.1.1	Alyssa Koshy	Metals Digestate Storage	03/30/22 10:57	Return to Storage
JD41762-51.2	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-52.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-52.1	Christian King	Secured Staging Area	04/11/22 18:52	Return to Storage
stage				
JD41762-52.1	Secured Staging Area	Alyssa Koshy	04/12/22 08:58	Retrieve from Storage
JD41762-52.1	Alyssa Koshy	Secured Storage	04/12/22 13:15	Return to Storage
JD41762-52.1.1	Alyssa Koshy	Metals Digestion	04/12/22 12:20	Digestate from JD41762-52.1
JD41762-52.1.1	Metals Digestion	Alyssa Koshy	04/12/22 12:21	Digestate from JD41762-52.1

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-52.1.1	Alyssa Koshy	Metals Digestate Storage	04/12/22 12:21	Return to Storage
JD41762-53.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-53F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-53F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-53F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-53F.1	Alyssa Koshy		04/08/22 12:02	Depleted
JD41762-53F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-53F.1
JD41762-53F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-53F.1
JD41762-53F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-54.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-55.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-55F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-55F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-55F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-55F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-55F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-55F.1
JD41762-55F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-55F.1
JD41762-55F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-56.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-56.1	Secured Storage	Alyssa Koshy	03/29/22 16:06	Retrieve from Storage
JD41762-56.1	Secured Storage	Benjamin Gaines	03/29/22 16:34	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-56.1	Benjamin Gaines	Secured Staging Area	03/29/22 16:35	Return to Storage
JD41762-56.1	Secured Staging Area	Alyssa Koshy	03/30/22 08:44	Retrieve from Storage
JD41762-56.1	Alyssa Koshy	Secured Storage	03/30/22 12:07	Return to Storage
JD41762-56.1.1	Alyssa Koshy	Metals Digestion	03/30/22 10:56	Digestate from JD41762-56.1
JD41762-56.1.1	Metals Digestion	Alyssa Koshy	03/30/22 10:57	Digestate from JD41762-56.1
JD41762-56.1.1	Alyssa Koshy	Metals Digestate Storage	03/30/22 10:57	Return to Storage
JD41762-57F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-57F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-57F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-57F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-57F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-57F.1
JD41762-57F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-57F.1
JD41762-57F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-58F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
JD41762-58F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-58F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-58F.1
JD41762-58F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-58F.1
JD41762-58F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-59F.1	Secured Storage	Dave Hunkele	03/29/22 15:11	Retrieve from Storage
JD41762-59F.1	Dave Hunkele	Secured Staging Area	03/29/22 15:12	Return to Storage
JD41762-59F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-59F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-59F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-59F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-59F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-59F.1
JD41762-59F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-59F.1
JD41762-59F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-81.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-81.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-81.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-81.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-81.1	Secured Storage	Todd Shoemaker	04/14/22 09:44	Retrieve from Storage
JD41762-81.1	Todd Shoemaker	Secured Staging Area	04/14/22 09:44	Return to Storage
JD41762-81.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-81.1
JD41762-81.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-81.1
JD41762-81.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-84F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-84F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-84F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-84F.1	Alyssa Koshy		04/08/22 12:02	Depleted
JD41762-84F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-84F.1
JD41762-84F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-84F.1

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-84F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-85F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-85F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-85F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-85F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-85F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-85F.1
JD41762-85F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-85F.1
JD41762-85F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-86F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-86F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-86F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-86F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-86F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-86F.1
JD41762-86F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-86F.1
JD41762-86F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-87F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-87F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-87F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-87F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-87F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-87F.1
JD41762-87F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-87F.1
JD41762-87F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-88F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-88F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-88F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-88F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-88F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-88F.1
JD41762-88F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-88F.1
JD41762-88F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-89F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-89F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-89F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-89F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-89F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-89F.1
JD41762-89F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-89F.1
JD41762-89F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-90F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-90F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-90F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-90F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-90F.1	Secured Storage	Todd Shoemaker	04/14/22 09:44	Retrieve from Storage
JD41762-90F.1	Todd Shoemaker	Secured Staging Area	04/14/22 09:44	Return to Storage
JD41762-90F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-90F.1
JD41762-90F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-90F.1
JD41762-90F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:41	MA52118-STD1	1		STDA
06:46	MA52118-STD2	1		STDB
06:51	MA52118-ICV1	1		
07:05	MA52118-ICB1	1		
07:17	MA52118-CCV1	1		
07:22	MA52118-CCB1	1		
07:27	MA52118-CRI1	1		
07:32	MA52118-CRID1	1		
07:37	MA52118-ICSA1	1		
07:42	MA52118-ICSAB1	1		
07:47	MA52118-HSTD1	1		
07:52	MA52118-HSTD2	1		
07:58	ZZZZZZ	1		
08:03	ZZZZZZ	1		
08:08	ZZZZZZ	1		
08:13	ZZZZZZ	1		
08:20	MA52118-CCV2	1		
08:25	MA52118-CCB2	1		
08:31	MP31902-MB1	1		
08:36	MP31902-B1	1		
08:40	MP31902-S1	1		
08:45	MP31902-S2	1		
08:50	JD41762-4	1		
08:55	MP31902-SD1	5		
09:00	JD41762-1	1		
09:05	JD41762-3	1		
09:10	JD41762-6	1		
09:15	MA52118-CCV3	1		
09:20	MA52118-CCB3	1		
09:25	JD41762-7	1		
09:30	JD41762-8	1		
09:35	JD41762-1	2		
09:40	JD41762-3	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:45	JD41762-7	5		
----------->	Last reportable sample/prep for job JD41762			
09:50	ZZZZZZ	1		
09:55	ZZZZZZ	1		
10:00	MA52118-CRI2	1		
10:05	MA52118-ICSA2	1		
10:11	MA52118-ICSAB2	1		
10:15	MA52118-CCV4	1		
10:20	MA52118-CCB4	1		
----------->	Last reportable CCB for job JD41762			
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:46	MP31905-B1	1		
10:50	MP31905-MB1	1		
10:56	MP31905-S1	1		Na,S high, see rerun
11:00	MP31905-S2	1		
11:05	JD41787-12	1		(sample used for QC only; not part of login JD41762)
11:13	MA52118-CCV5	1		
11:17	MA52118-CCB5	1		
11:23	MP31905-SD1	5		
11:28	ZZZZZZ	1		
11:33	MP31859-S1	5		
11:38	MP31859-S2	5		
11:43	JD41584-6	5		(sample used for QC only; not part of login JD41762)
11:48	MP31859-SD1	25		
11:54	MP31828-S1	2		
11:58	MP31828-S2	2		
12:03	JD41563-4	2		(sample used for QC only; not part of login JD41762)
12:08	MA52118-CCV6	1		
12:13	MA52118-CCB6	1		
12:18	MP31828-SD1	10		
12:23	ZZZZZZ	5		
12:29	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:34	ZZZZZZ	5		
12:39	ZZZZZZ	10		
12:44	ZZZZZZ	10		
12:49	ZZZZZZ	2		
12:54	ZZZZZZ	5		
13:00	MA52118-CCV7	1		
13:04	MA52118-CCB7	1		
13:10	ZZZZZZ	1		
13:15	ZZZZZZ	1		
13:20	ZZZZZZ	1		
13:28	MP31905-S1	2		
13:33	MP31905-S2	2		
13:38	JD41787-12	2		(sample used for QC only; not part of login JD41762)
13:43	MP31905-SD1	10		
13:48	MA52118-CCV8	1		
13:53	MA52118-CCB8	1		
13:58	ZZZZZZ	1		
14:03	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Element: Dilution	As
06:51	MA52118-ICV1	1	X
07:05	MA52118-ICB1	1	X
07:17	MA52118-CCV1	1	X
07:22	MA52118-CCB1	1	X
07:27	MA52118-CRI1	1	X
07:32	MA52118-CRID1	1	X
07:37	MA52118-ICSA1	1	X
07:42	MA52118-ICSAB1	1	X
07:47	MA52118-HSTD1	1	X
07:52	MA52118-HSTD2	1	
07:58	ZZZZZZ	1	
08:03	ZZZZZZ	1	
08:08	ZZZZZZ	1	
08:13	ZZZZZZ	1	
08:20	MA52118-CCV2	1	X
08:25	MA52118-CCB2	1	X
08:31	MP31902-MB1	1	X
08:36	MP31902-B1	1	X
08:40	MP31902-S1	1	X
08:45	MP31902-S2	1	X
08:50	JD41762-4	1	X
08:55	MP31902-SD1	5	X
09:00	JD41762-1	1	X
09:05	JD41762-3	1	X
09:10	JD41762-6	1	X
09:15	MA52118-CCV3	1	X
09:20	MA52118-CCB3	1	X
09:25	JD41762-7	1	X
09:30	JD41762-8	1	X
09:35	JD41762-1	2	
09:40	JD41762-3	2	
09:45	JD41762-7	5	
09:50	ZZZZZZ	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:55	ZZZZZZ	1		
10:00	MA52118-CRI2	1	X	
10:05	MA52118-ICSA2	1	X	
10:11	MA52118-ICSAB2	1	X	
10:15	MA52118-CCV4	1	X	
10:20	MA52118-CCB4	1	X	
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:46	MP31905-B1	1	X	
10:50	MP31905-MB1	1	X	
10:56	MP31905-S1	1	X	
11:00	MP31905-S2	1	X	
11:05	JD41787-12	1		(a)
11:13	MA52118-CCV5	1	X	
11:17	MA52118-CCB5	1	X	
11:23	MP31905-SD1	5	X	
11:28	ZZZZZZ	1		
11:33	MP31859-S1	5		
11:38	MP31859-S2	5		
11:43	JD41584-6	5		(a)
11:48	MP31859-SD1	25		
11:54	MP31828-S1	2	X	
11:58	MP31828-S2	2	X	
12:03	JD41563-4	2		(a)
12:08	MA52118-CCV6	1	X	
12:13	MA52118-CCB6	1	X	
12:18	MP31828-SD1	10	X	
12:23	ZZZZZZ	5		
12:29	ZZZZZZ	1		
12:34	ZZZZZZ	5		
12:39	ZZZZZZ	10		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution	Element: As
12:44	ZZZZZZ	10	
12:49	ZZZZZZ	2	
12:54	ZZZZZZ	5	
13:00	MA52118-CCV7	1	X
13:04	MA52118-CCB7	1	X
13:10	ZZZZZZ	1	
13:15	ZZZZZZ	1	
13:20	ZZZZZZ	1	
13:28	MP31905-S1	2	
13:33	MP31905-S2	2	
13:38	JD41787-12	2	(a)
13:43	MP31905-SD1	10	
13:48	MA52118-CCV8	1	X
13:53	MA52118-CCB8	1	X
13:58	ZZZZZZ	1	
14:03	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:41	MA52118-STD1	2247 R	70214 R	6865 R	7090 R
06:46	MA52118-STD2	2113	64760	6680	6136
06:51	MA52118-ICV1	2182	65868	6824	6412
07:05	MA52118-ICB1	2235	70017	6780	7068
07:17	MA52118-CCV1	2158	66221	6722	6363
07:22	MA52118-CCB1	2229	69655	6811	7038
07:27	MA52118-CRI1	2202	68731	6800	6875
07:32	MA52118-CRID1	2225	69339	6795	7009
07:37	MA52118-ICSA1	2050	61432	6763	5745
07:42	MA52118-ICSAB1	2044	61391	6777	5741
07:47	MA52118-HSTD1	2195	68138	6824	6842
07:52	MA52118-HSTD2	2048	61993	6674	5719
07:58	ZZZZZZ	1912	58494	6516	5437
08:03	ZZZZZZ	2010	61791	6641	5655
08:08	ZZZZZZ	2119	67035	6777	6657
08:13	ZZZZZZ	2190	68344	6809	6827
08:20	MA52118-CCV2	2184	67099	6812	6419
08:25	MA52118-CCB2	2239	70154	6866	7076
08:31	MP31902-MB1	2237	71137	7028	7099
08:36	MP31902-B1	2225	68914	7011	6658
08:40	MP31902-S1	2291	70359	7422	6562
08:45	MP31902-S2	2322	70589	7476	6594
08:50	JD41762-4	2299	70418	7367	6662
08:55	MP31902-SD1	2298	70756	7074	6989
09:00	JD41762-1	2356	71492	7556	6659
09:05	JD41762-3	2339	71335	7540	6632
09:10	JD41762-6	2293	70538	7355	6673
09:15	MA52118-CCV3	2189	66901	6803	6441
09:20	MA52118-CCB3	2240	69421	6820	7051
09:25	JD41762-7	2275	70137	7480	6585
09:30	JD41762-8	2285	70483	7438	6669
09:35	JD41762-1	2284	69588	7148	6684
09:40	JD41762-3	2286	68743	7288	6692

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:45	JD41762-7	2257	69344	7085	6839
09:50	ZZZZZZ	2221	68935	6877	7089
09:55	ZZZZZZ	2245	68618	6839	7151
10:00	MA52118-CRI2	2204	68802	6876	6828
10:05	MA52118-ICSA2	2026	60370	6670	5667
10:11	MA52118-ICSAB2	2059	61440	6842	5762
10:15	MA52118-CCV4	2180	66260	6851	6398
10:20	MA52118-CCB4	2236	69799	6885	7042
10:25	ZZZZZZ	2293	70526	7295	6690
10:30	ZZZZZZ	2243	68523	7050	6813
10:35	ZZZZZZ	2277	69598	7404	6310
10:40	ZZZZZZ	2371	74273	8028	5781
10:46	MP31905-B1	2178	67098	6938	6525
10:50	MP31905-MB1	2223	70123	6949	7059
10:56	MP31905-S1	2220	68791	7210	6110
11:00	MP31905-S2	2218	68749	7270	6135
11:05	JD41787-12	2277	70265	7322	6278
11:13	MA52118-CCV5	2178	66258	6742	6378
11:17	MA52118-CCB5	2210	69337	6878	7006
11:23	MP31905-SD1	2229	68670	6953	6728
11:28	ZZZZZZ	2219	64525	7167	6179
11:33	MP31859-S1	2124	64726	6746	6076
11:38	MP31859-S2	2115	64835	6794	6054
11:43	JD41584-6	2095	63996	6699	6082
11:48	MP31859-SD1	2196	67639	6801	6619
11:54	MP31828-S1	2146	66042	6819	6302
11:58	MP31828-S2	2144	66283	6880	6314
12:03	JD41563-4	2173	66653	6777	6504
12:08	MA52118-CCV6	2222	67168	6880	6479
12:13	MA52118-CCB6	2278	70778	6955	7152
12:18	MP31828-SD1	2274	69960	6959	6981
12:23	ZZZZZZ	2005	60895	6632	5650
12:29	ZZZZZZ	1990	59745	6688	5410

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:34	ZZZZZZ	2052	61683	6629	5708
12:39	ZZZZZZ	2156	65444	6807	6292
12:44	ZZZZZZ	2191	67220	6975	6370
12:49	ZZZZZZ	2313	70497	7306	6625
12:54	ZZZZZZ	2272	70125	7194	6450
13:00	MA52118-CCV7	2166	65804	6855	6340
13:04	MA52118-CCB7	2235	69507	6892	6993
13:10	ZZZZZZ	2200	68109	6813	6951
13:15	ZZZZZZ	2204	69769	6905	7062
13:20	ZZZZZZ	2234	68924	6811	7047
13:28	MP31905-S1	2252	69364	7170	6401
13:33	MP31905-S2	2206	67849	7057	6297
13:38	JD41787-12	2233	68773	6997	6472
13:43	MP31905-SD1	2219	68614	6864	6803
13:48	MA52118-CCV8	2169	66077	6794	6352
13:53	MA52118-CCB8	2232	69300	6802	7010
13:58	ZZZZZZ	2230	69974	6920	7030
14:03	ZZZZZZ	2244	70213	6983	7048

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time: / Sample ID:			07:05 ICB1		07:22 CCB1		08:25 CCB2		09:20 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.5	anr							
Arsenic	3.0	2	-1.10	<3.0	0.300	<3.0	1.20	<3.0	0.500	<3.0
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	1.9								
Cadmium	3.0	.4	anr							
Calcium	5000	5.6	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.5	anr							
Copper	10	1	anr							
Iron	100	11	anr							
Lead	3.0	1.2	anr							
Lithium	50	2.3								
Magnesium	5000	65	anr							
Manganese	15	.2	anr							
Molybdenum	20	.4								
Nickel	10	.3	anr							
Phosphorus	50	4.1								
Potassium	10000	55	anr							
Selenium	10	3.5	anr							
Silicon	200	1.6								
Silver	10	1.1	anr							
Sodium	10000	11	anr							
Strontium	10	.1								
Sulfur	50	4.4								
Thallium	10	2.5	anr							
Tin	10	1								
Titanium	10	.4								
Tungsten	50	2.8								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time:			07:05		07:22		08:25		09:20	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time:			10:20	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Aluminum	200	16	anr	
Antimony	6.0	2.5	anr	
Arsenic	3.0	2	-0.600	<3.0
Barium	200	.4	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	3.6		
Boron	100	1.9		
Cadmium	3.0	.4	anr	
Calcium	5000	5.6	anr	
Cerium	100			
Chromium	10	.5	anr	
Cobalt	50	.5	anr	
Copper	10	1	anr	
Iron	100	11	anr	
Lead	3.0	1.2	anr	
Lithium	50	2.3		
Magnesium	5000	65	anr	
Manganese	15	.2	anr	
Molybdenum	20	.4		
Nickel	10	.3	anr	
Phosphorus	50	4.1		
Potassium	10000	55	anr	
Selenium	10	3.5	anr	
Silicon	200	1.6		
Silver	10	1.1	anr	
Sodium	10000	11	anr	
Strontium	10	.1		
Sulfur	50	4.4		
Thallium	10	2.5	anr	
Tin	10	1		
Titanium	10	.4		
Tungsten	50	2.8		
Vanadium	50	.6	anr	

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time:			10:20	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Zinc	20	.1	anr	
Zirconium	10	.4		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		06:51			07:17			08:20	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1990	99.5	2000	1980	99.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		06:51			07:17			08:20	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		09:15			10:15	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	1940	97.0	2000	1970	98.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		09:15			10:15	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52118 Units: ug/l

Time:		07:47			07:52	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7450	93.1			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52118 Units: ug/l

Time:		07:47			07:52	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52118 Units: ug/l

Time:				07:27		07:32		10:00	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	8.70	108.8	2.60	86.7	9.20	115.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52118 Units: ug/l

Time:				07:27		07:32		10:00	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52118 Units: ug/l

Time:			07:37		07:42		10:05		10:11	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	482000	96.4	489000	97.8	489000	97.8	486000	97.2
Antimony		1000	-2.80		1010	101.0	-3.50		1000	100.0
Arsenic		1000	0.900		1010	101.0	0.500		998	99.8
Barium		500	-44.0		458	91.6	-44.7		458	91.6
Beryllium		500	-0.300		484	96.8	-0.200		483	96.6
Bismuth		500	3.00		524	104.8	0.700		519	103.8
Boron		500	-2.50		477	95.4	-3.30		473	94.6
Cadmium		1000	1.20		1040	104.0	1.40		1030	103.0
Calcium	400000	400000	365000	91.3	372000	93.0	370000	92.5	370000	92.5
Cerium			93.3				93.7			
Chromium		500	-2.10		477	95.4	-1.90		474	94.8
Cobalt		500	-0.500		475	95.0	-1.10		471	94.2
Copper		500	8.30		516	103.2	8.90		513	102.6
Iron	200000	200000	180000	90.0	183000	91.5	183000	91.5	182000	91.0
Lead		1000	-0.200		958	95.8	-1.10		952	95.2
Lithium		500	0.100		535	107.0	0.500		538	107.6
Magnesium	500000	500000	475000	95.0	484000	96.8	481000	96.2	480000	96.0
Manganese		500	0.100		500	100.0	0.100		497	99.4
Molybdenum		500	-3.10		464	92.8	-3.30		460	92.0
Nickel		1000	-1.60		958	95.8	-2.20		951	95.1
Phosphorus		500	12.4		477	95.4	15.4		462	92.4
Potassium			231		232		260		248	
Selenium		1000	6.80		950	95.0	6.20		941	94.1
Silicon		500	-8.80		521	104.2	-8.10		516	103.2
Silver		1000	3.10		1100	110.0	2.70		1100	110.0
Sodium			-38.0		-47.7		-52.4		-46.5	
Strontium		500	1.00		501	100.2	1.10		501	100.2
Sulfur		500	7.80		481	96.2	8.90		483	96.6
Thallium		1000	-2.10		950	95.0	-3.80		945	94.5
Tin		500	-1.30		454	90.8	-2.80		453	90.6
Titanium		500	-0.700		500	100.0	-0.100		496	99.2
Tungsten		500	5.50		479	95.8	5.00		475	95.0
Vanadium		500	0.900		476	95.2	1.50		475	95.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52118 Units: ug/l

Time:			07:37		07:42		10:05		10:11	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	4.60		941	94.1	4.40		931	93.1
Zirconium		500	-2.30		511	102.2	-2.10		508	101.6

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:18	MA52132-STD1	1		STDA
07:23	MA52132-STD2	1		STDB
07:29	MA52132-ICV1	1		
07:37	MA52132-ICB1	1		
07:42	MA52132-ICCV1	1		
07:51	MA52132-CCB1	1		
07:56	MA52132-CRID1	1		
08:01	MA52132-CRI1	1		
08:06	MA52132-ICSA1	1		
08:12	MA52132-ICSAB1	1		
08:17	MA52132-HSTD1	1		
08:23	MA52132-HSTD2	1		
08:28	ZZZZZZ	1		
08:33	ZZZZZZ	1		
08:38	MA52132-CRI2	1		
08:43	ZZZZZZ	1		
08:49	MA52132-CCV1	1		
08:53	MA52132-CCB2	1		
08:59	MP31947-MB1	1		
09:04	MP31947-B1	1		
09:09	MP31947-S1	1		
09:14	MP31947-S2	1		
09:19	JD41893-1	1		(sample used for QC only; not part of login JD41762)
09:24	MP31947-SD1	5		
09:29	MP31947-PS1	1		
09:34	JD41762-26	1		
09:39	JD41762-27	1		FE high
09:44	MA52132-CCV2	1		
09:49	MA52132-CCB3	1		
09:54	JD41762-28	1		
09:59	JD41762-30	1		
10:04	JD41762-32	1		
10:09	JD41762-39	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:15	MP31934-B1	1		
10:19	MP31934-B2	1		
10:24	MP31934-MB1	1		
10:29	MP31934-MB2	1		
10:34	MP31934-S1	1		
10:39	MA52132-CCV3	1		
10:44	MA52132-CCB4	1		
10:50	MP31934-S2	1		
10:54	JD41762-16F	1		
11:00	MP31934-SD1	5		
11:05	JD41762-14F	1		
11:10	JD41762-15F	1		
---------->	Last reportable sample/prep for job JD41762			
11:15	MP31915-B1	1		
11:20	MP31915-MB1	1		
11:25	MP31915-S1	1		FE, Ti high
11:30	MP31915-S2	1		FE, Ti high
11:35	MA52132-CCV4	1		
11:40	MA52132-CCB5	1		
11:45	JD41803-1	1		(sample used for QC only; not part of login JD41762)
11:51	MP31915-SD1	5		FE, Ti high
11:56	MP31915-PS1	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:27	MA52132-CCV5	1		
12:32	MA52132-CCB6	1		
12:37	MA52132-CRID2	1		
12:42	MA52132-CRI3	1		
12:49	MA52132-ICSA2	1		
12:54	MA52132-ICSAB2	1		
12:59	MA52132-CCV6	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:04	MA52132-CCB7	1		
---------->	Last reportable CCB for job JD41762			
13:10	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Element: Dilution	As
07:29	MA52132-ICV1	1	X
07:37	MA52132-ICB1	1	X
07:42	MA52132-ICCV1	1	X
07:51	MA52132-CCB1	1	X
07:56	MA52132-CRID1	1	X
08:01	MA52132-CRI1	1	
08:06	MA52132-ICSA1	1	X
08:12	MA52132-ICSAB1	1	X
08:17	MA52132-HSTD1	1	X
08:23	MA52132-HSTD2	1	X
08:28	ZZZZZZ	1	
08:33	ZZZZZZ	1	
08:38	MA52132-CRI2	1	X
08:43	ZZZZZZ	1	
08:49	MA52132-CCV1	1	X
08:53	MA52132-CCB2	1	X
08:59	MP31947-MB1	1	X
09:04	MP31947-B1	1	X
09:09	MP31947-S1	1	X
09:14	MP31947-S2	1	X
09:19	JD41893-1	1	X (a)
09:24	MP31947-SD1	5	X
09:29	MP31947-PS1	1	
09:34	JD41762-26	1	X
09:39	JD41762-27	1	FE high
09:44	MA52132-CCV2	1	X
09:49	MA52132-CCB3	1	X
09:54	JD41762-28	1	X
09:59	JD41762-30	1	X
10:04	JD41762-32	1	X
10:09	JD41762-39	1	X
10:15	MP31934-B1	1	X
10:19	MP31934-B2	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:24	MP31934-MB1	1	X	
10:29	MP31934-MB2	1	X	
10:34	MP31934-S1	1	X	
10:39	MA52132-CCV3	1	X	
10:44	MA52132-CCB4	1	X	
10:50	MP31934-S2	1	X	
10:54	JD41762-16F	1	X	
11:00	MP31934-SD1	5	X	
11:05	JD41762-14F	1	X	
11:10	JD41762-15F	1	X	
11:15	MP31915-B1	1		
11:20	MP31915-MB1	1		
11:25	MP31915-S1	1		
11:30	MP31915-S2	1		
11:35	MA52132-CCV4	1	X	
11:40	MA52132-CCB5	1	X	
11:45	JD41803-1	1		(a)
11:51	MP31915-SD1	5		
11:56	MP31915-PS1	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:27	MA52132-CCV5	1	X	
12:32	MA52132-CCB6	1	X	
12:37	MA52132-CRID2	1	X	
12:42	MA52132-CRI3	1	X	
12:49	MA52132-ICSA2	1	X	
12:54	MA52132-ICSAB2	1	X	
12:59	MA52132-CCV6	1	X	
13:04	MA52132-CCB7	1	X	
13:10	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Element: Dilution	As

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:18	MA52132-STD1	9365 R	310520 R	32407 R	11261 R
07:23	MA52132-STD2	8943	272310	32391	10195
07:29	MA52132-ICV1	9228	280160	33012	10588
07:37	MA52132-ICB1	9466	293010	33084	11392
07:42	MA52132-ICCV1	9269	284400	33150	10674
07:51	MA52132-CCB1	9558	299350	33338	11501
07:56	MA52132-CRID1	9497	292020	33160	11408
08:01	MA52132-CRI1	No results reported for the elements associated with this internal standard.			
08:06	MA52132-ICSA1	8823	263450	33359	9795
08:12	MA52132-ICSAB1	8852	265400	33458	9832
08:17	MA52132-HSTD1	9426	292220	33567	11362
08:23	MA52132-HSTD2	8832	266670	33181	9760
08:28	ZZZZZZ	9320	287370	32842	11430
08:33	ZZZZZZ	9342	297470	32997	11444
08:38	MA52132-CRI2	9511	298800	33700	11371
08:43	ZZZZZZ	9467	291390	32947	11492
08:49	MA52132-CCV1	9347	286350	33503	10764
08:53	MA52132-CCB2	9549	304860	33550	11508
08:59	MP31947-MB1	9659	303260	34184	11639
09:04	MP31947-B1	9515	291650	34376	11104
09:09	MP31947-S1	9534	293280	34771	10843
09:14	MP31947-S2	9548	293340	34936	10843
09:19	JD41893-1	9671	301460	35050	11172
09:24	MP31947-SD1	9714	301890	34223	11469
09:29	MP31947-PS1	9532	296580	34623	10888
09:34	JD41762-26	9617	296460	35254	11110
09:39	JD41762-27	No results reported for the elements associated with this internal standard.			
09:44	MA52132-CCV2	9422	289210	33928	10883
09:49	MA52132-CCB3	9641	304460	34005	11661
09:54	JD41762-28	9727	299920	35595	11272
09:59	JD41762-30	9666	296260	35422	11215
10:04	JD41762-32	9747	301660	36002	11249
10:09	JD41762-39	9759	298880	35657	11317

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:15	MP31934-B1	9731	298870	35156	11347
10:19	MP31934-B2	9753	304090	35452	11391
10:24	MP31934-MB1	9914	313420	35347	11986
10:29	MP31934-MB2	10098	317000	36116	12184
10:34	MP31934-S1	9701	300590	35426	11220
10:39	MA52132-CCV3	9538	297190	34447	11020
10:44	MA52132-CCB4	9767	307630	34378	11804
10:50	MP31934-S2	9693	298460	35336	11217
10:54	JD41762-16F	9806	309040	35315	11657
11:00	MP31934-SD1	9834	307460	34827	11839
11:05	JD41762-14F	9812	313540	35647	11720
11:10	JD41762-15F	9835	311350	35657	11650
11:15	MP31915-B1	9725	303270	35179	11399
11:20	MP31915-MB1	9820	311270	35225	11912
11:25	MP31915-S1	9498	293160	35522	10758
11:30	MP31915-S2	9517	291810	35618	10816
11:35	MA52132-CCV4	9583	296750	34834	11107
11:40	MA52132-CCB5	9884	309970	34804	11965
11:45	JD41803-1	9627	296580	35825	10931
11:51	MP31915-SD1	9846	306860	35116	11509
11:56	MP31915-PS1	9612	293480	35940	10926
12:01	ZZZZZZ	10042	309600	36216	11754
12:06	ZZZZZZ	9943	308300	36209	11688
12:12	ZZZZZZ	9913	311480	34754	11994
12:17	ZZZZZZ	9919	310590	34774	11887
12:22	ZZZZZZ	9974	310230	34875	12013
12:27	MA52132-CCV5	9607	302070	35022	11113
12:32	MA52132-CCB6	10076	314690	35263	12106
12:37	MA52132-CRID2	10028	313840	35205	12049
12:42	MA52132-CRI3	10027	312990	35178	11976
12:49	MA52132-ICSA2	9272	280840	35236	10275
12:54	MA52132-ICSAB2	9230	282140	35171	10244
12:59	MA52132-CCV6	9836	301660	35265	11353

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:04	MA52132-CCB7	10146	318730	35191	12222
13:10	ZZZZZZ	10182	319710	35469	12224

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time:			07:37		07:51		08:53		09:49	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.900	<3.0	1.60	<3.0	1.20	<3.0	1.80	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time:			07:37		07:51		08:53		09:49	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time:			10:44		11:40		12:32		13:04	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	1.30	<3.0	0.900	<3.0	1.00	<3.0	1.60	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time:			10:44		11:40		12:32		13:04	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52132 Units: ug/l

Time:		07:42	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1930	96.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52132 Units: ug/l

Time:		07:42	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		07:29			08:49			09:44	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1990	99.5	2000	1900	95.0	2000	1880	94.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		07:29			08:49			09:44	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		10:39			11:35			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1850	92.5	2000	1860	93.0	2000	1840	92.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		10:39			11:35			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		12:59	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1780	89.0*(a)
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		12:59	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested
(a) No samples reported for this element in the area bracketed by this QC.

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52132 Units: ug/l

Time:		08:17			08:23	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7330	91.6			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52132 Units: ug/l

Time:		08:17			08:23	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				07:56		08:38		12:37	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	2.80	93.3	8.90	111.3	3.40	113.3
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				07:56		08:38		12:37	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				12:42	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	9.20	115.0
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				12:42	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52132 Units: ug/l

Time:			08:06		08:12		12:49		12:54	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	480000	96.0	482000	96.4	441000	88.2	454000	90.8
Antimony		1000	-3.60		973	97.3	-3.20		925	92.5
Arsenic		1000	-0.600		966	96.6	-0.800		913	91.3
Barium		500	5.60		493	98.6	5.40		466	93.2
Beryllium		500	0.100		469	93.8	0.200		433	86.6
Bismuth		500	12.8		520	104.0	12.7		498	99.6
Boron		500	1.40		476	95.2	-0.500		451	90.2
Cadmium		1000	0.400		1010	101.0	0.400		946	94.6
Calcium	400000	400000	363000	90.8	363000	90.8	332000	83.0	337000	84.3
Cerium			17.7		492*		14.1		462*	
Chromium		500	-2.00		468	93.6	-1.90		434	86.8
Cobalt		500	0.800		480	96.0	0.700		455	91.0
Copper		500	3.50		497	99.4	3.70		464	92.8
Iron	200000	200000	183000	91.5	183000	91.5	166000	83.0	168000	84.0
Lead		1000	2.40		945	94.5	0.100		892	89.2
Lithium		500	-8.70		521	104.2	-9.40		493	98.6
Magnesium	500000	500000	475000	95.0	478000	95.6	432000	86.4	439000	87.8
Manganese		500	0.900		501	100.2	0.800		464	92.8
Molybdenum		500	-2.20		456	91.2	-2.00		435	87.0
Nickel		1000	0.100		952	95.2	0.200		906	90.6
Phosphorus		500	1.00		466	93.2	3.10		446	89.2
Potassium			-497		-501		-469		-488	
Selenium		1000	-1.20		932	93.2	-2.50		885	88.5
Silicon		500	5.90		500	100.0	3.20		474	94.8
Silver		1000	4.80		1030	103.0	4.70		961	96.1
Sodium			78.5		79.2		73.6		69.4	
Strontium		500	-0.900		493	98.6	-0.700		469	93.8
Sulfur		500	-23.7		459	91.8	-21.6		434	86.8
Thallium		1000	-7.30		934	93.4	-4.30		887	88.7
Tin		500	-6.40		449	89.8	-4.90		425	85.0
Titanium		500	-2.10		470	94.0	-1.70		436	87.2
Tungsten		500	0.100		456	91.2	3.00		442	88.4
Vanadium		500	-2.80		477	95.4	-3.30		440	88.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52132 Units: ug/l

Time:			08:06		08:12		12:49		12:54	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	3.00		944	94.4	2.50		890	89.0
Zirconium		500	0.400		488	97.6	0.700		474	94.8

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:46	MA52135-STD1	1		STDA
13:51	MA52135-STD2	1		STDB
13:57	MA52135-ICV1	1		
14:04	MA52135-ICB1	1		
14:10	MA52135-CCV1	1		
14:14	MA52135-CCB1	1		
14:20	MA52135-CRID1	1		
14:25	MA52135-CRI1	1		
14:30	MA52135-ICSA1	1		
14:35	MA52135-ICSAB1	1		
14:40	ZZZZZZ	1		
14:46	MA52135-HSTD1	1		
14:52	ZZZZZZ	1		
14:57	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	ZZZZZZ	1		
15:13	MA52135-CCV2	1		
15:18	MA52135-CCB2	1		
15:23	MP31917-B1	1		
15:28	MP31917-MB1	1		
15:33	MA52135-HSTD2	1		
15:39	MP31917-LC1	1		
15:44	MP31917-LC2	1		
15:49	MP31917-S1	1		
15:54	MP31917-S2	1		
15:59	JD41833-5	1		(sample used for QC only; not part of login JD41762)
16:04	MP31917-SD1	5		
16:09	MP31917-PS1	1		
16:14	MA52135-CCV3	1		
16:18	MA52135-CCB3	1		
16:24	ZZZZZZ	1		
16:29	ZZZZZZ	1		
16:34	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:39	JD41762-27	2		
----------->	Last reportable sample/prep for job JD41762			
16:44	ZZZZZZ	1		
16:49	MA52135-CRI2	1		
16:54	MA52135-CRI3	1		
16:59	MA52135-CCV4	1		
17:04	MA52135-CCB4	1		
17:09	MA52135-ICSA2	1		
17:14	MA52135-ICSAB2	1		
17:20	MA52135-CCV5	1		
17:24	MA52135-CCB5	1		
----------->	Last reportable CCB for job JD41762			
17:30	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:45	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:55	ZZZZZZ	1		
18:00	ZZZZZZ	1		
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	MA52135-CCV6	1		
18:20	MA52135-CCB6	1		
18:25	ZZZZZZ	1		
18:30	ZZZZZZ	1		
18:36	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	MP31933-B1	1		
18:56	MP31933-MB1	1		
19:01	MP31933-S1	1		
19:06	MP31933-S2	1		
19:11	MA52135-CCV7	1		
19:16	MA52135-CCB7	1		
19:21	JD41871-4	1		(sample used for QC only; not part of login JD41762)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:27	MP31933-SD1	5		
19:32	MP31933-S1	2		
19:37	MP31933-S2	2		
19:42	JD41871-4	2		(sample used for QC only; not part of login JD41762)
19:47	MP31933-SD1	10		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	MA52135-CCV8	1		
20:18	MA52135-CCB8	1		
20:23	ZZZZZZ	1		
20:28	ZZZZZZ	1		
20:33	ZZZZZZ	1		
20:38	ZZZZZZ	1		
20:43	ZZZZZZ	1		
05:38	MA52135-CCV9	1		
05:46	MA52135-CCB9	1		
05:51	MA52135-CCV10	1		
05:59	MA52135-CCB10	1		
06:04	MP31952-MB1	1		Batch to reanalyze, curve out
06:10	MP31952-LB1	1		
06:14	MP31952-B1	1		
06:19	MP31952-LS1	1		
06:24	MP31952-S1	1		
06:29	MP31952-S2	1		
06:35	JD41780-1	1		(sample used for QC only; not part of login JD41762)
06:39	MP31952-SD1	5		
06:44	ZZZZZZ	1		
06:49	MA52135-CCV11	1		
06:55	MA52135-CCV12	1		
06:59	MA52135-CCB11	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:57	MA52135-ICV1	1	X	
14:04	MA52135-ICB1	1	X	
14:10	MA52135-CCV1	1	X	
14:14	MA52135-CCB1	1	X	
14:20	MA52135-CRID1	1	X	
14:25	MA52135-CRI1	1	X	
14:30	MA52135-ICSA1	1	X	
14:35	MA52135-ICSAB1	1	X	
14:40	ZZZZZZ	1		
14:46	MA52135-HSTD1	1	X	
14:52	ZZZZZZ	1		
14:57	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	ZZZZZZ	1		
15:13	MA52135-CCV2	1	X	
15:18	MA52135-CCB2	1	X	
15:23	MP31917-B1	1	X	
15:28	MP31917-MB1	1	X	
15:33	MA52135-HSTD2	1	X	
15:39	MP31917-LC1	1	X	
15:44	MP31917-LC2	1	X	
15:49	MP31917-S1	1	X	
15:54	MP31917-S2	1	X	
15:59	JD41833-5	1	X	(a)
16:04	MP31917-SD1	5	X	
16:09	MP31917-PS1	1		
16:14	MA52135-CCV3	1	X	
16:18	MA52135-CCB3	1	X	
16:24	ZZZZZZ	1		
16:29	ZZZZZZ	1		
16:34	ZZZZZZ	1		
16:39	JD41762-27	2	X	
16:44	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Element: Dilution	As	
16:49	MA52135-CRI2	1	X	
16:54	MA52135-CRI3	1	X	
16:59	MA52135-CCV4	1	X	
17:04	MA52135-CCB4	1	X	
17:09	MA52135-ICSA2	1	X	
17:14	MA52135-ICSAB2	1	X	
17:20	MA52135-CCV5	1	X	
17:24	MA52135-CCB5	1	X	
17:30	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:45	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:55	ZZZZZZ	1		
18:00	ZZZZZZ	1		
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	MA52135-CCV6	1	X	
18:20	MA52135-CCB6	1	X	
18:25	ZZZZZZ	1		
18:30	ZZZZZZ	1		
18:36	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	MP31933-B1	1		
18:56	MP31933-MB1	1		
19:01	MP31933-S1	1		
19:06	MP31933-S2	1		
19:11	MA52135-CCV7	1	X	
19:16	MA52135-CCB7	1	X	
19:21	JD41871-4	1		(a)
19:27	MP31933-SD1	5		
19:32	MP31933-S1	2		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Element: Dilution	As	
19:37	MP31933-S2	2		
19:42	JD41871-4	2		(a)
19:47	MP31933-SD1	10		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	MA52135-CCV8	1	X	
20:18	MA52135-CCB8	1	X	
20:23	ZZZZZZ	1		
20:28	ZZZZZZ	1		
20:33	ZZZZZZ	1		
20:38	ZZZZZZ	1		
20:43	ZZZZZZ	1		
05:38	MA52135-CCV9	1		
05:46	MA52135-CCB9	1		
05:51	MA52135-CCV10	1	X	
05:59	MA52135-CCB10	1	X	
06:04	MP31952-MB1	1		Batch to reanalyze, curve out
06:10	MP31952-LB1	1		
06:14	MP31952-B1	1		
06:19	MP31952-LS1	1		
06:24	MP31952-S1	1		
06:29	MP31952-S2	1		
06:35	JD41780-1	1		
06:39	MP31952-SD1	5		
06:44	ZZZZZZ	1		
06:49	MA52135-CCV11	1		
06:55	MA52135-CCV12	1		
06:59	MA52135-CCB11	1	X	

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:46	MA52135-STD1	10093 R	316510 R	35359 R	12175 R
13:51	MA52135-STD2	9629	295890	35164	10980
13:57	MA52135-ICV1	9933	304890	35474	11420
14:04	MA52135-ICB1	10190	319030	35727	12270
14:10	MA52135-CCV1	9974	307170	35747	11457
14:14	MA52135-CCB1	10228	322560	35760	12312
14:20	MA52135-CRID1	10171	319320	35817	12236
14:25	MA52135-CRI1	10195	315460	35905	12160
14:30	MA52135-ICSA1	9461	284840	35687	10469
14:35	MA52135-ICSAB1	9479	286100	35784	10490
14:40	ZZZZZZ	999999 !	313370	36120	999999 !
14:46	MA52135-HSTD1	9444	291820	35583	10420
14:52	ZZZZZZ	10186	314330	36251	12232
14:57	ZZZZZZ	10112	314820	35701	12364
15:03	ZZZZZZ	10122	318730	35662	12363
15:08	ZZZZZZ	10266	320220	35443	12413
15:13	MA52135-CCV2	10122	311920	36227	11602
15:18	MA52135-CCB2	10412	326420	36340	12527
15:23	MP31917-B1	10371	323090	37241	12047
15:28	MP31917-MB1	10504	329610	36894	12631
15:33	MA52135-HSTD2	10261	319350	36506	12321
15:39	MP31917-LC1	10413	322740	37657	11882
15:44	MP31917-LC2	10439	321610	37905	11901
15:49	MP31917-S1	10373	322880	37524	11787
15:54	MP31917-S2	10405	318940	37862	11816
15:59	JD41833-5	10372	325580	37307	12136
16:04	MP31917-SD1	10540	328550	36787	12469
16:09	MP31917-PS1	10349	318410	37691	11860
16:14	MA52135-CCV3	10291	302620	36516	11772
16:18	MA52135-CCB3	10558	331850	36646	12652
16:24	ZZZZZZ	10631	330780	37892	12353
16:29	ZZZZZZ	10602	329340	37797	12307
16:34	ZZZZZZ	10639	331160	37833	12357

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:39	JD41762-27	10530	326060	37934	12278
16:44	ZZZZZZ	10666	335630	37408	12777
16:49	MA52135-CRI2	10581	332240	37086	12548
16:54	MA52135-CRI3	10624	332170	37123	12614
16:59	MA52135-CCV4	10382	320100	36860	11853
17:04	MA52135-CCB4	10678	327200	36917	12778
17:09	MA52135-ICSA2	9745	297500	36700	10763
17:14	MA52135-ICSAB2	9783	296010	36742	10775
17:20	MA52135-CCV5	10413	320660	36880	11898
17:24	MA52135-CCB5	10623	337500	37008	12715
17:30	ZZZZZZ	10494	327890	37975	12145
17:34	ZZZZZZ	10761	331060	38669	12287
17:39	ZZZZZZ	10642	332010	38267	12263
17:45	ZZZZZZ	10852	332690	38719	12414
17:50	ZZZZZZ	10715	335700	38321	12316
17:55	ZZZZZZ	10713	331980	38120	12369
18:00	ZZZZZZ	10901	335850	38884	12295
18:05	ZZZZZZ	10850	335300	38481	12509
18:10	ZZZZZZ	10739	331410	38183	12355
18:15	MA52135-CCV6	10473	322630	36829	11966
18:20	MA52135-CCB6	10755	338390	37011	12862
18:25	ZZZZZZ	10835	335050	38428	12511
18:30	ZZZZZZ	10692	330800	37938	12483
18:36	ZZZZZZ	11048	336840	39205	12456
18:41	ZZZZZZ	10399	310510	37824	11597
18:46	ZZZZZZ	10846	340490	37824	12811
18:51	MP31933-B1	10715	334340	38156	12418
18:56	MP31933-MB1	10903	344660	38091	13088
19:01	MP31933-S1	10073	311810	37527	11163
19:06	MP31933-S2	10145	314090	37440	11222
19:11	MA52135-CCV7	10545	326360	37259	12070
19:16	MA52135-CCB7	10834	342040	37290	12973
19:21	JD41871-4	10125	313350	37348	11393

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:27	MP31933-SD1	10581	326130	37378	12328
19:32	MP31933-S1	10370	318020	37518	11689
19:37	MP31933-S2	10383	319210	37216	11707
19:42	JD41871-4	10354	311980	37334	11844
19:47	MP31933-SD1	10706	319510	37443	12601
19:52	ZZZZZZ	10909	340360	38208	12936
19:57	ZZZZZZ	10875	331680	38124	12854
20:03	ZZZZZZ	10866	340030	38173	12815
20:08	ZZZZZZ	10886	340290	38196	12923
20:13	MA52135-CCV8	10583	326600	37107	12118
20:18	MA52135-CCB8	10808	343400	37438	12961
20:23	ZZZZZZ	10979	342370	38188	13049
20:28	ZZZZZZ	10725	335270	37836	12596
20:33	ZZZZZZ	10867	341340	37412	12957
20:38	ZZZZZZ	10869	340120	37716	12910
20:43	ZZZZZZ	10832	339490	37810	12854
05:38	MA52135-CCV9	No results reported for the elements associated with this internal standard.			
05:46	MA52135-CCB9	No results reported for the elements associated with this internal standard.			
05:51	MA52135-CCV10	10360	315490	36078	11914
05:59	MA52135-CCB10	10628	333390	35666	12805
06:04	MP31952-MB1	No results reported for the elements associated with this internal standard.			
06:10	MP31952-LB1	No results reported for the elements associated with this internal standard.			
06:14	MP31952-B1	No results reported for the elements associated with this internal standard.			
06:19	MP31952-LS1	No results reported for the elements associated with this internal standard.			
06:24	MP31952-S1	No results reported for the elements associated with this internal standard.			
06:29	MP31952-S2	No results reported for the elements associated with this internal standard.			
06:35	JD41780-1	No results reported for the elements associated with this internal standard.			
06:39	MP31952-SD1	No results reported for the elements associated with this internal standard.			
06:44	ZZZZZZ	No results reported for the elements associated with this internal standard.			
06:49	MA52135-CCV11	No results reported for the elements associated with this internal standard.			
06:55	MA52135-CCV12	No results reported for the elements associated with this internal standard.			
06:59	MA52135-CCB11	11065	344200	37075	13307

R = Reference for ISTD limits. ! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time: / Sample ID:			14:04 ICB1		14:14 CCB1		15:18 CCB2		16:18 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	-0.500	<3.0	-0.200	<3.0	0.200	<3.0	1.10	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time:			14:04		14:14		15:18		16:18	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time: / Sample ID:			17:04 CCB4		17:24 CCB5	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	17	anr			
Antimony	6.0	1.7	anr			
Arsenic	3.0	2.1	0.400	<3.0	-0.500	<3.0
Barium	200	.8	anr			
Beryllium	1.0	.3	anr			
Bismuth	20	2.3				
Boron	100	2.3				
Cadmium	3.0	.3	anr			
Calcium	5000	6.6	anr			
Cerium	100					
Chromium	10	.3	anr			
Cobalt	50	.4	anr			
Copper	10	.8	anr			
Iron	100	5.3	anr			
Lead	3.0	1.1	anr			
Lithium	50	4.8				
Magnesium	5000	32	anr			
Manganese	15	.1	anr			
Molybdenum	20	.6				
Nickel	10	.4	anr			
Phosphorus	50	1.2				
Potassium	10000	77	anr			
Selenium	10	3.2	anr			
Silicon	200	1.7				
Silver	10	1	anr			
Sodium	10000	34	anr			
Strontium	10	.3				
Sulfur	50	3				
Thallium	10	1.8	anr			
Tin	10	.8				
Titanium	10	.5				
Tungsten	50	2.6				
Vanadium	50	.6	anr			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time:			17:04		17:24	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.1	anr			
Zirconium	10	.3				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		13:57			14:10			15:13	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1920	96.0	2000	1890	94.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		13:57			14:10			15:13	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		16:14			16:59			17:20	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1860	93.0	2000	1840	92.0	2000	1850	92.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		16:14			16:59			17:20	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52135 Units: ug/l

Time:		14:46			15:33	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony						
Arsenic				8000	7210	90.1
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium	anr					
Cerium						
Chromium						
Cobalt						
Copper						
Iron	anr					
Lead						
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium	anr					
Selenium						
Silicon						
Silver						
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52135 Units: ug/l

Time:		14:46			15:33	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc						
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				14:20		14:25		16:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	3.50	116.7	7.40	92.5	8.40	105.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				14:20		14:25		16:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				16:54	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	8.20	102.5
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				16:54	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52135 Units: ug/l

Time:			14:30		14:35		17:09		17:14	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	480000	96.0	487000	97.4	461000	92.2	469000	93.8
Antimony		1000	-3.00		972	97.2	-3.60		940	94.0
Arsenic		1000	1.80		970	97.0	0.600		935	93.5
Barium		500	5.60		500	100.0	5.70		486	97.2
Beryllium		500	0.100		473	94.6	0.100		456	91.2
Bismuth		500	15.7		529	105.8	13.2		510	102.0
Boron		500	1.60		476	95.2	2.70		461	92.2
Cadmium		1000	0.200		987	98.7	0.400		951	95.1
Calcium	400000	400000	356000	89.0	367000	91.8	350000	87.5	350000	87.5
Cerium			16.1		494*		16.4		477*	
Chromium		500	-2.40		466	93.2	-1.70		448	89.6
Cobalt		500	0.600		476	95.2	0.800		460	92.0
Copper		500	2.60		484	96.8	2.20		469	93.8
Iron	200000	200000	182000	91.0	184000	92.0	174000	87.0	177000	88.5
Lead		1000	-2.70		942	94.2	-0.500		907	90.7
Lithium		500	-6.80		529	105.8	-5.20		513	102.6
Magnesium	500000	500000	471000	94.2	479000	95.8	450000	90.0	459000	91.8
Manganese		500	0.900		497	99.4	0.800		478	95.6
Molybdenum		500	-2.40		454	90.8	-2.10		436	87.2
Nickel		1000	-0.200		951	95.1	0.400		921	92.1
Phosphorus		500	1.30		463	92.6	3.70		447	89.4
Potassium			-518		-437		-499		-458	
Selenium		1000	1.10		919	91.9	0.600		885	88.5
Silicon		500	4.90		498	99.6	4.50		480	96.0
Silver		1000	4.80		1030	103.0	4.50		998	99.8
Sodium			62.0		65.4		52.7		63.7	
Strontium		500	-0.800		497	99.4	-0.800		480	96.0
Sulfur		500	-26.3		457	91.4	-20.6		443	88.6
Thallium		1000	-7.60		938	93.8	-4.70		909	90.9
Tin		500	-6.00		443	88.6	-4.60		426	85.2
Titanium		500	-2.10		473	94.6	-1.80		458	91.6
Tungsten		500	-0.700		457	91.4	-0.700		441	88.2
Vanadium		500	-3.60		469	93.8	-3.20		452	90.4

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52135 Units: ug/l

Time:			14:30		14:35		17:09		17:14	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.50		937	93.7	2.00		900	90.0
Zirconium		500	0.800		502	100.4	0.900		485	97.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:01	MA52141-STD1	1		STDA
09:06	MA52141-STD2	1		STDB
09:11	MA52141-ICV1	1		
09:19	MA52141-ICB1	1		
09:30	MA52141-ICCV1	1		
09:46	MA52141-CCB1	1		
09:50	MA52141-CRI1	1		
09:55	MA52141-CRID1	1		
10:01	MA52141-ICSA1	1		
10:06	MA52141-ICSAB1	1		
10:11	MA52141-HSTD1	1		
10:17	MA52141-HSTD2	1		
10:22	ZZZZZZ	1		
10:27	ZZZZZZ	1		
10:32	ZZZZZZ	1		
10:37	MA52141-CCV1	1		
10:42	MA52141-CCB2	1		
10:47	MA52141-CRI2	1		
10:52	ZZZZZZ	1		
10:57	MP31964-B1	1		
11:02	MP31964-MB1	1		
11:07	MP31964-S1	1		
11:13	MP31964-S2	1		
11:18	JD41963-17	1		(sample used for QC only; not part of login JD41762)
11:23	MP31964-SD1	5		
11:28	ZZZZZZ	1		
11:33	MA52141-CCV2	1		
11:38	MA52141-CCB3	1		
11:43	ZZZZZZ	1		
11:49	ZZZZZZ	1		
11:54	ZZZZZZ	1		
11:59	ZZZZZZ	1		
12:04	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:10	ZZZZZZ	1		
12:15	ZZZZZZ	1		
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	1		
12:33	MA52141-CCV3	1		
12:38	MA52141-CCB4	1		
12:43	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:53	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:19	ZZZZZZ	1		
13:24	ZZZZZZ	1		
13:31	MA52141-CCV4	1		
13:36	MA52141-CCB5	1		
13:41	MP31966A-MB1	1		
13:46	MP31966A-B1	1		
13:51	MP31966A-S1	1		
13:55	MP31966A-S2	1		
14:00	JD41895-3	1		(sample used for QC only; not part of login JD41762)
14:05	MP31966A-SD1	5		
14:10	ZZZZZZ	1		
14:15	MP31965-B1	1		
14:19	MP31965-MB1	1		
14:24	MA52141-CCV5	1		
14:29	MA52141-CCB6	1		
14:34	MP31965-S1	1		
14:39	MP31965-S2	1		
14:44	JD41989-2	1		(sample used for QC only; not part of login JD41762)
14:50	MP31965-SD1	5		
14:55	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:00	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:15	ZZZZZZ	1		
15:20	MA52141-CCV6	1		
15:25	MA52141-CCB7	1		
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	1		
15:59	ZZZZZZ	1		
16:04	ZZZZZZ	1		
16:09	ZZZZZZ	1		
16:15	ZZZZZZ	1		
16:20	ZZZZZZ	1		
16:27	MA52141-CCV7	1		
16:32	MA52141-CCB8	1		
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:48	ZZZZZZ	1		
16:53	ZZZZZZ	1		
16:58	MP31964-S1	2		
17:03	MP31964-S2	2		
17:07	JD41963-17	2		(sample used for QC only; not part of login JD41762)
17:13	MP31964-SD1	10		
17:17	ZZZZZZ	5		
17:22	ZZZZZZ	5		
17:30	MA52141-CCV8	1		
17:34	MA52141-CCB9	1		
17:39	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:49	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:54	ZZZZZZ	5		
17:59	ZZZZZZ	5		
18:04	ZZZZZZ	2		
18:09	ZZZZZZ	10		
18:14	ZZZZZZ	100		
18:19	ZZZZZZ	5		
18:24	ZZZZZZ	5		
18:29	MA52141-CCV9	1		
18:34	MA52141-CCB10	1		
18:39	MP31965-S1	10		
18:44	MP31965-S2	10		
18:49	JD41989-2	10		(sample used for QC only; not part of login JD41762)
18:54	MP31965-SD1	50		
18:59	ZZZZZZ	2		
19:04	ZZZZZZ	5		
19:09	ZZZZZZ	50		
19:14	ZZZZZZ	10		
19:19	MP31972-MB1	1		
19:24	MP31972-B1	1		
19:29	MA52141-CCV10	1		
19:34	MA52141-CCB11	1		
19:39	MP31972-S1	1		
19:44	MP31972-S2	1		
19:49	JD41953-2	1		(sample used for QC only; not part of login JD41762)
19:54	MP31972-SD1	5		
19:59	MP31972-PS1	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:19	ZZZZZZ	1		
20:24	MA52141-CCV11	1		
20:29	MA52141-CCB12	1		
20:34	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:39	ZZZZZZ	1		
20:44	ZZZZZZ	1		
20:49	ZZZZZZ	1		
20:54	ZZZZZZ	1		
20:59	ZZZZZZ	1		
21:04	ZZZZZZ	1		
21:09	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:24	MA52141-CCV12	1		
21:29	MA52141-CCB13	1		
21:34	MP31965-MB1	1		
21:39	MP31995-MB1	1		
21:44	MP31995-B1	1		
21:49	ZZZZZZ	1		
21:54	ZZZZZZ	1		
21:59	ZZZZZZ	1		
22:04	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:15	ZZZZZZ	1		
22:20	MA52141-CCV13	1		
22:24	MA52141-CCB14	1		
22:30	MP31996-MB1	1		
22:35	MP31996-LB1	1		
22:40	MP31996-B1	1		
22:44	MP31996-LS1	1		
22:49	MP31996-S1	1		
22:54	MP31996-S2	1		
22:59	JD39100-3U	1		(sample used for QC only; not part of login JD41762)
23:03	MP31996-SD1	5		
23:08	ZZZZZZ	1		
23:13	MA52141-CCV14	1		
23:18	MA52141-CCB15	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:23	MP31997-MB1	1		
23:28	MP31997-LB1	1		
23:33	MP31997-B1	1		
23:38	MP31997-LS1	1		
23:43	MP31997-S1	1		
23:47	MP31997-S2	1		
23:52	JD40983-3T	1		(sample used for QC only; not part of login JD41762)
23:57	MP31997-SD1	5		
00:02	ZZZZZZ	1		
00:07	MA52141-CCV15	1		
00:12	MA52141-CCB16	1		
00:17	ZZZZZZ	1		
00:22	MP31941-S1	10		
00:27	MP31941-S2	10		rerun for AG
00:32	JD41763-4	10		(sample used for QC only; not part of login JD41762)
00:37	MP31941-SD1	50		
00:42	ZZZZZZ	2		
00:47	ZZZZZZ	150		
00:52	ZZZZZZ	5		
00:57	ZZZZZZ	5		
01:02	MA52141-CCV16	1		
01:07	MA52141-CCB17	1		
01:12	ZZZZZZ	5		
01:17	ZZZZZZ	2		
01:22	ZZZZZZ	10		
01:27	ZZZZZZ	5		
01:32	ZZZZZZ	5		
01:37	ZZZZZZ	5		
01:42	MA52141-CCV17	1		
01:46	MA52141-CCB18	1		
01:51	ZZZZZZ	1		
01:56	ZZZZZZ	1		
02:02	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
02:07	ZZZZZZ	1		
02:12	ZZZZZZ	1		
02:17	ZZZZZZ	1		
02:22	MA52141-CCV18	1		
02:27	MA52141-CCB19	1		
02:32	MP31992-MB1	1		
02:37	MP31992-B1	1		
02:42	MP31992-S1	1		
02:46	MP31992-S2	1		
02:51	JD42036-1	1		(sample used for QC only; not part of login JD41762)
02:56	MP31992-SD1	5		
03:01	ZZZZZZ	1		
03:06	ZZZZZZ	1		
03:12	ZZZZZZ	1		
03:17	MA52141-CCV19	1		
03:22	MA52141-CCB20	1		
03:27	ZZZZZZ	1		
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:53	ZZZZZZ	1		
03:58	ZZZZZZ	1		
04:03	ZZZZZZ	1		
04:08	ZZZZZZ	1		
04:13	MA52141-CCV20	1		
04:18	MA52141-CCB21	1		
04:23	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:33	ZZZZZZ	1		
04:38	ZZZZZZ	1		
04:43	ZZZZZZ	1		
04:48	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:53	ZZZZZZ	1		
04:58	MP31989-MB1	1		
05:03	MP31989-B1	1		
---------->	Last reportable sample/prep for job JD41762			
05:08	ZZZZZZ	1		
05:13	MA52141-CCV21	1		
05:18	MA52141-CCB22	1		
---------->	Last reportable CCB for job JD41762			
05:23	ZZZZZZ	1		
05:28	ZZZZZZ	1		
05:33	ZZZZZZ	1		
05:38	ZZZZZZ	1		
05:43	ZZZZZZ	1		
05:48	ZZZZZZ	1		
05:53	ZZZZZZ	1		
05:58	ZZZZZZ	1		
06:03	ZZZZZZ	1		
06:08	MA52141-CCV22	1		
06:13	MA52141-CCB23	1		
06:18	ZZZZZZ	1		
06:23	ZZZZZZ	1		
06:28	ZZZZZZ	1		
06:33	ZZZZZZ	1		
06:38	ZZZZZZ	1		
06:43	ZZZZZZ	1		
06:48	ZZZZZZ	1		
06:53	MA52141-CCV23	1		
06:58	MA52141-CCB24	1		
07:03	ZZZZZZ	2		
07:08	ZZZZZZ	2		
07:13	MP31929-MB2	1		rerun for Ag
07:18	MP31929-B2	1		
07:23	MP31929-S3	1		FE high. Needs post spike
07:28	MP31929-S4	1		FE high
07:33	JD41894-17	1		(sample used for QC only; not part of login JD41762)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:38	MP31929-SD2	5		FE high
07:43	MA52141-CCV24	1		
07:48	MA52141-CCB25	1		
07:54	ZZZZZZ	2		
07:59	ZZZZZZ	50		
08:04	ZZZZZZ	10		
08:09	ZZZZZZ	10		
08:14	ZZZZZZ	100		
08:19	ZZZZZZ	10		
08:24	ZZZZZZ	100		
08:29	ZZZZZZ	5		
08:34	ZZZZZZ	5		
08:40	MA52141-CCV25	1		
08:45	MA52141-CCB26	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:11	MA52141-ICV1	1	X	
09:19	MA52141-ICB1	1	X	
09:30	MA52141-ICCV1	1	X	
09:46	MA52141-CCB1	1	X	
09:50	MA52141-CRI1	1	X	
09:55	MA52141-CRID1	1	X	
10:01	MA52141-ICSA1	1	X	
10:06	MA52141-ICSAB1	1	X	
10:11	MA52141-HSTD1	1	X	
10:17	MA52141-HSTD2	1	X	
10:22	ZZZZZZ	1		
10:27	ZZZZZZ	1		
10:32	ZZZZZZ	1		
10:37	MA52141-CCV1	1	X	
10:42	MA52141-CCB2	1	X	
10:47	MA52141-CRI2	1	X	
10:52	ZZZZZZ	1		
10:57	MP31964-B1	1		
11:02	MP31964-MB1	1		
11:07	MP31964-S1	1		
11:13	MP31964-S2	1		
11:18	JD41963-17	1		(a)
11:23	MP31964-SD1	5		
11:28	ZZZZZZ	1		
11:33	MA52141-CCV2	1	X	
11:38	MA52141-CCB3	1	X	
11:43	ZZZZZZ	1		
11:49	ZZZZZZ	1		
11:54	ZZZZZZ	1		
11:59	ZZZZZZ	1		
12:04	ZZZZZZ	1		
12:10	ZZZZZZ	1		
12:15	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	1		
12:33	MA52141-CCV3	1	X	
12:38	MA52141-CCB4	1	X	
12:43	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:53	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:19	ZZZZZZ	1		
13:24	ZZZZZZ	1		
13:31	MA52141-CCV4	1	X	
13:36	MA52141-CCB5	1	X	
13:41	MP31966A-MB1	1		
13:46	MP31966A-B1	1		
13:51	MP31966A-S1	1		
13:55	MP31966A-S2	1		
14:00	JD41895-3	1		(a)
14:05	MP31966A-SD1	5		
14:10	ZZZZZZ	1		
14:15	MP31965-B1	1	X	
14:19	MP31965-MB1	1		
14:24	MA52141-CCV5	1	X	
14:29	MA52141-CCB6	1	X	
14:34	MP31965-S1	1	X	
14:39	MP31965-S2	1	X	
14:44	JD41989-2	1		(a)
14:50	MP31965-SD1	5	X	
14:55	ZZZZZZ	1		
15:00	ZZZZZZ	1		
15:04	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
15:09	ZZZZZZ	1		
15:15	ZZZZZZ	1		
15:20	MA52141-CCV6	1	X	
15:25	MA52141-CCB7	1	X	
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	1		
15:59	ZZZZZZ	1		
16:04	ZZZZZZ	1		
16:09	ZZZZZZ	1		
16:15	ZZZZZZ	1		
16:20	ZZZZZZ	1		
16:27	MA52141-CCV7	1	X	
16:32	MA52141-CCB8	1	X	
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:48	ZZZZZZ	1		
16:53	ZZZZZZ	1		
16:58	MP31964-S1	2		
17:03	MP31964-S2	2		
17:07	JD41963-17	2		(a)
17:13	MP31964-SD1	10		
17:17	ZZZZZZ	5		
17:22	ZZZZZZ	5		
17:30	MA52141-CCV8	1	X	
17:34	MA52141-CCB9	1	X	
17:39	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:49	ZZZZZZ	5		
17:54	ZZZZZZ	5		
17:59	ZZZZZZ	5		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
18:04	ZZZZZZ	2		
18:09	ZZZZZZ	10		
18:14	ZZZZZZ	100		
18:19	ZZZZZZ	5		
18:24	ZZZZZZ	5		
18:29	MA52141-CCV9	1	X	
18:34	MA52141-CCB10	1	X	
18:39	MP31965-S1	10		
18:44	MP31965-S2	10		
18:49	JD41989-2	10		(a)
18:54	MP31965-SD1	50		
18:59	ZZZZZZ	2		
19:04	ZZZZZZ	5		
19:09	ZZZZZZ	50		
19:14	ZZZZZZ	10		
19:19	MP31972-MB1	1	X	
19:24	MP31972-B1	1	X	
19:29	MA52141-CCV10	1	X	
19:34	MA52141-CCB11	1	X	
19:39	MP31972-S1	1	X	
19:44	MP31972-S2	1	X	
19:49	JD41953-2	1	X	(a)
19:54	MP31972-SD1	5	X	
19:59	MP31972-PS1	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:19	ZZZZZZ	1		
20:24	MA52141-CCV11	1	X	
20:29	MA52141-CCB12	1	X	
20:34	ZZZZZZ	1		
20:39	ZZZZZZ	1		
20:44	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
20:49	ZZZZZZ	1		
20:54	ZZZZZZ	1		
20:59	ZZZZZZ	1		
21:04	ZZZZZZ	1		
21:09	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:24	MA52141-CCV12	1	X	
21:29	MA52141-CCB13	1	X	
21:34	MP31965-MB1	1	X	
21:39	MP31995-MB1	1		
21:44	MP31995-B1	1		
21:49	ZZZZZZ	1		
21:54	ZZZZZZ	1		
21:59	ZZZZZZ	1		
22:04	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:15	ZZZZZZ	1		
22:20	MA52141-CCV13	1	X	
22:24	MA52141-CCB14	1	X	
22:30	MP31996-MB1	1		
22:35	MP31996-LB1	1		
22:40	MP31996-B1	1		
22:44	MP31996-LS1	1		
22:49	MP31996-S1	1		
22:54	MP31996-S2	1		
22:59	JD39100-3U	1		(a)
23:03	MP31996-SD1	5		
23:08	ZZZZZZ	1		
23:13	MA52141-CCV14	1	X	
23:18	MA52141-CCB15	1	X	
23:23	MP31997-MB1	1		
23:28	MP31997-LB1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
23:33	MP31997-B1	1		
23:38	MP31997-LS1	1		
23:43	MP31997-S1	1		
23:47	MP31997-S2	1		
23:52	JD40983-3T	1		(a)
23:57	MP31997-SD1	5		
00:02	ZZZZZZ	1		
00:07	MA52141-CCV15	1	X	
00:12	MA52141-CCB16	1	X	
00:17	ZZZZZZ	1		
00:22	MP31941-S1	10		
00:27	MP31941-S2	10		
00:32	JD41763-4	10		(a)
00:37	MP31941-SD1	50		
00:42	ZZZZZZ	2		
00:47	ZZZZZZ	150		
00:52	ZZZZZZ	5		
00:57	ZZZZZZ	5		
01:02	MA52141-CCV16	1	X	
01:07	MA52141-CCB17	1	X	
01:12	ZZZZZZ	5		
01:17	ZZZZZZ	2		
01:22	ZZZZZZ	10		
01:27	ZZZZZZ	5		
01:32	ZZZZZZ	5		
01:37	ZZZZZZ	5		
01:42	MA52141-CCV17	1	X	
01:46	MA52141-CCB18	1	X	
01:51	ZZZZZZ	1		
01:56	ZZZZZZ	1		
02:02	ZZZZZZ	1		
02:07	ZZZZZZ	1		
02:12	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
02:17	ZZZZZZ	1		
02:22	MA52141-CCV18	1	X	
02:27	MA52141-CCB19	1	X	
02:32	MP31992-MB1	1		
02:37	MP31992-B1	1		
02:42	MP31992-S1	1		
02:46	MP31992-S2	1		
02:51	JD42036-1	1		(a)
02:56	MP31992-SD1	5		
03:01	ZZZZZZ	1		
03:06	ZZZZZZ	1		
03:12	ZZZZZZ	1		
03:17	MA52141-CCV19	1	X	
03:22	MA52141-CCB20	1	X	
03:27	ZZZZZZ	1		
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:53	ZZZZZZ	1		
03:58	ZZZZZZ	1		
04:03	ZZZZZZ	1		
04:08	ZZZZZZ	1		
04:13	MA52141-CCV20	1	X	
04:18	MA52141-CCB21	1	X	
04:23	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:33	ZZZZZZ	1		
04:38	ZZZZZZ	1		
04:43	ZZZZZZ	1		
04:48	ZZZZZZ	1		
04:53	ZZZZZZ	1		
04:58	MP31989-MB1	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
05:03	MP31989-B1	1	X	
05:08	ZZZZZZ	1		
05:13	MA52141-CCV21	1	X	
05:18	MA52141-CCB22	1	X	
05:23	ZZZZZZ	1		
05:28	ZZZZZZ	1		
05:33	ZZZZZZ	1		
05:38	ZZZZZZ	1		
05:43	ZZZZZZ	1		
05:48	ZZZZZZ	1		
05:53	ZZZZZZ	1		
05:58	ZZZZZZ	1		
06:03	ZZZZZZ	1		
06:08	MA52141-CCV22	1	X	
06:13	MA52141-CCB23	1	X	
06:18	ZZZZZZ	1		
06:23	ZZZZZZ	1		
06:28	ZZZZZZ	1		
06:33	ZZZZZZ	1		
06:38	ZZZZZZ	1		
06:43	ZZZZZZ	1		
06:48	ZZZZZZ	1		
06:53	MA52141-CCV23	1	X	
06:58	MA52141-CCB24	1	X	
07:03	ZZZZZZ	2		
07:08	ZZZZZZ	2		
07:13	MP31929-MB2	1	X	
07:18	MP31929-B2	1	X	
07:23	MP31929-S3	1		
07:28	MP31929-S4	1		
07:33	JD41894-17	1		(a)
07:38	MP31929-SD2	5		
07:43	MA52141-CCV24	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As
07:48	MA52141-CCB25	1	X
07:54	ZZZZZZ	2	
07:59	ZZZZZZ	50	
08:04	ZZZZZZ	10	
08:09	ZZZZZZ	10	
08:14	ZZZZZZ	100	
08:19	ZZZZZZ	10	
08:24	ZZZZZZ	100	
08:29	ZZZZZZ	5	
08:34	ZZZZZZ	5	
08:40	MA52141-CCV25	1	X
08:45	MA52141-CCB26	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:01	MA52141-STD1	4444 R	234460 R	27859 R	9009 R
09:06	MA52141-STD2	4249	222540	27590	8125
09:11	MA52141-ICV1	4402	230100	27865	8443
09:19	MA52141-ICB1	4492	238020	28376	9049
09:30	MA52141-ICCV1	4388	231640	28529	8389
09:46	MA52141-CCB1	4490	238630	28505	9002
09:50	MA52141-CRI1	4455	234800	28289	8851
09:55	MA52141-CRID1	4479	233830	28032	8968
10:01	MA52141-ICSA1	4094	211920	27646	7558
10:06	MA52141-ICSAB1	4102	210780	27739	7595
10:11	MA52141-HSTD1	4406	233490	28676	8927
10:17	MA52141-HSTD2	4152	215120	27790	7619
10:22	ZZZZZZ	4483	232890	28819	9154
10:27	ZZZZZZ	4446	238490	29141	9099
10:32	ZZZZZZ	4564	238090	29052	9175
10:37	MA52141-CCV1	4368	229760	28510	8329
10:42	MA52141-CCB2	4486	238310	28800	8974
10:47	MA52141-CRI2	4453	234830	28673	8827
10:52	ZZZZZZ	4484	237000	28847	9078
10:57	MP31964-B1	4423	234480	29132	8522
11:02	MP31964-MB1	4487	238890	29051	9001
11:07	MP31964-S1	4220	222510	28463	7863
11:13	MP31964-S2	4207	224080	28626	7838
11:18	JD41963-17	4195	223510	28411	7908
11:23	MP31964-SD1	4379	231040	28455	8529
11:28	ZZZZZZ	4265	224840	28496	7934
11:33	MA52141-CCV2	4370	230810	28597	8340
11:38	MA52141-CCB3	4476	239950	28916	8951
11:43	ZZZZZZ	4023	210620	27781	7418
11:49	ZZZZZZ	4189	222550	28285	7895
11:54	ZZZZZZ	4070	216060	27931	7558
11:59	ZZZZZZ	4337	230390	28869	8122
12:04	ZZZZZZ	4395	234200	29150	8522

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:10	ZZZZZZ	4206	218720	28398	7830
12:15	ZZZZZZ	4243	224210	28480	7942
12:20	ZZZZZZ	4231	221090	28371	7722
12:25	ZZZZZZ	4251	225060	28475	7957
12:33	MA52141-CCV3	4346	230210	28630	8278
12:38	MA52141-CCB4	4409	235070	28649	8830
12:43	ZZZZZZ	4274	229680	28370	8219
12:48	ZZZZZZ	4362	233950	28813	8545
12:53	ZZZZZZ	4449	238410	28651	8952
12:58	ZZZZZZ	4242	227820	28269	8100
13:03	ZZZZZZ	4339	232260	28676	8441
13:08	ZZZZZZ	3965	208920	27244	7504
13:13	ZZZZZZ	4124	213830	26929	7673
13:19	ZZZZZZ	4061	219200	27166	7587
13:24	ZZZZZZ	4370	234910	27779	8770
13:31	MA52141-CCV4	4230	222560	26967	8112
13:36	MA52141-CCB5	4345	231800	27204	8716
13:41	MP31966A-MB1	4348	232570	27098	8729
13:46	MP31966A-B1	4254	226290	26887	8266
13:51	MP31966A-S1	4227	224750	27007	8185
13:55	MP31966A-S2	4228	223680	27140	8199
14:00	JD41895-3	4305	230880	27147	8552
14:05	MP31966A-SD1	4305	230200	27149	8652
14:10	ZZZZZZ	4261	228670	26891	8480
14:15	MP31965-B1	4194	223820	26748	8172
14:19	MP31965-MB1	4238	229520	26593	8554
14:24	MA52141-CCV5	4181	220900	26706	8044
14:29	MA52141-CCB6	4269	228330	26676	8615
14:34	MP31965-S1	3693	194880	25401	6757
14:39	MP31965-S2	3720	195330	25827	6807
14:44	JD41989-2	3687	195870	26064	6772
14:50	MP31965-SD1	4062	214740	26851	7711
14:55	ZZZZZZ	4273	229500	28050	8187

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:00	ZZZZZZ	4257	229520	27975	8182
15:04	ZZZZZZ	4279	228800	27921	8226
15:09	ZZZZZZ	3503	182510	25215	6357
15:15	ZZZZZZ	3865	203690	27193	7121
15:20	MA52141-CCV6	4245	227980	28162	8227
15:25	MA52141-CCB7	4376	237830	28546	8899
15:30	ZZZZZZ	4068	218630	27491	7892
15:35	ZZZZZZ	4231	227350	28213	8125
15:40	ZZZZZZ	3938	210940	27364	7446
15:45	ZZZZZZ	4345	238260	28279	8853
15:50	ZZZZZZ	3950	211080	27412	7382
15:59	ZZZZZZ	4180	226610	28405	8029
16:04	ZZZZZZ	4229	229450	27922	8391
16:09	ZZZZZZ	3422	171950	24255	6156 !a
16:15	ZZZZZZ	3874	203310	27311	7076
16:20	ZZZZZZ	3207	179920	25717	6274 !a
16:27	MA52141-CCV7	4257	229350	28243	8227
16:32	MA52141-CCB8	4340	235760	28235	8823
16:37	ZZZZZZ	3202	179220	24940	6266 !a
16:42	ZZZZZZ	4020	216150	27392	7506
16:48	ZZZZZZ	4377	237920	28454	8924
16:53	ZZZZZZ	4025	215000	27719	7568
16:58	MP31964-S1	4202	227820	28490	8051
17:03	MP31964-S2	4174	226990	28377	8022
17:07	JD41963-17	4181	226180	27930	8149
17:13	MP31964-SD1	4275	234080	28745	8590
17:17	ZZZZZZ	4264	230700	28153	8436
17:22	ZZZZZZ	4171	227050	28441	8106
17:30	MA52141-CCV8	4230	228870	28316	8204
17:34	MA52141-CCB9	4331	236380	28321	8838
17:39	ZZZZZZ	4191	225810	28123	8192
17:44	ZZZZZZ	4249	229520	28374	8325
17:49	ZZZZZZ	4267	231410	28245	8443

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:54	ZZZZZZ	4242	228200	28509	8264
17:59	ZZZZZZ	4295	230950	28562	8514
18:04	ZZZZZZ	4269	232530	28774	8500
18:09	ZZZZZZ	4253	232210	28389	8501
18:14	ZZZZZZ	4339	236860	28533	8849
18:19	ZZZZZZ	4222	229350	28349	8333
18:24	ZZZZZZ	4222	227260	28052	8325
18:29	MA52141-CCV9	4256	230030	28427	8282
18:34	MA52141-CCB10	4341	237500	28109	8902
18:39	MP31965-S1	4197	226050	28068	8123
18:44	MP31965-S2	4216	228580	28437	8168
18:49	JD41989-2	4223	227920	28544	8193
18:54	MP31965-SD1	4363	237090	28852	8751
18:59	ZZZZZZ	4399	239070	29565	8635
19:04	ZZZZZZ	4029	211740	27979	7546
19:09	ZZZZZZ	4279	232330	28627	8457
19:14	ZZZZZZ	4297	232230	28769	8399
19:19	MP31972-MB1	4456	243130	29571	9107
19:24	MP31972-B1	4326	236490	29356	8541
19:29	MA52141-CCV10	4262	232050	28579	8299
19:34	MA52141-CCB11	4360	237850	28618	8930
19:39	MP31972-S1	4459	236250	30324	8355
19:44	MP31972-S2	4423	235370	30139	8295
19:49	JD41953-2	4513	242840	30011	8590
19:54	MP31972-SD1	4393	238480	28934	8759
19:59	MP31972-PS1	4424	237060	30013	8442
20:03	ZZZZZZ	4611	245470	31118	8521
20:08	ZZZZZZ	4418	239590	29111	8796
20:13	ZZZZZZ	4394	241020	30005	8593
20:19	ZZZZZZ	4427	236000	29893	8506
20:24	MA52141-CCV11	4201	228540	28251	8210
20:29	MA52141-CCB12	4318	235910	28212	8859
20:34	ZZZZZZ	4487	239690	30038	8442

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:39	ZZZZZZ	4830	256700	32651	8599
20:44	ZZZZZZ	4520	241990	30699	8765
20:49	ZZZZZZ	4776	255170	32394	8917
20:54	ZZZZZZ	4210	225880	28470	7919
20:59	ZZZZZZ	4468	237440	29666	8598
21:04	ZZZZZZ	4488	237850	29683	8698
21:09	ZZZZZZ	4470	238520	30459	8317
21:14	ZZZZZZ	4302	231230	28880	8466
21:19	ZZZZZZ	4259	230210	28806	8388
21:24	MA52141-CCV12	4196	227800	27992	8218
21:29	MA52141-CCB13	4290	235940	28279	8845
21:34	MP31965-MB1	4294	236050	28049	8853
21:39	MP31995-MB1	4311	238440	28567	8906
21:44	MP31995-B1	4261	232010	28550	8483
21:49	ZZZZZZ	3946	203360	26499	7328
21:54	ZZZZZZ	3978	211340	28767	7385
21:59	ZZZZZZ	3903	207060	27030	7159
22:04	ZZZZZZ	3864	201610	26917	7244
22:09	ZZZZZZ	3973	206380	27153	7291
22:15	ZZZZZZ	3910	207890	27027	7232
22:20	MA52141-CCV13	4223	231760	28555	8332
22:24	MA52141-CCB14	4308	235980	27892	8937
22:30	MP31996-MB1	4310	235080	27823	8954
22:35	MP31996-LB1	4292	235420	27862	8937
22:40	MP31996-B1	4243	229210	27782	8478
22:44	MP31996-LS1	4193	229250	28154	8403
22:49	MP31996-S1	4184	226730	27527	8383
22:54	MP31996-S2	4187	228480	27604	8384
22:59	JD39100-3U	4265	233440	27569	8758
23:03	MP31996-SD1	4248	231480	27231	8821
23:08	ZZZZZZ	4167	228070	27238	8528
23:13	MA52141-CCV14	4161	224250	27084	8251
23:18	MA52141-CCB15	4258	233530	27247	8880

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:23	MP31997-MB1	4256	233440	27323	8863
23:28	MP31997-LB1	4267	232680	27790	8888
23:33	MP31997-B1	4214	228440	27552	8437
23:38	MP31997-LS1	4211	228410	27647	8417
23:43	MP31997-S1	4194	225900	27518	8390
23:47	MP31997-S2	4184	227150	27525	8376
23:52	JD40983-3T	4250	232770	27662	8797
23:57	MP31997-SD1	4265	232060	27168	8856
00:02	ZZZZZZ	4279	233690	27635	8828
00:07	MA52141-CCV15	4153	224210	27017	8224
00:12	MA52141-CCB16	4252	232550	27520	8849
00:17	ZZZZZZ	4248	231690	27084	8831
00:22	MP31941-S1	4178	223830	26782	8337
00:27	MP31941-S2	4170	226040	27182	8336
00:32	JD41763-4	4164	225530	27027	8364
00:37	MP31941-SD1	4202	228210	27003	8666
00:42	ZZZZZZ	4114	223100	26616	8316
00:47	ZZZZZZ	No results reported for the elements associated with this internal standard.			
00:52	ZZZZZZ	4122	224620	26743	8361
00:57	ZZZZZZ	4126	223290	26233	8446
01:02	MA52141-CCV16	4073	218510	26203	8137
01:07	MA52141-CCB17	4181	227440	26392	8760
01:12	ZZZZZZ	4054	220070	26194	8213
01:17	ZZZZZZ	3987	218600	26097	8132
01:22	ZZZZZZ	4017	218120	25667	8170
01:27	ZZZZZZ	4043	216310	25799	8032
01:32	ZZZZZZ	4084	220060	25797	8308
01:37	ZZZZZZ	4093	223130	26127	8409
01:42	MA52141-CCV17	4032	218720	26082	8069
01:46	MA52141-CCB18	4126	227460	26199	8681
01:51	ZZZZZZ	4076	225620	25961	8577
01:56	ZZZZZZ	4140	224880	25798	8752
02:02	ZZZZZZ	4180	228520	26433	8928

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
02:07	ZZZZZZ	3882	213080	26111	7827
02:12	ZZZZZZ	4213	232890	27259	8865
02:17	ZZZZZZ	4178	229800	26946	8806
02:22	MA52141-CCV18	4108	223210	27183	8242
02:27	MA52141-CCB19	4204	232320	27192	8882
02:32	MP31992-MB1	4194	232980	27165	8867
02:37	MP31992-B1	4150	226690	27151	8448
02:42	MP31992-S1	4046	221900	27438	8059
02:46	MP31992-S2	4030	220010	27110	8034
02:51	JD42036-1	4063	221450	27095	8233
02:56	MP31992-SD1	4139	226380	27064	8658
03:01	ZZZZZZ	3868	211670	26512	7635
03:06	ZZZZZZ	3373	176070	25054	6290 !a
03:12	ZZZZZZ	3763	203690	26651	7242
03:17	MA52141-CCV19	4060	221540	27087	8207
03:22	MA52141-CCB20	4143	229050	26584	8802
03:27	ZZZZZZ	3785	205700	26249	7426
03:32	ZZZZZZ	3867	210980	26527	7596
03:37	ZZZZZZ	3544	187390	25482	6739
03:42	ZZZZZZ	4005	219210	26951	8047
03:47	ZZZZZZ	3854	209950	26423	7556
03:53	ZZZZZZ	4199	233230	27409	8936
03:58	ZZZZZZ	4161	232070	27351	8855
04:03	ZZZZZZ	4111	226940	27069	8511
04:08	ZZZZZZ	4020	219780	26856	8123
04:13	MA52141-CCV20	4076	222200	26625	8247
04:18	MA52141-CCB21	4146	228910	26637	8816
04:23	ZZZZZZ	4040	220200	26508	8220
04:28	ZZZZZZ	4094	226040	27178	8393
04:33	ZZZZZZ	4177	232230	27034	8899
04:38	ZZZZZZ	4019	221170	26730	8213
04:43	ZZZZZZ	3767	206870	26066	7487
04:48	ZZZZZZ	4076	226700	26037	8707

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:53	ZZZZZZ	4096	224970	25645	8740
04:58	MP31989-MB1	4124	229190	26471	8786
05:03	MP31989-B1	4046	221870	26469	8328
05:08	ZZZZZZ	3861	206960	26002	7579
05:13	MA52141-CCV21	4008	220220	26701	8155
05:18	MA52141-CCB22	4126	228850	26726	8818
05:23	ZZZZZZ	4016	219020	26835	8053
05:28	ZZZZZZ	4140	229970	26824	8879
05:33	ZZZZZZ	3858	206270	26031	7591
05:38	ZZZZZZ	3990	215890	26161	8055
05:43	ZZZZZZ	3882	211550	26164	7721
05:48	ZZZZZZ	4079	225990	26576	8607
05:53	ZZZZZZ	4050	224580	27064	8406
05:58	ZZZZZZ	4051	223870	27104	8408
06:03	ZZZZZZ	3772	201680	25869	7413
06:08	MA52141-CCV22	4019	219390	26436	8229
06:13	MA52141-CCB23	4140	230950	26871	8908
06:18	ZZZZZZ	4083	225360	27463	8477
06:23	ZZZZZZ	4131	228660	27145	8810
06:28	ZZZZZZ	4119	227830	27196	8727
06:33	ZZZZZZ	3851	204780	26587	7544
06:38	ZZZZZZ	4093	227560	27341	8502
06:43	ZZZZZZ	4181	233170	27516	8900
06:48	ZZZZZZ	4190	234730	28371	8825
06:53	MA52141-CCV23	4082	225750	27786	8344
06:58	MA52141-CCB24	4179	234340	27733	8982
07:03	ZZZZZZ	3978	213750	27014	7945
07:08	ZZZZZZ	3941	215150	27299	7871
07:13	MP31929-MB2	4216	234280	27444	9045
07:18	MP31929-B2	4136	228650	27325	8588
07:23	MP31929-S3	4133	226060	28879	7981
07:28	MP31929-S4	4191	230700	29528	8218
07:33	JD41894-17	4240	231990	28998	8444

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:38	MP31929-SD2	4161	230230	27612	8699
07:43	MA52141-CCV24	4077	224730	27161	8341
07:48	MA52141-CCB25	4169	232200	27007	8994
07:54	ZZZZZZ	3505	188540	26064	6718
07:59	ZZZZZZ	4020	222240	26936	8323
08:04	ZZZZZZ	4004	219340	26687	8216
08:09	ZZZZZZ	3842	206680	25992	7750
08:14	ZZZZZZ	4063	223460	26724	8577
08:19	ZZZZZZ	3868	210020	26416	7808
08:24	ZZZZZZ	4069	226910	27017	8580
08:29	ZZZZZZ	4018	221810	26715	8294
08:34	ZZZZZZ	4030	220450	26543	8370
08:40	MA52141-CCV25	4066	222220	26747	8357
08:45	MA52141-CCB26	4180	230760	26930	9019

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			09:19		09:46		10:42		11:38	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.400	<3.0	0.00	<3.0	-0.100	<3.0	-0.500	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			09:19		09:46		10:42		11:38	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			12:38		13:36		14:29		15:25	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-1.10	<3.0	-0.100	<3.0	-0.300	<3.0	-0.200	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			12:38 CCB4		13:36 CCB5		14:29 CCB6		15:25 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			16:32		17:34		18:34		19:34	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-1.10	<3.0	-1.50	<3.0	1.20	<3.0	0.200	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			16:32 CCB8		17:34 CCB9		18:34 CCB10		19:34 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			20:29		21:29		22:24		23:18	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.200	<3.0	-0.400	<3.0	0.200	<3.0	-0.800	<100
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			20:29		21:29		22:24		23:18	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			00:12 CCB16		01:07 CCB17		01:46 CCB18		02:27 CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-1.00	<100	-0.900	<3.0	-0.700	<3.0	-0.100	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			00:12		01:07		01:46		02:27	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			03:22 CCB20		04:18 CCB21		05:18 CCB22	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	27	anr					
Antimony	6.0	2.2	anr					
Arsenic	3.0	1.3	0.100	<3.0	-1.00	<3.0	-0.400	<3.0
Barium	200	1	anr					
Beryllium	1.0	.2	anr					
Bismuth	20	2.1						
Boron	100	1	anr					
Cadmium	3.0	.2	anr					
Calcium	5000	7.7	anr					
Cerium	100							
Chromium	10	.5	anr					
Cobalt	50	.4	anr					
Copper	10	6.8	anr					
Iron	100	15	anr					
Lead	3.0	1.6	anr					
Lithium	50	3.7						
Magnesium	5000	54	anr					
Manganese	15	.1	anr					
Molybdenum	20	.5	anr					
Nickel	10	.3	anr					
Phosphorus	50	1.8						
Potassium	10000	77	anr					
Selenium	10	2	anr					
Silicon	200	1.3						
Silver	10	.9	anr					
Sodium	10000	23	anr					
Strontium	10	.4						
Sulfur	50	4.1	anr					
Thallium	10	1.6	anr					
Tin	10	.9	anr					
Titanium	10	.9	anr					
Tungsten	50	2						
Vanadium	50	.8	anr					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			03:22		04:18		05:18	
Sample ID:			CCB20		CCB21		CCB22	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.2	anr					
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52141 Units: ug/l

Time:		09:30	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1930	96.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin	anr		
Titanium	anr		
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52141 Units: ug/l

Time:		09:30	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		09:11			10:37			11:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1960	98.0	2000	1940	97.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		09:11			10:37			11:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		12:33			13:31			14:24	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2000	100.0	2000	2000	100.0	2000	2010	100.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		12:33			13:31			14:24	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		15:20			16:27			17:30	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	2020	101.0	2000	2020	101.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		15:20			16:27			17:30	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		18:29			19:29			20:24	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2030	101.5	2000	2040	102.0	2000	2050	102.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		18:29			19:29			20:24	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		21:24			22:20			23:13	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2030	101.5	2000	2050	102.5	2000	2060	103.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		21:24			22:20			23:13	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		00:07			01:02			01:42	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2060	103.0	2000	2060	103.0	2000	2060	103.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		00:07			01:02			01:42	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		02:22			03:17			04:13	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2070	103.5	2000	2070	103.5	2000	2080	104.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		02:22			03:17			04:13	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		05:13	
Sample ID:	CCV	CCV21	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	2080	104.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin	anr		
Titanium	anr		
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		05:13	
Sample ID:	CCV	CCV21	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52141 Units: ug/l

Time:		10:11			10:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7420	92.8			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur	anr					
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52141 Units: ug/l

Time:		10:11			10:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52141 Units: ug/l

Time:				09:50		09:55		10:47	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	7.30	91.3	3.10	103.3	7.70	96.3
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50			anr					
Thallium	10		2.0	anr					
Tin	10			anr					
Titanium	10			anr					
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52141 Units: ug/l

Time:				09:50		09:55		10:47	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52141 Units: ug/l

Time:			10:01		10:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	484000	96.8	486000	97.2
Antimony		1000	0.800		1030	103.0
Arsenic		1000	2.50		1030	103.0
Barium		500	-44.6		484	96.8
Beryllium		500	0.200		508	101.6
Bismuth		500	4.70		534	106.8
Boron		500	-3.00		492	98.4
Cadmium		1000	-2.40		1020	102.0
Calcium	400000	400000	370000	92.5	378000	94.5
Cerium			39.9		526*	
Chromium		500	1.60		486	97.2
Cobalt		500	-0.300		479	95.8
Copper		500	-0.900		505	101.0
Iron	200000	200000	187000	93.5	190000	95.0
Lead		1000	2.00		984	98.4
Lithium		500	-3.40		544	108.8
Magnesium	500000	500000	484000	96.8	494000	98.8
Manganese		500	-9.10		514	102.8
Molybdenum		500	-3.10		470	94.0
Nickel		1000	0.500		993	99.3
Phosphorus		500	14.3		499	99.8
Potassium			-123		-122	
Selenium		1000	8.00		975	97.5
Silicon		500	-22.8		502	100.4
Silver		1000	4.80		1130	113.0
Sodium			-125		-141	
Strontium		500	0.800		527	105.4
Sulfur		500	-32.4		469	93.8
Thallium		1000	4.00		994	99.4
Tin		500	-3.90		459	91.8
Titanium		500	-1.30		485	97.0
Tungsten		500	2.20		476	95.2
Vanadium		500	-4.20		488	97.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52141 Units: ug/l

Time:			10:01		10:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	2.30		956	95.6
Zirconium		500	2.20		530	106.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:08	MA52146-STD1	1		STDA
06:13	MA52146-STD2	1		STDB
06:18	ZZZZZZ	1		
06:26	ZZZZZZ	1		
06:31	MA52146-ICV1	1		
06:36	MA52146-ICB1	1		
06:41	MA52146-CCV1	1		
06:46	MA52146-CCB1	1		
06:51	MA52146-CRI1	1		
06:56	MA52146-CRID1	1		
07:01	MA52146-ICSA1	1		
07:07	MA52146-ICSAB1	1		
07:11	MA52146-HSTD1	1		
07:16	MA52146-HSTD2	1		
07:22	ZZZZZZ	1		
07:27	ZZZZZZ	1		
07:32	ZZZZZZ	1		
07:37	ZZZZZZ	1		
07:42	MA52146-CCV2	1		
07:47	MA52146-CCB2	1		
07:52	MP31989-MB1	1		
07:58	MP31989-B1	1		
08:02	MP31989-S1	1		
08:07	MP31989-S2	1		
08:12	JD41762-48F	1		
08:17	MP31989-SD1	5		
08:22	JD41762-51F	1		
08:27	JD41762-56F	1		
08:33	MA52146-CCV3	1		
08:37	MA52146-CCB3	1		
08:43	MP31995-MB1	1		
08:48	MP31995-LB1	1		
08:53	MP31995-B1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:58	MP31995-LS1	1		
09:03	MP31995-S1	1		
09:08	MP31995-S2	1		
09:13	JD41931-1A	1		(sample used for QC only; not part of login JD41762)
09:18	MP31995-SD1	5		
09:23	ZZZZZZ	1		
09:29	JD41762-51F	5		
---------->	Last reportable sample/prep for job JD41762			
09:35	MA52146-CCV4	1		
09:39	MA52146-CCB4	1		
09:45	ZZZZZZ	1		
09:50	MA52146-CRID2	1		
09:55	MP31993-B1	1		
10:00	MP31993-S1	1		
10:05	MP31993-S2	1		
10:09	JD42034-2	1		(sample used for QC only; not part of login JD41762)
10:14	MP31993-SD1	5		
10:19	ZZZZZZ	1		
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	MA52146-CCV5	1		
10:40	MA52146-CCB5	1		
10:45	MP31993-MB1	1		CCV out
10:50	ZZZZZZ	1		
10:55	MA52146-CRI2	1		
11:01	MA52146-ICSA2	1		
11:06	MA52146-ICSAB2	1		
11:10	MP31987-MB1	1		CCV out
12:01	MP31987-B1	1		CCV out
12:08	ZZZZZZ	1		
12:13	MA52146-CCV6	1		
12:20	MA52146-CCB6	1		
---------->	Last reportable CCB for job JD41762			
12:24	ZZZZZZ	2		
12:28	ZZZZZZ	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:33	ZZZZZZ	2		
12:38	ZZZZZZ	1		
12:44	ZZZZZZ	1		
12:48	MA52146-CCV7	1		
12:56	MA52146-CCB7	1		
13:00	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Element: Dilution	As
06:18	ZZZZZZ	1	
06:26	ZZZZZZ	1	
06:31	MA52146-ICV1	1	X
06:36	MA52146-ICB1	1	X
06:41	MA52146-CCV1	1	X
06:46	MA52146-CCB1	1	X
06:51	MA52146-CRI1	1	X
06:56	MA52146-CRID1	1	X
07:01	MA52146-ICSA1	1	X
07:07	MA52146-ICSAB1	1	X
07:11	MA52146-HSTD1	1	X
07:16	MA52146-HSTD2	1	X
07:22	ZZZZZZ	1	
07:27	ZZZZZZ	1	
07:32	ZZZZZZ	1	
07:37	ZZZZZZ	1	
07:42	MA52146-CCV2	1	X
07:47	MA52146-CCB2	1	X
07:52	MP31989-MB1	1	X
07:58	MP31989-B1	1	X
08:02	MP31989-S1	1	X
08:07	MP31989-S2	1	X
08:12	JD41762-48F	1	X
08:17	MP31989-SD1	5	X
08:22	JD41762-51F	1	X
08:27	JD41762-56F	1	X
08:33	MA52146-CCV3	1	X
08:37	MA52146-CCB3	1	X
08:43	MP31995-MB1	1	X
08:48	MP31995-LB1	1	
08:53	MP31995-B1	1	X
08:58	MP31995-LS1	1	X
09:03	MP31995-S1	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:08	MP31995-S2	1	X	
09:13	JD41931-1A	1	X	(a)
09:18	MP31995-SD1	5	X	
09:23	ZZZZZZ	1		
09:29	JD41762-51F	5		
09:35	MA52146-CCV4	1	X	
09:39	MA52146-CCB4	1	X	
09:45	ZZZZZZ	1		
09:50	MA52146-CRID2	1	X	
09:55	MP31993-B1	1		
10:00	MP31993-S1	1		
10:05	MP31993-S2	1		
10:09	JD42034-2	1		(a)
10:14	MP31993-SD1	5		
10:19	ZZZZZZ	1		
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	MA52146-CCV5	1	X	
10:40	MA52146-CCB5	1	X	
10:45	MP31993-MB1	1		
10:50	ZZZZZZ	1		
10:55	MA52146-CRI2	1	X	
11:01	MA52146-ICSA2	1	X	
11:06	MA52146-ICSAB2	1	X	
11:10	MP31987-MB1	1	X	
12:01	MP31987-B1	1	X	
12:08	ZZZZZZ	1		
12:13	MA52146-CCV6	1	X	
12:20	MA52146-CCB6	1	X	
12:24	ZZZZZZ	2		
12:28	ZZZZZZ	2		
12:33	ZZZZZZ	2		
12:38	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Element: Dilution	As
12:44	ZZZZZZ	1	
12:48	MA52146-CCV7	1	X
12:56	MA52146-CCB7	1	X
13:00	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:08	MA52146-STD1	2295 R	66145 R	6486 R	6943 R
06:13	MA52146-STD2	2186	61161	6392	6039
06:18	ZZZZZZ	2261	64361	6473	6740
06:26	ZZZZZZ	2279	65610	6491	6935
06:31	MA52146-ICV1	2213	62187	6390	6254
06:36	MA52146-ICB1	2236	65330	6443	6829
06:41	MA52146-CCV1	2201	62162	6392	6237
06:46	MA52146-CCB1	2244	66051	6490	6831
06:51	MA52146-CRI1	2244	64900	6445	6743
06:56	MA52146-CRID1	2249	65333	6387	6865
07:01	MA52146-ICSA1	2045	56743	6250	5572
07:07	MA52146-ICSAB1	2053	56693	6209	5578
07:11	MA52146-HSTD1	2211	63317	6342	6636
07:16	MA52146-HSTD2	2051	57630	6185	5569
07:22	ZZZZZZ	2219	63982	6335	6842
07:27	ZZZZZZ	2203	64921	6367	6914
07:32	ZZZZZZ	2255	64901	6397	6878
07:37	ZZZZZZ	2267	65523	6362	7023
07:42	MA52146-CCV2	2189	61573	6338	6227
07:47	MA52146-CCB2	2268	65906	6450	6939
07:52	MP31989-MB1	2269	66687	6580	6978
07:58	MP31989-B1	2220	63788	6547	6403
08:02	MP31989-S1	2186	62396	6535	6194
08:07	MP31989-S2	2182	62526	6548	6196
08:12	JD41762-48F	2198	64005	6554	6409
08:17	MP31989-SD1	2253	64830	6472	6771
08:22	JD41762-51F	2229	63333	6728	6194
08:27	JD41762-56F	2264	66365	6557	6943
08:33	MA52146-CCV3	2218	62444	6434	6291
08:37	MA52146-CCB3	2278	65746	6474	6962
08:43	MP31995-MB1	2275	66495	6666	6956
08:48	MP31995-LB1	2009	56972	6373	5419
08:53	MP31995-B1	2223	62865	6518	6365

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:58	MP31995-LS1	2019	56839	6303	5274
09:03	MP31995-S1	2001	56227	6293	5235
09:08	MP31995-S2	2011	55614	6293	5269
09:13	JD41931-1A	1983	56332	6300	5306
09:18	MP31995-SD1	2157	59646	6342	5970
09:23	ZZZZZZ	2023	56922	6347	5324
09:29	JD41762-51F	2258	64136	6523	6569
09:35	MA52146-CCV4	2212	61936	6416	6227
09:39	MA52146-CCB4	2249	64641	6412	6834
09:45	ZZZZZZ	2255	65407	6555	6865
09:50	MA52146-CRID2	2275	65534	6414	6890
09:55	MP31993-B1	2203	62385	6490	6290
10:00	MP31993-S1	2173	61691	6515	6141
10:05	MP31993-S2	2170	61666	6498	6131
10:09	JD42034-2	2191	63396	6510	6468
10:14	MP31993-SD1	2226	64213	6514	6712
10:19	ZZZZZZ	2145	61925	6534	6076
10:25	ZZZZZZ	2136	62012	6601	6096
10:30	ZZZZZZ	2145	62032	6553	6086
10:35	MA52146-CCV5	2175	61005	6436	6081
10:40	MA52146-CCB5	2260	65183	6544	6833
10:45	MP31993-MB1	2227	64222	6449	6725
10:50	ZZZZZZ	2201	63408	6482	6556
10:55	MA52146-CRI2	2208	63421	6415	6578
11:01	MA52146-ICSA2	2003	55150	6291	5382
11:06	MA52146-ICSAB2	2000	55423	6314	5395
11:10	MP31987-MB1	2263	66307	6774	6869
12:01	MP31987-B1	2220	61506	8368	6140
12:08	ZZZZZZ	2180	61560	8559 !a	6631
12:13	MA52146-CCV6	2227	61085	8314	6041
12:20	MA52146-CCB6	2276	63474	8353	6644
12:24	ZZZZZZ	2259	62429	8436 !a	6303
12:28	ZZZZZZ	2238	62692	8487 !a	6362

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:33	ZZZZZZ	2032	55738	8234	5216
12:38	ZZZZZZ	2229	62953	8708 !a	6315
12:44	ZZZZZZ	2256	63962	8646 !	6626
12:48	MA52146-CCV7	2196	60013	8563 !a	5971
12:56	MA52146-CCB7	2248	63328	8561 !a	6602
13:00	ZZZZZZ	2284	64129	8572 !	6694

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			06:36		06:46		07:47		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16								
Antimony	6.0	2.5	anr							
Arsenic	3.0	2	-0.100	<3.0	-1.10	<3.0	0.00	<3.0	-0.200	<3.0
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	1.9								
Cadmium	3.0	.4	anr							
Calcium	5000	5.6	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.5								
Copper	10	1	anr							
Iron	100	11	anr							
Lead	3.0	1.2	anr							
Lithium	50	2.3								
Magnesium	5000	65								
Manganese	15	.2	anr							
Molybdenum	20	.4								
Nickel	10	.3	anr							
Phosphorus	50	4.1								
Potassium	10000	55	anr							
Selenium	10	3.5	anr							
Silicon	200	1.6								
Silver	10	1.1	anr							
Sodium	10000	11	anr							
Strontium	10	.1								
Sulfur	50	4.4	anr							
Thallium	10	2.5	anr							
Tin	10	1								
Titanium	10	.4								
Tungsten	50	2.8								
Vanadium	50	.6								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			06:36		06:46		07:47		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			09:39		10:40		12:20	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	16						
Antimony	6.0	2.5	anr					
Arsenic	3.0	2	0.600	<3.0	0.700	<3.0	0.00	<3.0
Barium	200	.4	anr					
Beryllium	1.0	.1	anr					
Bismuth	20	3.6						
Boron	100	1.9						
Cadmium	3.0	.4	anr					
Calcium	5000	5.6	anr					
Cerium	100							
Chromium	10	.5	anr					
Cobalt	50	.5						
Copper	10	1	anr					
Iron	100	11	anr					
Lead	3.0	1.2	anr					
Lithium	50	2.3						
Magnesium	5000	65						
Manganese	15	.2	anr					
Molybdenum	20	.4						
Nickel	10	.3	anr					
Phosphorus	50	4.1						
Potassium	10000	55	anr					
Selenium	10	3.5	anr					
Silicon	200	1.6						
Silver	10	1.1	anr					
Sodium	10000	11	anr					
Strontium	10	.1						
Sulfur	50	4.4	anr					
Thallium	10	2.5	anr					
Tin	10	1						
Titanium	10	.4						
Tungsten	50	2.8						
Vanadium	50	.6						

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			09:39		10:40		12:20	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.1	anr					
Zirconium	10	.4						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		06:31			06:41			07:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony	anr								
Arsenic	2000	1940	97.0	2000	1930	96.5	2000	1960	98.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		06:31			06:41			07:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		08:33			09:35			10:35	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1960	98.0	2000	1970	98.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		08:33			09:35			10:35	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		12:13	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum			
Antimony	anr		
Arsenic	2000	1910	95.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		12:13	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52146 Units: ug/l

Time:		07:11			07:16	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7620	95.3			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur	anr					
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52146 Units: ug/l

Time:		07:11			07:16	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				06:51		06:56		09:50	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	7.70	96.3	3.40	113.3	3.00	100.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50			anr					
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				06:51		06:56		09:50	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				10:55	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100		
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	7.80	97.5
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0		
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100		
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50			anr	
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				10:55	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52146 Units: ug/l

Time:			07:01		07:07		11:01		11:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	491000	98.2	495000	99.0	506000	101.2	508000	101.6
Antimony		1000	0.400		1010	101.0	-1.30		1020	102.0
Arsenic		1000	-1.70		999	99.9	-0.800		1010	101.0
Barium		500	-45.4		450	90.0	-45.3		464	92.8
Beryllium		500	-0.300		485	97.0	-0.300		489	97.8
Bismuth		500	3.00		506	101.2	3.00		514	102.8
Boron		500	-2.40		479	95.8	-1.70		485	97.0
Cadmium		1000	1.40		1050	105.0	1.50		1060	106.0
Calcium	400000	400000	371000	92.8	379000	94.8	370000	92.5	376000	94.0
Cerium			89.6		581*		83.1		581*	
Chromium		500	-2.50		465	93.0	-2.40		471	94.2
Cobalt		500	-0.800		468	93.6	-1.00		474	94.8
Copper		500	8.20		515	103.0	7.40		535	107.0
Iron	200000	200000	185000	92.5	192000	96.0	187000	93.5	193000	96.5
Lead		1000	0.00		939	93.9	-0.400		948	94.8
Lithium		500	1.20		545	109.0	-0.700		556	111.2
Magnesium	500000	500000	487000	97.4	486000	97.2	484000	96.8	479000	95.8
Manganese		500	0.300		497	99.4	1.00		505	101.0
Molybdenum		500	-3.30		465	93.0	-3.30		472	94.4
Nickel		1000	-1.80		927	92.7	-1.70		929	92.9
Phosphorus		500	15.6		430	86.0	15.0		421	84.2
Potassium			214		231		212		228	
Selenium		1000	4.50		936	93.6	-3.50		944	94.4
Silicon		500	-6.50		537	107.4	-8.30		547	109.4
Silver		1000	3.90		999	99.9	2.90		1020	102.0
Sodium			-38.3		-23.2		10.9		21.6	
Strontium		500	1.00		490	98.0	1.10		505	101.0
Sulfur		500	36.0		497	99.4	36.9		475	95.0
Thallium		1000	-5.10		913	91.3	4.30		838	83.8
Tin		500	-3.30		453	90.6	-1.60		454	90.8
Titanium		500	-0.500		486	97.2	-0.600		479	95.8
Tungsten		500	4.50		488	97.6	6.80		485	97.0
Vanadium		500	-0.500		471	94.2	-0.700		485	97.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52146 Units: ug/l

Time:			07:01		07:07		11:01		11:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	4.50		925	92.5	4.40		920	92.0
Zirconium		500	-2.40		458	91.6	-3.30		467	93.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:11	MA52155-STD1	1		STDA
07:16	MA52155-STD2	1		STDB
07:21	MA52155-ICV1	1		
07:29	MA52155-ICB1	1		
07:35	MA52155-ICCV1	1		
07:44	MA52155-CCB1	1		
07:50	MA52155-CRI1	1		
07:55	MA52155-CRID1	1		
08:01	MA52155-ICSA1	1		
08:06	MA52155-ICSAB1	1		
08:11	MA52155-HSTD1	1		
08:17	MA52155-HSTD2	1		
08:22	ZZZZZZ	1		
08:27	ZZZZZZ	1		
08:32	ZZZZZZ	1		
08:37	MA52155-CCV1	1		
08:42	MA52155-CCB2	1		
08:48	ZZZZZZ	1		
08:53	MP32014-B1	1		ICSA out
08:58	MP32014-S1	1		ICSA out
09:03	MP32014-S2	1		ICSA out
09:08	JD41762-17F	1		ICSA out
09:13	MP32014-SD1	5		ICSA out
09:18	JD41762-81	1		
09:23	JD41762-23F	1		high rsd
09:28	JD41762-25F	1		
09:33	MA52155-CCV2	1		
09:38	MA52155-CCB3	1		
09:44	MP32014-MB1	1		ICSA out
09:49	JD41762-47F	1		
09:54	JD41762-49F	1		
09:59	JD41762-59F	1		
10:04	JD41762-87F	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:09	JD41762-88F	1		
10:14	JD41762-89F	1		high rsd
10:19	JD41762-90F	1		
10:25	MA52155-CCV3	1		
10:30	MA52155-CCB4	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:55	ZZZZZZ	1		
11:00	ZZZZZZ	1		
11:05	JD41762-47F	2		
---------->	Last reportable sample/prep for job JD41762			
11:11	MA52155-CRID2	1		
11:17	MA52155-CCV4	1		
11:22	MA52155-CCB5	1		
11:27	MA52155-ICSA2	1		
11:32	MA52155-ICSAB2	1		
11:37	MP32021-B1	1		
11:42	MP32021-MB1	1		
11:47	MP32021-S1	1		multiple high elements
11:52	MP32021-S2	1		multiple high elements
11:58	JD42137-6	1		(sample used for QC only; not part of login JD41762)
12:03	MP32021-SD1	5		multiple high elements
12:08	MP32021-PS1	1		multiple high elements
12:14	MA52155-CCV5	1		
12:19	MA52155-CCB6	1		
---------->	Last reportable CCB for job JD41762			
12:24	MP32001-B1	1		
12:29	MP32001-MB1	1		
12:34	MP32001-S1	1		
12:39	MP32001-S2	1		
12:44	JD42091-2	1		(sample used for QC only; not part of login JD41762)
12:49	MP32001-SD1	5		
12:55	MP32001-S3	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:00	MP32001-S4	1		
13:05	JD42091-2F	1		(sample used for QC only; not part of login JD41762)
13:10	MP32001-SD2	5		
13:17	MA52155-CCV6	1		
13:22	MA52155-CCB7	1		
13:27	ZZZZZZ	1		
13:32	ZZZZZZ	1		
13:37	ZZZZZZ	1		
13:42	ZZZZZZ	1		
13:48	MP32012-MB1	1		
13:53	MP32012-B1	1		
13:58	MP32012-S1	1		
14:03	MP32012-S2	1		
14:08	JD42073-15A	1		(sample used for QC only; not part of login JD41762)
14:13	MP32012-SD1	5		
14:18	MA52155-CCV7	1		
14:23	MA52155-CCB8	1		
14:28	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:44	ZZZZZZ	1		
14:49	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:19	MA52155-CCV8	1		
15:24	MA52155-CCB9	1		
15:29	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	MP32011-MB1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:50	MP32011-B1	1		
15:55	MP32011-S1	1		
16:00	MP32011-S2	1		
16:05	JD42073-3A	1		(sample used for QC only; not part of login JD41762)
16:10	MP32011-SD1	5		
16:15	MA52155-CCV9	1		
16:20	MA52155-CCB10	1		
16:25	MP32011-S3	1		
16:30	MP32011-S4	1		
16:35	JD42073-3AF	1		(sample used for QC only; not part of login JD41762)
16:40	MP32011-SD2	5		
16:45	ZZZZZZ	1		
16:50	ZZZZZZ	1		
16:55	ZZZZZZ	1		
17:01	ZZZZZZ	1		
17:06	ZZZZZZ	1		
17:11	ZZZZZZ	1		
17:16	MA52155-CCV10	1		
17:21	MA52155-CCB11	1		
17:26	ZZZZZZ	1		
17:31	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:02	ZZZZZZ	1		
18:07	ZZZZZZ	1		
18:12	ZZZZZZ	1		
18:17	MA52155-CCV11	1		
18:21	MA52155-CCB12	1		
18:27	ZZZZZZ	1		
18:32	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:37	MP32057-MB1	1		
18:42	MP32057-B1	1		
18:47	MP32057-S1	1		
18:51	MP32057-S2	1		
18:56	JD42052-1	1		(sample used for QC only; not part of login JD41762)
19:01	MP32057-SD1	5		
19:06	ZZZZZZ	1		
19:11	ZZZZZZ	1		
19:16	MA52155-CCV12	1		
19:21	MA52155-CCB13	1		
19:26	ZZZZZZ	1		
19:32	ZZZZZZ	1		
19:36	ZZZZZZ	1		
19:41	ZZZZZZ	1		
19:46	ZZZZZZ	1		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:02	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:12	ZZZZZZ	1		
20:17	ZZZZZZ	1		
20:22	MA52155-CCV13	1		
20:27	MA52155-CCB14	1		
20:32	ZZZZZZ	1		
20:37	ZZZZZZ	1		
20:42	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:58	ZZZZZZ	1		
21:03	ZZZZZZ	1		
21:08	MA52155-CCV14	1		
21:13	MA52155-CCB15	1		
21:18	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
21:23	ZZZZZZ	1		
21:28	ZZZZZZ	1		
21:33	ZZZZZZ	1		
21:38	ZZZZZZ	1		
21:43	ZZZZZZ	1		
21:48	ZZZZZZ	1		
21:53	ZZZZZZ	1		
21:58	ZZZZZZ	1		
22:04	MA52155-CCV15	1		
22:09	MA52155-CCB16	1		
22:14	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:24	ZZZZZZ	1		
22:29	ZZZZZZ	1		
22:34	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:44	ZZZZZZ	1		
22:49	ZZZZZZ	1		
22:54	ZZZZZZ	1		
22:59	MA52155-CCV16	1		
23:04	MA52155-CCB17	1		
23:09	ZZZZZZ	1		
23:15	ZZZZZZ	1		
23:20	ZZZZZZ	1		
23:25	ZZZZZZ	1		
23:30	ZZZZZZ	1		
23:35	ZZZZZZ	1		
23:40	ZZZZZZ	1		
23:45	ZZZZZZ	1		
23:50	ZZZZZZ	1		
23:55	MA52155-CCV17	1		
00:00	MA52155-CCB18	1		
00:06	MP31924-S1	2		Needs higher dilution for S interference

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:11	MP31924-S2	2		Needs higher dilution for S interference
00:16	JD41689-2	2		(sample used for QC only; not part of login JD41762)
00:21	MP31924-SD1	10		Needs higher dilution for S interference
00:26	ZZZZZZ	2		
00:31	ZZZZZZ	5		
00:36	ZZZZZZ	5		
00:41	ZZZZZZ	2		
00:47	ZZZZZZ	2		
00:52	ZZZZZZ	5		
00:57	MA52155-CCV18	1		
01:02	MA52155-CCB19	1		
01:07	ZZZZZZ	5		
01:12	MP32030-B1	1		
01:17	MP32030-MB1	1		
01:22	MP32030-S1	1		
01:28	MP32030-S2	1		
01:33	JD42135-1A	1		(sample used for QC only; not part of login JD41762)
01:38	MP32030-SD1	5		
01:43	ZZZZZZ	1		
01:48	ZZZZZZ	1		
01:54	ZZZZZZ	1		
01:59	MA52155-CCV19	1		
02:04	MA52155-CCB20	1		
02:09	ZZZZZZ	1		
02:14	ZZZZZZ	1		
02:19	ZZZZZZ	1		
02:24	ZZZZZZ	1		
02:29	ZZZZZZ	1		
02:35	ZZZZZZ	1		
02:40	ZZZZZZ	1		
02:45	ZZZZZZ	1		
02:50	ZZZZZZ	1		
02:56	MA52155-CCV20	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
03:01	MA52155-CCB21	1		
03:06	ZZZZZZ	1		
03:11	ZZZZZZ	1		
03:16	ZZZZZZ	1		
03:22	ZZZZZZ	1		
03:27	ZZZZZZ	1		
03:32	ZZZZZZ	1		
03:37	MP32020-B1	1		
03:42	MP32020-MB1	1		
03:47	MA52155-CCV21	1		
03:52	MA52155-CCB22	1		
03:58	MP32020-S1	1		
04:03	MP32020-S2	1		
04:08	JD42145-1	1		(sample used for QC only; not part of login JD41762)
04:13	MP32020-SD1	5		
04:18	ZZZZZZ	1		
04:23	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:34	ZZZZZZ	1		
04:39	ZZZZZZ	1		
04:44	MA52155-CCV22	1		
04:49	MA52155-CCB23	1		
04:54	ZZZZZZ	1		
04:59	ZZZZZZ	1		
05:05	ZZZZZZ	1		
05:10	ZZZZZZ	1		
05:15	ZZZZZZ	1		
05:20	ZZZZZZ	1		
05:25	ZZZZZZ	1		
05:30	MA52155-CCV23	1		
05:35	MA52155-CCB24	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As
07:21	MA52155-ICV1	1	X
07:29	MA52155-ICB1	1	X
07:35	MA52155-ICCV1	1	X
07:44	MA52155-CCB1	1	X
07:50	MA52155-CRI1	1	X
07:55	MA52155-CRID1	1	X
08:01	MA52155-ICSA1	1	X
08:06	MA52155-ICSAB1	1	X
08:11	MA52155-HSTD1	1	X
08:17	MA52155-HSTD2	1	X
08:22	ZZZZZZ	1	
08:27	ZZZZZZ	1	
08:32	ZZZZZZ	1	
08:37	MA52155-CCV1	1	X
08:42	MA52155-CCB2	1	X
08:48	ZZZZZZ	1	
08:53	MP32014-B1	1	X
08:58	MP32014-S1	1	X
09:03	MP32014-S2	1	X
09:08	JD41762-17F	1	X
09:13	MP32014-SD1	5	X
09:18	JD41762-81	1	X
09:23	JD41762-23F	1	
09:28	JD41762-25F	1	X
09:33	MA52155-CCV2	1	X
09:38	MA52155-CCB3	1	X
09:44	MP32014-MB1	1	X
09:49	JD41762-47F	1	
09:54	JD41762-49F	1	X
09:59	JD41762-59F	1	X
10:04	JD41762-87F	1	X
10:09	JD41762-88F	1	X
10:14	JD41762-89F	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:19	JD41762-90F	1	X	
10:25	MA52155-CCV3	1	X	
10:30	MA52155-CCB4	1	X	
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:55	ZZZZZZ	1		
11:00	ZZZZZZ	1		
11:05	JD41762-47F	2	X	
11:11	MA52155-CRID2	1	X	
11:17	MA52155-CCV4	1	X	
11:22	MA52155-CCB5	1	X	
11:27	MA52155-ICSA2	1	X	
11:32	MA52155-ICSAB2	1	X	
11:37	MP32021-B1	1	X	
11:42	MP32021-MB1	1	X	
11:47	MP32021-S1	1		
11:52	MP32021-S2	1		
11:58	JD42137-6	1		(a)
12:03	MP32021-SD1	5		
12:08	MP32021-PS1	1		
12:14	MA52155-CCV5	1	X	
12:19	MA52155-CCB6	1	X	
12:24	MP32001-B1	1	X	
12:29	MP32001-MB1	1	X	
12:34	MP32001-S1	1	X	
12:39	MP32001-S2	1	X	
12:44	JD42091-2	1	X	(a)
12:49	MP32001-SD1	5	X	
12:55	MP32001-S3	1	X	
13:00	MP32001-S4	1	X	
13:05	JD42091-2F	1		(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:10	MP32001-SD2	5	X	
13:17	MA52155-CCV6	1	X	
13:22	MA52155-CCB7	1	X	
13:27	ZZZZZZ	1		
13:32	ZZZZZZ	1		
13:37	ZZZZZZ	1		
13:42	ZZZZZZ	1		
13:48	MP32012-MB1	1		
13:53	MP32012-B1	1		
13:58	MP32012-S1	1		
14:03	MP32012-S2	1		
14:08	JD42073-15A	1		(a)
14:13	MP32012-SD1	5		
14:18	MA52155-CCV7	1	X	
14:23	MA52155-CCB8	1	X	
14:28	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:44	ZZZZZZ	1		
14:49	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:19	MA52155-CCV8	1	X	
15:24	MA52155-CCB9	1	X	
15:29	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	MP32011-MB1	1		
15:50	MP32011-B1	1		
15:55	MP32011-S1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
16:00	MP32011-S2	1		
16:05	JD42073-3A	1		(a)
16:10	MP32011-SD1	5		
16:15	MA52155-CCV9	1	X	
16:20	MA52155-CCB10	1	X	
16:25	MP32011-S3	1		
16:30	MP32011-S4	1		
16:35	JD42073-3AF	1		(a)
16:40	MP32011-SD2	5		
16:45	ZZZZZZ	1		
16:50	ZZZZZZ	1		
16:55	ZZZZZZ	1		
17:01	ZZZZZZ	1		
17:06	ZZZZZZ	1		
17:11	ZZZZZZ	1		
17:16	MA52155-CCV10	1	X	
17:21	MA52155-CCB11	1	X	
17:26	ZZZZZZ	1		
17:31	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:02	ZZZZZZ	1		
18:07	ZZZZZZ	1		
18:12	ZZZZZZ	1		
18:17	MA52155-CCV11	1	X	
18:21	MA52155-CCB12	1	X	
18:27	ZZZZZZ	1		
18:32	ZZZZZZ	1		
18:37	MP32057-MB1	1		
18:42	MP32057-B1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
18:47	MP32057-S1	1		
18:51	MP32057-S2	1		
18:56	JD42052-1	1		(a)
19:01	MP32057-SD1	5		
19:06	ZZZZZZ	1		
19:11	ZZZZZZ	1		
19:16	MA52155-CCV12	1	X	
19:21	MA52155-CCB13	1	X	
19:26	ZZZZZZ	1		
19:32	ZZZZZZ	1		
19:36	ZZZZZZ	1		
19:41	ZZZZZZ	1		
19:46	ZZZZZZ	1		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:02	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:12	ZZZZZZ	1		
20:17	ZZZZZZ	1		
20:22	MA52155-CCV13	1	X	
20:27	MA52155-CCB14	1	X	
20:32	ZZZZZZ	1		
20:37	ZZZZZZ	1		
20:42	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:58	ZZZZZZ	1		
21:03	ZZZZZZ	1		
21:08	MA52155-CCV14	1	X	
21:13	MA52155-CCB15	1	X	
21:18	ZZZZZZ	1		
21:23	ZZZZZZ	1		
21:28	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
21:33	ZZZZZZ	1		
21:38	ZZZZZZ	1		
21:43	ZZZZZZ	1		
21:48	ZZZZZZ	1		
21:53	ZZZZZZ	1		
21:58	ZZZZZZ	1		
22:04	MA52155-CCV15	1	X	
22:09	MA52155-CCB16	1	X	
22:14	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:24	ZZZZZZ	1		
22:29	ZZZZZZ	1		
22:34	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:44	ZZZZZZ	1		
22:49	ZZZZZZ	1		
22:54	ZZZZZZ	1		
22:59	MA52155-CCV16	1	X	
23:04	MA52155-CCB17	1	X	
23:09	ZZZZZZ	1		
23:15	ZZZZZZ	1		
23:20	ZZZZZZ	1		
23:25	ZZZZZZ	1		
23:30	ZZZZZZ	1		
23:35	ZZZZZZ	1		
23:40	ZZZZZZ	1		
23:45	ZZZZZZ	1		
23:50	ZZZZZZ	1		
23:55	MA52155-CCV17	1	X	
00:00	MA52155-CCB18	1	X	
00:06	MP31924-S1	2		
00:11	MP31924-S2	2		
00:16	JD41689-2	2		(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
00:21	MP31924-SD1	10		
00:26	ZZZZZZ	2		
00:31	ZZZZZZ	5		
00:36	ZZZZZZ	5		
00:41	ZZZZZZ	2		
00:47	ZZZZZZ	2		
00:52	ZZZZZZ	5		
00:57	MA52155-CCV18	1	X	
01:02	MA52155-CCB19	1	X	
01:07	ZZZZZZ	5		
01:12	MP32030-B1	1		
01:17	MP32030-MB1	1		
01:22	MP32030-S1	1		
01:28	MP32030-S2	1		
01:33	JD42135-1A	1		(a)
01:38	MP32030-SD1	5		
01:43	ZZZZZZ	1		
01:48	ZZZZZZ	1		
01:54	ZZZZZZ	1		
01:59	MA52155-CCV19	1	X	
02:04	MA52155-CCB20	1	X	
02:09	ZZZZZZ	1		
02:14	ZZZZZZ	1		
02:19	ZZZZZZ	1		
02:24	ZZZZZZ	1		
02:29	ZZZZZZ	1		
02:35	ZZZZZZ	1		
02:40	ZZZZZZ	1		
02:45	ZZZZZZ	1		
02:50	ZZZZZZ	1		
02:56	MA52155-CCV20	1	X	
03:01	MA52155-CCB21	1	X	
03:06	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As
03:11	ZZZZZZ	1	
03:16	ZZZZZZ	1	
03:22	ZZZZZZ	1	
03:27	ZZZZZZ	1	
03:32	ZZZZZZ	1	
03:37	MP32020-B1	1	X
03:42	MP32020-MB1	1	X
03:47	MA52155-CCV21	1	X
03:52	MA52155-CCB22	1	X
03:58	MP32020-S1	1	X
04:03	MP32020-S2	1	X
04:08	JD42145-1	1	X (a)
04:13	MP32020-SD1	5	X
04:18	ZZZZZZ	1	
04:23	ZZZZZZ	1	
04:28	ZZZZZZ	1	
04:34	ZZZZZZ	1	
04:39	ZZZZZZ	1	
04:44	MA52155-CCV22	1	X
04:49	MA52155-CCB23	1	X
04:54	ZZZZZZ	1	
04:59	ZZZZZZ	1	
05:05	ZZZZZZ	1	
05:10	ZZZZZZ	1	
05:15	ZZZZZZ	1	
05:20	ZZZZZZ	1	
05:25	ZZZZZZ	1	
05:30	MA52155-CCV23	1	X
05:35	MA52155-CCB24	1	X

(a) Sample used for QC only; not part of login JD41762.

Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:11	MA52155-STD1	4762 R	253400 R	31221 R	11217 R
07:16	MA52155-STD2	4521	240920	31008	9940
07:21	MA52155-ICV1	4658	245150	31298	10344
07:29	MA52155-ICB1	4812	254850	31850	11278
07:35	MA52155-ICCV1	4679	243980	31768	10361
07:44	MA52155-CCB1	4618	255750	32030	10848
07:50	MA52155-CRI1	4570	238520	29151	10645
07:55	MA52155-CRID1	4641	243540	29601	10889
08:01	MA52155-ICSA1	4211	215610	28872	8992
08:06	MA52155-ICSAB1	4209	216370	28896	8981
08:11	MA52155-HSTD1	4532	241500	29695	10639
08:17	MA52155-HSTD2	4238	218370	28646	9034
08:22	ZZZZZZ	4680	242960	30360	11101
08:27	ZZZZZZ	4638	247310	30308	11132
08:32	ZZZZZZ	4757	246470	30320	11197
08:37	MA52155-CCV1	4506	234770	29401	10040
08:42	MA52155-CCB2	4648	242190	29635	10912
08:48	ZZZZZZ	4658	242430	29907	10921
08:53	MP32014-B1	4578	238560	29959	10311
08:58	MP32014-S1	4528	236060	29478	10112
09:03	MP32014-S2	4543	233780	29605	10158
09:08	JD41762-17F	4589	237380	29509	10538
09:13	MP32014-SD1	4651	240480	29758	10848
09:18	JD41762-81	4676	245170	29749	11005
09:23	JD41762-23F	4531	235560	29215	10514
09:28	JD41762-25F	4555	237490	29522	10474
09:33	MA52155-CCV2	4546	236380	29570	10072
09:38	MA52155-CCB3	4679	243400	29601	10951
09:44	MP32014-MB1	4685	243290	29728	10956
09:49	JD41762-47F	4643	239280	30135	10294
09:54	JD41762-49F	4543	236860	29519	10287
09:59	JD41762-59F	4545	237860	29542	10400
10:04	JD41762-87F	4583	239330	29769	10488

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:09	JD41762-88F	4657	240910	29990	10487
10:14	JD41762-89F	4534	236640	29509	10182
10:19	JD41762-90F	4582	239610	29661	10432
10:25	MA52155-CCV3	4571	235160	29553	10107
10:30	MA52155-CCB4	4710	246120	29557	11022
10:35	ZZZZZZ	4680	244700	29956	10870
10:40	ZZZZZZ	4682	243530	29972	10806
10:45	ZZZZZZ	4668	243990	29950	10816
10:50	ZZZZZZ	4717	248850	29983	11037
10:55	ZZZZZZ	4701	244080	30199	10907
11:00	ZZZZZZ	4682	247430	29932	10913
11:05	JD41762-47F	4686	244760	29900	10590
11:11	MA52155-CRID2	4742	249470	30072	11020
11:17	MA52155-CCV4	4573	238050	29516	10135
11:22	MA52155-CCB5	4711	247340	30004	11006
11:27	MA52155-ICSA2	4265	219080	28861	9078
11:32	MA52155-ICSAB2	4253	219120	28718	9076
11:37	MP32021-B1	4610	241910	29894	10399
11:42	MP32021-MB1	4738	249450	29694	11085
11:47	MP32021-S1	4123	223830	29243	10720
11:52	MP32021-S2	3932	215990	28518	10753
11:58	JD42137-6	4110	222440	28981	10526
12:03	MP32021-SD1	4494	236390	29689	10505
12:08	MP32021-PS1	4079	222280	29114	10424
12:14	MA52155-CCV5	4650	241460	29998	10289
12:19	MA52155-CCB6	4749	251070	29815	11123
12:24	MP32001-B1	4674	243110	30253	10449
12:29	MP32001-MB1	4764	250770	30170	11119
12:34	MP32001-S1	4655	239890	30271	10325
12:39	MP32001-S2	4641	240780	30075	10302
12:44	JD42091-2	4711	245230	30275	10822
12:49	MP32001-SD1	4795	248770	30591	11109
12:55	MP32001-S3	4673	242710	30284	10364

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:00	MP32001-S4	4690	242990	30342	10399
13:05	JD42091-2F	4723	246730	30241	10847
13:10	MP32001-SD2	4791	248790	29971	11133
13:17	MA52155-CCV6	4680	240720	30076	10326
13:22	MA52155-CCB7	4795	249230	30069	11161
13:27	ZZZZZZ	4669	242910	30008	10621
13:32	ZZZZZZ	4783	250720	29974	11176
13:37	ZZZZZZ	4633	242610	29813	10566
13:42	ZZZZZZ	4765	250210	29999	11168
13:48	MP32012-MB1	4782	251490	30167	11148
13:53	MP32012-B1	4662	243180	29846	10493
13:58	MP32012-S1	4540	236610	29724	9900
14:03	MP32012-S2	4533	236320	29327	9922
14:08	JD42073-15A	4568	238670	29666	10143
14:13	MP32012-SD1	4696	244420	29759	10820
14:18	MA52155-CCV7	4679	243990	29888	10347
14:23	MA52155-CCB8	4820	252950	30154	11243
14:28	ZZZZZZ	4683	245370	29908	10628
14:34	ZZZZZZ	4718	247490	30146	10707
14:39	ZZZZZZ	4715	245670	30052	10717
14:44	ZZZZZZ	4670	244770	30096	10580
14:49	ZZZZZZ	4646	242570	29834	10384
14:54	ZZZZZZ	4666	244140	29980	10617
14:59	ZZZZZZ	4660	244060	30093	10581
15:04	ZZZZZZ	4680	247230	30068	10746
15:09	ZZZZZZ	4670	244200	29845	10696
15:14	ZZZZZZ	4664	244620	29965	10651
15:19	MA52155-CCV8	4677	246170	29796	10327
15:24	MA52155-CCB9	4833	254780	30302	11232
15:29	ZZZZZZ	4559	240290	29587	10106
15:35	ZZZZZZ	4647	243100	29717	10408
15:40	ZZZZZZ	4676	247740	29816	10653
15:45	MP32011-MB1	4819	251920	30307	11247

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:50	MP32011-B1	4749	248100	30568	10622
15:55	MP32011-S1	4643	242620	30171	10179
16:00	MP32011-S2	4658	241680	30221	10219
16:05	JD42073-3A	4684	243760	30037	10505
16:10	MP32011-SD1	4778	248720	30164	10986
16:15	MA52155-CCV9	4719	243410	30083	10381
16:20	MA52155-CCB10	4862	253630	30295	11287
16:25	MP32011-S3	4674	242550	30333	10239
16:30	MP32011-S4	4640	243140	29919	10184
16:35	JD42073-3AF	4649	243260	29746	10441
16:40	MP32011-SD2	4776	249640	30066	10998
16:45	ZZZZZZ	4630	243510	30126	10282
16:50	ZZZZZZ	4652	244790	30221	10332
16:55	ZZZZZZ	4773	251760	30359	10854
17:01	ZZZZZZ	4720	247800	30236	10687
17:06	ZZZZZZ	4656	244060	29966	10323
17:11	ZZZZZZ	4662	242780	29823	10414
17:16	MA52155-CCV10	4693	243250	29945	10369
17:21	MA52155-CCB11	4846	255310	29975	11255
17:26	ZZZZZZ	4690	245970	29936	10483
17:31	ZZZZZZ	4705	247410	30147	10572
17:36	ZZZZZZ	4711	247910	30143	10537
17:41	ZZZZZZ	4637	243850	29944	10267
17:46	ZZZZZZ	4643	244770	29867	10306
17:51	ZZZZZZ	4755	251370	29757	10860
17:56	ZZZZZZ	4728	249660	30019	10709
18:02	ZZZZZZ	4642	244270	29681	10322
18:07	ZZZZZZ	4669	247530	29751	10462
18:12	ZZZZZZ	4674	248470	29911	10519
18:17	MA52155-CCV11	4702	249660	29788	10385
18:21	MA52155-CCB12	4854	257680	30029	11309
18:27	ZZZZZZ	4692	248970	29812	10570
18:32	ZZZZZZ	4671	248940	29726	10494

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:37	MP32057-MB1	4856	259540	30322	11332
18:42	MP32057-B1	4736	254200	30174	10622
18:47	MP32057-S1	4655	248480	29931	10244
18:51	MP32057-S2	4653	249380	30175	10240
18:56	JD42052-1	4667	251580	29856	10583
19:01	MP32057-SD1	4810	257670	30273	11120
19:06	ZZZZZZ	4829	258500	30208	11205
19:11	ZZZZZZ	4853	261210	30517	11267
19:16	MA52155-CCV12	4738	252840	29934	10417
19:21	MA52155-CCB13	4879	262130	30319	11315
19:26	ZZZZZZ	4856	259100	30272	11286
19:32	ZZZZZZ	4777	255300	29997	10830
19:36	ZZZZZZ	4765	254350	30222	10824
19:41	ZZZZZZ	4616	245410	30018	10214
19:46	ZZZZZZ	4672	248930	30033	10430
19:52	ZZZZZZ	4418	237270	29095	9814
19:57	ZZZZZZ	4692	250240	29843	10623
20:02	ZZZZZZ	4565	244250	29477	10134
20:07	ZZZZZZ	4633	249570	30118	10396
20:12	ZZZZZZ	4426	237490	29334	9846
20:17	ZZZZZZ	4853	257580	29879	11331
20:22	MA52155-CCV13	4717	251080	29568	10431
20:27	MA52155-CCB14	4852	261280	30014	11332
20:32	ZZZZZZ	4933	263650	30594	11474
20:37	ZZZZZZ	4904	263100	30264	11417
20:42	ZZZZZZ	4910	262920	30594	11374
20:48	ZZZZZZ	4928	263870	30518	11446
20:53	ZZZZZZ	4901	261870	30335	11454
20:58	ZZZZZZ	4907	262660	30424	11407
21:03	ZZZZZZ	4924	262100	30438	11448
21:08	MA52155-CCV14	4703	251870	29544	10425
21:13	MA52155-CCB15	4857	259370	29891	11358
21:18	ZZZZZZ	4975	265690	30904	11480

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
21:23	ZZZZZZ	4935	263870	30865	11287
21:28	ZZZZZZ	4975	266300	30904	11402
21:33	ZZZZZZ	4553	244920	30282	9961
21:38	ZZZZZZ	5063	267330	31808	11157
21:43	ZZZZZZ	4716	251380	30818	10259
21:48	ZZZZZZ	5008	268220	31497	11092
21:53	ZZZZZZ	5133	269570	32510	10782
21:58	ZZZZZZ	5019	265070	31775	11011
22:04	MA52155-CCV15	4731	253160	29908	10479
22:09	MA52155-CCB16	4879	261840	29840	11400
22:14	ZZZZZZ	5156	270010	32311	11022
22:19	ZZZZZZ	5152	271270	32492	10944
22:24	ZZZZZZ	4967	261250	31666	10945
22:29	ZZZZZZ	4706	251670	29637	10508
22:34	ZZZZZZ	4676	248190	29538	10412
22:39	ZZZZZZ	4707	251300	29710	10485
22:44	ZZZZZZ	4696	251170	29780	10455
22:49	ZZZZZZ	4718	251690	29936	10488
22:54	ZZZZZZ	4885	264460	30120	11386
22:59	MA52155-CCV16	4767	254580	30043	10520
23:04	MA52155-CCB17	4895	265040	30229	11410
23:09	ZZZZZZ	4270	223150	28705	9022
23:15	ZZZZZZ	4306	225860	28649	9158
23:20	ZZZZZZ	4326	227560	28858	9208
23:25	ZZZZZZ	4307	228000	28730	9167
23:30	ZZZZZZ	4408	234110	29219	9418
23:35	ZZZZZZ	4235	221660	28352	8951
23:40	ZZZZZZ	4900	263210	29997	11452
23:45	ZZZZZZ	4918	266360	30379	11479
23:50	ZZZZZZ	4774	256650	30032	10700
23:55	MA52155-CCV17	4751	255140	29869	10529
00:00	MA52155-CCB18	4920	266080	30091	11476
00:06	MP31924-S1	4812	259400	30639	10388

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:11	MP31924-S2	4784	256540	30483	10360
00:16	JD41689-2	4880	261200	30493	10643
00:21	MP31924-SD1	4894	263360	30168	11194
00:26	ZZZZZZ	4842	257240	30058	10568
00:31	ZZZZZZ	4736	250780	29543	10541
00:36	ZZZZZZ	4735	250610	29215	10694
00:41	ZZZZZZ	4843	257950	29878	10557
00:47	ZZZZZZ	4851	257500	30184	10573
00:52	ZZZZZZ	4755	252570	29732	10600
00:57	MA52155-CCV18	4731	254500	29388	10503
01:02	MA52155-CCB19	4893	263340	29909	11441
01:07	ZZZZZZ	4735	251920	29441	10708
01:12	MP32030-B1	4822	257300	30035	10874
01:17	MP32030-MB1	4896	265680	29878	11485
01:22	MP32030-S1	4705	253190	29964	10423
01:28	MP32030-S2	4710	252590	29960	10434
01:33	JD42135-1A	4762	254710	29845	10775
01:38	MP32030-SD1	4853	261750	29846	11260
01:43	ZZZZZZ	4668	247080	29577	10284
01:48	ZZZZZZ	4592	243800	29094	9903
01:54	ZZZZZZ	4879	264080	29757	11430
01:59	MA52155-CCV19	4751	252600	29505	10535
02:04	MA52155-CCB20	4905	264700	29441	11469
02:09	ZZZZZZ	4758	254830	29864	10632
02:14	ZZZZZZ	4864	264170	29837	11309
02:19	ZZZZZZ	4782	255740	29695	10857
02:24	ZZZZZZ	4739	253910	29356	10771
02:29	ZZZZZZ	4509	244190	28888	10126
02:35	ZZZZZZ	4804	259810	29852	10971
02:40	ZZZZZZ	4935	266540	29875	11500
02:45	ZZZZZZ	4146	216510	27947	8654
02:50	ZZZZZZ	4252	222580	27998	9020
02:56	MA52155-CCV20	4730	251490	28884	10528

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
03:01	MA52155-CCB21	4890	263300	29178	11466
03:06	ZZZZZZ	4515	239230	28556	9796
03:11	ZZZZZZ	4595	245020	28843	10088
03:16	ZZZZZZ	4335	226750	28118	9187
03:22	ZZZZZZ	4372	227450	28287	9218
03:27	ZZZZZZ	4534	235960	28756	9673
03:32	ZZZZZZ	4908	263490	29422	11494
03:37	MP32020-B1	4952	261800	30447	11110
03:42	MP32020-MB1	5042	269730	30387	11835
03:47	MA52155-CCV21	4747	252700	29239	10545
03:52	MA52155-CCB22	4937	263230	29382	11547
03:58	MP32020-S1	4823	255930	30389	10557
04:03	MP32020-S2	4807	253970	30346	10520
04:08	JD42145-1	4861	258120	30419	10802
04:13	MP32020-SD1	4879	259910	29388	11205
04:18	ZZZZZZ	4821	256790	30081	10815
04:23	ZZZZZZ	4821	255240	30066	10805
04:28	ZZZZZZ	4847	254550	30119	10687
04:34	ZZZZZZ	4685	250490	29627	10381
04:39	ZZZZZZ	4731	250650	29536	10399
04:44	MA52155-CCV22	4723	250580	28573	10471
04:49	MA52155-CCB23	4877	261050	28755	11415
04:54	ZZZZZZ	4885	263490	28979	11368
04:59	ZZZZZZ	4881	261880	28832	11368
05:05	ZZZZZZ	4893	264600	29010	11455
05:10	ZZZZZZ	4522	244910	28238	10131
05:15	ZZZZZZ	4414	238910	27350	9802
05:20	ZZZZZZ	5045	251800	30065	10557
05:25	ZZZZZZ	4894	265380	28958	11449
05:30	MA52155-CCV23	4760	252770	28788	10570
05:35	MA52155-CCB24	4914	263100	29217	11473

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

Istd#4	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			07:29		07:44		08:42		09:38	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.200	<3.0	-0.600	<3.0	-0.200	<3.0	-0.600	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5								
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9								
Titanium	10	.9								
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			07:29		07:44		08:42		09:38	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			10:30		11:22		12:19	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	27	anr					
Antimony	6.0	2.2	anr					
Arsenic	3.0	1.3	0.500	<3.0	0.500	<3.0	1.30	<3.0
Barium	200	1	anr					
Beryllium	1.0	.2	anr					
Bismuth	20	2.1						
Boron	100	1	anr					
Cadmium	3.0	.2	anr					
Calcium	5000	7.7	anr					
Cerium	100							
Chromium	10	.5	anr					
Cobalt	50	.4	anr					
Copper	10	6.8	anr					
Iron	100	15	anr					
Lead	3.0	1.6	anr					
Lithium	50	3.7						
Magnesium	5000	54	anr					
Manganese	15	.1	anr					
Molybdenum	20	.5						
Nickel	10	.3	anr					
Phosphorus	50	1.8						
Potassium	10000	77	anr					
Selenium	10	2	anr					
Silicon	200	1.3						
Silver	10	.9	anr					
Sodium	10000	23	anr					
Strontium	10	.4						
Sulfur	50	4.1						
Thallium	10	1.6	anr					
Tin	10	.9						
Titanium	10	.9						
Tungsten	50	2						
Vanadium	50	.8	anr					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			10:30		11:22		12:19	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.2	anr					
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52155 Units: ug/l

Time:		07:35	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1930	96.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52155 Units: ug/l

Time:		07:35	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		07:21			08:37			09:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1940	97.0	2000	1930	96.5	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		07:21			08:37			09:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		10:25			11:17			12:14	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1990	99.5	2000	1990	99.5	2000	1960	98.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		10:25			11:17			12:14	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52155 Units: ug/l

Time:		08:11			08:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7350	91.9			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52155 Units: ug/l

Time:		08:11			08:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52155 Units: ug/l

Time:				07:50		07:55		11:11	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	6.90	86.3	2.60	86.7	2.90	96.7
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52155 Units: ug/l

Time:				07:50		07:55		11:11	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52155 Units: ug/l

Time:			08:01		08:06		11:27		11:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	475000	95.0	485000	97.0	479000	95.8	483000	96.6
Antimony		1000	-2.00		1010	101.0	-2.10		1010	101.0
Arsenic		1000	-1.20		1010	101.0	-1.80		1000	100.0
Barium		500	-42.7		472	94.4	-43.4		468	93.6
Beryllium		500	0.00		500	100.0	0.00		498	99.6
Bismuth		500	-9.40		516	103.2	-8.10		514	102.8
Boron		500	-5.60		483	96.6	-6.10		479	95.8
Cadmium		1000	0.900		1010	101.0	0.500		1010	101.0
Calcium	400000	400000	365000	91.3	374000	93.5	365000	91.3	376000	94.0
Cerium			51.3		540*		49.5		533*	
Chromium		500	1.90		485	97.0	2.10		485	97.0
Cobalt		500	3.00		475	95.0	2.70		477	95.4
Copper		500	-5.20		506	101.2	-4.70		498	99.6
Iron	200000	200000	187000	93.5	191000	95.5	188000	94.0	190000	95.0
Lead		1000	3.00*(a)		979	97.9	1.40		977	97.7
Lithium		500	-6.00		538	107.6	-7.10		536	107.2
Magnesium	500000	500000	491000	98.2	503000	100.6	496000	99.2	504000	100.8
Manganese		500	0.500		523	104.6	0.600		519	103.8
Molybdenum		500	-2.20		455	91.0	-2.00		458	91.6
Nickel		1000	4.50		969	96.9	4.20		968	96.8
Phosphorus		500	-7.10		481	96.2	-6.30		489	97.8
Potassium			-109		-140		-133		-147	
Selenium		1000	-2.70		939	93.9	3.20		949	94.9
Silicon		500	-20.9		484	96.8	-19.5		483	96.6
Silver		1000	0.700		1130	113.0	2.90		1120	112.0
Sodium			-134		-143		-210		-220	
Strontium		500	1.00		523	104.6	1.20		524	104.8
Sulfur		500	-34.1		459	91.8	-30.8		461	92.2
Thallium		1000	-5.30		963	96.3	-7.90		971	97.1
Tin		500	-4.20		459	91.8	-4.00		457	91.4
Titanium		500	-0.900		483	96.6	-0.800		482	96.4
Tungsten		500	3.50		467	93.4	-1.00		469	93.8
Vanadium		500	0.800		477	95.4	0.100		476	95.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52155 Units: ug/l

Time:			08:01		08:06		11:27		11:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	1.80		960	96.0	1.80		968	96.8
Zirconium		500	2.20		534	106.8	2.40		528	105.6

(*) Outside of QC limits
(anr) Analyte not requested
(a) No AQ samples reported for this element in the area bracketed by this QC.

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:22	MA52164-STD1	1		STDA
08:27	MA52164-STD2	1		STDB
08:32	MA52164-ICV1	1		
08:40	MA52164-ICB1	1		
08:45	MA52164-CCV1	1		
08:50	MA52164-CCB1	1		
08:56	MA52164-CRI1	1		
09:01	MA52164-CRID1	1		
09:06	MA52164-ICSA1	1		
09:11	MA52164-ICSAB1	1		
09:16	MA52164-HSTD1	1		
09:21	MA52164-HSTD2	1		
09:26	ZZZZZZ	1		
09:31	ZZZZZZ	1		
09:37	ZZZZZZ	1		
09:42	MA52164-CCV2	1		
09:47	MA52164-CCB2	1		
09:52	MA52164-CRID2	1		
09:57	ZZZZZZ	1		
10:03	ZZZZZZ	5		
10:08	MP32014-MB1	1		
10:13	MP32014-B1	1		
10:18	MP32014-S1	1		
10:23	MP32014-S2	1		
10:28	JD41762-17F	1		
10:33	MP32014-SD1	5		
10:38	MA52164-CCV3	1		
10:43	MA52164-CCB3	1		
10:48	JD41762-23F	1		
10:53	JD41762-89F	1		
---------->	Last reportable sample/prep for job JD41762			
11:00	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:16	ZZZZZZ	1		
11:21	ZZZZZZ	1		
11:26	MA52164-CRID3	1		
11:32	MA52164-CCV4	1		
11:36	MA52164-CCB4	1		
11:42	MA52164-ICSA2	1		
11:47	MA52164-ICSAB2	1		
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	MP31924-S1	5		
12:07	MP31924-S2	5		
12:12	JD41689-2	5		(sample used for QC only; not part of login JD41762)
12:17	MP31924-SD1	25		
12:22	ZZZZZZ	5		
12:27	MA52164-CCV5	1		
12:32	MA52164-CCB5	1		
---------->	Last reportable CCB for job JD41762			
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:48	ZZZZZZ	10		
12:53	ZZZZZZ	5		
12:58	ZZZZZZ	5		
13:03	ZZZZZZ	10		
13:08	MP32054-MB2	1		
13:13	MP32054-MB1	1		
13:19	MP32054-B1	1		
13:23	MA52164-CCV6	1		
13:28	MA52164-CCB6	1		
13:34	MP32054-B2	1		
13:39	MP32054-S1	1		
13:44	MP32054-B2	1		
13:49	MP32054-S1	1		
13:54	MP32054-S2	1		
13:58	JD42120-5	1		(sample used for QC only; not part of login JD41762)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:04	MP32054-SD1	5		
14:09	MP32054-S3	1		
14:14	MP32054-S4	1		
14:19	MA52164-CCV7	1		
14:23	MA52164-CCB7	1		
14:29	MP32093-MB1	1		
14:34	MP32093-B1	1		
14:39	MP32093-S1	1		
14:44	MP32093-S2	1		
14:49	JD42333-1	1		(sample used for QC only; not part of login JD41762)
14:54	MP32093-SD1	5		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:20	MA52164-CCV8	1		
15:24	MA52164-CCB8	1		
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	JD42120-5F	1		(sample used for QC only; not part of login JD41762)
15:50	MP32054-SD2	5		
15:55	ZZZZZZ	1		
16:01	ZZZZZZ	1		
16:06	ZZZZZZ	1		
16:11	ZZZZZZ	1		
16:16	MA52164-CCV9	1		
16:21	MA52164-CCB9	1		
16:26	ZZZZZZ	1		
16:31	ZZZZZZ	1		
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:47	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:52	ZZZZZZ	1		
16:57	ZZZZZZ	1		
17:03	ZZZZZZ	1		
17:08	ZZZZZZ	1		
17:13	MA52164-CCV10	1		
17:18	MA52164-CCB10	1		
17:23	ZZZZZZ	1		
17:28	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:44	ZZZZZZ	1		
17:49	ZZZZZZ	1		
17:55	MA52164-CCV11	1		
17:59	MA52164-CCB11	1		
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	ZZZZZZ	1		
18:20	ZZZZZZ	1		
18:26	ZZZZZZ	1		
18:31	ZZZZZZ	1		
18:36	MA52164-CCV12	1		
18:41	MA52164-CCB12	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As
08:32	MA52164-ICV1	1	X
08:40	MA52164-ICB1	1	X
08:45	MA52164-CCV1	1	X
08:50	MA52164-CCB1	1	X
08:56	MA52164-CRI1	1	X
09:01	MA52164-CRID1	1	
09:06	MA52164-ICSA1	1	X
09:11	MA52164-ICSAB1	1	X
09:16	MA52164-HSTD1	1	X
09:21	MA52164-HSTD2	1	X
09:26	ZZZZZZ	1	
09:31	ZZZZZZ	1	
09:37	ZZZZZZ	1	
09:42	MA52164-CCV2	1	X
09:47	MA52164-CCB2	1	X
09:52	MA52164-CRID2	1	X
09:57	ZZZZZZ	1	
10:03	ZZZZZZ	5	
10:08	MP32014-MB1	1	
10:13	MP32014-B1	1	
10:18	MP32014-S1	1	
10:23	MP32014-S2	1	
10:28	JD41762-17F	1	
10:33	MP32014-SD1	5	
10:38	MA52164-CCV3	1	X
10:43	MA52164-CCB3	1	X
10:48	JD41762-23F	1	X
10:53	JD41762-89F	1	X
11:00	ZZZZZZ	1	
11:06	ZZZZZZ	1	
11:11	ZZZZZZ	1	
11:16	ZZZZZZ	1	
11:21	ZZZZZZ	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As	
11:26	MA52164-CRID3	1	X	
11:32	MA52164-CCV4	1	X	
11:36	MA52164-CCB4	1	X	
11:42	MA52164-ICSA2	1	X	
11:47	MA52164-ICSAB2	1	X	
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	MP31924-S1	5		
12:07	MP31924-S2	5		
12:12	JD41689-2	5		(a)
12:17	MP31924-SD1	25		
12:22	ZZZZZZ	5		
12:27	MA52164-CCV5	1	X	
12:32	MA52164-CCB5	1	X	
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:48	ZZZZZZ	10		
12:53	ZZZZZZ	5		
12:58	ZZZZZZ	5		
13:03	ZZZZZZ	10		
13:08	MP32054-MB2	1		
13:13	MP32054-MB1	1		
13:19	MP32054-B1	1		
13:23	MA52164-CCV6	1	X	
13:28	MA52164-CCB6	1	X	
13:34	MP32054-B2	1		
13:39	MP32054-S1	1		
13:44	MP32054-B2	1		
13:49	MP32054-S1	1		
13:54	MP32054-S2	1		
13:58	JD42120-5	1		(a)
14:04	MP32054-SD1	5		
14:09	MP32054-S3	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As	
14:14	MP32054-S4	1		
14:19	MA52164-CCV7	1	X	
14:23	MA52164-CCB7	1	X	
14:29	MP32093-MB1	1		
14:34	MP32093-B1	1		
14:39	MP32093-S1	1		
14:44	MP32093-S2	1		
14:49	JD42333-1	1		(a)
14:54	MP32093-SD1	5		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:20	MA52164-CCV8	1	X	
15:24	MA52164-CCB8	1	X	
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	JD42120-5F	1		(a)
15:50	MP32054-SD2	5		
15:55	ZZZZZZ	1		
16:01	ZZZZZZ	1		
16:06	ZZZZZZ	1		
16:11	ZZZZZZ	1		
16:16	MA52164-CCV9	1	X	
16:21	MA52164-CCB9	1	X	
16:26	ZZZZZZ	1		
16:31	ZZZZZZ	1		
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:47	ZZZZZZ	1		
16:52	ZZZZZZ	1		
16:57	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As
17:03	ZZZZZZ	1	
17:08	ZZZZZZ	1	
17:13	MA52164-CCV10	1	X
17:18	MA52164-CCB10	1	X
17:23	ZZZZZZ	1	
17:28	ZZZZZZ	1	
17:34	ZZZZZZ	1	
17:39	ZZZZZZ	1	
17:44	ZZZZZZ	1	
17:49	ZZZZZZ	1	
17:55	MA52164-CCV11	1	X
17:59	MA52164-CCB11	1	X
18:05	ZZZZZZ	1	
18:10	ZZZZZZ	1	
18:15	ZZZZZZ	1	
18:20	ZZZZZZ	1	
18:26	ZZZZZZ	1	
18:31	ZZZZZZ	1	
18:36	MA52164-CCV12	1	X
18:41	MA52164-CCB12	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:22	MA52164-STD1	2144 R	69007 R	2623 R	5421 R
08:27	MA52164-STD2	2081	67039	2604	5215
08:32	MA52164-ICV1	2163	69895	2730	5354
08:40	MA52164-ICB1	2167	71343	2712	5469
08:45	MA52164-CCV1	2149	69901	2730	5337
08:50	MA52164-CCB1	2191	71932	2552	5538
08:56	MA52164-CRI1	2189	66927	2547	5514
09:01	MA52164-CRID1	No results reported for the elements associated with this internal standard.			
09:06	MA52164-ICSA1	1974	63659	2610	4984
09:11	MA52164-ICSAB1	2007	65025	2687	5071
09:16	MA52164-HSTD1	2157	70619	2749	5605
09:21	MA52164-HSTD2	2031	67054	2411	5074
09:26	ZZZZZZ	2225	66963	2530	5810
09:31	ZZZZZZ	2169	73613	2811	5634
09:37	ZZZZZZ	2209	73735	2792	5606
09:42	MA52164-CCV2	2190	72045	2830	5447
09:47	MA52164-CCB2	2246	74009	2824	5694
09:52	MA52164-CRID2	2226	73529	2806	5652
09:57	ZZZZZZ	2269	74888	2875	5757
10:03	ZZZZZZ	2208	73527	2823	5514
10:08	MP32014-MB1	2231	74409	2841	5660
10:13	MP32014-B1	2210	73067	2871	5520
10:18	MP32014-S1	2184	73043	2846	5440
10:23	MP32014-S2	2182	73272	2844	5438
10:28	JD41762-17F	2204	73855	2840	5539
10:33	MP32014-SD1	2227	73721	2814	5637
10:38	MA52164-CCV3	2164	71126	2793	5393
10:43	MA52164-CCB3	2233	73212	2831	5671
10:48	JD41762-23F	2201	73439	2830	5558
10:53	JD41762-89F	2168	72719	2820	5419
11:00	ZZZZZZ	2223	73888	2829	5629
11:06	ZZZZZZ	2229	74402	2876	5636
11:11	ZZZZZZ	No results reported for the elements associated with this internal standard.			

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:16	ZZZZZZ	2223	74748	2846	5620
11:21	ZZZZZZ	2240	74006	2853	5683
11:26	MA52164-CRID3	2213	73417	2810	5617
11:32	MA52164-CCV4	2182	72207	2816	5430
11:36	MA52164-CCB4	2206	73181	2850	5594
11:42	MA52164-ICSA2	2042	67640	2782	5125
11:47	MA52164-ICSAB2	2034	67243	2776	5120
11:52	ZZZZZZ	2223	74963	2878	5643
11:57	ZZZZZZ	2210	73481	2873	5519
12:02	MP31924-S1	2223	73843	2839	5482
12:07	MP31924-S2	2222	73855	2860	5478
12:12	JD41689-2	2225	74147	2890	5499
12:17	MP31924-SD1	2222	74888	2841	5587
12:22	ZZZZZZ	2235	74331	2851	5511
12:27	MA52164-CCV5	2186	72748	2805	5436
12:32	MA52164-CCB5	2220	74314	2831	5630
12:37	ZZZZZZ	2238	74682	2877	5691
12:42	ZZZZZZ	2228	74577	2841	5658
12:48	ZZZZZZ	2212	73730	2862	5515
12:53	ZZZZZZ	2247	74489	2898	5558
12:58	ZZZZZZ	2234	74217	2875	5518
13:03	ZZZZZZ	2199	73460	2847	5474
13:08	MP32054-MB2	2246	75269	2903	5681
13:13	MP32054-MB1	2234	74876	2879	5645
13:19	MP32054-B1	2186	73549	2878	5457
13:23	MA52164-CCV6	2190	72821	2829	5438
13:28	MA52164-CCB6	2242	75290	2857	5667
13:34	MP32054-B2	No results reported for the elements associated with this internal standard.			
13:39	MP32054-S1	No results reported for the elements associated with this internal standard.			
13:44	MP32054-B2	2196	73735	2888	5471
13:49	MP32054-S1	2122	71896	2825	5310
13:54	MP32054-S2	2120	71941	2856	5311
13:58	JD42120-5	2150	73062	2854	5386

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:04	MP32054-SD1	2203	74412	2859	5547
14:09	MP32054-S3	2148	72121	2846	5371
14:14	MP32054-S4	2170	72848	2859	5418
14:19	MA52164-CCV7	2232	73212	2835	5541
14:23	MA52164-CCB7	2268	74905	2882	5737
14:29	MP32093-MB1	2270	75391	2928	5746
14:34	MP32093-B1	2245	74339	2881	5582
14:39	MP32093-S1	2189	72375	2863	5360
14:44	MP32093-S2	2159	72510	2887	5312
14:49	JD42333-1	2179	73251	2891	5371
14:54	MP32093-SD1	2219	73948	2898	5563
14:59	ZZZZZZ	2190	73381	2888	5375
15:04	ZZZZZZ	2229	73628	2910	5458
15:09	ZZZZZZ	2240	73932	2921	5482
15:14	ZZZZZZ	2216	74152	2891	5427
15:20	MA52164-CCV8	2213	73502	2880	5499
15:24	MA52164-CCB8	2259	75578	2881	5711
15:30	ZZZZZZ	2198	74203	2897	5404
15:35	ZZZZZZ	2198	74076	2913	5384
15:40	ZZZZZZ	2184	74300	2928	5354
15:45	JD42120-5F	2189	74108	2889	5476
15:50	MP32054-SD2	2284	76049	2923	5729
15:55	ZZZZZZ	2227	74295	2889	5592
16:01	ZZZZZZ	2250	74661	2894	5634
16:06	ZZZZZZ	2176	74090	2938	5392
16:11	ZZZZZZ	2178	73360	2928	5469
16:16	MA52164-CCV9	2209	73646	2896	5485
16:21	MA52164-CCB9	2267	75655	2916	5727
16:26	ZZZZZZ	2165	73725	2865	5457
16:31	ZZZZZZ	2138	72816	2870	5357
16:37	ZZZZZZ	2156	73139	2875	5410
16:42	ZZZZZZ	2258	76166	2963	5728
16:47	ZZZZZZ	2120	73238	2868	5332

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:52	ZZZZZZ	2215	74509	2892	5567
16:57	ZZZZZZ	2238	74831	2915	5594
17:03	ZZZZZZ	2176	74891	2901	5410
17:08	ZZZZZZ	2204	74308	2917	5527
17:13	MA52164-CCV10	2229	74577	2887	5541
17:18	MA52164-CCB10	2258	76506	2908	5713
17:23	ZZZZZZ	2169	73152	2862	5467
17:28	ZZZZZZ	2102	72837	2850	5281
17:34	ZZZZZZ	2161	73195	2880	5409
17:39	ZZZZZZ	2285	76571	2927	5771
17:44	ZZZZZZ	2146	73425	2881	5381
17:49	ZZZZZZ	2307	76383	2883	5828
17:55	MA52164-CCV11	2254	75136	2905	5600
17:59	MA52164-CCB11	2322	76683	2877	5859
18:05	ZZZZZZ	2289	77139	2905	5783
18:10	ZZZZZZ	2277	76761	2889	5766
18:15	ZZZZZZ	2158	73794	2822	5352
18:20	ZZZZZZ	2297	77250	2930	5792
18:26	ZZZZZZ	2277	77107	2971	5670
18:31	ZZZZZZ	2281	76629	2974	5669
18:36	MA52164-CCV12	2256	75145	2905	5586
18:41	MA52164-CCB12	2304	77538	2895	5816

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time: / Sample ID:			08:40 ICB1		08:50 CCB1		09:47 CCB2		10:43 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2								
Antimony	6.0	2.8								
Arsenic	3.0	2.6	0.00	<3.0	0.00	<3.0	-0.100	<3.0	0.200	<3.0
Barium	200	.2								
Beryllium	1.0	.2								
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4								
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7								
Cobalt	50	.6								
Copper	10	.7								
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35								
Selenium	10	3.6								
Silicon	200	2.2								
Silver	10	.6								
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2								
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time:			08:40		08:50		09:47		10:43	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time:			11:36		12:32	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	9.2				
Antimony	6.0	2.8				
Arsenic	3.0	2.6	0.400	<3.0	-0.900	<3.0
Barium	200	.2				
Beryllium	1.0	.2				
Bismuth	20	2.5				
Boron	100	1.8				
Cadmium	3.0	.4				
Calcium	5000	13	anr			
Cerium	100					
Chromium	10	.7				
Cobalt	50	.6				
Copper	10	.7				
Iron	100	3.3	anr			
Lead	3.0	2	anr			
Lithium	50	1.5				
Magnesium	5000	25	anr			
Manganese	15	.1	anr			
Molybdenum	20	.6				
Nickel	10	.8	anr			
Phosphorus	50	7				
Potassium	10000	35				
Selenium	10	3.6				
Silicon	200	2.2				
Silver	10	.6				
Sodium	10000	14	anr			
Strontium	10	.1				
Sulfur	50	3.7				
Thallium	10	5.2				
Tin	10	1.4				
Titanium	10	.8				
Tungsten	50	1.3				
Vanadium	50	.5				

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time:			11:36		12:32	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.3	anr			
Zirconium	10	.5				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		08:32			08:45			09:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	1970	98.5	2000	1950	97.5	2000	1960	98.0
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium	anr								
Cerium									
Chromium									
Cobalt									
Copper									
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		08:32			08:45			09:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		10:38			11:32			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	2010	100.5	2000	1990	99.5	2000	1990	99.5
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium	anr								
Cerium									
Chromium									
Cobalt									
Copper									
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		10:38			11:32			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52164 Units: ug/l

Time:		09:16			09:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	8000	7470	93.4			
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52164 Units: ug/l

Time:		09:16			09:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52164 Units: ug/l

Time:				08:56		09:52		11:26	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	7.80	97.5	3.50	116.7	3.30	110.0
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0						
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52164 Units: ug/l

Time:				08:56		09:52		11:26	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52164 Units: ug/l

Time:			09:06		09:11		11:42		11:47	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	500000	100.0	507000	101.4	499000	99.8	507000	101.4
Antimony		1000	-0.100		1040	104.0	-2.20		1040	104.0
Arsenic		1000	-0.800		1060	106.0	-1.70		1060	106.0
Barium		500	4.60		512	102.4	4.30		514	102.8
Beryllium		500	0.300		497	99.4	0.300		493	98.6
Bismuth		500	0.500		541	108.2	0.100		552	110.4
Boron		500	1.60		516	103.2	1.30		517	103.4
Cadmium		1000	0.100		1050	105.0	0.400		1050	105.0
Calcium	400000	400000	379000	94.8	386000	96.5	373000	93.3	381000	95.3
Cerium			36.9		545*		29.4		538*	
Chromium		500	-1.00		493	98.6	-1.10		485	97.0
Cobalt		500	-0.100		478	95.6	0.500		475	95.0
Copper		500	-1.70		533	106.6	4.20		533	106.6
Iron	200000	200000	188000	94.0	191000	95.5	184000	92.0	188000	94.0
Lead		1000	-1.90		963	96.3	1.70		955	95.5
Lithium		500	-3.90		551	110.2	-3.10		542	108.4
Magnesium	500000	500000	492000	98.4	498000	99.6	480000	96.0	491000	98.2
Manganese		500	-1.00		521	104.2	-0.700		514	102.8
Molybdenum		500	1.50		480	96.0	1.50		480	96.0
Nickel		1000	1.60		973	97.3	0.900		972	97.2
Phosphorus		500	8.60		512	102.4	9.80		514	102.8
Potassium			39.4		51.1		-95.7		-42.9	
Selenium		1000	3.30		991	99.1	3.40		982	98.2
Silicon		500	-18.7		513	102.6	-18.7		515	103.0
Silver		1000	2.50		1100	110.0	2.80		1090	109.0
Sodium			38.7		13.1		37.6		22.4	
Strontium		500	-1.30		519	103.8	-1.20		524	104.8
Sulfur		500	15.6		528	105.6	12.5		526	105.2
Thallium		1000	-3.70		952	95.2	-3.00		951	95.1
Tin		500	-5.90		475	95.0	-5.20		472	94.4
Titanium		500	-1.70		488	97.6	-1.80		483	96.6
Tungsten		500	-4.90		487	97.4	-5.70		487	97.4
Vanadium		500	-1.30		489	97.8	-1.80		480	96.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52164 Units: ug/l

Time:			09:06		09:11		11:42		11:47	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	10.1		975	97.5	11.4		943	94.3
Zirconium		500	2.20		511	102.2	2.60		522	104.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:03	MA52201-STD1	1		STDA
06:08	MA52201-STD2	1		STDB
06:13	MA52201-ICV1	1		
06:21	MA52201-ICB1	1		
06:26	MA52201-CCV1	1		
06:31	MA52201-CCB1	1		
06:36	MA52201-CRI1	1		
06:42	MA52201-CRID1	1		
06:47	MA52201-ICSA1	1		
06:52	MA52201-ICSAB1	1		
06:57	MA52201-HSTD1	1		
07:02	MA52201-HSTD2	1		
07:07	ZZZZZZ	1		
07:12	ZZZZZZ	1		
07:18	ZZZZZZ	1		
07:23	MA52201-CCV2	1		
07:28	MA52201-CCB2	1		
07:33	MP32191-MB1	1		
07:38	MP32191-B1	1		
07:43	MP32191-S1	1		
07:48	MP32191-S2	1		
07:53	JD41762-18F	1		
07:58	MP32191-SD1	5		
08:03	JD41762-13F	1		high rsd
08:09	JD41762-19F	1		
08:14	JD41762-20F	1		high rsd
08:19	MA52201-CCV3	1		
08:24	MA52201-CCB3	1		
08:29	JD41762-21F	1		high rsd
08:35	JD41762-22F	1		
08:40	JD41762-24F	1		
08:45	JD41762-50F	1		
08:50	JD41762-53F	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:55	JD41762-55F	1		
09:01	JD41762-57F	1		
09:06	JD41762-58F	1		
09:11	JD41762-84F	1		
09:16	MA52201-CCV4	1		
09:21	MA52201-CCB4	1		
09:26	JD41762-84F	1		
09:31	JD41762-85F	1		
09:37	JD41762-86F	1		
09:42	MP32191-MB2	1		
09:47	MP32191-B2	1		
---------->	Last reportable sample/prep for job JD41762			
09:52	ZZZZZZ	1		
09:57	ZZZZZZ	1		
10:02	ZZZZZZ	1		
10:08	MA52201-CCV5	1		
10:13	MA52201-CCB5	1		
10:18	MA52201-CRID2	1		
10:23	MA52201-ICSA2	1		
10:28	MA52201-ICSAB2	1		
10:33	MA52201-CCV6	1		
10:38	MA52201-CCB6	1		
---------->	Last reportable CCB for job JD41762			
	Refer to raw data for calibration curve and standards.			

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Element: Dilution	As
06:13	MA52201-ICV1	1	X
06:21	MA52201-ICB1	1	X
06:26	MA52201-CCV1	1	X
06:31	MA52201-CCB1	1	X
06:36	MA52201-CRI1	1	X
06:42	MA52201-CRID1	1	X
06:47	MA52201-ICSA1	1	X
06:52	MA52201-ICSAB1	1	X
06:57	MA52201-HSTD1	1	X
07:02	MA52201-HSTD2	1	X
07:07	ZZZZZZ	1	
07:12	ZZZZZZ	1	
07:18	ZZZZZZ	1	
07:23	MA52201-CCV2	1	X
07:28	MA52201-CCB2	1	X
07:33	MP32191-MB1	1	X
07:38	MP32191-B1	1	X
07:43	MP32191-S1	1	X
07:48	MP32191-S2	1	X
07:53	JD41762-18F	1	X
07:58	MP32191-SD1	5	X
08:03	JD41762-13F	1	
08:09	JD41762-19F	1	X
08:14	JD41762-20F	1	
08:19	MA52201-CCV3	1	X
08:24	MA52201-CCB3	1	X
08:29	JD41762-21F	1	
08:35	JD41762-22F	1	X
08:40	JD41762-24F	1	X
08:45	JD41762-50F	1	X
08:50	JD41762-53F	1	X
08:55	JD41762-55F	1	X
09:01	JD41762-57F	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Element: Dilution	As
09:06	JD41762-58F	1	X
09:11	JD41762-84F	1	X
09:16	MA52201-CCV4	1	X
09:21	MA52201-CCB4	1	X
09:26	JD41762-84F	1	
09:31	JD41762-85F	1	X
09:37	JD41762-86F	1	X
09:42	MP32191-MB2	1	X
09:47	MP32191-B2	1	X
09:52	ZZZZZZ	1	
09:57	ZZZZZZ	1	
10:02	ZZZZZZ	1	
10:08	MA52201-CCV5	1	X
10:13	MA52201-CCB5	1	X
10:18	MA52201-CRID2	1	X
10:23	MA52201-ICSA2	1	X
10:28	MA52201-ICSAB2	1	X
10:33	MA52201-CCV6	1	X
10:38	MA52201-CCB6	1	X

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:03	MA52201-STD1	2257 R	77997 R	2718 R	5938 R
06:08	MA52201-STD2	2172	73938	2694	5632
06:13	MA52201-ICV1	2207	74675	2686	5684
06:21	MA52201-ICB1	2240	76941	2659	5897
06:26	MA52201-CCV1	2207	74954	2656	5700
06:31	MA52201-CCB1	2246	76370	2658	5924
06:36	MA52201-CRI1	2242	77660	2725	5883
06:42	MA52201-CRID1	2244	77573	2750	5905
06:47	MA52201-ICSA1	2062	71346	2713	5341
06:52	MA52201-ICSAB1	2070	70856	2717	5383
06:57	MA52201-HSTD1	2228	77558	2755	5994
07:02	MA52201-HSTD2	2096	72691	2708	5392
07:07	ZZZZZZ	2244	77523	2771	6079
07:12	ZZZZZZ	2228	78086	2793	5990
07:18	ZZZZZZ	2282	78599	2801	6022
07:23	MA52201-CCV2	2201	76339	2751	5687
07:28	MA52201-CCB2	2247	78299	2776	5926
07:33	MP32191-MB1	2235	78468	2784	5893
07:38	MP32191-B1	2228	76246	2794	5772
07:43	MP32191-S1	2193	76301	2797	5658
07:48	MP32191-S2	2185	76529	2794	5634
07:53	JD41762-18F	2202	77206	2816	5723
07:58	MP32191-SD1	2224	77621	2763	5849
08:03	JD41762-13F	2222	78093	2786	5833
08:09	JD41762-19F	2192	76717	2796	5701
08:14	JD41762-20F	2227	77747	2784	5836
08:19	MA52201-CCV3	2198	75790	2747	5687
08:24	MA52201-CCB3	2259	78800	2769	5964
08:29	JD41762-21F	2212	77354	2787	5747
08:35	JD41762-22F	2218	77461	2791	5757
08:40	JD41762-24F	2218	78174	2803	5802
08:45	JD41762-50F	2213	77100	2801	5750
08:50	JD41762-53F	2208	77305	2799	5761

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:55	JD41762-55F	2202	77044	2810	5723
09:01	JD41762-57F	2213	77132	2815	5749
09:06	JD41762-58F	2215	77390	2826	5761
09:11	JD41762-84F	2228	78225	2809	5823
09:16	MA52201-CCV4	2212	76634	2781	5718
09:21	MA52201-CCB4	2249	78751	2783	5937
09:26	JD41762-84F	2234	78291	2815	5832
09:31	JD41762-85F	2230	77459	2812	5848
09:37	JD41762-86F	2231	77810	2817	5844
09:42	MP32191-MB2	2249	78231	2841	5933
09:47	MP32191-B2	2220	76827	2839	5767
09:52	ZZZZZZ	2252	78742	2794	5946
09:57	ZZZZZZ	2257	78999	2795	5962
10:02	ZZZZZZ	2260	78623	2791	5955
10:08	MA52201-CCV5	2220	76527	2752	5739
10:13	MA52201-CCB5	2259	78617	2798	5973
10:18	MA52201-CRID2	2258	77993	2807	5947
10:23	MA52201-ICSA2	2075	71538	2732	5371
10:28	MA52201-ICSAB2	2073	71312	2759	5381
10:33	MA52201-CCV6	2225	76529	2797	5751
10:38	MA52201-CCB6	2266	78768	2794	5980

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			06:21		06:31		07:28		08:24	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2								
Antimony	6.0	2.8								
Arsenic	3.0	2.6	-0.600	<3.0	-0.900	<3.0	-0.700	<3.0	-0.800	<3.0
Barium	200	.2								
Beryllium	1.0	.2								
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4								
Calcium	5000	13								
Cerium	100									
Chromium	10	.7								
Cobalt	50	.6								
Copper	10	.7								
Iron	100	3.3								
Lead	3.0	2								
Lithium	50	1.5								
Magnesium	5000	25								
Manganese	15	.1								
Molybdenum	20	.6								
Nickel	10	.8								
Phosphorus	50	7								
Potassium	10000	35								
Selenium	10	3.6								
Silicon	200	2.2								
Silver	10	.6								
Sodium	10000	14								
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2								
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			06:21		06:31		07:28		08:24	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3								
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			09:21		10:13		10:38	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	9.2						
Antimony	6.0	2.8						
Arsenic	3.0	2.6	-0.900	<3.0	-1.10	<3.0	-1.70	<3.0
Barium	200	.2						
Beryllium	1.0	.2						
Bismuth	20	2.5						
Boron	100	1.8						
Cadmium	3.0	.4						
Calcium	5000	13						
Cerium	100							
Chromium	10	.7						
Cobalt	50	.6						
Copper	10	.7						
Iron	100	3.3						
Lead	3.0	2						
Lithium	50	1.5						
Magnesium	5000	25						
Manganese	15	.1						
Molybdenum	20	.6						
Nickel	10	.8						
Phosphorus	50	7						
Potassium	10000	35						
Selenium	10	3.6						
Silicon	200	2.2						
Silver	10	.6						
Sodium	10000	14						
Strontium	10	.1						
Sulfur	50	3.7						
Thallium	10	5.2						
Tin	10	1.4						
Titanium	10	.8						
Tungsten	50	1.3						
Vanadium	50	.5						

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			09:21		10:13		10:38	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.3						
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:13			06:26			07:23	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	2060	103.0	2000	1970	98.5	2000	1980	99.0
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Cerium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:13			06:26			07:23	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc									
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		08:19			09:16			10:08	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	1980	99.0	2000	1980	99.0	2000	1990	99.5
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Cerium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		08:19			09:16			10:08	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc									
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		10:33	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	2000	1980	99.0
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Cerium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium			
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		10:33	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc			
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:57			07:02	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	8000	7700	96.3			
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:57			07:02	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc						
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52201 Units: ug/l

Time:				06:36		06:42		10:18	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	7.20	90.0			3.00	100.0
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000						
Cerium									
Chromium	10		2.0						
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0						
Molybdenum	20								
Nickel	10		4.0						
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000						
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52201 Units: ug/l

Time:				06:36		06:42		10:18	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10						
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52201 Units: ug/l

Time:			06:47		06:52		10:23		10:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	511000	102.2	515000	103.0	513000	102.6	516000	103.2
Antimony		1000	4.70		1060	106.0	0.200		1060	106.0
Arsenic		1000	-0.900		1030	103.0	0.00		1030	103.0
Barium		500	4.90		493	98.6	4.90		495	99.0
Beryllium		500	0.100		486	97.2	0.300		485	97.0
Bismuth		500	-3.50		487	97.4	-3.80		490	98.0
Boron		500	0.800		497	99.4	1.40		500	100.0
Cadmium		1000	0.00		1030	103.0	-0.100		1030	103.0
Calcium	400000	400000	383000	95.8	392000	98.0	384000	96.0	391000	97.8
Cerium			39.3		536*		37.0		541*	
Chromium		500	-0.700		476	95.2	-1.10		475	95.0
Cobalt		500	0.400		472	94.4	0.400		473	94.6
Copper		500	1.50		518	103.6	2.10		522	104.4
Iron	200000	200000	191000	95.5	198000	99.0	190000	95.0	197000	98.5
Lead		1000	4.70*		942	94.2	6.70*		942	94.2
Lithium		500	-2.80		561	112.2	-6.00		561	112.2
Magnesium	500000	500000	504000	100.8	502000	100.4	504000	100.8	499000	99.8
Manganese		500	11.8		513	102.6	11.6		513	102.6
Molybdenum		500	1.50		490	98.0	0.700		490	98.0
Nickel		1000	1.80		935	93.5	2.30		937	93.7
Phosphorus		500	10.4		494	98.8	10.8		494	98.8
Potassium			13.1		80.4		44.6		40.8	
Selenium		1000	9.40		958	95.8	9.70		956	95.6
Silicon		500	-18.5		518	103.6	-18.4		520	104.0
Silver		1000	3.30		1060	106.0	3.10		1060	106.0
Sodium			24.6		21.5		24.6		17.3	
Strontium		500	-1.60		501	100.2	-1.30		503	100.6
Sulfur		500	16.4		519	103.8	15.3		522	104.4
Thallium		1000	3.70		923	92.3	1.90		931	93.1
Tin		500	-6.30		473	94.6	-6.30		470	94.0
Titanium		500	-2.30		495	99.0	-2.00		498	99.6
Tungsten		500	-5.90		501	100.2	-6.50		499	99.8
Vanadium		500	-0.600		475	95.0	-0.600		476	95.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52201 Units: ug/l

Time:			06:47		06:52		10:23		10:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	8.00		944	94.4	8.30		941	94.1
Zirconium		500	0.900		471	94.2	1.10		474	94.8

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:22	MA52204-STD1	1		STDA
06:27	MA52204-STD2	1		STDB
06:32	MA52204-ICV1	1		
06:40	MA52204-ICB1	1		
06:51	MA52204-ICCV1	1		
07:00	MA52204-CCB1	1		
07:04	MA52204-CRI1	1		
07:10	MA52204-CRID1	1		
07:15	MA52204-ICSA1	1		
07:20	MA52204-ICSAB1	1		
07:25	MA52204-HSTD1	1		
07:30	MA52204-HSTD2	1		
07:35	ZZZZZZ	1		
07:40	ZZZZZZ	1		
07:46	ZZZZZZ	1		
07:51	MA52204-CCV1	1		
07:56	MA52204-CCB2	1		
08:01	MA52204-CRID2	1		
08:06	MA52204-CRI2	1		
08:11	ZZZZZZ	1		
08:17	JD41762-13F	1		
08:22	JD41762-20F	1		
08:27	JD41762-21F	1		
---------->	Last reportable sample/prep for job JD41762			
08:32	MA52204-CCV2	1		
08:37	MA52204-CCB3	1		
08:42	MP32200-MB1	1		
08:48	MP32200-B1	1		
08:52	MP32200-S1	1		
08:57	MP32200-S2	1		
09:02	JD42610-21	1		(sample used for QC only; not part of login JD41762)
09:07	MP32200-SD1	5		
09:12	ZZZZZZ	1		
09:17	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:23	ZZZZZZ	1		
09:28	MA52204-CCV3	1		
09:33	MA52204-CCB4	1		
09:38	ZZZZZZ	1		
09:43	ZZZZZZ	1		
09:49	ZZZZZZ	1		
09:54	MA52204-CRID3	1		
09:59	MA52204-CRI3	1		
10:04	ZZZZZZ	1		
10:10	ZZZZZZ	1		
10:15	ZZZZZZ	1		
10:20	ZZZZZZ	1		
10:25	MA52204-CCV4	1		
10:30	MA52204-CCB5	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:56	ZZZZZZ	1		
11:01	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		
11:16	ZZZZZZ	1		
11:22	MA52204-CCV5	1		
11:27	MA52204-CCB6	1		
11:32	MA52204-ICSA2	1		
11:37	MA52204-ICSAB2	1		
11:42	ZZZZZZ	1		
11:47	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:57	MA52204-CCV6	1		
12:02	MA52204-CCB7	1		

----------> Last reportable CCB for job JD41762
Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Element: Dilution	As
06:32	MA52204-ICV1	1	X
06:40	MA52204-ICB1	1	X
06:51	MA52204-ICCV1	1	X
07:00	MA52204-CCB1	1	X
07:04	MA52204-CRI1	1	
07:10	MA52204-CRID1	1	
07:15	MA52204-ICSA1	1	X
07:20	MA52204-ICSAB1	1	X
07:25	MA52204-HSTD1	1	X
07:30	MA52204-HSTD2	1	X
07:35	ZZZZZZ	1	
07:40	ZZZZZZ	1	
07:46	ZZZZZZ	1	
07:51	MA52204-CCV1	1	X
07:56	MA52204-CCB2	1	X
08:01	MA52204-CRID2	1	X
08:06	MA52204-CRI2	1	X
08:11	ZZZZZZ	1	
08:17	JD41762-13F	1	X
08:22	JD41762-20F	1	X
08:27	JD41762-21F	1	X
08:32	MA52204-CCV2	1	X
08:37	MA52204-CCB3	1	X
08:42	MP32200-MB1	1	X
08:48	MP32200-B1	1	X
08:52	MP32200-S1	1	X
08:57	MP32200-S2	1	X
09:02	JD42610-21	1	(a)
09:07	MP32200-SD1	5	X
09:12	ZZZZZZ	1	
09:17	ZZZZZZ	1	
09:23	ZZZZZZ	1	
09:28	MA52204-CCV3	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Element: Dilution	As
09:33	MA52204-CCB4	1	X
09:38	ZZZZZZ	1	
09:43	ZZZZZZ	1	
09:49	ZZZZZZ	1	
09:54	MA52204-CRID3	1	X
09:59	MA52204-CRI3	1	X
10:04	ZZZZZZ	1	
10:10	ZZZZZZ	1	
10:15	ZZZZZZ	1	
10:20	ZZZZZZ	1	
10:25	MA52204-CCV4	1	X
10:30	MA52204-CCB5	1	X
10:35	ZZZZZZ	1	
10:40	ZZZZZZ	1	
10:45	ZZZZZZ	1	
10:50	ZZZZZZ	1	
10:56	ZZZZZZ	1	
11:01	ZZZZZZ	1	
11:06	ZZZZZZ	1	
11:11	ZZZZZZ	1	
11:16	ZZZZZZ	1	
11:22	MA52204-CCV5	1	X
11:27	MA52204-CCB6	1	X
11:32	MA52204-ICSA2	1	X
11:37	MA52204-ICSAB2	1	X
11:42	ZZZZZZ	1	
11:47	ZZZZZZ	1	
11:52	ZZZZZZ	1	
11:57	MA52204-CCV6	1	X
12:02	MA52204-CCB7	1	X

(a) Sample used for QC only; not part of login JD41762.

	Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:22	MA52204-STD1	2280 R	75390 R	2549 R	6084 R
06:27	MA52204-STD2	2257	73820	2565	5916
06:32	MA52204-ICV1	2275	75133	2589	5944
06:40	MA52204-ICB1	2319	76860	2574	6190
06:51	MA52204-ICCV1	2277	74637	2559	5986
07:00	MA52204-CCB1	2313	76338	2560	6197
07:04	MA52204-CRI1	No results reported for the elements associated with this internal standard.			
07:10	MA52204-CRID1	No results reported for the elements associated with this internal standard.			
07:15	MA52204-ICSA1	2147	71201	2595	5650
07:20	MA52204-ICSAB1	2125	70880	2589	5627
07:25	MA52204-HSTD1	2298	76706	2635	6283
07:30	MA52204-HSTD2	2171	73169	2601	5684
07:35	ZZZZZZ	2320	77961	2665	6398
07:40	ZZZZZZ	2310	79186	2703	6338
07:46	ZZZZZZ	2367	79918	2702	6378
07:51	MA52204-CCV1	2272	75842	2645	6008
07:56	MA52204-CCB2	2331	78402	2673	6276
08:01	MA52204-CRID2	2336	78421	2685	6297
08:06	MA52204-CRI2	2324	77660	2671	6245
08:11	ZZZZZZ	2362	78970	2695	6362
08:17	JD41762-13F	2373	79122	2728	6355
08:22	JD41762-20F	2358	79167	2710	6326
08:27	JD41762-21F	2318	77082	2698	6180
08:32	MA52204-CCV2	2325	75863	2679	6179
08:37	MA52204-CCB3	2367	78956	2684	6427
08:42	MP32200-MB1	2363	79494	2678	6414
08:48	MP32200-B1	2346	78209	2715	6261
08:52	MP32200-S1	2274	76346	2708	6049
08:57	MP32200-S2	2296	77003	2740	6114
09:02	JD42610-21	2304	77202	2715	6140
09:07	MP32200-SD1	2385	79558	2725	6408
09:12	ZZZZZZ	2342	78654	2757	6258
09:17	ZZZZZZ	2386	79289	2758	6479

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:23	ZZZZZZ	2385	79891	2734	6470
09:28	MA52204-CCV3	2340	77707	2706	6232
09:33	MA52204-CCB4	2393	79677	2744	6500
09:38	ZZZZZZ	2308	77674	2732	6178
09:43	ZZZZZZ	2384	79396	2768	6463
09:49	ZZZZZZ	2371	78856	2744	6418
09:54	MA52204-CRID3	2382	79656	2734	6476
09:59	MA52204-CRI3	2360	78758	2724	6380
10:04	ZZZZZZ	2315	78048	2737	6181
10:10	ZZZZZZ	2374	79035	2775	6429
10:15	ZZZZZZ	2342	77874	2758	6266
10:20	ZZZZZZ	2324	77940	2762	6165
10:25	MA52204-CCV4	2345	77916	2738	6234
10:30	MA52204-CCB5	2398	79771	2754	6522
10:35	ZZZZZZ	2366	79262	2798	6217
10:40	ZZZZZZ	2285	77121	2729	6117
10:45	ZZZZZZ	2251	76484	2703	5979
10:50	ZZZZZZ	2263	76751	2706	6028
10:56	ZZZZZZ	2164	73803	2670	5662
11:01	ZZZZZZ	2140	73229	2632	5561
11:06	ZZZZZZ	2245	77233	2725	5977
11:11	ZZZZZZ	2147	74152	2687	5605
11:16	ZZZZZZ	2126	73483	2675	5451
11:22	MA52204-CCV5	2313	77470	2737	6132
11:27	MA52204-CCB6	2373	80088	2777	6426
11:32	MA52204-ICSA2	2165	72636	2728	5745
11:37	MA52204-ICSAB2	2153	71032	2674	5734
11:42	ZZZZZZ	2238	76493	2732	5853
11:47	ZZZZZZ	2321	78188	2758	6166
11:52	ZZZZZZ	2302	78533	2763	6118
11:57	MA52204-CCV6	2323	77941	2761	6165
12:02	MA52204-CCB7	2358	79083	2742	6380

R = Reference for ISTD limits. ! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			06:40		07:00		07:56		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2	anr							
Antimony	6.0	2.8	anr							
Arsenic	3.0	2.6	-0.700	<3.0	0.900	<3.0	-0.600	<3.0	0.900	<3.0
Barium	200	.2	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4	anr							
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	.7	anr							
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35	anr							
Selenium	10	3.6	anr							
Silicon	200	2.2								
Silver	10	.6	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2	anr							
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			06:40		07:00		07:56		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			09:33		10:30		11:27		12:02	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2	anr							
Antimony	6.0	2.8	anr							
Arsenic	3.0	2.6	-0.600	<3.0	0.600	<3.0	1.40	<3.0	0.600	<3.0
Barium	200	.2	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4	anr							
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	.7	anr							
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35	anr							
Selenium	10	3.6	anr							
Silicon	200	2.2								
Silver	10	.6	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2	anr							
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			09:33		10:30		11:27		12:02	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52204 Units: ug/l

Time:		06:51	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1960	98.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52204 Units: ug/l

Time:		06:51	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		06:32			07:51			08:32	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2010	100.5	2000	1970	98.5	2000	1970	98.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		06:32			07:51			08:32	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		09:28			10:25			11:22	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1960	98.0	2000	1960	98.0	2000	1930	96.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		09:28			10:25			11:22	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		11:57	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1940	97.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		11:57	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52204 Units: ug/l

Time:		07:25			07:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7490	93.6			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52204 Units: ug/l

Time:		07:25			07:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				08:01		08:06		09:54	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	3.30	110.0	8.20	102.5	2.60	86.7
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				08:01		08:06		09:54	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				09:59	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	8.50	106.3
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				09:59	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52204 Units: ug/l

Time:			07:15		07:20		11:32		11:37	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	496000	99.2	503000	100.6	484000	96.8	492000	98.4
Antimony		1000	4.80		1050	105.0	4.60		1010	101.0
Arsenic		1000	-0.300		1020	102.0	1.40		999	99.9
Barium		500	4.40		473	94.6	3.70		461	92.2
Beryllium		500	0.300		474	94.8	0.200		453	90.6
Bismuth		500	-0.900		473	94.6	1.70		458	91.6
Boron		500	1.80		490	98.0	1.60		483	96.6
Cadmium		1000	0.200		1020	102.0	0.400		987	98.7
Calcium	400000	400000	373000	93.3	388000	97.0	358000	89.5	372000	93.0
Cerium			33.7		516*		24.5		503*	
Chromium		500	-0.800		465	93.0	-0.700		454	90.8
Cobalt		500	1.00		462	92.4	1.10		447	89.4
Copper		500	-1.70		514	102.8	-2.40		538	107.6
Iron	200000	200000	187000	93.5	197000	98.5	177000	88.5	188000	94.0
Lead		1000	-0.800		905	90.5	2.00		860	86.0
Lithium		500	-5.30		545	109.0	-7.40		519	103.8
Magnesium	500000	500000	489000	97.8	485000	97.0	464000	92.8	463000	92.6
Manganese		500	-0.400		489	97.8	-0.300		483	96.6
Molybdenum		500	1.10		482	96.4	0.900		460	92.0
Nickel		1000	1.30		905	90.5	1.40		864	86.4
Phosphorus		500	8.90		484	96.8	6.20		474	94.8
Potassium			52.0		120		80.5		33.4	
Selenium		1000	3.40		931	93.1	-7.90		883	88.3
Silicon		500	-18.9		515	103.0	-15.8		499	99.8
Silver		1000	1.90		1030	103.0	2.30		1010	101.0
Sodium			19.4		3.70		166		137	
Strontium		500	-1.20		482	96.4	-1.10		473	94.6
Sulfur		500	29.5		528	105.6	33.7		517	103.4
Thallium		1000	3.80		906	90.6	-0.200		864	86.4
Tin		500	-6.00		464	92.8	-6.50		449	89.8
Titanium		500	-2.50		480	96.0	-1.70		459	91.8
Tungsten		500	-5.40		495	99.0	-5.90		474	94.8
Vanadium		500	-1.60		463	92.6	-1.70		446	89.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52204 Units: ug/l

Time:			07:15		07:20		11:32		11:37	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	6.10		926	92.6	6.30		884	88.4
Zirconium		500	2.00		440	88.0	2.60		432	86.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:01	MA52222-STD1	1		STDA
06:06	MA52222-STD2	1		STDB
06:11	MA52222-ICV1	1		
06:16	MA52222-ICB1	1		
06:23	MA52222-ICCV1	1		
06:36	MA52222-CCB1	1		
06:42	MA52222-CRID1	1		
06:48	MA52222-CRI1	1		
06:52	MA52222-ICSA1	1		
06:58	MA52222-ICSAB1	1		
07:03	MA52222-HSTD1	1		
07:08	MA52222-HSTD2	1		
07:14	ZZZZZZ	1		
07:19	ZZZZZZ	1		
07:24	MA52222-CRID2	1		
07:29	ZZZZZZ	1		
07:34	MA52222-CCV1	1		
07:38	MA52222-CCB2	1		
07:43	MP32248-MB1	1		
07:48	MP32248-B1	1		
07:53	MP32248-S1	1		Ca, FE high
07:58	MP32248-S2	1		Ca, FE high
08:03	JD42748-1	1		(sample used for QC only; not part of login JD41762)
08:08	MP32248-SD1	5		Ca, FE high
08:13	MP32248-PS1	1		
08:17	ZZZZZZ	1		
08:22	MA52222-CCV2	1		
08:29	MA52222-CCB3	1		
08:34	ZZZZZZ	1		
08:39	ZZZZZZ	1		
08:44	ZZZZZZ	1		
08:49	ZZZZZZ	1		
08:54	MP32253-B1	1		

----------> Last reportable sample/prep for job JD41762

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:58	ZZZZZZ	2		
09:03	ZZZZZZ	1		
09:09	MA52222-CCV3	1		
09:14	MA52222-CCB4	1		
09:21	MA52222-CRI2	1		
09:27	MA52222-ICSA2	1		
09:32	MA52222-ICSAB2	1		
09:38	MA52222-CCV4	1		
09:42	MA52222-CCB5	1		

----------> Last reportable CCB for job JD41762
Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Element: Dilution	As	
06:11	MA52222-ICV1	1	X	
06:16	MA52222-ICB1	1	X	
06:23	MA52222-ICCV1	1	X	
06:36	MA52222-CCB1	1	X	
06:42	MA52222-CRID1	1		
06:48	MA52222-CRI1	1	X	
06:52	MA52222-ICSA1	1	X	
06:58	MA52222-ICSAB1	1	X	
07:03	MA52222-HSTD1	1	X	
07:08	MA52222-HSTD2	1	X	
07:14	ZZZZZZ	1		
07:19	ZZZZZZ	1		
07:24	MA52222-CRID2	1	X	
07:29	ZZZZZZ	1		
07:34	MA52222-CCV1	1	X	
07:38	MA52222-CCB2	1	X	
07:43	MP32248-MB1	1	X	
07:48	MP32248-B1	1	X	
07:53	MP32248-S1	1	X	
07:58	MP32248-S2	1	X	
08:03	JD42748-1	1		(a)
08:08	MP32248-SD1	5	X	
08:13	MP32248-PS1	1		
08:17	ZZZZZZ	1		
08:22	MA52222-CCV2	1	X	
08:29	MA52222-CCB3	1	X	
08:34	ZZZZZZ	1		
08:39	ZZZZZZ	1		
08:44	ZZZZZZ	1		
08:49	ZZZZZZ	1		
08:54	MP32253-B1	1	X	
08:58	ZZZZZZ	2		
09:03	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Element: Dilution	As
09:09	MA52222-CCV3	1	X
09:14	MA52222-CCB4	1	X
09:21	MA52222-CRI2	1	X
09:27	MA52222-ICSA2	1	X
09:32	MA52222-ICSAB2	1	X
09:38	MA52222-CCV4	1	X
09:42	MA52222-CCB5	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:01	MA52222-STD1	6491 R	202350 R	20972 R	11389 R
06:06	MA52222-STD2	6122	187720	20802	10066
06:11	MA52222-ICV1	6277	193110	21144	10395
06:16	MA52222-ICB1	6470	202410	21128	11326
06:23	MA52222-ICCV1	6340	193160	21117	10512
06:36	MA52222-CCB1	6517	201890	21390	11456
06:42	MA52222-CRID1	No results reported for the elements associated with this internal standard.			
06:48	MA52222-CRI1	6478	202790	21333	11297
06:52	MA52222-ICSA1	5938	178350	21186	9456
06:58	MA52222-ICSAB1	5952	179630	21226	9498
07:03	MA52222-HSTD1	6440	200690	21665	11288
07:08	MA52222-HSTD2	6049	184640	21371	9551
07:14	ZZZZZZ	6423	197690	21257	11440
07:19	ZZZZZZ	6398	201110	21165	11504
07:24	MA52222-CRID2	6640	207050	21686	11627
07:29	ZZZZZZ	6512	203450	21334	11549
07:34	MA52222-CCV1	6532	201570	22167	10806
07:38	MA52222-CCB2	6736	211370	21848	11789
07:43	MP32248-MB1	6802	212310	22420	11901
07:48	MP32248-B1	6643	208130	22699	11157
07:53	MP32248-S1	6881	210480	23917	10727
07:58	MP32248-S2	6770	210110	23625	10715
08:03	JD42748-1	6629	204370	23501	10364
08:08	MP32248-SD1	6780	211240	22758	11263
08:13	MP32248-PS1	6559	203140	23223	10223
08:17	ZZZZZZ	6884	211820	23562	11245
08:22	MA52222-CCV2	6739	207080	22764	11090
08:29	MA52222-CCB3	6929	217110	22345	12070
08:34	ZZZZZZ	6823	216040	22725	11916
08:39	ZZZZZZ	6805	217510	23014	11916
08:44	ZZZZZZ	6905	207950	23645	11200
08:49	ZZZZZZ	6879	211670	23532	11317
08:54	MP32253-B1	6915	213630	23005	11479

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:58	ZZZZZZ	6980	215350	23288	11612
09:03	ZZZZZZ	6855	209060	22920	11807
09:09	MA52222-CCV3	6830	208750	22909	11125
09:14	MA52222-CCB4	7059	220170	22764	12199
09:21	MA52222-CRI2	6992	217380	22957	12038
09:27	MA52222-ICSA2	6380	195050	22705	10055
09:32	MA52222-ICSAB2	6390	195140	22795	10092
09:38	MA52222-CCV4	6849	212330	23213	11310
09:42	MA52222-CCB5	7068	221910	23032	12341

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time: / Sample ID:			06:16 ICB1		06:36 CCB1		07:38 CCB2		08:29 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.00	<3.0	0.400	<3.0	-1.30	<3.0	-0.600	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3	anr							
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time:			06:16		06:36		07:38		08:29	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time: / Sample ID:			09:14 CCB4		09:42 CCB5	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	17	anr			
Antimony	6.0	1.7	anr			
Arsenic	3.0	2.1	0.100	<3.0	-0.500	<3.0
Barium	200	.8	anr			
Beryllium	1.0	.3	anr			
Bismuth	20	2.3				
Boron	100	2.3				
Cadmium	3.0	.3	anr			
Calcium	5000	6.6	anr			
Cerium	100					
Chromium	10	.3	anr			
Cobalt	50	.4	anr			
Copper	10	.8	anr			
Iron	100	5.3	anr			
Lead	3.0	1.1	anr			
Lithium	50	4.8				
Magnesium	5000	32	anr			
Manganese	15	.1	anr			
Molybdenum	20	.6				
Nickel	10	.4	anr			
Phosphorus	50	1.2				
Potassium	10000	77	anr			
Selenium	10	3.2	anr			
Silicon	200	1.7				
Silver	10	1	anr			
Sodium	10000	34	anr			
Strontium	10	.3				
Sulfur	50	3	anr			
Thallium	10	1.8	anr			
Tin	10	.8				
Titanium	10	.5				
Tungsten	50	2.6				
Vanadium	50	.6	anr			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

			Time:		09:14		09:42	
			Sample ID:		CCB4		CCB5	
Metal	RL	IDL			raw	final	raw	final
Zinc	20	.1			anr			
Zirconium	10	.3						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52222 Units: ug/l

Time:		06:23	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1970	98.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52222 Units: ug/l

Time:		06:23	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		06:11			07:34			08:22	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2020	101.0	2000	1910	95.5	2000	1850	92.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		06:11			07:34			08:22	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		09:09			09:38	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	1850	92.5	2000	1820	91.0
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur	anr					
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		09:09			09:38	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52222 Units: ug/l

Time:		07:03			07:08	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7630	95.4			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver						
Sodium						
Strontium						
Sulfur	anr					
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52222 Units: ug/l

Time:		07:03			07:08	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52222 Units: ug/l

Time:				06:48		07:24		09:21	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	7.80	97.5	2.40	80.0	6.40	80.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50			anr					
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52222 Units: ug/l

Time:				06:48		07:24		09:21	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52222 Units: ug/l

Time:			06:52		06:58		09:27		09:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	505000	101.0	504000	100.8	466000	93.2	467000	93.4
Antimony		1000	-1.60		960	96.0	-2.60		892	89.2
Arsenic		1000	0.500		960	96.0	0.500		889	88.9
Barium		500	6.10		462	92.4	5.40		430	86.0
Beryllium		500	0.100		453	90.6	0.00		419	83.8
Bismuth		500	-9.40		458	91.6	-6.90		424	84.8
Boron		500	-0.500		452	90.4	0.500		419	83.8
Cadmium		1000	0.600		963	96.3	0.400		889	88.9
Calcium	400000	400000	378000	94.5	393000	98.3	353000	88.3	358000	89.5
Cerium			13.4		471*		14.6		430*	
Chromium		500	-1.70		445	89.0	-1.10		406	81.2
Cobalt		500	0.700		455	91.0	0.700		426	85.2
Copper		500	2.90		487	97.4	3.40		440	88.0
Iron	200000	200000	191000	95.5	201000	100.5	177000	88.5	186000	93.0
Lead		1000	0.200		882	88.2	-1.80		823	82.3
Lithium		500	-7.60		525	105.0	-7.10		485	97.0
Magnesium	500000	500000	498000	99.6	488000	97.6	458000	91.6	449000	89.8
Manganese		500	0.800		479	95.8	0.800		436	87.2
Molybdenum		500	-2.00		455	91.0	-1.80		421	84.2
Nickel		1000	0.300		877	87.7	0.200		822	82.2
Phosphorus		500	-9.60		444	88.8	-9.50		416	83.2
Potassium			-601		-616		-578		-568	
Selenium		1000	2.60		877	87.7	3.30		810	81.0
Silicon		500	6.60		504	100.8	6.10		470	94.0
Silver		1000	4.90		1030	103.0	4.40		932	93.2
Sodium			65.2		80.3		59.4		71.4	
Strontium		500	-1.20		457	91.4	-1.30		424	84.8
Sulfur		500	-24.9		428	85.6	-15.4		405	81.0
Thallium		1000	-6.20		868	86.8	-4.40		809	80.9
Tin		500	-4.70		440	88.0	-4.80		408	81.6
Titanium		500	-2.10		463	92.6	-1.70		423	84.6
Tungsten		500	-0.300		468	93.6	0.00		435	87.0
Vanadium		500	-3.90		460	92.0	-2.60		420	84.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52222 Units: ug/l

Time:			06:52		06:58		09:27		09:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.50		879	87.9	2.40		811	81.1
Zirconium		500	1.60		426	85.2	1.30		389	77.8*

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:27	MA52223-STD1	1		STDA
10:33	MA52223-STD2	1		STDB
10:37	MA52223-ICV1	1		
10:45	MA52223-ICB1	1		
10:53	MA52223-ICCV1	1		
11:00	MA52223-CCB1	1		
11:05	MA52223-CRID1	1		
11:10	MA52223-CRI1	1		
11:15	MA52223-ICSA1	1		
11:20	MA52223-ICSAB1	1		
11:25	MA52223-HSTD1	1		
11:30	MA52223-HSTD2	1		
11:35	MP32253-B1	1		
11:40	MP32253-MB1	1		
11:45	MP32253-S1	1		Ca, MN, Na high
11:50	MA52223-CCV1	1		
11:55	MA52223-CCB2	1		
12:00	MP32253-S2	1		Ca, MN, Na high
12:05	JD42841-1	1		(sample used for QC only; not part of login JD41762)
12:11	MP32253-SD1	5		Ca, MN, Na high
12:16	JD41762-52F	1		
---------->	Last reportable sample/prep for job JD41762			
12:21	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:31	MA52223-CRI2	1		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	2		
12:47	MA52223-CCV2	1		
12:51	MA52223-CCB3	1		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52223-CRID2	1		
13:12	MA52223-ICSA2	1		
13:17	MA52223-ICSAB2	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:22	MP32249-S1	2		
13:27	MP32249-S2	2		
13:32	DA43674-3	2		(sample used for QC only; not part of login JD41762)
13:36	MP32249-SD1	10		
13:42	MA52223-CCV3	1		
13:46	MA52223-CCB4	1		
---------->	Last reportable CCB for job JD41762			
13:52	MP32284-B1	1		
13:56	MP32284-MB1	1		
14:01	MP32284-S1	1		
14:06	MP32284-S2	1		
14:11	JD42918-1	1		(sample used for QC only; not part of login JD41762)
14:16	MP32284-SD1	5		
14:22	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:32	MA52223-CCV4	1		
14:37	MA52223-CCB5	1		
14:42	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	MA52223-CCV5	1		
15:13	MA52223-CCB6	1		
15:18	ZZZZZZ	1		
15:22	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:37	MA52223-ICV1	1	X	
10:45	MA52223-ICB1	1	X	
10:53	MA52223-ICCV1	1	X	
11:00	MA52223-CCB1	1	X	
11:05	MA52223-CRID1	1	X	
11:10	MA52223-CRI1	1	X	
11:15	MA52223-ICSA1	1	X	
11:20	MA52223-ICSAB1	1	X	
11:25	MA52223-HSTD1	1	X	
11:30	MA52223-HSTD2	1	X	
11:35	MP32253-B1	1	X	
11:40	MP32253-MB1	1	X	
11:45	MP32253-S1	1		
11:50	MA52223-CCV1	1	X	
11:55	MA52223-CCB2	1	X	
12:00	MP32253-S2	1		
12:05	JD42841-1	1		(a)
12:11	MP32253-SD1	5		
12:16	JD41762-52F	1	X	
12:21	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:31	MA52223-CRI2	1	X	
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	2		
12:47	MA52223-CCV2	1	X	
12:51	MA52223-CCB3	1	X	
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52223-CRID2	1	X	
13:12	MA52223-ICSA2	1	X	
13:17	MA52223-ICSAB2	1	X	
13:22	MP32249-S1	2		
13:27	MP32249-S2	2		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:32	DA43674-3	2		(a)
13:36	MP32249-SD1	10		
13:42	MA52223-CCV3	1	X	
13:46	MA52223-CCB4	1	X	
13:52	MP32284-B1	1		
13:56	MP32284-MB1	1		
14:01	MP32284-S1	1		
14:06	MP32284-S2	1		
14:11	JD42918-1	1		(a)
14:16	MP32284-SD1	5		
14:22	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:32	MA52223-CCV4	1	X	
14:37	MA52223-CCB5	1	X	
14:42	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	MA52223-CCV5	1	X	
15:13	MA52223-CCB6	1	X	
15:18	ZZZZZZ	1		
15:22	ZZZZZZ	1		

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:27	MA52223-STD1	2369 R	67137 R	8780 R	6285 R
10:33	MA52223-STD2	2245	62614	8598	5582
10:37	MA52223-ICV1	2302	63909	8687	5756
10:45	MA52223-ICB1	2372	66513	8778	6261
10:53	MA52223-ICCV1	2301	63353	8746	5728
11:00	MA52223-CCB1	2376	66450	8867	6252
11:05	MA52223-CRID1	2377	66359	8908	6219
11:10	MA52223-CRI1	2362	65555	8857	6130
11:15	MA52223-ICSA1	2129	57681	8541	5108
11:20	MA52223-ICSAB1	2120	57149	8466	5097
11:25	MA52223-HSTD1	2334	65581	8819	6096
11:30	MA52223-HSTD2	2145	58715	8510	5120
11:35	MP32253-B1	2310	63943	8861	5803
11:40	MP32253-MB1	2353	66072	8876	6174
11:45	MP32253-S1	2169	59491	8605	5197
11:50	MA52223-CCV1	2299	62263	8729	5681
11:55	MA52223-CCB2	2367	65430	8797	6181
12:00	MP32253-S2	2174	59570	8730	5202
12:05	JD42841-1	2157	59744	8685	5296
12:11	MP32253-SD1	2289	63269	8809	5819
12:16	JD41762-52F	2305	63411	8850	5766
12:21	ZZZZZZ	2355	65608	8940	6162
12:26	ZZZZZZ	2364	65558	8861	6167
12:31	MA52223-CRI2	2334	64660	8837	6049
12:37	ZZZZZZ	2400	64909	9381	5803
12:42	ZZZZZZ	2349	64174	8985	5880
12:47	MA52223-CCV2	2291	62229	8777	5657
12:51	MA52223-CCB3	2359	65429	8850	6162
12:57	ZZZZZZ	2358	65986	8982	6173
13:02	ZZZZZZ	2358	65163	8869	6145
13:07	MA52223-CRID2	2349	65154	8858	6123
13:12	MA52223-ICSA2	2109	56308	8459	5033
13:17	MA52223-ICSAB2	2123	56127	8583	5043

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:22	MP32249-S1	2340	63187	9141	5677
13:27	MP32249-S2	2331	63207	9108	5692
13:32	DA43674-3	2325	63847	9186	5705
13:36	MP32249-SD1	2355	64630	8907	6044
13:42	MA52223-CCV3	2268	61752	8712	5603
13:46	MA52223-CCB4	2344	64950	8820	6117
13:52	MP32284-B1	2306	62920	8949	5777
13:56	MP32284-MB1	2344	65193	8963	6172
14:01	MP32284-S1	2163	59866	8783	5254
14:06	MP32284-S2	2157	59304	8729	5231
14:11	JD42918-1	2181	59416	8657	5334
14:16	MP32284-SD1	2285	62966	8893	5812
14:22	ZZZZZZ	2181	60144	8760	5374
14:27	ZZZZZZ	2193	60211	8765	5356
14:32	MA52223-CCV4	2272	62072	8830	5617
14:37	MA52223-CCB5	2338	63903	8783	6100
14:42	ZZZZZZ	2173	60320	8822	5362
14:47	ZZZZZZ	2168	60524	8922	5343
14:52	ZZZZZZ	2158	60245	8854	5313
14:58	ZZZZZZ	2156	59751	8819	5308
15:03	ZZZZZZ	2195	60303	8896	5337
15:08	MA52223-CCV5	2268	62116	8919	5605
15:13	MA52223-CCB6	2349	65197	8943	6135
15:18	ZZZZZZ	2310	63822	8949	6098
15:22	ZZZZZZ	2289	64665	8875	6093

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			10:45		11:00		11:55		12:51	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16								
Antimony	6.0	2.5								
Arsenic	3.0	2	0.00	<3.0	-0.900	<3.0	1.10	<3.0	1.60	<3.0
Barium	200	.4								
Beryllium	1.0	.1								
Bismuth	20	3.6								
Boron	100	1.9								
Cadmium	3.0	.4								
Calcium	5000	5.6								
Cerium	100									
Chromium	10	.5								
Cobalt	50	.5								
Copper	10	1	anr							
Iron	100	11	anr							
Lead	3.0	1.2	anr							
Lithium	50	2.3								
Magnesium	5000	65								
Manganese	15	.2								
Molybdenum	20	.4								
Nickel	10	.3	anr							
Phosphorus	50	4.1								
Potassium	10000	55								
Selenium	10	3.5								
Silicon	200	1.6								
Silver	10	1.1								
Sodium	10000	11	anr							
Strontium	10	.1								
Sulfur	50	4.4								
Thallium	10	2.5								
Tin	10	1								
Titanium	10	.4								
Tungsten	50	2.8								
Vanadium	50	.6								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			10:45		11:00		11:55		12:51	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			13:46	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Aluminum	200	16		
Antimony	6.0	2.5		
Arsenic	3.0	2	-0.400	<3.0
Barium	200	.4		
Beryllium	1.0	.1		
Bismuth	20	3.6		
Boron	100	1.9		
Cadmium	3.0	.4		
Calcium	5000	5.6		
Cerium	100			
Chromium	10	.5		
Cobalt	50	.5		
Copper	10	1	anr	
Iron	100	11	anr	
Lead	3.0	1.2	anr	
Lithium	50	2.3		
Magnesium	5000	65		
Manganese	15	.2		
Molybdenum	20	.4		
Nickel	10	.3	anr	
Phosphorus	50	4.1		
Potassium	10000	55		
Selenium	10	3.5		
Silicon	200	1.6		
Silver	10	1.1		
Sodium	10000	11	anr	
Strontium	10	.1		
Sulfur	50	4.4		
Thallium	10	2.5		
Tin	10	1		
Titanium	10	.4		
Tungsten	50	2.8		
Vanadium	50	.6		

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			13:46	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Zinc	20	.1	anr	
Zirconium	10	.4		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52223 Units: ug/l

Time:		10:53	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	2000	2010	100.5
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Cerium			
Chromium			
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium	anr		
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52223 Units: ug/l

Time:		10:53	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		10:37			11:50			12:47	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	1970	98.5	2000	2030	101.5	2000	2040	102.0
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Cerium									
Chromium									
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		10:37			11:50			12:47	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		13:42	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	2000	2030	101.5
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Cerium			
Chromium			
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium	anr		
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		13:42	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52223 Units: ug/l

Time:		11:25			11:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	8000	7430	92.9			
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52223 Units: ug/l

Time:		11:25			11:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				11:05		11:10		12:31	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	3.30	110.0	7.80	97.5	8.70	108.8
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000						
Cerium									
Chromium	10		2.0						
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0						
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				11:05		11:10		12:31	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				13:07	
Sample ID:	CRI	CRIA	CRID	CRID2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100		
Antimony	6.0	20	3.0		
Arsenic	8.0	20	3.0	2.80	93.3
Barium	200		4.0		
Beryllium	2.0		1.0		
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0		
Calcium	5000	2000	1000		
Cerium					
Chromium	10		2.0		
Cobalt	50		3.0		
Copper	10		2.0		
Iron	100	500			
Lead	3.0	20	2.5		
Lithium	50				
Magnesium	5000	2000	100		
Manganese	15		3.0		
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000		
Selenium	10	20	5.0		
Silicon	200				
Silver	5.0		2.0		
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0		
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				13:07	
Sample ID:	CRI	CRIA	CRID	CRID2	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52223 Units: ug/l

Time:			11:15		11:20		13:12		13:17	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	511000	102.2	520000	104.0	510000	102.0	513000	102.6
Antimony		1000	5.80		1020	102.0	5.50		1040	104.0
Arsenic		1000	1.60		1010	101.0	-0.300		1030	103.0
Barium		500	-46.6		429	85.8	-46.2		424	84.8
Beryllium		500	-0.400		464	92.8	-0.500		450	90.0
Bismuth		500	4.20		489	97.8	2.30		494	98.8
Boron		500	-2.70		475	95.0	-3.90		479	95.8
Cadmium		1000	-0.500		1030	103.0	-0.900		1010	101.0
Calcium	400000	400000	384000	96.0	398000	99.5	379000	94.8	388000	97.0
Cerium			147*		660*		151*		669*	
Chromium		500	-3.00		470	94.0	-2.40		482	96.4
Cobalt		500	-1.10		471	94.2	-1.50		482	96.4
Copper		500	-3.50		512	102.4	-2.60		520	104.0
Iron	200000	200000	190000	95.0	201000	100.5	192000	96.0	200000	100.0
Lead		1000	2.40		939	93.9	1.80		957	95.7
Lithium		500	5.20		568	113.6	4.50		567	113.4
Magnesium	500000	500000	499000	99.8	496000	99.2	495000	99.0	484000	96.8
Manganese		500	1.30		505	101.0	1.00		512	102.4
Molybdenum		500	-3.40		464	92.8	-3.70		467	93.4
Nickel		1000	-2.00		917	91.7	-1.50		917	91.7
Phosphorus		500	4.00		498	99.6	15.3		508	101.6
Potassium			147		172		159		165	
Selenium		1000	7.10		906	90.6	3.80		925	92.5
Silicon		500	-2.70		533	106.6	-4.80		537	107.4
Silver		1000	2.10		1040	104.0	-1.90		1050	105.0
Sodium			-32.2		-17.2		-25.6		-10.4	
Strontium		500	0.600		467	93.4	0.500		461	92.2
Sulfur		500	-6.40		465	93.0	-12.0		468	93.6
Thallium		1000	2.90		822	82.2	-0.700		930	93.0
Tin		500	-2.10		458	91.6	-3.00		464	92.8
Titanium		500	-0.700		495	99.0	-1.20		500	100.0
Tungsten		500	3.90		493	98.6	8.40		497	99.4
Vanadium		500	-0.700		500	100.0	0.00		508	101.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52223 Units: ug/l

Time:			11:15		11:20		13:12		13:17	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	4.90		917	91.7	4.70		920	92.0
Zirconium		500	-4.30		458	91.6	-3.60		466	93.2

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:07	MA52224-STD1	1		STDA
09:12	MA52224-STD2	1		STDB
09:17	MA52224-ICV1	1		
09:28	MA52224-ICB1	1		
09:34	MA52224-ICCV1	1		
09:41	MA52224-ICCV2	1		
09:49	MA52224-CCB1	1		
09:54	MA52224-CRI1	1		
09:59	MA52224-CRID1	1		
10:05	MA52224-ICSA1	1		
10:10	MA52224-ICSAB1	1		
10:15	MA52224-HSTD1	1		
10:21	MA52224-HSTD2	1		
10:26	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	ZZZZZZ	1		
10:41	MA52224-CCV1	1		
10:46	MA52224-CCB2	1		
10:51	MA52224-CRID2	1		
10:57	MP32251-MB1	1		
11:02	MP32251-B1	1		
11:06	MP32251-S1	1		
11:11	MP32251-S2	1		
11:16	JD42757-24	1		(sample used for QC only; not part of login JD41762)
11:21	MP32251-SD1	5		
11:26	MP32251-PS1	1		
11:31	ZZZZZZ	1		
11:37	MA52224-CCV2	1		
11:41	MA52224-CCB3	1		
11:47	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:07	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:27	ZZZZZZ	1		
12:32	MA52224-CCV3	1		
12:37	MA52224-CCB4	1		
12:42	ZZZZZZ	1		
12:47	ZZZZZZ	1		
12:52	ZZZZZZ	1		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:18	ZZZZZZ	1		
13:23	ZZZZZZ	1		
13:28	MA52224-CCV4	1		
13:33	MA52224-CCB5	1		
13:38	ZZZZZZ	1		
13:43	ZZZZZZ	5		
13:48	ZZZZZZ	1		
13:53	ZZZZZZ	10		
13:58	ZZZZZZ	5		
14:03	ZZZZZZ	5		
14:08	MP32254-PS1	1		
14:13	MP32255-PS1	1		
14:18	ZZZZZZ	1		
14:23	MA52224-CCV5	1		
14:28	MA52224-CCB6	1		
14:33	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:43	ZZZZZZ	1		
14:48	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:53	ZZZZZZ	5		
14:58	ZZZZZZ	5		
15:03	ZZZZZZ	2		
15:08	ZZZZZZ	2		
15:13	ZZZZZZ	2		
15:18	ZZZZZZ	2		
15:23	MA52224-CCV6	1		
15:28	MA52224-CCB7	1		
15:33	ZZZZZZ	5		
15:38	ZZZZZZ	25		
15:43	ZZZZZZ	5		
15:47	ZZZZZZ	25		
15:52	ZZZZZZ	5		
15:57	ZZZZZZ	25		
16:02	ZZZZZZ	5		
16:07	ZZZZZZ	25		
16:12	ZZZZZZ	5		
16:17	ZZZZZZ	25		
16:22	MA52224-CCV7	1		
16:27	MA52224-CCB8	1		
16:32	ZZZZZZ	5		
16:37	ZZZZZZ	25		
16:42	MP32234-B1	1		
16:47	MP32234-MB1	1		
16:52	MP32234-S1	1		
16:56	MP32234-S2	1		
17:01	JD42749-3F	1		(sample used for QC only; not part of login JD41762)
17:06	MP32234-SD1	5		
17:11	ZZZZZZ	1		
17:16	ZZZZZZ	1		
17:21	MA52224-CCV8	1		
17:26	MA52224-CCB9	1		
17:31	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:01	ZZZZZZ	1		
18:06	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:16	ZZZZZZ	1		
18:21	MA52224-CCV9	1		
18:26	MA52224-CCB10	1		
18:31	ZZZZZZ	1		
18:35	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:00	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:10	MP32250-S1	5		
19:15	MP32250-S2	5		
19:20	MA52224-CCV10	1		
19:25	MA52224-CCB11	1		
19:30	JD42757-3	5		(sample used for QC only; not part of login JD41762)
19:35	MP32250-SD1	25		
19:40	ZZZZZZ	5		
19:45	ZZZZZZ	5		
19:50	ZZZZZZ	5		
19:55	ZZZZZZ	5		
20:00	ZZZZZZ	5		
20:05	ZZZZZZ	5		
20:10	ZZZZZZ	5		
20:15	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:20	MA52224-CCV11	1		
20:25	MA52224-CCB12	1		
20:30	ZZZZZZ	5		
20:35	ZZZZZZ	5		
20:40	ZZZZZZ	5		
20:45	ZZZZZZ	5		
20:50	ZZZZZZ	5		
20:55	ZZZZZZ	5		
21:00	ZZZZZZ	5		
21:05	ZZZZZZ	5		
21:10	ZZZZZZ	5		
21:15	ZZZZZZ	5		
21:20	MA52224-CCV12	1		
21:25	MA52224-CCB13	1		
21:31	ZZZZZZ	5		
21:36	MP32258-B1	1		
21:41	MP32258-MB1	1		
21:46	MP32258-S1	1		
21:51	MP32258-S2	1		
21:55	JD42458-9	1		(sample used for QC only; not part of login JD41762)
22:01	MP32258-SD1	5		
22:06	ZZZZZZ	1		
22:11	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:21	MA52224-CCV13	1		
22:26	MA52224-CCB14	1		
22:31	ZZZZZZ	1		
22:36	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:47	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:57	ZZZZZZ	1		
23:02	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:07	ZZZZZZ	1		
23:12	ZZZZZZ	1		
23:17	ZZZZZZ	1		
23:22	MA52224-CCV14	1		
23:27	MA52224-CCB15	1		
23:32	ZZZZZZ	1		
23:38	ZZZZZZ	1		
23:43	ZZZZZZ	1		
23:48	ZZZZZZ	1		
23:53	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:03	ZZZZZZ	1		
00:08	ZZZZZZ	1		
00:14	MA52224-CCV15	1		
00:19	MA52224-CCB16	1		
00:24	MP32277-MB1	1		
00:29	MP32277-MB2	1		
00:34	MP32277-B1	1		
00:39	MP32277-B2	1		
00:44	MP32277-S1	1		
00:49	MP32277-S2	1		
00:54	JD42730-2FA	1		(sample used for QC only; not part of login JD41762)
00:59	MP32277-SD1	5		
01:04	ZZZZZZ	1		
01:09	ZZZZZZ	1		
01:14	MA52224-CCV16	1		
01:19	MA52224-CCB17	1		
01:24	ZZZZZZ	1		
01:29	ZZZZZZ	1		
01:34	ZZZZZZ	1		
01:39	ZZZZZZ	1		
01:44	ZZZZZZ	1		
01:50	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
01:55	ZZZZZZ	1		
02:00	ZZZZZZ	1		
02:05	ZZZZZZ	1		
02:10	ZZZZZZ	1		
02:15	MA52224-CCV17	1		
02:20	MA52224-CCB18	1		
02:25	ZZZZZZ	1		
02:31	ZZZZZZ	1		
02:36	ZZZZZZ	1		
02:41	ZZZZZZ	1		
02:46	ZZZZZZ	1		
02:51	MP32278-MB1	1		
02:56	MP32278-B1	1		
03:01	MP32278-S1	1		
03:06	MP32278-S2	1		
03:11	JD42840-5	1		(sample used for QC only; not part of login JD41762)
03:16	MA52224-CCV18	1		
03:21	MA52224-CCB19	1		
03:26	MP32278-SD1	5		
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:52	ZZZZZZ	1		
03:57	MP32279A-MB1	1		
04:02	MP32279A-B1	1		
04:07	MP32279A-S1	1		
04:12	MP32279A-S2	1		
04:17	MA52224-CCV19	1		
04:22	MA52224-CCB20	1		
04:28	JD42817-1	1		(sample used for QC only; not part of login JD41762)
04:33	MP32279A-SD1	5		
04:38	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:43	MP32285-MB1	1		
04:48	MP32285-LB1	1		
04:54	MP32285-B1	1		
04:58	MP32285-LS1	1		
05:03	MP32285-S1	1		
05:08	MP32285-S2	1		
05:13	JD42787-3A	1		(sample used for QC only; not part of login JD41762)
05:18	MA52224-CCV20	1		
05:23	MA52224-CCB21	1		
05:28	MP32285-SD1	5		
05:34	ZZZZZZ	1		
05:39	ZZZZZZ	1		
05:44	ZZZZZZ	1		
05:49	ZZZZZZ	1		
05:54	ZZZZZZ	1		
06:00	ZZZZZZ	1		
06:05	ZZZZZZ	1		
06:10	ZZZZZZ	1		
06:16	MA52224-CCV21	1		
06:21	MA52224-CCB22	1		
06:26	MP32282-MB1	1		
06:31	MP32282-LB1	1		
06:36	MP32282-B1	1		
06:41	MP32282-LS1	1		
06:46	ZZZZZZ	1		
06:51	ZZZZZZ	1		
06:56	ZZZZZZ	1		
07:01	ZZZZZZ	1		
07:22	MP32280-B1	1		CCV out
---------->	Last reportable sample/prep for job JD41762			
07:26	MA52224-CCV22	1		
07:32	MA52224-CCB23	1		
---------->	Last reportable CCB for job JD41762			
07:36	MP32282-S1	25		
07:41	MP32282-S2	25		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:46	ZZZZZZ	25		
07:50	JD42826-2	25		(sample used for QC only; not part of login JD41762)
07:55	MP32282-SD1	125		
08:00	ZZZZZZ	25		
08:05	ZZZZZZ	100		
08:10	ZZZZZZ	100		
08:14	MA52224-CCV23	1		
08:19	MA52224-CCB24	1		
08:24	MP32282-S2	100		
08:29	JD42826-2	100		(sample used for QC only; not part of login JD41762)
08:33	MP32282-SD1	500		
08:39	ZZZZZZ	100		
08:43	MP32282-S1	100		
08:47	MA52224-CCV24	1		
08:53	MA52224-CCB25	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:17	MA52224-ICV1	1	X	
09:28	MA52224-ICB1	1	X	
09:34	MA52224-ICCV1	1		
09:41	MA52224-ICCV2	1	X	
09:49	MA52224-CCB1	1	X	
09:54	MA52224-CRI1	1	X	
09:59	MA52224-CRID1	1		
10:05	MA52224-ICSA1	1	X	
10:10	MA52224-ICSAB1	1	X	
10:15	MA52224-HSTD1	1	X	
10:21	MA52224-HSTD2	1	X	
10:26	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	ZZZZZZ	1		
10:41	MA52224-CCV1	1	X	
10:46	MA52224-CCB2	1	X	
10:51	MA52224-CRID2	1	X	
10:57	MP32251-MB1	1	X	
11:02	MP32251-B1	1	X	
11:06	MP32251-S1	1	X	
11:11	MP32251-S2	1	X	
11:16	JD42757-24	1	X	(a)
11:21	MP32251-SD1	5	X	
11:26	MP32251-PS1	1		
11:31	ZZZZZZ	1		
11:37	MA52224-CCV2	1	X	
11:41	MA52224-CCB3	1	X	
11:47	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	ZZZZZZ	1		
12:07	ZZZZZZ	1		
12:12	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As
12:17	ZZZZZZ	1	
12:22	ZZZZZZ	1	
12:27	ZZZZZZ	1	
12:32	MA52224-CCV3	1	X
12:37	MA52224-CCB4	1	X
12:42	ZZZZZZ	1	
12:47	ZZZZZZ	1	
12:52	ZZZZZZ	1	
12:57	ZZZZZZ	1	
13:02	ZZZZZZ	1	
13:08	ZZZZZZ	1	
13:13	ZZZZZZ	1	
13:18	ZZZZZZ	1	
13:23	ZZZZZZ	1	
13:28	MA52224-CCV4	1	X
13:33	MA52224-CCB5	1	X
13:38	ZZZZZZ	1	
13:43	ZZZZZZ	5	
13:48	ZZZZZZ	1	
13:53	ZZZZZZ	10	
13:58	ZZZZZZ	5	
14:03	ZZZZZZ	5	
14:08	MP32254-PS1	1	
14:13	MP32255-PS1	1	
14:18	ZZZZZZ	1	
14:23	MA52224-CCV5	1	X
14:28	MA52224-CCB6	1	X
14:33	ZZZZZZ	1	
14:38	ZZZZZZ	1	
14:43	ZZZZZZ	1	
14:48	ZZZZZZ	5	
14:53	ZZZZZZ	5	
14:58	ZZZZZZ	5	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
15:03	ZZZZZZ	2		
15:08	ZZZZZZ	2		
15:13	ZZZZZZ	2		
15:18	ZZZZZZ	2		
15:23	MA52224-CCV6	1	X	
15:28	MA52224-CCB7	1	X	
15:33	ZZZZZZ	5		
15:38	ZZZZZZ	25		
15:43	ZZZZZZ	5		
15:47	ZZZZZZ	25		
15:52	ZZZZZZ	5		
15:57	ZZZZZZ	25		
16:02	ZZZZZZ	5		
16:07	ZZZZZZ	25		
16:12	ZZZZZZ	5		
16:17	ZZZZZZ	25		
16:22	MA52224-CCV7	1	X	
16:27	MA52224-CCB8	1	X	
16:32	ZZZZZZ	5		
16:37	ZZZZZZ	25		
16:42	MP32234-B1	1		
16:47	MP32234-MB1	1		
16:52	MP32234-S1	1		
16:56	MP32234-S2	1		
17:01	JD42749-3F	1		(a)
17:06	MP32234-SD1	5		
17:11	ZZZZZZ	1		
17:16	ZZZZZZ	1		
17:21	MA52224-CCV8	1	X	
17:26	MA52224-CCB9	1	X	
17:31	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:01	ZZZZZZ	1		
18:06	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:16	ZZZZZZ	1		
18:21	MA52224-CCV9	1	X	
18:26	MA52224-CCB10	1	X	
18:31	ZZZZZZ	1		
18:35	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:00	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:10	MP32250-S1	5		
19:15	MP32250-S2	5		
19:20	MA52224-CCV10	1	X	
19:25	MA52224-CCB11	1	X	
19:30	JD42757-3	5		(a)
19:35	MP32250-SD1	25		
19:40	ZZZZZZ	5		
19:45	ZZZZZZ	5		
19:50	ZZZZZZ	5		
19:55	ZZZZZZ	5		
20:00	ZZZZZZ	5		
20:05	ZZZZZZ	5		
20:10	ZZZZZZ	5		
20:15	ZZZZZZ	5		
20:20	MA52224-CCV11	1	X	
20:25	MA52224-CCB12	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
20:30	ZZZZZZ	5		
20:35	ZZZZZZ	5		
20:40	ZZZZZZ	5		
20:45	ZZZZZZ	5		
20:50	ZZZZZZ	5		
20:55	ZZZZZZ	5		
21:00	ZZZZZZ	5		
21:05	ZZZZZZ	5		
21:10	ZZZZZZ	5		
21:15	ZZZZZZ	5		
21:20	MA52224-CCV12	1	X	
21:25	MA52224-CCB13	1	X	
21:31	ZZZZZZ	5		
21:36	MP32258-B1	1		
21:41	MP32258-MB1	1		
21:46	MP32258-S1	1		
21:51	MP32258-S2	1		
21:55	JD42458-9	1		(a)
22:01	MP32258-SD1	5		
22:06	ZZZZZZ	1		
22:11	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:21	MA52224-CCV13	1	X	
22:26	MA52224-CCB14	1	X	
22:31	ZZZZZZ	1		
22:36	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:47	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:57	ZZZZZZ	1		
23:02	ZZZZZZ	1		
23:07	ZZZZZZ	1		
23:12	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
23:17	ZZZZZZ	1		
23:22	MA52224-CCV14	1	X	
23:27	MA52224-CCB15	1	X	
23:32	ZZZZZZ	1		
23:38	ZZZZZZ	1		
23:43	ZZZZZZ	1		
23:48	ZZZZZZ	1		
23:53	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:03	ZZZZZZ	1		
00:08	ZZZZZZ	1		
00:14	MA52224-CCV15	1	X	
00:19	MA52224-CCB16	1	X	
00:24	MP32277-MB1	1	X	
00:29	MP32277-MB2	1	X	
00:34	MP32277-B1	1	X	
00:39	MP32277-B2	1	X	
00:44	MP32277-S1	1	X	
00:49	MP32277-S2	1	X	
00:54	JD42730-2FA	1		(a)
00:59	MP32277-SD1	5	X	
01:04	ZZZZZZ	1		
01:09	ZZZZZZ	1		
01:14	MA52224-CCV16	1	X	
01:19	MA52224-CCB17	1	X	
01:24	ZZZZZZ	1		
01:29	ZZZZZZ	1		
01:34	ZZZZZZ	1		
01:39	ZZZZZZ	1		
01:44	ZZZZZZ	1		
01:50	ZZZZZZ	1		
01:55	ZZZZZZ	1		
02:00	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
02:05	ZZZZZZ	1		
02:10	ZZZZZZ	1		
02:15	MA52224-CCV17	1	X	
02:20	MA52224-CCB18	1	X	
02:25	ZZZZZZ	1		
02:31	ZZZZZZ	1		
02:36	ZZZZZZ	1		
02:41	ZZZZZZ	1		
02:46	ZZZZZZ	1		
02:51	MP32278-MB1	1	X	
02:56	MP32278-B1	1	X	
03:01	MP32278-S1	1	X	
03:06	MP32278-S2	1	X	
03:11	JD42840-5	1	X	(a)
03:16	MA52224-CCV18	1	X	
03:21	MA52224-CCB19	1	X	
03:26	MP32278-SD1	5	X	
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:52	ZZZZZZ	1		
03:57	MP32279A-MB1	1	X	
04:02	MP32279A-B1	1	X	
04:07	MP32279A-S1	1	X	
04:12	MP32279A-S2	1	X	
04:17	MA52224-CCV19	1	X	
04:22	MA52224-CCB20	1	X	
04:28	JD42817-1	1	X	(a)
04:33	MP32279A-SD1	5	X	
04:38	ZZZZZZ	1		
04:43	MP32285-MB1	1	X	
04:48	MP32285-LB1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
04:54	MP32285-B1	1	X	
04:58	MP32285-LS1	1	X	
05:03	MP32285-S1	1	X	
05:08	MP32285-S2	1	X	
05:13	JD42787-3A	1	X	(a)
05:18	MA52224-CCV20	1	X	
05:23	MA52224-CCB21	1	X	
05:28	MP32285-SD1	5	X	
05:34	ZZZZZZ	1		
05:39	ZZZZZZ	1		
05:44	ZZZZZZ	1		
05:49	ZZZZZZ	1		
05:54	ZZZZZZ	1		
06:00	ZZZZZZ	1		
06:05	ZZZZZZ	1		
06:10	ZZZZZZ	1		
06:16	MA52224-CCV21	1	X	
06:21	MA52224-CCB22	1	X	
06:26	MP32282-MB1	1	X	
06:31	MP32282-LB1	1		
06:36	MP32282-B1	1	X	
06:41	MP32282-LS1	1	X	
06:46	ZZZZZZ	1		
06:51	ZZZZZZ	1		
06:56	ZZZZZZ	1		
07:01	ZZZZZZ	1		
07:22	MP32280-B1	1	X	
07:26	MA52224-CCV22	1	X	
07:32	MA52224-CCB23	1	X	
07:36	MP32282-S1	25	X	
07:41	MP32282-S2	25	X	
07:46	ZZZZZZ	25		
07:50	JD42826-2	25	X	(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As
07:55	MP32282-SD1	125	X
08:00	ZZZZZZ	25	
08:05	ZZZZZZ	100	
08:10	ZZZZZZ	100	
08:14	MA52224-CCV23	1	X
08:19	MA52224-CCB24	1	X
08:24	MP32282-S2	100	
08:29	JD42826-2	100	(a)
08:33	MP32282-SD1	500	
08:39	ZZZZZZ	100	
08:43	MP32282-S1	100	
08:47	MA52224-CCV24	1	X
08:53	MA52224-CCB25	1	X

(a) Sample used for QC only; not part of login JD41762.

Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:07	MA52224-STD1	4166 R	247630 R	22149 R	10645 R
09:12	MA52224-STD2	3987	235520	22027	9539
09:17	MA52224-ICV1	4080	238560	22207	9845
09:28	MA52224-ICB1	4198	247160	22349	10691
09:34	MA52224-ICCV1	No results reported for the elements associated with this internal standard.			
09:41	MA52224-ICCV2	4101	239620	22413	9848
09:49	MA52224-CCB1	4219	247750	22503	10700
09:54	MA52224-CRI1	4177	246510	22544	10504
09:59	MA52224-CRID1	No results reported for the elements associated with this internal standard.			
10:05	MA52224-ICSA1	3844	223810	22202	8831
10:10	MA52224-ICSAB1	3845	223580	22060	8840
10:15	MA52224-HSTD1	4111	246730	22838	10406
10:21	MA52224-HSTD2	3829	223730	21680	8805
10:26	ZZZZZZ	4155	244580	22420	10663
10:31	ZZZZZZ	4112	246820	22294	10612
10:36	ZZZZZZ	4177	247440	22293	10667
10:41	MA52224-CCV1	4019	236830	21756	9694
10:46	MA52224-CCB2	4116	245330	21767	10500
10:51	MA52224-CRID2	4112	244780	21803	10477
10:57	MP32251-MB1	4118	245490	22022	10546
11:02	MP32251-B1	4021	240070	21809	9910
11:06	MP32251-S1	4121	241910	22715	9742
11:11	MP32251-S2	4107	242400	22684	9684
11:16	JD42757-24	4242	248940	23163	10113
11:21	MP32251-SD1	4145	247380	22095	10382
11:26	MP32251-PS1	4141	245500	23007	9798
11:31	ZZZZZZ	3979	233990	22344	9161
11:37	MA52224-CCV2	3999	238870	21832	9765
11:41	MA52224-CCB3	4095	245950	21713	10595
11:47	ZZZZZZ	3909	231540	22061	8940
11:52	ZZZZZZ	3966	235520	22450	9122
11:57	ZZZZZZ	4117	243290	22846	9808
12:02	ZZZZZZ	3959	233830	22403	9097

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:07	ZZZZZZ	4058	240120	22769	9539
12:12	ZZZZZZ	3995	237440	22512	9355
12:17	ZZZZZZ	3926	232390	22073	9013
12:22	ZZZZZZ	3988	238640	22259	9488
12:27	ZZZZZZ	4078	245270	22623	9840
12:32	MA52224-CCV3	3985	239150	21584	9859
12:37	MA52224-CCB4	4075	247060	21568	10663
12:42	ZZZZZZ	3947	234080	22175	9269
12:47	ZZZZZZ	3936	234010	22159	9209
12:52	ZZZZZZ	3949	235220	22181	9281
12:57	ZZZZZZ	3859	231910	22063	9126
13:02	ZZZZZZ	3716	227070	22085	8862
13:08	ZZZZZZ	3786	228440	22499	8611
13:13	ZZZZZZ	3623	222870	21371	8779
13:18	ZZZZZZ	3779	227190	21586	8975
13:23	ZZZZZZ	4166	247300	23090	10098
13:28	MA52224-CCV4	3949	238590	21473	9808
13:33	MA52224-CCB5	4069	246950	21635	10677
13:38	ZZZZZZ	4036	246010	21649	10627
13:43	ZZZZZZ	3882	233770	21298	9716
13:48	ZZZZZZ	4143	249800	22051	10956
13:53	ZZZZZZ	3914	234810	21509	9745
13:58	ZZZZZZ	3859	232310	21296	9629
14:03	ZZZZZZ	3705	219610	20836	8947
14:08	MP32254-PS1	3928	238290	21441	9882
14:13	MP32255-PS1	3880	235740	21509	9634
14:18	ZZZZZZ	4075	249420	21953	10804
14:23	MA52224-CCV5	3938	238290	21520	9832
14:28	MA52224-CCB6	4039	247090	21512	10660
14:33	ZZZZZZ	4096	248330	21788	10882
14:38	ZZZZZZ	4080	247460	21795	10875
14:43	ZZZZZZ	4078	248440	22007	10853
14:48	ZZZZZZ	4022	243880	21716	10235

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:53	ZZZZZZ	3951	240820	21629	9919
14:58	ZZZZZZ	3935	238190	21303	9927
15:03	ZZZZZZ	4018	243170	22032	10024
15:08	ZZZZZZ	3886	234930	21697	9607
15:13	ZZZZZZ	4036	243310	22321	9925
15:18	ZZZZZZ	3862	233400	21878	9303
15:23	MA52224-CCV6	3893	235590	21270	9782
15:28	MA52224-CCB7	4019	245920	21294	10636
15:33	ZZZZZZ	3924	237360	21863	9504
15:38	ZZZZZZ	4005	244210	21684	10153
15:43	ZZZZZZ	3910	237500	21714	9565
15:47	ZZZZZZ	3980	243290	21493	10190
15:52	ZZZZZZ	3902	236420	21624	9598
15:57	ZZZZZZ	3984	243710	21637	10216
16:02	ZZZZZZ	3855	234200	21581	9645
16:07	ZZZZZZ	3985	243860	21622	10197
16:12	ZZZZZZ	3821	233070	21344	9580
16:17	ZZZZZZ	3961	241840	21309	10209
16:22	MA52224-CCV7	3893	237430	21231	9786
16:27	MA52224-CCB8	3976	244480	21258	10612
16:32	ZZZZZZ	3860	235320	21537	9587
16:37	ZZZZZZ	3984	243090	21559	10275
16:42	MP32234-B1	3899	239230	21337	10018
16:47	MP32234-MB1	3957	244170	21273	10668
16:52	MP32234-S1	3838	234610	21153	9770
16:56	MP32234-S2	3867	236620	21222	9815
17:01	JD42749-3F	3898	239870	21515	10229
17:06	MP32234-SD1	3972	244500	21393	10604
17:11	ZZZZZZ	3826	233780	21187	9861
17:16	ZZZZZZ	3781	234170	20852	9873
17:21	MA52224-CCV8	3870	236690	21133	9878
17:26	MA52224-CCB9	3960	244450	20866	10656
17:31	ZZZZZZ	3739	232180	20905	9728

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:36	ZZZZZZ	3756	232580	21029	9696
17:41	ZZZZZZ	3734	229920	21111	9531
17:46	ZZZZZZ	3912	244180	21466	10426
17:51	ZZZZZZ	3941	243820	21726	10205
17:56	ZZZZZZ	3899	240990	21490	10229
18:01	ZZZZZZ	3956	246460	21544	10666
18:06	ZZZZZZ	3909	242910	21365	10408
18:11	ZZZZZZ	3897	241080	21345	10188
18:16	ZZZZZZ	3985	248640	21703	10727
18:21	MA52224-CCV9	3899	238430	21538	9881
18:26	MA52224-CCB10	3988	247380	21188	10689
18:31	ZZZZZZ	3871	237500	21482	10019
18:35	ZZZZZZ	3860	239100	21658	10000
18:41	ZZZZZZ	3989	247650	21990	10476
18:46	ZZZZZZ	3984	246820	22028	10451
18:51	ZZZZZZ	3686	218500	21312	8973
18:56	ZZZZZZ	3880	238830	21667	9984
19:00	ZZZZZZ	4043	251510	22052	10813
19:05	ZZZZZZ	3943	242760	21762	10119
19:10	MP32250-S1	3987	244090	22146	10035
19:15	MP32250-S2	4029	247510	22706	10090
19:20	MA52224-CCV10	3954	242420	22165	9965
19:25	MA52224-CCB11	4045	252010	22209	10803
19:30	JD42757-3	4041	247680	22428	10256
19:35	MP32250-SD1	4082	246860	22332	10655
19:40	ZZZZZZ	4045	247590	22644	9980
19:45	ZZZZZZ	4062	242940	22720	10165
19:50	ZZZZZZ	4081	246230	22996	10133
19:55	ZZZZZZ	4073	246530	22747	10160
20:00	ZZZZZZ	4078	246040	22825	10112
20:05	ZZZZZZ	4051	240280	22782	10075
20:10	ZZZZZZ	4067	246240	22766	10135
20:15	ZZZZZZ	4090	243720	22847	10258

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:20	MA52224-CCV11	4009	239940	22617	9952
20:25	MA52224-CCB12	4100	248600	22658	10808
20:30	ZZZZZZ	4062	245950	22932	10235
20:35	ZZZZZZ	4037	245950	22679	10200
20:40	ZZZZZZ	4026	243590	22767	10063
20:45	ZZZZZZ	4026	242850	22710	10121
20:50	ZZZZZZ	4008	243300	22619	10098
20:55	ZZZZZZ	4020	240270	22712	9902
21:00	ZZZZZZ	4015	241990	22585	9887
21:05	ZZZZZZ	4033	244110	22637	10086
21:10	ZZZZZZ	4044	245850	22924	10083
21:15	ZZZZZZ	4053	246660	22855	10100
21:20	MA52224-CCV12	3979	241140	22419	9904
21:25	MA52224-CCB13	4078	248850	22335	10753
21:31	ZZZZZZ	3984	239660	22484	9877
21:36	MP32258-B1	4067	245810	23001	10273
21:41	MP32258-MB1	4096	249460	22809	10772
21:46	MP32258-S1	3934	237790	22840	9698
21:51	MP32258-S2	3925	238500	23005	9669
21:55	JD42458-9	3925	238620	22799	9908
22:01	MP32258-SD1	4025	244530	22609	10448
22:06	ZZZZZZ	4048	246920	22974	10433
22:11	ZZZZZZ	3989	241970	23004	9905
22:16	ZZZZZZ	3745	226310	22272	9193
22:21	MA52224-CCV13	3966	240420	22784	9877
22:26	MA52224-CCB14	4077	248840	22763	10749
22:31	ZZZZZZ	4053	247950	23137	10455
22:36	ZZZZZZ	3628	219180	22093	8812
22:42	ZZZZZZ	3711	230990	23294	9006
22:47	ZZZZZZ	3943	238270	22445	9921
22:52	ZZZZZZ	4055	246400	22715	10370
22:57	ZZZZZZ	3895	238310	22281	10001
23:02	ZZZZZZ	4019	248060	22327	10634

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:07	ZZZZZZ	3957	241040	22308	10112
23:12	ZZZZZZ	3904	238860	22234	9969
23:17	ZZZZZZ	3973	242270	22126	10362
23:22	MA52224-CCV14	3908	239060	21822	9797
23:27	MA52224-CCB15	3999	246730	21790	10577
23:32	ZZZZZZ	3981	246210	22136	10491
23:38	ZZZZZZ	3949	242330	21971	10353
23:43	ZZZZZZ	3984	245050	22093	10372
23:48	ZZZZZZ	3997	244450	22195	10506
23:53	ZZZZZZ	3930	240220	22215	10014
23:58	ZZZZZZ	4019	245980	22175	10651
00:03	ZZZZZZ	4035	246760	22036	10653
00:08	ZZZZZZ	4100	247340	22350	10847
00:14	MA52224-CCV15	3921	237750	21954	9783
00:19	MA52224-CCB16	4024	245200	22074	10607
00:24	MP32277-MB1	4053	248830	22400	10719
00:29	MP32277-MB2	4053	248770	22560	10680
00:34	MP32277-B1	3979	242830	22487	10006
00:39	MP32277-B2	3972	243120	22667	10033
00:44	MP32277-S1	3903	237960	22261	9666
00:49	MP32277-S2	3910	238820	22262	9684
00:54	JD42730-2FA	3952	241390	22328	9994
00:59	MP32277-SD1	4012	246120	22368	10457
01:04	ZZZZZZ	4035	248160	22456	10647
01:09	ZZZZZZ	4028	247020	22513	10648
01:14	MA52224-CCV16	3926	240720	22196	9812
01:19	MA52224-CCB17	4032	247930	22399	10641
01:24	ZZZZZZ	3921	239750	22363	9947
01:29	ZZZZZZ	3943	240730	22291	10132
01:34	ZZZZZZ	3937	242240	22397	10120
01:39	ZZZZZZ	3908	240240	22269	10002
01:44	ZZZZZZ	3471	206960	21256	8162
01:50	ZZZZZZ	3837	234900	22461	9478

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
01:55	ZZZZZZ	3961	246110	22987	10280
02:00	ZZZZZZ	3909	239980	22687	9837
02:05	ZZZZZZ	3940	243090	22844	10111
02:10	ZZZZZZ	3873	239520	22683	9839
02:15	MA52224-CCV17	3952	244610	22895	9898
02:20	MA52224-CCB18	4042	249450	22794	10725
02:25	ZZZZZZ	3940	243470	23047	10182
02:31	ZZZZZZ	4019	249880	23267	10518
02:36	ZZZZZZ	4011	248620	23238	10525
02:41	ZZZZZZ	4016	250180	23360	10545
02:46	ZZZZZZ	4106	251890	24236	9617
02:51	MP32278-MB1	4046	250340	23214	10790
02:56	MP32278-B1	3988	247080	23383	10172
03:01	MP32278-S1	3870	240780	23126	9584
03:06	MP32278-S2	3858	240220	23123	9575
03:11	JD42840-5	3883	240440	23052	9775
03:16	MA52224-CCV18	3934	242680	22865	9871
03:21	MA52224-CCB19	4039	250410	22669	10727
03:26	MP32278-SD1	3972	247380	22788	10347
03:32	ZZZZZZ	3997	246070	22992	10225
03:37	ZZZZZZ	3960	248100	22866	10373
03:42	ZZZZZZ	3976	246710	22777	10414
03:47	ZZZZZZ	3877	239760	22657	9762
03:52	ZZZZZZ	4017	250220	22862	10710
03:57	MP32279A-MB1	4019	249560	22792	10698
04:02	MP32279A-B1	3949	242990	22889	10067
04:07	MP32279A-S1	4138	251130	24656	9168
04:12	MP32279A-S2	4119	250120	24397	9158
04:17	MA52224-CCV19	3907	241590	22282	9834
04:22	MA52224-CCB20	4009	247010	22287	10658
04:28	JD42817-1	4145	251990	24260	9257
04:33	MP32279A-SD1	4006	245880	22781	10091
04:38	ZZZZZZ	4165	247860	24394	9084

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:43	MP32285-MB1	4010	248970	22690	10675
04:48	MP32285-LB1	3624	214920	21937	8667
04:54	MP32285-B1	3928	242540	22427	10025
04:58	MP32285-LS1	3698	220850	21836	8639
05:03	MP32285-S1	3642	218280	21659	8416
05:08	MP32285-S2	3623	217170	21530	8383
05:13	JD42787-3A	3568	210490	21443	8409
05:18	MA52224-CCV20	3911	240960	22180	9823
05:23	MA52224-CCB21	4001	247020	22072	10639
05:28	MP32285-SD1	3810	230790	22005	9403
05:34	ZZZZZZ	3560	210800	21576	8447
05:39	ZZZZZZ	3577	211590	21558	8486
05:44	ZZZZZZ	3573	211500	21554	8473
05:49	ZZZZZZ	3590	211410	21507	8513
05:54	ZZZZZZ	3499	209040	21562	8250
06:00	ZZZZZZ	3423	206590	21226	8082
06:05	ZZZZZZ	3484	209200	21338	8190
06:10	ZZZZZZ	3460	208320	21286	8132
06:16	MA52224-CCV21	3940	242380	22147	9865
06:21	MA52224-CCB22	4043	247750	22271	10692
06:26	MP32282-MB1	4059	250540	22654	10743
06:31	MP32282-LB1	4047	249270	22468	10708
06:36	MP32282-B1	3944	241410	22331	10025
06:41	MP32282-LS1	3951	243690	22397	10038
06:46	ZZZZZZ	1082 !a	228690	21954	9641
06:51	ZZZZZZ	4004	246790	22122	10592
06:56	ZZZZZZ	4022	248190	22455	10560
07:01	ZZZZZZ	4011	248260	22103	10601
07:22	MP32280-B1	3996	244360	22673	10134
07:26	MA52224-CCV22	3928	239420	22070	9840
07:32	MA52224-CCB23	4034	246290	22118	10694
07:36	MP32282-S1	3918	243760	22174	10547
07:41	MP32282-S2	3921	243380	22190	10556

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:46	ZZZZZZ	10246 !	568380 !	37560 !	26315 !
07:50	JD42826-2	3850	241360	21493	10462
07:55	MP32282-SD1	3952	242920	21653	10560
08:00	ZZZZZZ	3838	241470	21515	10478
08:05	ZZZZZZ	9435 !	536640 !	35651 !	24699 !
08:10	ZZZZZZ	3878	240970	20992	10473
08:14	MA52224-CCV23	3824	235740	21112	9726
08:19	MA52224-CCB24	3925	245340	21288	10578
08:24	MP32282-S2	3877	243250	21247	10564
08:29	JD42826-2	3899	244650	21157	10595
08:33	MP32282-SD1	3928	245330	21303	10617
08:39	ZZZZZZ	3910	245390	21276	10618
08:43	MP32282-S1	3898	245160	21215	10590
08:47	MA52224-CCV24	3839	236810	21195	9781
08:53	MA52224-CCB25	3927	244980	21114	10629

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			09:28		09:49		10:46		11:41	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.200	<3.0	1.70	<3.0	1.40	<3.0	2.10	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			09:28 ICB1		09:49 CCB1		10:46 CCB2		11:41 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			12:37		13:33		14:28		15:28	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.200	<3.0	0.600	<3.0	0.600	<3.0	0.700	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			12:37 CCB4		13:33 CCB5		14:28 CCB6		15:28 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			16:27		17:26		18:26		19:25	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.400	<3.0	0.500	<3.0	1.30	<3.0	0.400	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			16:27 CCB8		17:26 CCB9		18:26 CCB10		19:25 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			20:25 CCB12		21:25 CCB13		22:26 CCB14		23:27 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	1.10	<3.0	0.100	<3.0	-0.400	<3.0	2.70	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			20:25		21:25		22:26		23:27	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			00:19		01:19		02:20		03:21	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.400	<3.0	1.60	<3.0	0.800	<3.0	0.200	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			00:19		01:19		02:20		03:21	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			04:22 CCB20		05:23 CCB21		06:21 CCB22		07:32 CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.900	<3.0	1.40	<3.0	0.600	<3.0	1.10	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			04:22 CCB20		05:23 CCB21		06:21 CCB22		07:32 CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52224 Units: ug/l

Time:		09:41	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1970	98.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus	anr		
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium	anr		
Sulfur			
Thallium	anr		
Tin	anr		
Titanium	anr		
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52224 Units: ug/l

Time:		09:41	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		09:17			10:41			11:37	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2000	100.0	2000	1940	97.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		09:17			10:41			11:37	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		12:32			13:28			14:23	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1980	99.0	2000	1980	99.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		12:32			13:28			14:23	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		15:23			16:22			17:21	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1970	98.5	2000	1980	99.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		15:23			16:22			17:21	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		18:21			19:20			20:20	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1980	99.0	2000	2000	100.0	2000	1990	99.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		18:21			19:20			20:20	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		21:20			22:21			23:22	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1980	99.0	2000	2000	100.0	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		21:20			22:21			23:22	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		00:14			01:14			02:15	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2010	100.5	2000	2000	100.0	2000	2010	100.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		00:14			01:14			02:15	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		03:16			04:17			05:18	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2010	100.5	2000	2010	100.5	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		03:16			04:17			05:18	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		06:16			07:26	
Sample ID:	CCV	CCV21		CCV	CCV22	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	2010	100.5	2000	2010	100.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium	anr					
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium	anr					
Sulfur						
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		06:16			07:26	
Sample ID:	CCV	CCV21		CCV	CCV22	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52224 Units: ug/l

Time:		10:15			10:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7470	93.4			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium	anr					
Sulfur						
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52224 Units: ug/l

Time:		10:15			10:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52224 Units: ug/l

Time:				09:54		10:51	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr			
Antimony	6.0	20	3.0	anr			
Arsenic	8.0	20	3.0	8.30	103.8	2.70	90.0
Barium	200		4.0	anr			
Beryllium	2.0		1.0	anr			
Bismuth	20						
Boron	100		10	anr			
Cadmium	3.0		1.0	anr			
Calcium	5000	2000	1000	anr			
Cerium							
Chromium	10		2.0	anr			
Cobalt	50		3.0	anr			
Copper	10		2.0	anr			
Iron	100	500		anr			
Lead	3.0	20	2.5	anr			
Lithium	50			anr			
Magnesium	5000	2000	100	anr			
Manganese	15		3.0	anr			
Molybdenum	20			anr			
Nickel	10		4.0	anr			
Phosphorus	50			anr			
Potassium	5000		2000	anr			
Selenium	10	20	5.0	anr			
Silicon	200						
Silver	5.0		2.0	anr			
Sodium	5000		1000	anr			
Strontium	10			anr			
Sulfur	50						
Thallium	10		2.0	anr			
Tin	10			anr			
Titanium	10			anr			
Tungsten	50						
Vanadium	50		2.0	anr			

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52224 Units: ug/l

Time:				09:54		10:51	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Zinc	20		10	anr			
Zirconium	10						

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52224 Units: ug/l

Time:			10:05		10:10	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	496000	99.2	506000	101.2
Antimony		1000	0.700		1020	102.0
Arsenic		1000	1.00		1010	101.0
Barium		500	-45.4		440	88.0
Beryllium		500	0.100		469	93.8
Bismuth		500	-10.6		478	95.6
Boron		500	-5.10		475	95.0
Cadmium		1000	1.20		1000	100.0
Calcium	400000	400000	382000	95.5	402000	100.5
Cerium			40.4		511*	
Chromium		500	2.00		466	93.2
Cobalt		500	2.30		468	93.6
Copper		500	1.90		496	99.2
Iron	200000	200000	194000	97.0	203000	101.5
Lead		1000	0.900		946	94.6
Lithium		500	-6.50		532	106.4
Magnesium	500000	500000	501000	100.2	502000	100.4
Manganese		500	-8.10		492	98.4
Molybdenum		500	-2.70		466	93.2
Nickel		1000	3.60		938	93.8
Phosphorus		500	12.9		481	96.2
Potassium			-47.3		-11.3	
Selenium		1000	4.00		941	94.1
Silicon		500	-26.2		496	99.2
Silver		1000	4.10		1090	109.0
Sodium			-102		-113	
Strontium		500	1.20		491	98.2
Sulfur		500	-24.3		457	91.4
Thallium		1000	-6.10		960	96.0
Tin		500	-6.00		459	91.8
Titanium		500	-1.10		478	95.6
Tungsten		500	-0.200		485	97.0
Vanadium		500	-4.70		462	92.4

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52224 Units: ug/l

Time:			10:05		10:10	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	1.00		909	90.9
Zirconium		500	3.30		472	94.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:28	MA52233-STD1	1		STDA
08:33	MA52233-STD2	1		STDB
08:38	MA52233-ICV1	1		
08:44	MA52233-ICB1	1		
08:49	MA52233-CCV1	1		
08:54	MA52233-CCB1	1		
08:59	MA52233-CRID1	1		
09:05	MA52233-CRI1	1		
09:10	MA52233-ICSA1	1		
09:15	MA52233-ICSAB1	1		
09:20	ZZZZZZ	1		
09:25	ZZZZZZ	1		
09:30	MA52233-HSTD1	1		
09:36	MA52233-HSTD2	1		
09:41	MP32280-B1	1		
09:46	ZZZZZZ	1		
09:51	MA52233-CCV2	1		
09:56	MA52233-CCB2	1		
10:01	ZZZZZZ	1		
10:06	ZZZZZZ	1		
10:11	MP32280-MB1	1		
10:16	MP32280-S1	1		
10:21	MP32280-S2	1		
10:26	JD42834-2	1		(sample used for QC only; not part of login JD41762)
10:31	MP32280-SD1	5		
10:36	MP32280-PS1	1		
10:41	MA52233-CCV3	1		
10:46	MA52233-CCB3	1		
10:51	JD41762-33	1		
10:56	JD41762-46	1		
11:01	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:16	MA52233-CCV4	1		
11:21	MA52233-CCB4	1		
11:26	MA52233-CRID2	1		
11:31	MP32253-S1	5		
11:36	MP32253-S2	5		
11:41	JD42841-1	5		(sample used for QC only; not part of login JD41762)
11:46	MP32253-SD1	25		
---------->	Last reportable sample/prep for job JD41762			
11:51	ZZZZZZ	5		
11:56	ZZZZZZ	5		
12:01	ZZZZZZ	5		
12:06	ZZZZZZ	5		
12:11	MA52233-CCV5	1		
12:16	MA52233-CCB5	1		
12:21	ZZZZZZ	1		
12:26	MA52233-CRI2	1		
12:32	ZZZZZZ	2		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	5		
12:47	ZZZZZZ	5		
12:52	ZZZZZZ	5		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52233-CCV6	1		
13:12	MA52233-CCB6	1		
13:17	MA52233-ICSA2	1		
13:22	MA52233-ICSAB2	1		
13:27	ZZZZZZ	5		
13:33	ZZZZZZ	25		
13:38	ZZZZZZ	1		
13:43	MA52233-CCV7	1		
13:48	MA52233-CCB7	1		
---------->	Last reportable CCB for job JD41762			
13:53	ZZZZZZ	1		
13:58	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:03	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Element: Dilution	As	
08:38	MA52233-ICV1	1	X	
08:44	MA52233-ICB1	1	X	
08:49	MA52233-CCV1	1	X	
08:54	MA52233-CCB1	1	X	
08:59	MA52233-CRID1	1	X	
09:05	MA52233-CRI1	1	X	
09:10	MA52233-ICSA1	1	X	
09:15	MA52233-ICSAB1	1	X	
09:20	ZZZZZZ	1		
09:25	ZZZZZZ	1		
09:30	MA52233-HSTD1	1	X	
09:36	MA52233-HSTD2	1	X	
09:41	MP32280-B1	1		
09:46	ZZZZZZ	1		
09:51	MA52233-CCV2	1	X	
09:56	MA52233-CCB2	1	X	
10:01	ZZZZZZ	1		
10:06	ZZZZZZ	1		
10:11	MP32280-MB1	1	X	
10:16	MP32280-S1	1		
10:21	MP32280-S2	1		
10:26	JD42834-2	1		(a)
10:31	MP32280-SD1	5		
10:36	MP32280-PS1	1		
10:41	MA52233-CCV3	1	X	
10:46	MA52233-CCB3	1	X	
10:51	JD41762-33	1	X	
10:56	JD41762-46	1	X	
11:01	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		
11:16	MA52233-CCV4	1	X	
11:21	MA52233-CCB4	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Element: Dilution	As	
11:26	MA52233-CRID2	1	X	
11:31	MP32253-S1	5	X	
11:36	MP32253-S2	5	X	
11:41	JD42841-1	5		(a)
11:46	MP32253-SD1	25	X	
11:51	ZZZZZZ	5		
11:56	ZZZZZZ	5		
12:01	ZZZZZZ	5		
12:06	ZZZZZZ	5		
12:11	MA52233-CCV5	1	X	
12:16	MA52233-CCB5	1	X	
12:21	ZZZZZZ	1		
12:26	MA52233-CRI2	1	X	
12:32	ZZZZZZ	2		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	5		
12:47	ZZZZZZ	5		
12:52	ZZZZZZ	5		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52233-CCV6	1	X	
13:12	MA52233-CCB6	1	X	
13:17	MA52233-ICSA2	1	X	
13:22	MA52233-ICSAB2	1	X	
13:27	ZZZZZZ	5		
13:33	ZZZZZZ	25		
13:38	ZZZZZZ	1		
13:43	MA52233-CCV7	1	X	
13:48	MA52233-CCB7	1	X	
13:53	ZZZZZZ	1		
13:58	ZZZZZZ	1		
14:03	ZZZZZZ	1		

(a) Sample used for QC only; not part of login JD41762.

Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:28	MA52233-STD1	8063 R	231460 R	22667 R	13474 R
08:33	MA52233-STD2	7736	218280	22621	12069
08:38	MA52233-ICV1	7903	235960	22584	12471
08:44	MA52233-ICB1	8057	231380	22743	13449
08:49	MA52233-CCV1	7898	222130	22630	12468
08:54	MA52233-CCB1	8015	230160	22321	13398
08:59	MA52233-CRID1	8073	228290	22327	13447
09:05	MA52233-CRI1	8050	228170	22490	13289
09:10	MA52233-ICSA1	7419	207590	22174	11208
09:15	MA52233-ICSAB1	7418	208150	22206	11203
09:20	ZZZZZZ	22022 !	585660 !	48634 !	34607 !
09:25	ZZZZZZ	22110 !	594320 !	48681 !	34802 !
09:30	MA52233-HSTD1	8027	225790	22542	13290
09:36	MA52233-HSTD2	7492	210400	22139	11223
09:41	MP32280-B1	8076	227630	22890	12935
09:46	ZZZZZZ	7826	222470	21660	13247
09:51	MA52233-CCV2	7856	221780	22303	12446
09:56	MA52233-CCB2	8151	229450	22435	13640
10:01	ZZZZZZ	7795	222420	21661	13263
10:06	ZZZZZZ	7765	221070	21590	13243
10:11	MP32280-MB1	8146	233520	22932	13671
10:16	MP32280-S1	7869	221100	23221	11931
10:21	MP32280-S2	7811	219340	22778	11965
10:26	JD42834-2	7923	222610	23067	12221
10:31	MP32280-SD1	8074	228120	22633	13058
10:36	MP32280-PS1	7858	222400	23142	12065
10:41	MA52233-CCV3	7967	224300	22520	12634
10:46	MA52233-CCB3	8018	216580	21268	13370
10:51	JD41762-33	8026	222580	21537	12737
10:56	JD41762-46	8136	226350	21846	12816
11:01	ZZZZZZ	8026	224820	22219	11948
11:06	ZZZZZZ	No results reported for the elements associated with this internal standard.			
11:11	ZZZZZZ	8047	219080	21524	12785

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:16	MA52233-CCV4	7877	219090	21250	12410
11:21	MA52233-CCB4	8005	224240	20823	13315
11:26	MA52233-CRID2	8033	223950	20893	13328
11:31	MP32253-S1	7919	220930	21072	12652
11:36	MP32253-S2	7909	220250	21120	12637
11:41	JD42841-1	7918	221130	20965	12767
11:46	MP32253-SD1	8034	225480	20808	13224
11:51	ZZZZZZ	7836	220010	21057	12509
11:56	ZZZZZZ	7830	215720	20820	12318
12:01	ZZZZZZ	7814	217470	20751	12295
12:06	ZZZZZZ	7911	220610	21037	12190
12:11	MA52233-CCV5	7873	218360	20982	12401
12:16	MA52233-CCB5	8090	224650	20839	13424
12:21	ZZZZZZ	8242	231090	21552	13658
12:26	MA52233-CRI2	7999	223580	20826	13175
12:32	ZZZZZZ	8055	221360	21491	12412
12:37	ZZZZZZ	8312	231850	21689	13756
12:42	ZZZZZZ	7756	210630	21013	11929
12:47	ZZZZZZ	8077	222320	21215	13037
12:52	ZZZZZZ	8211	225470	21534	13073
12:57	ZZZZZZ	8139	222490	21689	12588
13:02	ZZZZZZ	7620	212050	21165	11306
13:07	MA52233-CCV6	8053	222270	21004	12568
13:12	MA52233-CCB6	8231	229560	21318	13541
13:17	MA52233-ICSA2	7570	208600	21182	11361
13:22	MA52233-ICSAB2	7638	207570	21343	11442
13:27	ZZZZZZ	8199	227810	21430	12879
13:33	ZZZZZZ	8106	223850	21276	12874
13:38	ZZZZZZ	8223	226290	21495	12844
13:43	MA52233-CCV7	8050	221870	21318	12533
13:48	MA52233-CCB7	8209	228650	21047	13486
13:53	ZZZZZZ	7876	220470	20545	13241
13:58	ZZZZZZ	7925	219230	20418	13126

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:03	ZZZZZZ	8291	230240	21556	13568

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time: / Sample ID:			08:44 ICB1		08:54 CCB1		09:56 CCB2		10:46 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.00	<3.0	-0.800	<3.0	-0.100	<3.0	0.500	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time:			08:44		08:54		09:56		10:46	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time: / Sample ID:			11:21 CCB4		12:16 CCB5		13:12 CCB6		13:48 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.100	<3.0	0.100	<3.0	0.200	<3.0	0.00	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time:			11:21		12:16		13:12		13:48	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		08:38			08:49			09:51	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2000	100.0	2000	2040	102.0	2000	2040	102.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		08:38			08:49			09:51	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		10:41			11:16			12:11	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2020	101.0	2000	1980	99.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		10:41			11:16			12:11	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		13:07			13:43	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	1920	96.0	2000	1970	98.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		13:07			13:43	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52233 Units: ug/l

Time:		09:30			09:36	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7570	94.6			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52233 Units: ug/l

Time:		09:30			09:36	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				08:59		09:05		11:26	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0			7.70	96.3	2.50	83.3
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				08:59		09:05		11:26	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				12:26	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	9.50	118.8
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				12:26	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52233 Units: ug/l

Time:			09:10		09:15		13:17		13:22	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	521000	104.2	522000	104.4	507000	101.4	507000	101.4
Antimony		1000	1.60		983	98.3	3.00		911	91.1
Arsenic		1000	-0.500		973	97.3	-0.400		927	92.7
Barium		500	6.30		469	93.8	6.00		455	91.0
Beryllium		500	0.100		466	93.2	0.100		441	88.2
Bismuth		500	8.60		482	96.4	11.6		445	89.0
Boron		500	-0.500		462	92.4	0.00		430	86.0
Cadmium		1000	0.300		977	97.7	0.00		908	90.8
Calcium	400000	400000	392000	98.0	406000	101.5	388000	97.0	388000	97.0
Cerium			27.9		492*		27.0		476*	
Chromium		500	-0.900		454	90.8	-0.900		452	90.4
Cobalt		500	0.600		467	93.4	0.800		450	90.0
Copper		500	2.40		485	97.0	1.10		449	89.8
Iron	200000	200000	199000	99.5	210000	105.0	194000	97.0	204000	102.0
Lead		1000	0.900		913	91.3	0.00		889	88.9
Lithium		500	-7.00		537	107.4	-7.50		511	102.2
Magnesium	500000	500000	513000	102.6	503000	100.6	501000	100.2	491000	98.2
Manganese		500	0.200		485	97.0	-0.100		476	95.2
Molybdenum		500	-1.90		463	92.6	-2.30		440	88.0
Nickel		1000	-1.00		902	90.2	-1.30		876	87.6
Phosphorus		500	-21.0		435	87.0	-29.3		411	82.2
Potassium			-384		-400		-383		-418	
Selenium		1000	5.70		890	89.0	8.00		845	84.5
Silicon		500	8.30		510	102.0	4.80		479	95.8
Silver		1000	4.50		1020	102.0	4.10		972	97.2
Sodium			92.4		118		78.9		97.4	
Strontium		500	-1.40		464	92.8	-1.60		444	88.8
Sulfur		500	-11.2		454	90.8	-18.6		422	84.4
Thallium		1000	-0.500		906	90.6	1.10		870	87.0
Tin		500	-6.10		453	90.6	-6.70		435	87.0
Titanium		500	-1.80		473	94.6	-1.90		462	92.4
Tungsten		500	-3.40		476	95.2	-3.20		464	92.8
Vanadium		500	2.20		472	94.4	3.10		463	92.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52233 Units: ug/l

Time:			09:10		09:15		13:17		13:22	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.60		906	90.6	2.80		897	89.7
Zirconium		500	-1.80		423	84.6	-1.70		410	82.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:56	MA52240-STD1	1		STDA
10:01	MA52240-STD2	1		STDB
10:06	MA52240-ICV1	1		
10:14	MA52240-ICB1	1		
10:26	MA52240-ICB2	1		
10:30	MA52240-ICCV1	1		
10:36	MA52240-ICCV2	1		
10:47	MA52240-CCB1	1		
10:53	MA52240-CRI1	1		
10:58	MA52240-CRID1	1		
11:03	MA52240-ICSA1	1		
11:08	MA52240-ICSAB1	1		
11:13	MA52240-HSTD1	1		
11:18	MA52240-HSTD2	1		
11:23	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:34	ZZZZZZ	1		
11:39	MA52240-CCV1	1		
11:44	MA52240-CCB2	1		
11:49	MA52240-CRI2	1		
11:55	ZZZZZZ	1		
12:00	MP32331-B1	1		
12:05	ZZZZZZ	1		
12:10	ZZZZZZ	5		
12:15	MP32331-MB1	1		
---------->	Last reportable sample/prep for job JD41762			
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	5		
12:30	ZZZZZZ	5		
12:36	MA52240-CCV2	1		
12:40	MA52240-CCB3	1		
---------->	Last reportable CCB for job JD41762			
12:46	MP32300-MB1	1		
12:51	MP32300-B1	1		
12:56	MP32300-S1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:01	MP32300-S2	1		
13:06	JD42974-1	1		(sample used for QC only; not part of login JD41762)
13:11	MP32300-SD1	5		
13:16	ZZZZZZ	1		
13:21	ZZZZZZ	1		
13:27	ZZZZZZ	1		
13:32	MA52240-CCV3	1		
13:37	MA52240-CCB4	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:06	MA52240-ICV1	1	X	
10:14	MA52240-ICB1	1	X	
10:26	MA52240-ICB2	1	X	
10:30	MA52240-ICCV1	1		
10:36	MA52240-ICCV2	1	X	
10:47	MA52240-CCB1	1	X	
10:53	MA52240-CRI1	1		
10:58	MA52240-CRID1	1	X	
11:03	MA52240-ICSA1	1	X	
11:08	MA52240-ICSAB1	1	X	
11:13	MA52240-HSTD1	1	X	
11:18	MA52240-HSTD2	1	X	
11:23	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:34	ZZZZZZ	1		
11:39	MA52240-CCV1	1	X	
11:44	MA52240-CCB2	1	X	
11:49	MA52240-CRI2	1	X	
11:55	ZZZZZZ	1		
12:00	MP32331-B1	1	X	
12:05	ZZZZZZ	1		
12:10	ZZZZZZ	5		
12:15	MP32331-MB1	1	X	
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	5		
12:30	ZZZZZZ	5		
12:36	MA52240-CCV2	1	X	
12:40	MA52240-CCB3	1	X	
12:46	MP32300-MB1	1		
12:51	MP32300-B1	1		
12:56	MP32300-S1	1		
13:01	MP32300-S2	1		
13:06	JD42974-1	1		(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Element: Dilution	As
13:11	MP32300-SD1	5	
13:16	ZZZZZZ	1	
13:21	ZZZZZZ	1	
13:27	ZZZZZZ	1	
13:32	MA52240-CCV3	1	X
13:37	MA52240-CCB4	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:56	MA52240-STD1	2282 R	75527 R	3187 R	6045 R
10:01	MA52240-STD2	2217	74158	3195	5785
10:06	MA52240-ICV1	2264	75821	3375	5880
10:14	MA52240-ICB1	2309	77592	3361	6115
10:26	MA52240-ICB2	2310	77578	3345	6119
10:30	MA52240-ICCV1	No results reported for the elements associated with this internal standard.			
10:36	MA52240-ICCV2	2274	75680	3377	5893
10:47	MA52240-CCB1	2307	77639	3361	6115
10:53	MA52240-CRI1	No results reported for the elements associated with this internal standard.			
10:58	MA52240-CRID1	2317	77734	3368	6125
11:03	MA52240-ICSA1	2122	71141	3302	5520
11:08	MA52240-ICSAB1	2128	70643	3293	5559
11:13	MA52240-HSTD1	2278	77231	3327	6167
11:18	MA52240-HSTD2	2155	71923	3268	5566
11:23	ZZZZZZ	2324	77978	3383	6323
11:29	ZZZZZZ	2294	78679	3381	6217
11:34	ZZZZZZ	2339	78776	3366	6209
11:39	MA52240-CCV1	2278	76507	3318	5917
11:44	MA52240-CCB2	2321	78651	3334	6163
11:49	MA52240-CRI2	2321	78419	3357	6128
11:55	ZZZZZZ	2330	79358	3390	6176
12:00	MP32331-B1	2297	76463	3382	5993
12:05	ZZZZZZ	2289	76471	3475	5715
12:10	ZZZZZZ	2326	77392	3400	5975
12:15	MP32331-MB1	2341	79559	3420	6215
12:20	ZZZZZZ	2316	77898	3500	5811
12:25	ZZZZZZ	2328	77191	3397	6013
12:30	ZZZZZZ	2308	77292	3369	5978
12:36	MA52240-CCV2	2298	76842	3355	5979
12:40	MA52240-CCB3	2348	78468	3340	6242
12:46	MP32300-MB1	2373	79788	3429	6323
12:51	MP32300-B1	2331	78062	3372	6093
12:56	MP32300-S1	2113	72532	3292	5411

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:01	MP32300-S2	2104	72784	3287	5398
13:06	JD42974-1	2113	72784	3252	5430
13:11	MP32300-SD1	2269	76777	3309	5910
13:16	ZZZZZZ	2068	71259	3225	5196
13:21	ZZZZZZ	2282	77307	3359	5873
13:27	ZZZZZZ	2347	79490	3378	6252
13:32	MA52240-CCV3	2306	76771	3347	6009
13:37	MA52240-CCB4	2364	79306	3362	6297

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time: / Sample ID:			10:14 ICB1		10:26 ICB2		10:47 CCB1		11:44 CCB2	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2	anr							
Antimony	6.0	2.8	anr							
Arsenic	3.0	2.6	-1.40	<3.0	0.700	<3.0	-0.900	<3.0	0.400	<3.0
Barium	200	.2	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4	anr							
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	.7	anr							
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6	anr							
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35	anr							
Selenium	10	3.6	anr							
Silicon	200	2.2								
Silver	10	.6	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2	anr							
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time:			10:14		10:26		10:47		11:44	
Sample ID:			ICB1		ICB2		CCB1		CCB2	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time:			12:40	
Sample ID:			CCB3	
Metal	RL	IDL	raw	final
Aluminum	200	9.2	anr	
Antimony	6.0	2.8	anr	
Arsenic	3.0	2.6	-0.100	<3.0
Barium	200	.2	anr	
Beryllium	1.0	.2	anr	
Bismuth	20	2.5		
Boron	100	1.8		
Cadmium	3.0	.4	anr	
Calcium	5000	13	anr	
Cerium	100			
Chromium	10	.7	anr	
Cobalt	50	.6	anr	
Copper	10	.7	anr	
Iron	100	3.3	anr	
Lead	3.0	2	anr	
Lithium	50	1.5		
Magnesium	5000	25	anr	
Manganese	15	.1	anr	
Molybdenum	20	.6	anr	
Nickel	10	.8	anr	
Phosphorus	50	7		
Potassium	10000	35	anr	
Selenium	10	3.6	anr	
Silicon	200	2.2		
Silver	10	.6	anr	
Sodium	10000	14	anr	
Strontium	10	.1		
Sulfur	50	3.7		
Thallium	10	5.2	anr	
Tin	10	1.4		
Titanium	10	.8		
Tungsten	50	1.3		
Vanadium	50	.5	anr	

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time:			12:40	
Sample ID:			CCB3	
Metal	RL	IDL	raw	final
Zinc	20	.3	anr	
Zirconium	10	.5		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52240 Units: ug/l

Time:		10:36	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1940	97.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52240 Units: ug/l

Time:		10:36	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52240 Units: ug/l

Time:		10:06			11:39			12:36	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1960	98.0	2000	1960	98.0	2000	1960	98.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52240 Units: ug/l

Time:		10:06			11:39			12:36	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52240 Units: ug/l

Time:		11:13			11:18	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7530	94.1			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52240 Units: ug/l

Time:		11:13			11:18	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52240 Units: ug/l

Time:				10:58		11:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr			
Antimony	6.0	20	3.0				
Arsenic	8.0	20	3.0	3.00	100.0	7.80	97.5
Barium	200		4.0	anr			
Beryllium	2.0		1.0	anr			
Bismuth	20						
Boron	100		10				
Cadmium	3.0		1.0	anr			
Calcium	5000	2000	1000	anr			
Cerium							
Chromium	10		2.0				
Cobalt	50		3.0	anr			
Copper	10		2.0				
Iron	100	500					
Lead	3.0	20	2.5				
Lithium	50						
Magnesium	5000	2000	100	anr			
Manganese	15		3.0	anr			
Molybdenum	20						
Nickel	10		4.0	anr			
Phosphorus	50						
Potassium	5000		2000	anr			
Selenium	10	20	5.0	anr			
Silicon	200						
Silver	5.0		2.0				
Sodium	5000		1000	anr			
Strontium	10						
Sulfur	50						
Thallium	10		2.0				
Tin	10						
Titanium	10						
Tungsten	50						
Vanadium	50		2.0	anr			

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52240 Units: ug/l

Time:				10:58		11:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Zinc	20		10	anr			
Zirconium	10						

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52240 Units: ug/l

Time:			11:03		11:08	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	506000	101.2	509000	101.8
Antimony		1000	-1.90		1030	103.0
Arsenic		1000	-1.20		1030	103.0
Barium		500	4.30		479	95.8
Beryllium		500	0.200		479	95.8
Bismuth		500	-2.10		473	94.6
Boron		500	-1.10		487	97.4
Cadmium		1000	0.300		1020	102.0
Calcium	400000	400000	377000	94.3	387000	96.8
Cerium			82.6		581*	
Chromium		500	-1.30		475	95.0
Cobalt		500	1.00		467	93.4
Copper		500	4.60		536	107.2
Iron	200000	200000	189000	94.5	198000	99.0
Lead		1000	0.700		923	92.3
Lithium		500	-2.60		563	112.6
Magnesium	500000	500000	492000	98.4	481000	96.2
Manganese		500	-0.100		502	100.4
Molybdenum		500	0.300		477	95.4
Nickel		1000	2.30		908	90.8
Phosphorus		500	9.30		483	96.6
Potassium			112		60.3	
Selenium		1000	4.70		923	92.3
Silicon		500	-14.6		510	102.0
Silver		1000	-0.300		1030	103.0
Sodium			17.8		28.3	
Strontium		500	-1.30		492	98.4
Sulfur		500	33.9		525	105.0
Thallium		1000	-1.80		896	89.6
Tin		500	-5.40		463	92.6
Titanium		500	-2.20		482	96.4
Tungsten		500	-4.60		486	97.2
Vanadium		500	7.20		486	97.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52240 Units: ug/l

Time:			11:03		11:08	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	7.40		928	92.8
Zirconium		500	2.60		445	89.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:40	MA52241-STD1	1		STDA
10:45	MA52241-STD2	1		STDB
10:50	MA52241-ICV1	1		
10:59	MA52241-ICB1	1		
11:08	MA52241-ICCV1	1		
11:20	MA52241-CCB1	1		
11:25	MA52241-CRI1	1		
11:30	MA52241-CRID1	1		
11:35	MA52241-ICSA1	1		
11:40	MA52241-ICSAB1	1		
11:45	MA52241-HSTD1	1		
11:51	MA52241-HSTD2	1		
11:56	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:11	MA52241-CCV1	1		
12:16	MA52241-CCB2	1		
12:21	MA52241-CRI2	1		
12:26	MP32331-MB1	1		
12:31	MP32331-B1	1		
12:36	MP32331-S1	1		
12:41	MP32331-S2	1		
12:46	JD42270-3	1		(sample used for QC only; not part of login JD41762)
12:51	MP32331-SD1	5		
12:56	MP32331-PS1	1		
13:01	JD41762-5	1		
13:06	MA52241-CCV2	1		
13:10	MA52241-CCB3	1		
13:16	MP32331-S1	5		
13:21	MP32331-S2	5		
13:25	JD42270-3	5		(sample used for QC only; not part of login JD41762)
13:31	MP32331-SD1	25		
13:36	MP32331-PS1	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:41	JD41762-5	2		
13:46	ZZZZZZ	1		
13:51	MA52241-CRI3	1		
13:56	MA52241-CCV3	1		
14:01	MA52241-CCB4	1		
14:09	MA52241-ICSA2	1		
14:15	MA52241-ICSAB2	1		
14:20	ZZZZZZ	1		
14:25	MP32280-S1	2		MN still high
14:30	MP32280-S2	2		MN still high
14:35	JD42834-2	2		(sample used for QC only; not part of login JD41762)
14:40	MP32280-SD1	10		MN still high
---------->	Last reportable sample/prep for job JD41762			
14:45	ZZZZZZ	2		
14:50	ZZZZZZ	1		
14:55	ZZZZZZ	1		
15:00	MA52241-CCV4	1		
15:05	MA52241-CCB5	1		
---------->	Last reportable CCB for job JD41762			
15:10	ZZZZZZ	2		
15:15	ZZZZZZ	5		
15:20	ZZZZZZ	2		
15:25	ZZZZZZ	2		
15:30	ZZZZZZ	5		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	5		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	2		
15:55	ZZZZZZ	5		
16:00	MA52241-CCV5	1		
16:05	MA52241-CCB6	1		
16:10	ZZZZZZ	5		
16:15	ZZZZZZ	5		
16:20	ZZZZZZ	1		
16:25	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:30	ZZZZZZ	1		
16:35	ZZZZZZ	1		
16:40	ZZZZZZ	1		
16:44	ZZZZZZ	1		
16:49	MA52241-CCV6	1		
16:54	MA52241-CCB7	1		
16:59	MP32289-MB1	1		
17:04	MP32289-B1	1		
17:09	MP32289-S1	1		
17:14	MP32289-S2	1		
17:19	JD42970-6	1		(sample used for QC only; not part of login JD41762)
17:23	MP32289-SD1	5		
17:28	MP32289-S3	1		
17:33	MP32289-S4	1		
17:38	JD42970-6F	1		(sample used for QC only; not part of login JD41762)
17:43	MP32289-SD2	5		
17:48	MA52241-CCV7	1		
17:53	MA52241-CCB8	1		
17:58	ZZZZZZ	1		
18:03	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:13	ZZZZZZ	5		
18:18	ZZZZZZ	10		
18:23	ZZZZZZ	5		
18:28	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	MA52241-CCV8	1		
18:43	MA52241-CCB9	1		
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:02	ZZZZZZ	1		
19:07	ZZZZZZ	1		
19:12	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:17	ZZZZZZ	1		
19:22	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:50	MA52241-ICV1	1	X	
10:59	MA52241-ICB1	1	X	
11:08	MA52241-ICCV1	1	X	
11:20	MA52241-CCB1	1	X	
11:25	MA52241-CRI1	1		
11:30	MA52241-CRID1	1	X	
11:35	MA52241-ICSA1	1	X	
11:40	MA52241-ICSAB1	1	X	
11:45	MA52241-HSTD1	1	X	
11:51	MA52241-HSTD2	1	X	
11:56	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:11	MA52241-CCV1	1	X	
12:16	MA52241-CCB2	1	X	
12:21	MA52241-CRI2	1	X	
12:26	MP32331-MB1	1	X	
12:31	MP32331-B1	1	X	
12:36	MP32331-S1	1		
12:41	MP32331-S2	1		
12:46	JD42270-3	1		(a)
12:51	MP32331-SD1	5		
12:56	MP32331-PS1	1		
13:01	JD41762-5	1		
13:06	MA52241-CCV2	1	X	
13:10	MA52241-CCB3	1	X	
13:16	MP32331-S1	5	X	
13:21	MP32331-S2	5	X	
13:25	JD42270-3	5	X	(a)
13:31	MP32331-SD1	25	X	
13:36	MP32331-PS1	5	X	
13:41	JD41762-5	2	X	
13:46	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:51	MA52241-CRI3	1	X	
13:56	MA52241-CCV3	1	X	
14:01	MA52241-CCB4	1	X	
14:09	MA52241-ICSA2	1	X	
14:15	MA52241-ICSAB2	1	X	
14:20	ZZZZZZ	1		
14:25	MP32280-S1	2	X	
14:30	MP32280-S2	2	X	
14:35	JD42834-2	2	X	(a)
14:40	MP32280-SD1	10	X	
14:45	ZZZZZZ	2		
14:50	ZZZZZZ	1		
14:55	ZZZZZZ	1		
15:00	MA52241-CCV4	1	X	
15:05	MA52241-CCB5	1	X	
15:10	ZZZZZZ	2		
15:15	ZZZZZZ	5		
15:20	ZZZZZZ	2		
15:25	ZZZZZZ	2		
15:30	ZZZZZZ	5		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	5		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	2		
15:55	ZZZZZZ	5		
16:00	MA52241-CCV5	1	X	
16:05	MA52241-CCB6	1	X	
16:10	ZZZZZZ	5		
16:15	ZZZZZZ	5		
16:20	ZZZZZZ	1		
16:25	ZZZZZZ	1		
16:30	ZZZZZZ	1		
16:35	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As	
16:40	ZZZZZZ	1		
16:44	ZZZZZZ	1		
16:49	MA52241-CCV6	1	X	
16:54	MA52241-CCB7	1	X	
16:59	MP32289-MB1	1		
17:04	MP32289-B1	1		
17:09	MP32289-S1	1		
17:14	MP32289-S2	1		
17:19	JD42970-6	1		(a)
17:23	MP32289-SD1	5		
17:28	MP32289-S3	1		
17:33	MP32289-S4	1		
17:38	JD42970-6F	1		(a)
17:43	MP32289-SD2	5		
17:48	MA52241-CCV7	1	X	
17:53	MA52241-CCB8	1	X	
17:58	ZZZZZZ	1		
18:03	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:13	ZZZZZZ	5		
18:18	ZZZZZZ	10		
18:23	ZZZZZZ	5		
18:28	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	MA52241-CCV8	1	X	
18:43	MA52241-CCB9	1	X	
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:02	ZZZZZZ	1		
19:07	ZZZZZZ	1		
19:12	ZZZZZZ	1		
19:17	ZZZZZZ	1		
19:22	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:40	MA52241-STD1	3978 R	234560 R	19546 R	9940 R
10:45	MA52241-STD2	3775	221050	19465	8922
10:50	MA52241-ICV1	3866	225720	19549	9193
10:59	MA52241-ICB1	4002	234380	19632	9966
11:08	MA52241-ICCV1	3893	227910	19863	9231
11:20	MA52241-CCB1	3999	236840	20094	9941
11:25	MA52241-CRI1	No results reported for the elements associated with this internal standard.			
11:30	MA52241-CRID1	4030	237590	20229	9963
11:35	MA52241-ICSA1	3650	209430	19623	8352
11:40	MA52241-ICSAB1	3638	208180	19542	8351
11:45	MA52241-HSTD1	3931	232250	20007	9804
11:51	MA52241-HSTD2	3703	213400	19609	8411
11:56	ZZZZZZ	4020	235890	20345	10144
12:01	ZZZZZZ	4016	237560	20421	10141
12:06	ZZZZZZ	4084	238810	20494	10140
12:11	MA52241-CCV1	3913	228920	20137	9238
12:16	MA52241-CCB2	4026	234660	20197	9993
12:21	MA52241-CRI2	3995	234130	20159	9840
12:26	MP32331-MB1	4039	238770	20421	10024
12:31	MP32331-B1	3953	231590	20439	9450
12:36	MP32331-S1	4020	230440	21315	9358
12:41	MP32331-S2	4048	233960	21196	9417
12:46	JD42270-3	4119	236550	21308	9745
12:51	MP32331-SD1	4074	236770	20678	9818
12:56	MP32331-PS1	4017	230880	21029	9502
13:01	JD41762-5	4178	240830	22116	9501
13:06	MA52241-CCV2	3943	229190	20313	9271
13:10	MA52241-CCB3	4057	238050	20526	10020
13:16	MP32331-S1	4063	233990	20856	9673
13:21	MP32331-S2	4064	231670	20862	9729
13:25	JD42270-3	4103	238580	20873	9868
13:31	MP32331-SD1	4056	236480	20448	9945
13:36	MP32331-PS1	4065	234450	20630	9741

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:41	JD41762-5	4097	235160	21252	9574
13:46	ZZZZZZ	4041	238700	20540	10000
13:51	MA52241-CRI3	4012	235310	20447	9844
13:56	MA52241-CCV3	3944	231490	20472	9271
14:01	MA52241-CCB4	4036	236200	20314	10003
14:09	MA52241-ICSA2	3669	211330	19891	8349
14:15	MA52241-ICSAB2	3652	210540	19931	8344
14:20	ZZZZZZ	4053	238920	20575	10052
14:25	MP32280-S1	3963	228920	20836	9090
14:30	MP32280-S2	3990	230750	20868	9240
14:35	JD42834-2	3979	232410	20706	9321
14:40	MP32280-SD1	3970	235960	20128	9678
14:45	ZZZZZZ	4084	234890	20634	9693
14:50	ZZZZZZ	4170	241830	22057	9348
14:55	ZZZZZZ	4182	242100	22129	9266
15:00	MA52241-CCV4	3899	229000	20087	9265
15:05	MA52241-CCB5	3971	236440	20060	9935
15:10	ZZZZZZ	3980	236450	20398	9525
15:15	ZZZZZZ	3972	233280	20051	9629
15:20	ZZZZZZ	3990	233630	20373	9519
15:25	ZZZZZZ	4001	234410	20613	9528
15:30	ZZZZZZ	3956	233600	20103	9636
15:35	ZZZZZZ	3961	236190	19978	9969
15:40	ZZZZZZ	3949	234210	19897	9683
15:45	ZZZZZZ	3955	237080	19992	10000
15:50	ZZZZZZ	3829	224260	20187	8746
15:55	ZZZZZZ	3840	226320	19853	9006
16:00	MA52241-CCV5	3849	227280	19530	9248
16:05	MA52241-CCB6	3959	235420	19575	9971
16:10	ZZZZZZ	3926	232920	19631	9553
16:15	ZZZZZZ	3855	227650	19487	9378
16:20	ZZZZZZ	3834	226560	19492	9241
16:25	ZZZZZZ	3816	225500	19558	9194

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:30	ZZZZZZ	3788	225660	19534	9264
16:35	ZZZZZZ	3766	222920	19354	9037
16:40	ZZZZZZ	3957	237600	19626	10029
16:44	ZZZZZZ	3786	225140	19393	9229
16:49	MA52241-CCV6	3858	227260	19582	9295
16:54	MA52241-CCB7	3953	233730	19484	10002
16:59	MP32289-MB1	3953	237560	19802	10039
17:04	MP32289-B1	3879	230080	19870	9494
17:09	MP32289-S1	3806	224230	19477	9077
17:14	MP32289-S2	3794	223600	19627	9063
17:19	JD42970-6	3799	224130	19414	9233
17:23	MP32289-SD1	3883	230240	19420	9723
17:28	MP32289-S3	3790	223390	19437	9077
17:33	MP32289-S4	3785	224210	19562	9050
17:38	JD42970-6F	3807	224750	19410	9278
17:43	MP32289-SD2	3870	230570	19493	9749
17:48	MA52241-CCV7	3820	227560	19357	9342
17:53	MA52241-CCB8	3914	234860	19271	10017
17:58	ZZZZZZ	3794	225390	19856	8853
18:03	ZZZZZZ	3681	213840	19434	8457
18:08	ZZZZZZ	3665	215120	19255	8710
18:13	ZZZZZZ	3912	232960	19812	9620
18:18	ZZZZZZ	3894	230500	19717	9515
18:23	ZZZZZZ	3902	229330	19534	9569
18:28	ZZZZZZ	3978	237880	19693	10100
18:33	ZZZZZZ	3989	237970	19743	10109
18:38	MA52241-CCV8	3892	228900	19781	9359
18:43	MA52241-CCB9	3992	235560	19776	10072
18:51	ZZZZZZ	3972	236730	19718	10013
18:56	ZZZZZZ	3990	234410	19838	10029
19:02	ZZZZZZ	3718	219650	19379	8942
19:07	ZZZZZZ	3996	236630	19837	10092
19:12	ZZZZZZ	3743	219210	19307	8911

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:17	ZZZZZZ	4017	237400	19860	10064
19:22	ZZZZZZ	3991	236010	19981	10062

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time: / Sample ID:			10:59 ICB1		11:20 CCB1		12:16 CCB2		13:10 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.600	<3.0	0.600	<3.0	-0.400	<3.0	0.900	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1								
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5								
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9								
Titanium	10	.9								
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time:			10:59		11:20		12:16		13:10	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time: / Sample ID:			14:01 CCB4		15:05 CCB5	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	27	anr			
Antimony	6.0	2.2	anr			
Arsenic	3.0	1.3	-0.100	<3.0	-0.400	<3.0
Barium	200	1	anr			
Beryllium	1.0	.2	anr			
Bismuth	20	2.1				
Boron	100	1				
Cadmium	3.0	.2	anr			
Calcium	5000	7.7	anr			
Cerium	100					
Chromium	10	.5	anr			
Cobalt	50	.4	anr			
Copper	10	6.8	anr			
Iron	100	15	anr			
Lead	3.0	1.6	anr			
Lithium	50	3.7				
Magnesium	5000	54	anr			
Manganese	15	.1	anr			
Molybdenum	20	.5				
Nickel	10	.3	anr			
Phosphorus	50	1.8				
Potassium	10000	77	anr			
Selenium	10	2	anr			
Silicon	200	1.3				
Silver	10	.9	anr			
Sodium	10000	23	anr			
Strontium	10	.4				
Sulfur	50	4.1				
Thallium	10	1.6	anr			
Tin	10	.9				
Titanium	10	.9				
Tungsten	50	2				
Vanadium	50	.8	anr			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time:			14:01		15:05	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.2	anr			
Zirconium	10	.5				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52241 Units: ug/l

Time:		11:08	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1940	97.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52241 Units: ug/l

Time:		11:08	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		10:50			12:11			13:06	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1940	97.0	2000	2000	100.0	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		10:50			12:11			13:06	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		13:56			15:00	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	2000	100.0	2000	2010	100.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		13:56			15:00	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52241 Units: ug/l

Time:		11:45			11:51	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7480	93.5			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52241 Units: ug/l

Time:		11:45			11:51	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52241 Units: ug/l

Time:				11:30		12:21		13:51	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRI3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	2.90	96.7	9.10	113.8	8.00	100.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52241 Units: ug/l

Time:				11:30		12:21		13:51	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRI3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52241 Units: ug/l

Time:			11:35		11:40		14:09		14:15	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	491000	98.2	505000	101.0	492000	98.4	493000	98.6
Antimony		1000	-3.90		1010	101.0	-4.50		994	99.4
Arsenic		1000	1.00		1010	101.0	1.30		990	99.0
Barium		500	-44.6		446	89.2	-45.0		429	85.8
Beryllium		500	0.200		476	95.2	0.300		463	92.6
Bismuth		500	0.00		483	96.6	2.40		468	93.6
Boron		500	-4.40		475	95.0	-5.10		466	93.2
Cadmium		1000	1.70		996	99.6	1.80		978	97.8
Calcium	400000	400000	377000	94.3	386000	96.5	368000	92.0	376000	94.0
Cerium			40.2		528*		39.5		515*	
Chromium		500	2.00		474	94.8	2.10		462	92.4
Cobalt		500	2.00		468	93.6	2.30		461	92.2
Copper		500	0.900		500	100.0	1.30		492	98.4
Iron	200000	200000	193000	96.5	200000	100.0	189000	94.5	199000	99.5
Lead		1000	0.400		939	93.9	-0.100		920	92.0
Lithium		500	-5.70		538	107.6	-5.70		529	105.8
Magnesium	500000	500000	496000	99.2	495000	99.0	485000	97.0	477000	95.4
Manganese		500	1.60		502	100.4	1.60		490	98.0
Molybdenum		500	-2.10		467	93.4	-1.70		459	91.8
Nickel		1000	4.40		930	93.0	4.40		911	91.1
Phosphorus		500	11.0		479	95.8	13.0		471	94.2
Potassium			-36.4		-9.50		-177		-156	
Selenium		1000	3.90		929	92.9	6.00		912	91.2
Silicon		500	-16.8		505	101.0	-16.8		499	99.8
Silver		1000	3.10		1100	110.0	4.10		1070	107.0
Sodium			-92.0		-101		-112		-98.9	
Strontium		500	1.30		491	98.2	1.40		477	95.4
Sulfur		500	-27.9		457	91.4	-28.8		446	89.2
Thallium		1000	-5.40		932	93.2	-4.40		915	91.5
Tin		500	-5.30		457	91.4	-4.10		449	89.8
Titanium		500	-0.900		484	96.8	-1.00		473	94.6
Tungsten		500	1.10		485	97.0	6.30		484	96.8
Vanadium		500	-4.60		469	93.8	-4.70		465	93.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52241 Units: ug/l

Time:			11:35		11:40		14:09		14:15	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	1.90		920	92.0	2.20		891	89.1
Zirconium		500	3.00		478	95.6	3.20		451	90.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.6	8		
Antimony	2.0	.25	.41		
Arsenic	2.0	.2	.28	0.030	<2.0
Barium	20	.04	1.9		
Beryllium	0.20	.0099	.079		
Bismuth	2.0	.36	.51		
Boron	9.9	.19	3.7		
Cadmium	0.50	.04	.069		
Calcium	500	.55	21		
Chromium	0.99	.05	.37		
Cobalt	5.0	.05	.28		
Copper	2.5	.099	.83		
Iron	50	1.1	19		
Lead	2.0	.12	.41		
Lithium	5.0	.23	.91		
Magnesium	500	6.4	14		
Manganese	1.5	.02	.41		
Molybdenum	2.0	.04	.32		
Nickel	4.0	.03	.35		
Phosphorus	20	.41	3.2		
Potassium	990	5.5	31		
Selenium	2.0	.35	.64		
Silicon	20	.16	11		
Silver	0.50	.11	.17		
Sodium	990	1.1	77		
Strontium	5.0	.0099	.18		
Sulfur	9.9	.44	3.8		
Thallium	0.99	.25	.57		
Tin	20	.099	3.8		
Titanium	0.99	.04	.34		
Tungsten	5.0	.28	1.7		
Vanadium	5.0	.059	.19		
Zinc	5.0	.0099	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.04	.53		

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	JD41762-4 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	92.3	471	398	95.2	75-125
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper					
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					
Zirconium					

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	JD41762-4 Original MS	Spikelot MPSPK2	% Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	JD41762-4 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	92.3	459	398	92.2	2.6	20
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						
Zirconium						

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 03/24/22

	JD41762-4	Spikelot		MSD	QC
Metal	Original MSD	MPSPK2	% Rec	RPD	Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	188	202	93.1	80-120
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				
Zirconium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/24/22

Metal	JD41762-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	473	488	3.1	0-10
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902 Methods: SW846 6010D
Matrix Type: SOLID Units: ug/l

Prep Date: 03/24/22

Metal	JD41762-4 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:				03/26/22		03/26/22	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	200	17	150				
Antimony	6.0	1.7	4.7				
Arsenic	3.0	2.1	2.8	0.90	<3.0	0.30	<3.0
Barium	200	.8	13				
Beryllium	1.0	.3	.5				
Bismuth	20	2.3	8.6				
Boron	100	2.3	10				
Cadmium	3.0	.3	1				
Calcium	5000	6.6	99				
Cerium	100						
Chromium	10	.3	2				
Cobalt	50	.4	2.6				
Copper	10	.8	5.9				
Iron	100	5.3	32				
Lead	3.0	1.1	1.8				
Lithium	50	4.8	7.3				
Magnesium	5000	32	140				
Manganese	15	.1	1.4				
Molybdenum	20	.6	3.6				
Nickel	10	.4	1.7				
Phosphorus	50	1.2	18				
Potassium	10000	77	200				
Selenium	10	3.2	4.9				
Silicon	200	1.7	32				
Silver	10	1	6.1				
Sodium	10000	34	570				
Strontium	10	.3	2.7				
Sulfur	50	3	45				
Thallium	10	1.8	1.8				
Tin	10	.8	3.7				
Titanium	10	.5	2.5				
Tungsten	50	2.6	40				
Vanadium	50	.6	1.8				

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date:				03/26/22		03/26/22	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Zinc	20	.1	6.9				
Zirconium	10	.3	4.1				

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	7.7	1790	2000	89.1	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Cerium					
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	7.7	1830	2000	91.1	2.2	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:		03/26/22				03/26/22		
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr							
Antimony	anr							
Arsenic	1800	2000	90.0	80-120	1750	2000	87.5	80-120
Barium	anr							
Beryllium	anr							
Bismuth								
Boron								
Cadmium	anr							
Calcium	anr							
Cerium								
Chromium	anr							
Cobalt	anr							
Copper	anr							
Iron	anr							
Lead	anr							
Lithium								
Magnesium	anr							
Manganese	anr							
Molybdenum								
Nickel	anr							
Phosphorus								
Potassium	anr							
Selenium	anr							
Silicon								
Silver	anr							
Sodium	anr							
Strontium								
Sulfur								
Thallium	anr							
Tin								
Titanium								
Tungsten								
Vanadium	anr							

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22 03/26/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr							
Zirconium								

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	7.70	0.00	100.0(a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Cerium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.7	8.1		
Antimony	2.0	.17	.41		
Arsenic	2.0	.21	.28	0.050	<2.0
Barium	20	.08	1.9		
Beryllium	0.20	.03	.08		
Bismuth	2.0	.23	.52		
Boron	10	.23	3.7		
Cadmium	0.50	.03	.07		
Calcium	500	.66	21		
Chromium	1.0	.03	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.08	.84		
Iron	50	.53	19		
Lead	2.0	.11	.41		
Lithium	5.0	.48	.92		
Magnesium	500	3.2	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.04	.35		
Phosphorus	20	.12	3.3		
Potassium	1000	7.7	32		
Selenium	2.0	.32	.65		
Silicon	20	.17	11		
Silver	0.50	.1	.17		
Sodium	1000	3.4	78		
Strontium	5.0	.03	.18		
Sulfur	10	.3	3.9		
Thallium	1.0	.18	.58		
Tin	20	.08	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.26	1.8		
Vanadium	5.0	.06	.19		
Zinc	5.0	.01	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 03/28/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.03	.54		

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	1.8	195	217	88.9	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	1.8	197	217	89.8	1.0	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	189	204	92.6	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	JD41893-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	16.5	20.1	21.8 (a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947 Methods: SW846 6010D
Matrix Type: SOLID Units: ug/l

Prep Date: 03/28/22

Metal	JD41893-1 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	Sample ml	Final ml	JD41893-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	Sample ml	Final ml	JD41893-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	150		
Antimony	6.0	2.2	4.7		
Arsenic	3.0	1.3	2.8	-1.4	<3.0
Barium	200	.4	13		
Beryllium	1.0	.1	.5		
Bismuth	20	2.1	8.6		
Boron	100	1	10		
Cadmium	3.0	.2	1		
Calcium	5000	5.6	99		
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.4	2.6		
Copper	10	1	5.9		
Iron	100	11	32		
Lead	3.0	1.2	1.8		
Lithium	50	2.3	7.3		
Magnesium	5000	54	140		
Manganese	15	.1	1.4		
Molybdenum	20	.4	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.8	18		
Potassium	10000	55	200		
Selenium	10	2	4.9		
Silicon	200	1.3	32		
Silver	10	.9	6.1		
Sodium	10000	11	570		
Strontium	10	.1	2.7		
Sulfur	50	4.1	45		
Thallium	10	1.6	1.8		
Tin	10	.9	3.7		
Titanium	10	.4	2.5		
Tungsten	50	2	40		
Vanadium	50	.6	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9		
Zirconium	10	.4	4.1		

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	276	2140	2000	93.2	75-125
Barium					
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Cerium					
Chromium	anr				
Cobalt					
Copper					
Iron					
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	276	2140	2000	93.2	0.0	20
Barium						
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt						
Copper						
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	2030	2000	101.5	80-120
Barium				
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Cerium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	276	277	0.4	0-10
Barium				
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Cerium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	9.2	150		
Antimony	6.0	2.2	4.7		
Arsenic	3.0	1.3	2.8	-0.60	<3.0
Barium	200	.2	13		
Beryllium	1.0	.2	.5		
Bismuth	20	2.1	8.6		
Boron	100	1	10		
Cadmium	3.0	.2	1		
Calcium	5000	7.7	99		
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.4	2.6		
Copper	10	.7	5.9		
Iron	100	3.3	32		
Lead	3.0	2	1.8		
Lithium	50	1.5	7.3		
Magnesium	5000	25	140		
Manganese	15	.1	1.4		
Molybdenum	20	.5	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.8	18		
Potassium	10000	35	200		
Selenium	10	2	4.9		
Silicon	200	1.3	32		
Silver	10	.6	6.1		
Sodium	10000	14	570		
Strontium	10	.1	2.7		
Sulfur	50	3.7	45		
Thallium	10	1.6	1.8		
Tin	10	.9	3.7		
Titanium	10	.8	2.5		
Tungsten	50	1.3	40		
Vanadium	50	.5	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.2	6.9		
Zirconium	10	.5	4.1		

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	0.0	1900	2000	94.9	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Cerium					
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	0.0	1830	2000	91.4	3.8	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	1910	2000	95.5	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Cerium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	2.10	0.00	100.0(a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Cerium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/31/22

	JD41762-17F		QC
Metal	Original SDL 1:5	%DIF	Limits
Zinc	anr		
Zirconium			

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:				04/08/22		04/08/22	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	200	9.2	150				
Antimony	6.0	2.8	4.7				
Arsenic	3.0	2.6	2.8	-0.70	<3.0	-0.70	<3.0
Barium	200	.2	13				
Beryllium	1.0	.2	.5				
Bismuth	20	2.5	8.6				
Boron	100	1.8	10				
Cadmium	3.0	.4	1				
Calcium	5000	13	99				
Cerium	100						
Chromium	10	.7	2				
Cobalt	50	.6	2.6				
Copper	10	.7	5.9				
Iron	100	3.3	32				
Lead	3.0	2	1.8				
Lithium	50	1.5	7.3				
Magnesium	5000	25	140				
Manganese	15	.1	1.4				
Molybdenum	20	.6	3.6				
Nickel	10	.8	1.7				
Phosphorus	50	7	18				
Potassium	10000	35	200				
Selenium	10	3.6	4.9				
Silicon	200	2.2	32				
Silver	10	.6	6.1				
Sodium	10000	14	570				
Strontium	10	.1	2.7				
Sulfur	50	3.7	45				
Thallium	10	5.2	1.8				
Tin	10	1.4	3.7				
Titanium	10	.8	2.5				
Tungsten	50	1.3	40				
Vanadium	50	.5	1.8				

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22 04/08/22

Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Zinc	20	.3	6.9				
Zirconium	10	.5	4.1				

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	19.6	2020	2000	100.0	75-125
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Cerium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	19.6	2070	2000	102.5	2.4	20
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:			04/08/22				04/08/22	
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic	2010	2000	100.5	80-120	1960	2000	98.0	80-120
Barium								
Beryllium								
Bismuth								
Boron								
Cadmium								
Calcium								
Cerium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Molybdenum								
Nickel								
Phosphorus								
Potassium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Thallium								
Tin								
Titanium								
Tungsten								
Vanadium								

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:				04/08/22				04/08/22
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc								
Zirconium								

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	19.6	21.6	10.2 (a)	0-10
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Cerium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	150		
Antimony	6.0	2.5	4.7		
Arsenic	3.0	2	2.8	0.10	<3.0
Barium	200	.4	13		
Beryllium	1.0	.1	.5		
Bismuth	20	3.6	8.6		
Boron	100	1.9	10		
Cadmium	3.0	.4	1		
Calcium	5000	5.6	99		
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.5	2.6		
Copper	10	1	5.9		
Iron	100	11	32		
Lead	3.0	1.2	1.8		
Lithium	50	2.3	7.3		
Magnesium	5000	65	140		
Manganese	15	.2	1.4		
Molybdenum	20	.4	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	4.1	18		
Potassium	10000	55	200		
Selenium	10	3.5	4.9		
Silicon	200	1.6	32		
Silver	10	1.1	6.1		
Sodium	10000	11	570		
Strontium	10	.1	2.7		
Sulfur	50	4.4	45		
Thallium	10	2.5	1.8		
Tin	10	1	3.7		
Titanium	10	.4	2.5		
Tungsten	50	2.8	40		
Vanadium	50	.6	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9		
Zirconium	10	.4	4.1		

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	0.0	1920	2000	95.4	75-125
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Cerium					
Chromium					
Cobalt					
Copper					
Iron	anr				
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	anr				
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0	1900	2000	95.0	1.0	20
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron	anr					
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1920	2000	96.0	80-120
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Cerium				
Chromium				
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Cerium				
Chromium				
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.7	8.1		
Antimony	2.0	.17	.41		
Arsenic	2.0	.21	.28	-0.010	<2.0
Barium	20	.08	1.9		
Beryllium	0.20	.03	.08		
Bismuth	2.0	.23	.52		
Boron	10	.23	3.7		
Cadmium	0.50	.03	.07		
Calcium	500	.66	21		
Chromium	1.0	.03	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.08	.84		
Iron	50	.53	19		
Lead	2.0	.11	.41		
Lithium	5.0	.48	.92		
Magnesium	500	3.2	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.04	.35		
Phosphorus	20	.12	3.3		
Potassium	1000	7.7	32		
Selenium	2.0	.32	.65		
Silicon	20	.17	11		
Silver	0.50	.1	.17		
Sodium	1000	3.4	78		
Strontium	5.0	.03	.18		
Sulfur	10	.3	3.9		
Thallium	1.0	.18	.58		
Tin	20	.08	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.26	1.8		
Vanadium	5.0	.06	.19		
Zinc	5.0	.01	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.03	.54		

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	7.3	236	249	91.5	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	7.3	218	252	83.5	7.9	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	170	200	85.0	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	JD42834-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	60.8	54.8	17.8 (a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	JD42834-2 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	Sample ml	Final ml	JD42834-2 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	Sample ml	Final ml	JD42834-2 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.92	8.1		
Antimony	2.0	.22	.41		
Arsenic	2.0	.13	.28	0.080	<2.0
Barium	20	.02	1.9		
Beryllium	0.20	.02	.08		
Bismuth	2.0	.21	.52		
Boron	10	.1	3.7		
Cadmium	0.50	.02	.07		
Calcium	500	.77	21		
Chromium	1.0	.05	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.07	.84		
Iron	50	.33	19		
Lead	2.0	.16	.41		
Lithium	5.0	.15	.92		
Magnesium	500	2.5	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.05	.32		
Nickel	4.0	.03	.35		
Phosphorus	20	.18	3.3		
Potassium	1000	3.5	32		
Selenium	2.0	.2	.65		
Silicon	20	.13	11		
Silver	0.50	.06	.17		
Sodium	1000	1.4	78		
Strontium	5.0	.01	.18		
Sulfur	10	.37	3.9		
Thallium	1.0	.16	.58		
Tin	20	.09	3.8		
Titanium	1.0	.08	.34		
Tungsten	5.0	.13	1.8		
Vanadium	5.0	.05	.19		
Zinc	5.0	.02	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.05	.54		

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	17.3	282	260	102.0	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	17.3	208	260	73.5N(a)	30.2 (b)	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) High rpd due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	193	200	96.5	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	JD42270-3 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	135	135	0.1	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	JD42270-3 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	Sample ml	Final ml	JD42270-3 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic	19.25	20	134.7	129.6488	2280	0.2	200	2000	107.5	80-120
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	Sample ml	Final ml	JD42270-3 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Sample: JD41762-1 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-25_20220322

Wet Weight (Total)	30.5	g
Tare Weight	24.4	g
Dry Weight (Total)	27.04	g
Solids, Percent	43.3	%

Sample: JD41762-3 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-10_20220322

Wet Weight (Total)	27.24	g
Tare Weight	21.57	g
Dry Weight (Total)	24.58	g
Solids, Percent	53.1	%

Sample: JD41762-4 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-07_20220322

Wet Weight (Total)	32.98	g
Tare Weight	26.63	g
Dry Weight (Total)	29.89	g
Solids, Percent	51.3	%

Sample: JD41762-5 **Analyzed:** 12-APR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-05_20220322

Wet Weight (Total)	24.43	g
Tare Weight	18.04	g
Dry Weight (Total)	21.07	g
Solids, Percent	47.4	%

Sample: JD41762-6 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-07_FD_20220322

Wet Weight (Total)	25.66	g
Tare Weight	19.79	g
Dry Weight (Total)	22.93	g
Solids, Percent	53.5	%

Sample: JD41762-7 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-04_20220322

Wet Weight (Total)	27.32	g
Tare Weight	21.8	g
Dry Weight (Total)	24.6	g
Solids, Percent	50.7	%

Percent Solids Raw Data Summary

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Sample: JD41762-8 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-01_20220322

Wet Weight (Total)	28.94	g
Tare Weight	22.94	g
Dry Weight (Total)	25.85	g
Solids, Percent	48.5	%

Sample: JD41762-26 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-13_20220323

Wet Weight (Total)	30.23	g
Tare Weight	22.09	g
Dry Weight (Total)	25.75	g
Solids, Percent	45	%

Sample: JD41762-27 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-16_20220323

Wet Weight (Total)	34.35	g
Tare Weight	26.04	g
Dry Weight (Total)	30.78	g
Solids, Percent	57	%

Sample: JD41762-28 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-28_20220322

Wet Weight (Total)	36.5	g
Tare Weight	29.24	g
Dry Weight (Total)	32.59	g
Solids, Percent	46.1	%

Sample: JD41762-29 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-12_20220323

Wet Weight (Total)	29.46	g
Tare Weight	23.18	g
Dry Weight (Total)	26.52	g
Solids, Percent	53.2	%

Sample: JD41762-30 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-03_20220323

Wet Weight (Total)	26.25	g
Tare Weight	18.07	g
Dry Weight (Total)	23.06	g
Solids, Percent	61	%

Percent Solids Raw Data Summary

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Sample: JD41762-31 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-11_20220323

Wet Weight (Total)	30.59	g
Tare Weight	23.02	g
Dry Weight (Total)	27.24	g
Solids, Percent	55.7	%

Sample: JD41762-32 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-19_20220323

Wet Weight (Total)	28.14	g
Tare Weight	20.12	g
Dry Weight (Total)	23.37	g
Solids, Percent	40.5	%

Sample: JD41762-33 **Analyzed:** 12-APR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-14_20220323

Wet Weight (Total)	27.38	g
Tare Weight	20.49	g
Dry Weight (Total)	24.23	g
Solids, Percent	54.3	%

Sample: JD41762-39 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-22_20220323

Wet Weight (Total)	30.4	g
Tare Weight	23.47	g
Dry Weight (Total)	26.93	g
Solids, Percent	49.9	%

Sample: JD41762-46 **Analyzed:** 12-APR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-17_20220324

Wet Weight (Total)	25.14	g
Tare Weight	17.97	g
Dry Weight (Total)	22.04	g
Solids, Percent	56.8	%

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SANHPAFW: Marcus Hook, PA

4862.02

SGS Job Number: JD41762A

Sampling Dates: 03/22/22 - 03/23/22

Report to:

Sanborn Head & Associates, Inc.
1015 Virginia Drive Suite 100
Fort Washington, PA 19034
swhitney@sanbornhead.com; cshepsko@sanbornhead.com

ATTN: Chelsey Shepsko

Total number of pages in report: **36**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Sections: 1 2 3 4 5

Table of Contents

Section 1: Sample Summary **3**
Section 2: Summary of Hits **4**
Section 3: Sample Results **5**
3.1: JD41762-11: AOI7-SED-10_20220322 6
3.2: JD41762-12: AOI7-SED-07_20220322 7
3.3: JD41762-29: AOI7-SED-12_20220323 8
3.4: JD41762-31: AOI7-SED-11_20220323 9
Section 4: Misc. Forms **10**
4.1: Certification Exceptions 11
4.2: Chain of Custody 12
Section 5: General Chemistry - QC Data Summaries **33**
5.1: Method Blank and Spike Results Summary 34
5.2: Duplicate Results Summary 35
5.3: Matrix Spike Results Summary 36

SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD41762A

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-11	03/22/22	10:40	CSS	03/22/22	SO	Sediment	AOI7-SED-10_20220322
JD41762-12	03/22/22	10:10	CSS	03/22/22	SO	Sediment	AOI7-SED-07_20220322
JD41762-29	03/23/22	10:25	CSS	03/23/22	SO	Sediment	AOI7-SED-12_20220323
JD41762-31	03/23/22	12:15	CSS	03/23/22	SO	Sediment	AOI7-SED-11_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: JD41762A
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/23/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-11	**AOI7-SED-10_20220322**					
No hits reported in this sample.						
JD41762-12	**AOI7-SED-07_20220322**					
No hits reported in this sample.						
JD41762-29	**AOI7-SED-12_20220323**					
Sulfate		351	37		mg/kg	EPA 300/SW846 9056A
JD41762-31	**AOI7-SED-11_20220323**					
Sulfate		471	35		mg/kg	EPA 300/SW846 9056A

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AOI7-SED-10_20220322		
Lab Sample ID:	JD41762-11	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	51.4
Project:	SANHPAFW: Marcus Hook, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	51.4		%	1	03/24/22 16:27	BG	SM2540 G 18TH ED MOD
Sulfate	< 39	39	mg/kg	1	03/25/22 12:04	JD	EPA 300/SW846 9056A
Sulfide, Neutral Extraction	< 8.1	8.1	mg/kg	1	03/28/22 18:30	MP	SW846 9034 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-07_20220322		
Lab Sample ID:	JD41762-12	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	57.1
Project:	SANHPAFW: Marcus Hook, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	57.1		%	1	03/24/22 16:27	BG	SM2540 G 18TH ED MOD
Sulfate	< 34	34	mg/kg	1	03/25/22 12:17	JD	EPA 300/SW846 9056A
Sulfide, Neutral Extraction	< 6.7	6.7	mg/kg	1	03/28/22 18:30	MP	SW846 9034 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-12_20220323		
Lab Sample ID:	JD41762-29	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	53.2
Project:	SANHPAFW: Marcus Hook, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	53.2		%	1	03/27/22 17:12	BG	SM2540 G 18TH ED MOD
Sulfate	351	37	mg/kg	1	03/30/22 02:48	JD	EPA 300/SW846 9056A
Sulfide, Neutral Extraction	< 6.8	6.8	mg/kg	1	03/28/22 18:30	MP	SW846 9034 M

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-11_20220323		
Lab Sample ID:	JD41762-31	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	55.7
Project:	SANHPAFW: Marcus Hook, PA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Solids, Percent	55.7		%	1	03/27/22 17:12	BG	SM2540 G 18TH ED MOD
Sulfate	471	35	mg/kg	1	03/30/22 03:01	JD	EPA 300/SW846 9056A
Sulfide, Neutral Extraction	< 7.2	7.2	mg/kg	1	03/28/22 18:30	MP	SW846 9034 M

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: JD41762A
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Sulfide, Neutral Extraction	18496-25-8	**SW846 9034 M**	SO	SGS is not certified for this parameter.[a]

(a) Lab is not certified for extraction using method SW846 9030B. Data analyzed by SW846 9034 used for regulatory programs must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SED

JD41762

VP-031422-240

SGS

CHAIN OF CUSTODY

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

FED-EX Tracking #

Bottle Order Control #

SGS Quote # 2022 219

SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates

Street Address: 1015 Virginia Dr, Suite 100

City: Fort Washington, State: PA, Zip: 19034

Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com

Phone #: 603-415-6159, Fax #:

Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook

Street: 100 Green Street

City: Marcus Hook, State: PA 19061

Project #: 4862.02

Client Purchase Order #:

Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates

Street Address: 20 Foundry Street

City: Concord, State: NH, Zip: 03301

Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
1	AOI7-SED-25.20220322		03/22/22	13:15	CSS												1		Dissolved	D22
2	AOI7-SED-26-20220322			13:35	CSS												1		3 on hold	
3	AOI7-SED-10.20220322			10:40	CSS												1			
	~~AOI7-SED-07-20220322~~			~~10:10~~	~~CSS~~												~~1~~			
4	AOI7-SED-DUP-20220322			10:10	CSS												1			
	AOI7-SED-OS7-MS.20220322			10:10													1			
	AOI7-SED-OS7-MSD.20220322			10:10													1			
5	AOI7-SED-05.20220322			12:20													1		3 on hold	
6	AOI7-SED-DUP-FD.20220322			10:10													1			
7	AOI7-SED-04.20220322			08:40													1			
8	AOI7-SED-01.20220322			09:20													1			
9	AOI7-SED-02.20220322			12:10													1		3 on hold	
10	AOI7-SED-03.20220322			12:35													1		3 on hold	

Turnaround Time (Business days)

Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

Commercial "A" (Level 1) NYASP Category A
Commercial "B" (Level 2) NYASP Category B
FULLT1 (Level 3+4) State Forms
NJ Reduced x REDT1 X EDD Format SHA EQuIS
Commercial "C" Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summery
NJ Reduced = Results + QC Summery + Partial Raw data

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:46	Received By: 1	Relinquished By: 2	Date Time: 3/22/22 1732	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable: On Ice / On Ice Cooler Temp: 3.5°C

Initial Assessment BB-3A

Label Verification

JD41762

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

FED-EX Tracking #
SGS Quote # 2022 219
Bottle Order Control #
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City / State / Zip: Fort Washington, PA, 19034
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts
Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by centrifuge								LAB USE ONLY
11	A017-SED-10.20220322		03/22/22	10:40	CDS											1	1									
12	A017-SED-07.20220322			10:10												1	1									
13	A017-PW-05.20220322			12:20														1								ON HOLD
14	A017-PW-007.20220322			10:10														1								
15	A017-PW-25_20220322			13:15														1								

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Turnaround Time (Business days)

Data Deliverable Information

Comments / Special Instructions

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 4 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] Other
- [ ] Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Commercial "A" (Level 1) NYASP Category A
Commercial "B" (Level 2) X NYASP Category B
FULLT1 (Level 3+4) State Forms
NJ Reduced X EDD Format SHA EQuIS
Commercial "C" Other
NJ Date of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Chelsey Shepsko	14:40	1 [signature]	2 [signature]	3/22/22 17:33	2 [signature]
3		3	4		4
5		5			

Custody Seal # ☐ Intact Not intact ☐ Preserved where applicable ☐ On Ice ☐ On Ice X Cooler Temp. 3.8 C/F

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

4.2

4

JD41762A: Chain of Custody
Page 2 of 21

SGS Sample Receipt Summary

Job Number: JD41762 **Client:** SANBORN HEAD & ASSOCIATES, INC. **Project:** SANHPAFW: MARCUS HOOK, PA

Date / Time Received: 3/22/2022 5:33:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

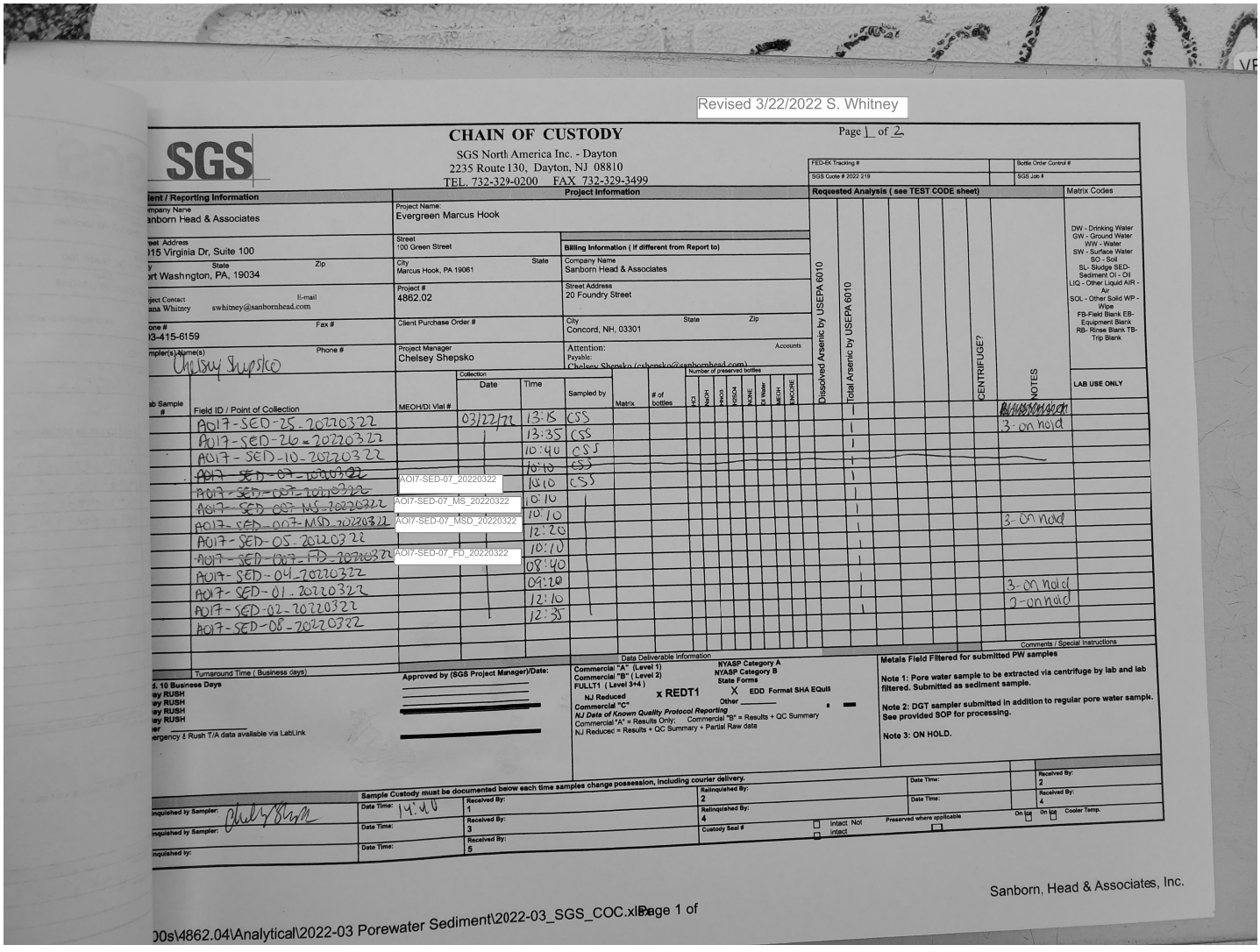
Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

JD41762A: Chain of Custody
Page 3 of 21



Revised 3/22/2022 S. Whitney

CHAIN OF CUSTODY

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 215 Virginia Dr, Suite 100
City: Fort Washington, PA, 19034
Project Contact: Dana Whitney
E-mail: swhitney@sanbornhead.com
Phone #: 913-415-6159
Fax #:
Sampler(s) Name(s): Chelsey Shepsko

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061
State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301
State:
Zip:
Attention:
Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219:
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
	A017-SED-25-20220322		03/22/22	13:15	CSS															
	A017-SED-26-20220322			13:35	CSS														3-on hold	
	A017-SED-10-20220322			10:40	CSS															
	~~A017-SED-09-20220322~~			10:10	CSS															
	A017-SED-007-20220322	AOI7-SED-07_20220322		10:10																
	A017-SED-007-MS-20220322	AOI7-SED-07_MS_20220322		10:10																
	A017-SED-007-MSD-20220322	AOI7-SED-07_MSD_20220322		12:20															3-on hold	
	A017-SED-05-20220322			10:10																
	A017-SED-007-FD-20220322	AOI7-SED-07_FD_20220322		08:40																
	A017-SED-04-20220322			09:20																
	A017-SED-01-20220322			12:10															3-on hold	
	A017-SED-02-20220322			12:35															3-on hold	
	A017-SED-08-20220322																			

Comments / Special Instructions

Turnaround Time (Business days)
10 Business Days
RUSH
RUSH
RUSH
RUSH
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reducec = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
x REDT1
X EDD Format SHA EQuIS
Other

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

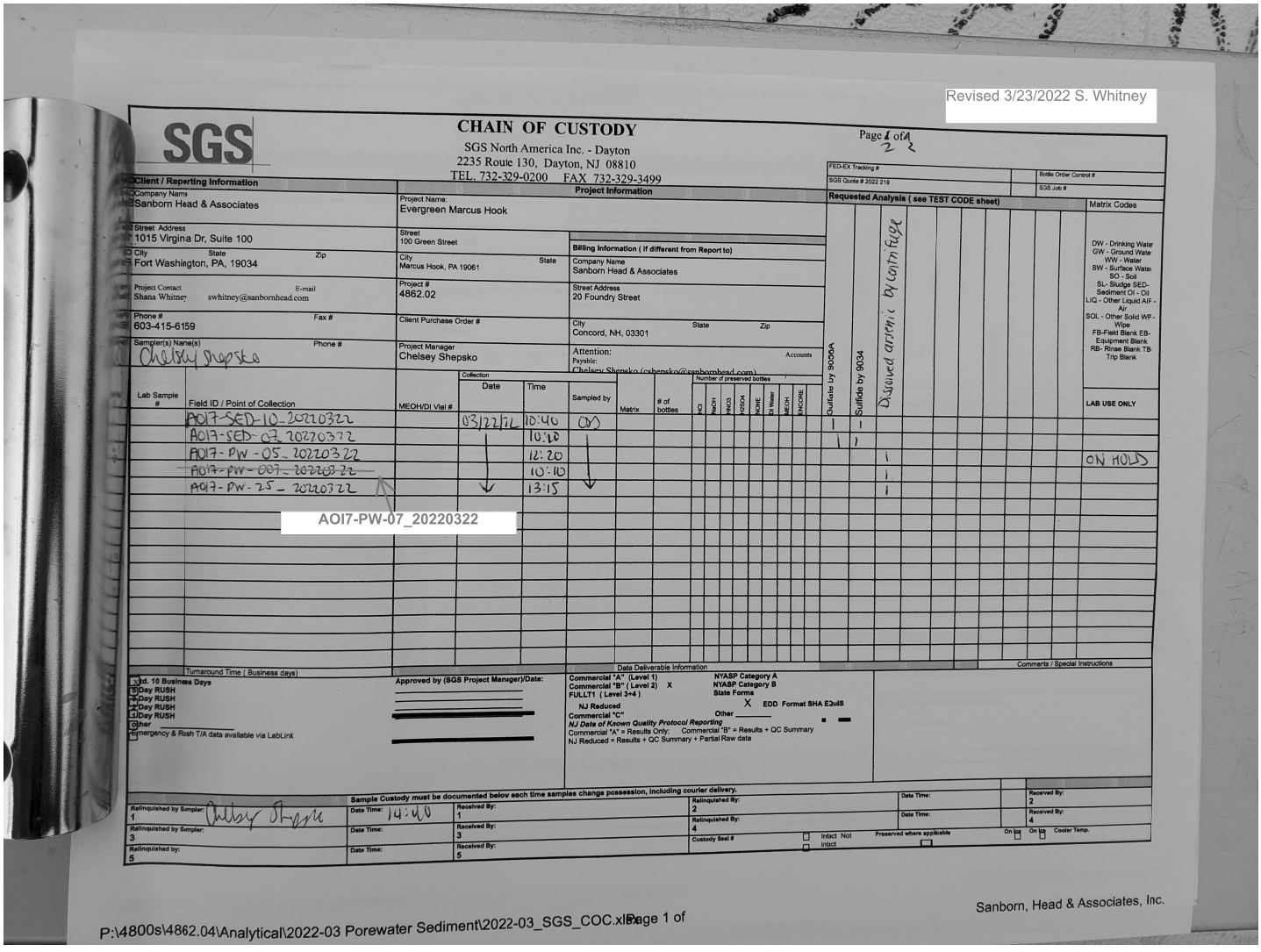
Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
	14:00	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable
		5			On Ice / Cooler Temp.

Sanborn, Head & Associates, Inc.

JD41762A: Chain of Custody
Page 4 of 21



Revised 3/23/2022 S. Whitney

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 1015 Virgina Dr, Suite 100
City: Fort Washington, PA, 19034 State: Zip:
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention:
Payable: Accounts
Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by Lumifuge	LAB USE ONLY
	AOI7-SED-10_20220322		03/22/22	10:40	CMS											1	1		
	AOI7-SED-07_20220322			10:20												1	1		
	AOI7-PW-05_20220322			12:20														1	ON HOLD
	AOI7-PW-007_20220322			10:10														1	
	AOI7-PW-25_20220322			13:15														1	

AOI7-PW-07_20220322

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIF - Air; SOL - Other Solid WF - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2) X
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA E2ul8
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:40	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact Not intact	Preserved where applicable	On Ice	On Ice	Cooler Temp.

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

4.2
4

JD41762A: Chain of Custody
Page 5 of 21

Job Change Order: JD41762

Requested Date:	3/24/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/24/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-13

Dept:

TAT: 7

AOI7-PW-05_20220322

Change:

Please create new -F sample for lab filtered volume and place on HOL

==========

==========

Sample #: JD41762-14, -15

Dept:

TAT: 7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date: 3/24/2022 **Received Date:** 3/22/2022

Account Name: Sunoco/Evergreen **Due Date:** 3/24/2022

Project Description: SANHPAFW: Marcus Hook, PA **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD41762-11, -12 **Change:**

Please move to -A job

Dept:

TAT: 7

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762A: Chain of Custody
Page 7 of 21

Job Change Order: JD41762

Requested Date:	3/25/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/25/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-29,-31

Dept:

TAT: 7

Change:
Please move to -A job

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/25/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762A: Chain of Custody
Page 8 of 21

6w
50

VP-031422-240

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of __

JD 41762

FED-EX Tracking # | Bottle Order Control #
SGS Quote # 2022 219 | SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington, State: PA, Zip: 19034
Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159, Fax #:
Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, State: PA 19061
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, State: NH, Zip: 03301
Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Dissolved Arsenic by USEPA 6010
Total Arsenic by USEPA 6010
CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
16F	MW17-PW-16_20220323		3/23/22	07:50	CS	GW	1			1						1				AS
17F	MW17-PW-11_20220323			12:15			1			1						1			3 on hold	D24
18	MW17-PW-24_20220323			12:45			1			1		1				1		X	[illegible] on hold	
19	MW17-PW-24-FD_20220323			12:45			1			1		1				1		X	on hold	
18	MW17-PW-24-MS_20220323			12:45			1			1		1				1		X	on hold	
20	MW17-PW-24-MSD_20220323			12:45			1			1		1				1		X	on hold	
21	MW17-PW-15_20220323			11:35			1			1		1				1		X	on hold	
22	MW17-PW-21_20220323			13:10			1			1		1				1		X	on hold	
23	MW17-PW-27_20220323			13:45			1			1		1				1		X	on hold	
24	MW17-PW-[illegible]_20220323			08:10			1			1		1				1		X		
25	MW17-PW-03_20220323			10:05			1			1		1				1		X	on hold	
26	MW17-PW-19_20220323			09:00			1			1						1		X		
27	MW17-SED-13_20220323			08:10		SO	1					1					1			
28	MW17-SED-16_20220323			07:50		SO	1					1					1			
	MW17-SED-28_20220322		3/22/22	13:00		SO	1										1			

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink
Field Assessment GC 2A
Label Verification

Approved by (SGS Project Manager)/Date:

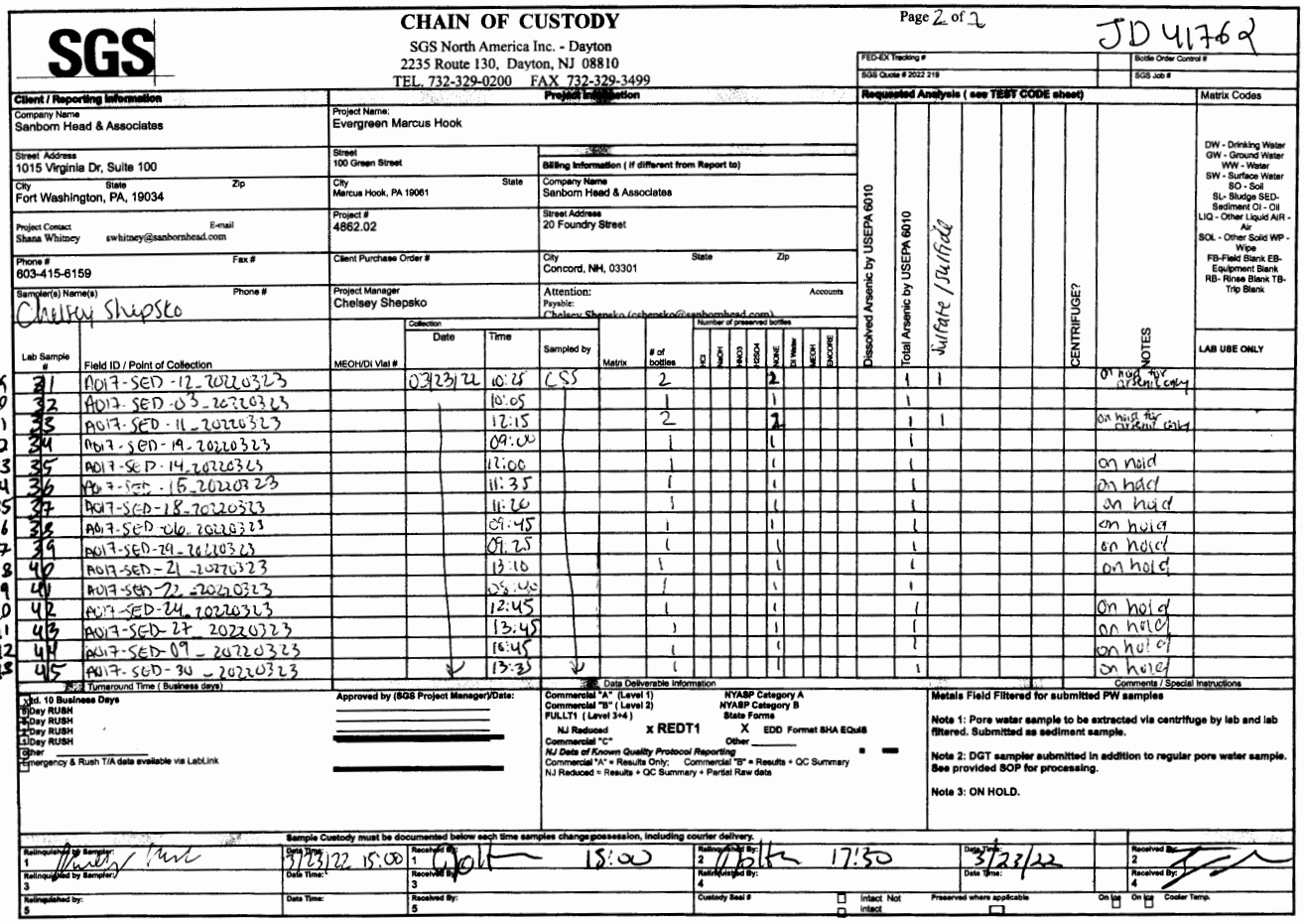
Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULL1T (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
x REDT1
X EDD Format BHA EQuIS
Other

Comments / Special Instructions
Metals Field Filtered for submitted PW samples
Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.
Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.
Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	3/23/22 15:00	1	2	17:35	2
3		3	4		4
5		5	Custody Seal #	Intact / Not Intact	Preserved where applicable: On Ice / Cooler Temp.

CTO 27



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 2 of 2

JD 41762

FED-EX Tracking #

Bottle Order Control #

SGS Quote # 2022 219

SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates

Street Address: 1015 Virginia Dr, Suite 100

City: Fort Washington, State: PA, Zip: 19034

Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com

Phone #: 603-415-6159, Fax #:

Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook

Street: 100 Green Street

City: Marcus Hook, State: PA 19061

Project #: 4862.02

Client Purchase Order #:

Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates

Street Address: 20 Foundry Street

City: Concord, State: NH, Zip: 03301

Attention:

Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB-Equipment Blank; RB- Rinse Blank TB-Trip Blank

	Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl, MeOH, NaOH, H2SO4, NONE, DI Water, MEOH, ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	Sulfate / Sulfide	CENTRIFUGE?	NOTES	LAB USE ONLY
29	31	AD17-SED-12_20220323		03/23/22	10:25	CSS		2	2		1	1		On hold for arsenic only	
30	32	AD17-SED-03_20220323			10:05			1	1		1				
31	33	AD17-SED-11_20220323			12:15			2	2		1	1		on hold for arsenic only	
32	34	AD17-SED-19-20220323			09:00			1	1		1				
33	35	AD17-SED-14_20220323			12:00			1	1		1			on hold	
34	36	AD17-SED-15_20220323			11:35			1	1		1			on hold	
35	37	AD17-SED-18_20220323			11:26			1	1		1			on hold	
36	38	AD17-SED-06_20220323			09:45			1	1		1			on hold	
37	39	AD17-SED-29_20220323			09:25			1	1		1			on hold	
38	40	AD17-SED-21_20220323			13:10			1	1		1			on hold	
39	41	AD17-SED-22_20220323			08:40			1	1		1				
40	42	AD17-SED-24_20220323			12:45			1	1		1			on hold	
41	43	AD17-SED-27_20220323			13:45			1	1		1			on hold	
42	44	AD17-SED-09_20220323			16:45			1	1		1			on hold	
43	45	AD17-SED-30_20220323			13:35			1	1		1			on hold	

Turnaround Time (Business days)

- Std. 10 Business Days
- 10Day RUSH
- 5Day RUSH
- 2Day RUSH
- 1Day RUSH
- Other
- Emergency & Rush T/A date available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

Commercial "A" (Level 1) / NYASP Category A
Commercial "B" (Level 2) / NYASP Category B
FULL T1 (Level 3+4) / State Forms
NJ Reduced x REDT1 X EDD Format SHA EQuIS
Commercial "C" / Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 3/23/22 15:00	Received By: 1		Relinquished By: 2	Date Time: 3/23/22 17:30	Received By: 2	
Relinquished by Sampler: 3	Date Time:	Received By: 3		Relinquished By: 4	Date Time:	Received By: 4	
Relinquished by: 5	Date Time:	Received By: 5		Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice / Cooler Temp.

CIP 2.7

SO
GW
EB

CHAIN OF CUSTODY

Reference JD41762

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #

Bottle Order Control # VB-031422-240

SGS Quote #

SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shena Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6459
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8542

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA Zip: 19061
Project #: 48762.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foxboro Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved Organic by USEPA 6010	Total Organic by USEPA 6010									ON HOLD?	CENTRIFUGE?	LAB USE ONLY
44	AOI7-SED-23_20220324		03/24/22	7:50	CSS	G		SO	1					1						1									X		1310
45	AOI7-SED-20_20220324			8:15				SO	1					1						1									X		AS
46	AOI7-SED-17_20220324			8:35				SO	1					1						1									X		
47	AOI7-PW-17_20220324			8:35				GW	2			HCl		NONE					1										X	X	
48	AOI7-PW-13_20220324			11:20					1			HCl							1												
49	AOI7-PW-20-20220324			8:15					2			HCl		NONE					1										X	X	
50	AOI7-PW-20-FD-20220324			8:15					1			HCl							1										X		
51	AOI7-PW-24-20220324			10:15					2			HCl		NONE					1											X	Filter in lab
52	AOI7-PW-14_20220324			11:45					1			HCl							1										X		Filter in lab
53	AOI7-PW-11-20220324			13:30					1					NONE															X	X	
54	AOI7-PW-23_20220324			7:50					1					NONE															X	X	
55	AOI7-PW-16_20220324			13:45					1					NONE																X	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

VERIFIED 38 SM

Verified By:

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [X] EDD Format STATEQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered submitted as sediment sample.

Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	3/24/22 16:00	1	2	3/24/22 1831	2 Jeema Patel
Relinquished by: 3	Date / Time:	Received By: 3	Relinquished By: 4	Date / Time:	Received By: 4
Relinquished by: 5	Date / Time:	Received By: 5	Custody Seal #	Intact / Not intact / Absent	Therm ID: / See Sample Receipt Summary	On Ice / Cooler Temp °C: 3.2 C

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

Page 2 of 2

FED-EX Tracking #	Bottle Order Control #
SGS Quote #	SGS Job # JD41762

Client / Reporting Information

Company Name:	Sanborn Head & Associates
Street Address	1015 Virginia Drive
City / State / Zip	Fort Washington, PA 19034
Project Contact / E-mail	Shana Whitney swhitney@sanborn head.com
Phone #	603-415-6159
Sampler(s) Name(s) / Phone #	Chelsey Shepsko 732-850-8592

Project Information

Project Name:	Evergreen Marcus Hook
Street	100 Green Street
City / State	Marcus Hook, PA
Project #	4862-04
Client Purchase Order #	
Project Manager	Chelsey Shepsko

Billing Information (if different from Report to)

Company Name	Sanborn Head & Associates
Street Address	20 Foundry Street
City / State / Zip	Concord NH 03301
Attention:	Chelsey Shepsko (cshepsko@sanborn head.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
56	A017-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted as a DGT sampler. See provided SOP for processing

Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Chelsey Shepsko	3/24/22 16:00	1 [signature]	2 [signature]	3/24/22 1831	2 Jeemit Patel
3		3	4		4
5		5			

Custody Seal # ☐ Intact ☐ Not intact ☐ Absent

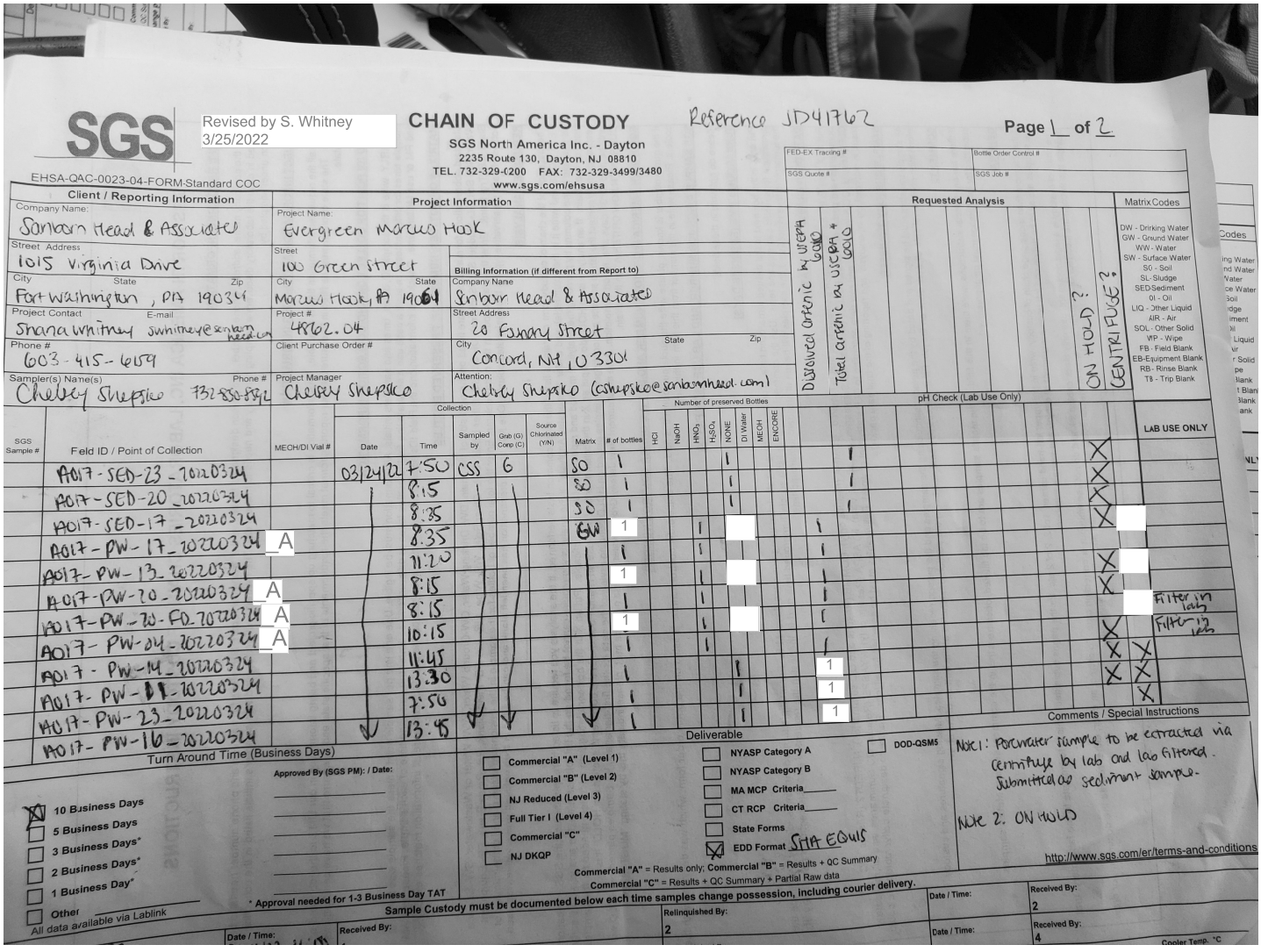
Therm ID: See Sample Receipt Summary

On Ice ☑ Cooler Temp. °C 3.2 CIP

4.2

4

JD41762A: Chain of Custody
Page 12 of 21



SGS

Revised by S. Whitney 3/25/2022

EHSA-QAC-0023-04-FORM-Standard COC

CHAIN OF CUSTODY

Reference JD41762

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shana Whitney E-mail: swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8842

Project Information

Project Name: Evergreen Marina Hook
Street: 100 Green Street
City: Marina Hook State: PA 19064
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved Arsenic in USEPA 6010
Total Arsenic in USEPA 6010
ON HOLD?
CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB - Equipment Blank; RB - Rinse Blank; TB - Trip Blank

pH Check (Lab Use Only)

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic	Total Arsenic	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
	A017-SED-23_20220324		03/24/22	7:50	CSS	6		SO	1						1					X		
	A017-SED-20_20220324			8:15				SO	1						1					X		
	A017-SED-17_20220324			8:35				SO	1						1					X		
	A017-PW-17_20220324	A		8:35				GW	1						1							
	A017-PW-13_20220324			11:20					1						1					X		
	A017-PW-20_20220324	A		8:15					1						1					X		
	A017-PW-20-FD_20220324	A		8:15					1						1							Filter 1/17 1625
	A017-PW-04_20220324	A		10:15					1						1					X		Filter 1/17 1625
	A017-PW-14_20220324			11:45					1						1					X		
	A017-PW-11_20220324			13:30					1						1					X		
	A017-PW-23_20220324			7:50					1						1							
	A017-PW-16_20220324			13:45					1						1					X		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [X] EDD Format STATEGIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

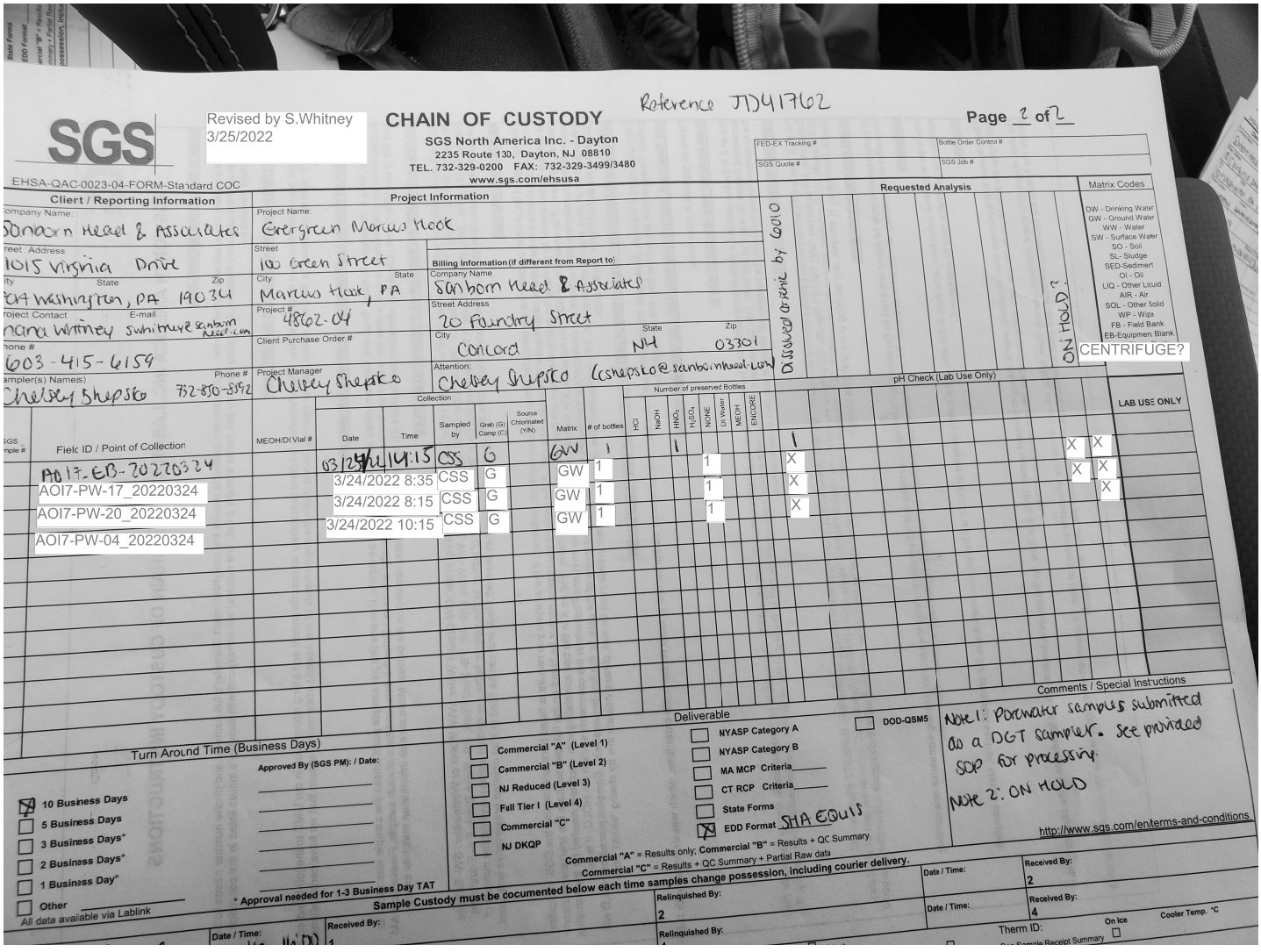
Note 2: ON HOLD

http://www.sgs.com/er/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished By:	Date / Time:	Received By:
2		2
	Date / Time:	Received By:
		4

Cooler Temp. °C



Revised by S.Whitney
3/25/2022

CHAIN OF CUSTODY

Reference JD41762

Page 2 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #
Bottle Order Control #
SGS Quote #
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: West Washington State: PA Zip: 19034
Project Contact: Mara Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-5592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 4862-04
Client Purchase Order #

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipmen Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
	AOI7-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	X X
	AOI7-PW-17_20220324		3/24/2022	8:35	CSS	G		GW	1					1				X	X X
	AOI7-PW-20_20220324		3/24/2022	8:15	CSS	G		GW	1					1				X	X
	AOI7-PW-04_20220324		3/24/2022	10:15	CSS	G		GW	1					1				X	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EDuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted on a DGT sampler. See provided SOP for processing.

Note 2: ON HOLD

http://www.sgs.com/enterms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Received By:	Date / Time:	Relinquished By:	Date / Time:	Received By:
1		2		2
				4

Therm ID: On Ice Cooler Temp. °C

Sample Receipt Summary

GW

Reference JD41762

PIN

CHAIN OF CUSTODY

Page 1 of 3

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
Bottle Order Control #: VAP-031482-240
SGS Quote #:
SGS Job #: JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington PA 19034
Project Contact: Shana Whitney
E-mail:
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shapsko
Phone #: 732-850-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 48827.04
Client Purchase Order #:
Project Manager: Chelsey Shapsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord
State: NH
Zip: 03301
Attention: Chelsey Shapsko, cshapsko@sanbornhead.com

Requested Analysis

Dissolved arsenic by 6010

DGT Sample? ON HOLD? CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	DGT Sample?	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
60	A017-PW-27-DGT-20220324		03/24/22	14:05	CSS	G		GW	1					1				1		X	X		B10
61	A017-PW-16-DGT-20220324		03/24/22	09:05					1					1				1		X	X		A35
62	A017-PW-19-DGT-20220324		03/24/22	09:07					1					1				1		X	X		G-FIR
63	A017-PW-13-DGT-20220324		03/24/22	09:00					1					1				1		X			
64	A017-PW-15-DGT-20220324		03/24/22	11:50					1					1				1		X	X		
65	A017-PW-07-DGT-20220323		03/23/22	11:00					1					1				1		X			
66	A017-PW-05-DGT-20220323		03/23/22	12:25					1					1				1		X	X		
67	A017-PW-25-DGT-20220323		03/23/22	13:25					1					1				1		X			
68	A017-PW-11-DGT-20220324		03/24/22	12:30					1					1				1		X	X		
69	A017-PW-21-DGT-20220324		03/24/22	13:55					1					1				1		X	X		
70	A017-PW-03-DGT-20220324		03/24/22	10:20					1					1				1		X	X		
71	A017-PW-24-DGT-20220324		03/24/22	14:00					1					1				1		X	X		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment: VGZA

Label Verification:

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format SHA EGUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Chelsey Shapsko	03/25/22 11:15	James Kuss	2		Keith Mordell
3			3	4		4
5			5	Custody Seal #	Intact / Not intact / Absent	Therm ID: / See Sample Receipt Summary / On Ice / Cooler Temp. °C: 3.8

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job # JD41762

Client / Reporting Information

Company Name: Sunborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shana Whitney E-mail:
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8892

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 48621.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sunborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko, cshepsko@sunbornhead.com

Requested Analysis

Dissolved arsenic by 6010
Total arsenic by 6010
DOT sample?
On Hold?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) / Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	Total arsenic by 6010	DOT sample?	On Hold?	CENTRIFUGE?	LAB USE ONLY
72	AOI7-PW-23-DGT-20220325		03/25/22	9:55	CSS	G		GW	1					1				1			X	X		
73	AOI7-PW-20-DGT-20220325			9:55					1					1				1			X	X		
74	AOI7-PW-17-DGT-20220325			10:02					1					1				1			X	X		
75	AOI7-PW-25-DGT-20220325			9:50					1					1				1			X			
76	AOI7-PW-08-DGT-20220325			10:05					1					1				1			X	X		
77	AOI7-PW-09-DGT-20220325			10:03					1					1				1			X	X		
78	AOI7-PW-02-DGT-20220325			9:10					1					1				1			X	X		
79	AOI7-PW-01-DGT-20220325			10:10					1					1				1			X			
80	AOI7-PW-04-DGT-20220325			10:07					1					1				1			X			
81	AOI7-EB-02-20220325			11:50					1			1						1	1					

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [ ] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only, Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1		03/25/22 1425	1	2		2
3			3	4		4
5			5			

Custody Seal # | [ ] Intact [ ] Not intact | [ ] Absent
Therm ID: | On Ice | Cooler Temp. °C | See Sample Receipt Summary

CHAIN OF CUSTODY

Reference JD41762

Page 3 of 3

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shang Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603 415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-5592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by 6010
ON HOLD
CENTRIFUGE

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	ON HOLD	CENTRIFUGE	LAB USE ONLY
82	AOI7-PW-27_20220325		03/25/22	07:50	CSS	G		GW	1					1				1		X	X	
83	AOI7-PW-28_20220325			09:20					1					1				1		X	X	
84	AOI7-PW-23_20220325			09:40					2					2				2		X	X	
85	AOI7-PW-02_20220325			09:00					2					2				2		X	X	
86	AOI7-PW-09_20220325			08:50					2					2				2		X	X	
87	AOI7-PW-27_20220325_A			07:50					1				1					1		X		
88	AOI7-PW-09_20220325_A			08:50					1				1					1		X		
89	AOI7-PW-24_20220325_A			11:15					1				1					1		X		
90	AOI7-PW-25_20220325_A			10:50					1				1					1				

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Labline

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [X] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished By:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1		03/25/22 14:05	1	2		2
3			3	4		4
5			5	Custody Seal #		Therm ID:

Custody Seal #: [ ] Intact [ ] Not intact [ ] Absent
On Ice: [ ]
Cooler Temp. °C
See Sample Receipt Summary

Job Change Order: JD41762

Requested Date:	3/28/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/28/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-56

Dept:

TAT: 7

AOI7-EB_20220324

Change:
Revise ID to AOI7-EB-01_20220324

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/28/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date: 3/29/2022 **Received Date:** 3/22/2022

Account Name: Sunoco/Evergreen **Due Date:** 3/29/2022

Project Description: SANHPAFW: Marcus Hook, PA **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD41762-23, -25, -59

Dept:

TAT: 7

Change:

Please create new -F sample for lab filtered volume. Log in for FIL TEF and AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date: 3/29/2022 **Received Date:** 3/22/2022

Account Name: Sunoco/Evergreen **Due Date:** 3/29/2022

Project Description: SANHPAFW: Marcus Hook, PA **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD41762-17F,-47F,-49F,-50F,-52F,-87F-88F,-89F **Change:** Off HOLD for AS

Dept:

TAT: 7

==========

Sample #: JD41762-13 **Change:** Off HOLD for CENTRIFUGE

Dept:

TAT: 7

AOI7-PW-05_20220322

==========

Sample #: JD41762-13F **Change:** Off HOLD for FILTERMET, AS

Dept:

TAT: 7

AOI7-PW-05_20220322

==========

Sample #: JD41762-60,-64,-66,-68 to -74, -76 to-78 **Change:** Off HOLD for SPECIALPREP

Dept:

TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-18,-18D,-18S,-19 to-22,-24 **Change:**

Dept: Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS

TAT: 7

==========

==========

Sample #: JD41762-53,-55,-57,-58,-84,-85,-86 **Change:**

Dept: Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS

TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD41762A
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP39134/GN27535	5.0	0.0	mg/kg	20	21.1	105.5	90-110%
Chloride	GP39134/GN27535	20	0.0	mg/kg	800	878	109.8	90-110%
Fluoride	GP39134/GN27535	2.0	0.0	mg/kg	20	19.8	99.0	90-110%
Sulfate	GP39134/GN27535	20	0.0	mg/kg	800	857	107.1	90-110%
Sulfate	GP39216/GN27702	20	0.0	mg/kg	800	850	106.3	90-110%
Sulfide, Neutral Extraction	GP39193/GN27670	4.0	0.0	mg/kg	41.6	38.9	93.5	80-120%

Associated Samples:
Batch GP39134: JD41762-11, JD41762-12
Batch GP39193: JD41762-11, JD41762-12, JD41762-29, JD41762-31
Batch GP39216: JD41762-29, JD41762-31
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD41762A
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Bromide	GP39134/GN27604	JD41762-11	mg/kg	0.0	0.0	0.0	0-20%
Chloride	GP39134/GN27604	JD41762-11	mg/kg	61.2	60.5	1.2	0-20%
Fluoride	GP39134/GN27604	JD41762-11	mg/kg	12.7	12.7	0.0	0-20%
Solids, Percent	GN27548	JD41762-4	%	51.3	53.9	4.9	0-5%
Solids, Percent	GN27625	JD39518-15R	%	89.7	89.1	0.7	0-5%
Sulfate	GP39134/GN27604	JD41762-11	mg/kg	0.0	0.00	0.0	0-20%
Sulfate	GP39216/GN27702	JD41916-25	mg/kg	156	156	0.0	0-20%
Sulfide, Neutral Extraction	GP39193/GN27670	JD41762-11	mg/kg	0.0	0.0	0.0	0-43%

Associated Samples:
Batch GN27548: JD41762-11, JD41762-12
Batch GN27625: JD41762-29, JD41762-31
Batch GP39134: JD41762-11, JD41762-12
Batch GP39193: JD41762-11, JD41762-12, JD41762-29, JD41762-31
Batch GP39216: JD41762-29, JD41762-31
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD41762A
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP39134/GN27535	JD41762-11	mg/kg	0.0	38.7	43.7	112.9	80-120%
Chloride	GP39134/GN27535	JD41762-11	mg/kg	61.2	1550	1740	108.4	80-120%
Fluoride	GP39134/GN27535	JD41762-11	mg/kg	12.7	38.7	49.4	94.8	80-120%
Sulfate	GP39134/GN27535	JD41762-11	mg/kg	0.0	1550	1680	108.5	80-120%
Sulfate	GP39216/GN27702	JD41916-25	mg/kg	156	1510	731	38.0N(a)	80-120%
Sulfide, Neutral Extraction	GP39193/GN27670	JD41762-11	mg/kg	0.0	82.5	72.6	87.9	10-147%

Associated Samples:
Batch GP39134: JD41762-11, JD41762-12
Batch GP39193: JD41762-11, JD41762-12, JD41762-29, JD41762-31
Batch GP39216: JD41762-29, JD41762-31
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(a) Spike recovery indicates possible matrix interference.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SANHPAFW: Marcus Hook, PA

4862.02

SGS Job Number: JD41762B

Sampling Dates: 03/23/22 - 03/25/22

Report to:

Sanborn Head & Associates, Inc.
1015 Virginia Drive Suite 100
Fort Washington, PA 19034
swhitney@sanbornhead.com; cshepsko@sanbornhead.com

ATTN: Chelsey Shepsko

Total number of pages in report: 57

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Sections: 1 2 3 4 5 6

Table of Contents

Section 1: Sample Summary **3**
Section 2: Case Narrative/Conformance Summary **7**
Section 3: Summary of Hits **8**
Section 4: Sample Results **10**
4.1: JD41762-60F: AOI7-PW-27-DGT_20220324 11
4.2: JD41762-61F: AOI7-PW-16-DGT_20220324 12
4.3: JD41762-62F: AOI7-PW-19-DGT_20220324 13
4.4: JD41762-63F: AOI7-PW-13-DGT_20220324 14
4.5: JD41762-64F: AOI7-PW-15-DGT_20220324 15
4.6: JD41762-65F: AOI7-PW-07-DGT_20220323 16
4.7: JD41762-66F: AOI7-PW-05-DGT_20220323 17
4.8: JD41762-67F: AOI7-PW-25-DGT_20220323 18
4.9: JD41762-68F: AOI7-PW-11-DGT_20220324 19
4.10: JD41762-69F: AOI7-PW-21-DGT_20220324 20
4.11: JD41762-70F: AOI7-PW-03-DGT_20220324 21
4.12: JD41762-71F: AOI7-PW-24-DGT_20220324 22
4.13: JD41762-72F: AOI7-PW-23-DGT_20220325 23
4.14: JD41762-73F: AOI7-PW-20-DGT_20220325 24
4.15: JD41762-74F: AOI7-PW-17-DGT_20220325 25
4.16: JD41762-75F: AOI7-PW-28-DGT_20220325 26
4.17: JD41762-76F: AOI7-PW-08-DGT_20220325 27
4.18: JD41762-77F: AOI7-PW-09-DGT_20220325 28
4.19: JD41762-78F: AOI7-PW-02-DGT_20220325 29
4.20: JD41762-79F: AOI7-PW-01-DGT_20220325 30
4.21: JD41762-80F: AOI7-PW-04-DGT_20220325 31
Section 5: Misc. Forms **32**
5.1: Chain of Custody 33
Section 6: Metals Analysis - QC Data Summaries **57**

SGS North America Inc.

Sample Summary

Sunoco/Evergreen

Job No: JD41762B

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-60	03/24/22	14:05	CSS	03/25/22	AQ	Water	AOI7-PW-27-DGT_20220324
JD41762-60F	03/24/22	14:05	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-27-DGT_20220324
JD41762-61	03/24/22	09:05	CSS	03/25/22	AQ	Water	AOI7-PW-16-DGT_20220324
JD41762-61F	03/24/22	09:05	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-16-DGT_20220324
JD41762-62	03/24/22	09:07	CSS	03/25/22	AQ	Water	AOI7-PW-19-DGT_20220324
JD41762-62F	03/24/22	09:07	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-19-DGT_20220324
JD41762-63	03/24/22	09:00	CSS	03/25/22	AQ	Water	AOI7-PW-13-DGT_20220324
JD41762-63F	03/24/22	09:00	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-13-DGT_20220324
JD41762-64	03/24/22	11:50	CSS	03/25/22	AQ	Water	AOI7-PW-15-DGT_20220324
JD41762-64F	03/24/22	11:50	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-15-DGT_20220324
JD41762-65	03/23/22	11:00	CSS	03/25/22	AQ	Water	AOI7-PW-07-DGT_20220323
JD41762-65F	03/23/22	11:00	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-07-DGT_20220323
JD41762-66	03/23/22	12:25	CSS	03/25/22	AQ	Water	AOI7-PW-05-DGT_20220323

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762B

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-66F	03/23/22	12:25	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-05-DGT_20220323
JD41762-67	03/23/22	13:25	CSS	03/25/22	AQ	Water	AOI7-PW-25-DGT_20220323
JD41762-67F	03/23/22	13:25	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-25-DGT_20220323
JD41762-68	03/24/22	12:30	CSS	03/25/22	AQ	Water	AOI7-PW-11-DGT_20220324
JD41762-68F	03/24/22	12:30	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-11-DGT_20220324
JD41762-69	03/24/22	13:55	CSS	03/25/22	AQ	Water	AOI7-PW-21-DGT_20220324
JD41762-69F	03/24/22	13:55	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-21-DGT_20220324
JD41762-70	03/24/22	10:20	CSS	03/25/22	AQ	Water	AOI7-PW-03-DGT_20220324
JD41762-70F	03/24/22	10:20	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-03-DGT_20220324
JD41762-71	03/24/22	14:00	CSS	03/25/22	AQ	Water	AOI7-PW-24-DGT_20220324
JD41762-71F	03/24/22	14:00	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-24-DGT_20220324
JD41762-72	03/25/22	09:55	CSS	03/25/22	AQ	Water	AOI7-PW-23-DGT_20220325
JD41762-72F	03/25/22	09:55	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-23-DGT_20220325

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762B

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-73	03/25/22	09:58	CSS	03/25/22	AQ	Water	AOI7-PW-20-DGT_20220325
JD41762-73F	03/25/22	09:58	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-20-DGT_20220325
JD41762-74	03/25/22	10:00	CSS	03/25/22	AQ	Water	AOI7-PW-17-DGT_20220325
JD41762-74F	03/25/22	10:00	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-17-DGT_20220325
JD41762-75	03/25/22	09:50	CSS	03/25/22	AQ	Water	AOI7-PW-28-DGT_20220325
JD41762-75F	03/25/22	09:50	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-28-DGT_20220325
JD41762-76	03/25/22	10:05	CSS	03/25/22	AQ	Water	AOI7-PW-08-DGT_20220325
JD41762-76F	03/25/22	10:05	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-08-DGT_20220325
JD41762-77	03/25/22	10:03	CSS	03/25/22	AQ	Water	AOI7-PW-09-DGT_20220325
JD41762-77F	03/25/22	10:03	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-09-DGT_20220325
JD41762-78	03/25/22	09:10	CSS	03/25/22	AQ	Water	AOI7-PW-02-DGT_20220325
JD41762-78F	03/25/22	09:10	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-02-DGT_20220325
JD41762-79	03/25/22	10:10	CSS	03/25/22	AQ	Water	AOI7-PW-01-DGT_20220325

SGS North America Inc.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762B

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-79F	03/25/22	10:10	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-01-DGT_20220325
JD41762-80	03/25/22	10:07	CSS	03/25/22	AQ	Water	AOI7-PW-04-DGT_20220325
JD41762-80F	03/25/22	10:07	CSS	03/25/22	WIPE	Wipe Sample	AOI7-PW-04-DGT_20220325

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Sunoco/Evergreen	**Job No**	JD41762B
Site:	SANHPAFW: Marcus Hook, PA	**Report Date**	4/26/2022 11:23:16 A

On 03/25/2022, 21 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD41762B was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals Analysis By Method SW846 6010D

Matrix: WIPE **Batch ID:** MP32522

- The data for SW846 6010D meets quality control requirements.

Matrix: WIPE **Batch ID:** MP32523

- The data for SW846 6010D meets quality control requirements.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD41762B
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/23/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-60F	**AOI7-PW-27-DGT_20220324**					
No hits reported in this sample.						
JD41762-61F	**AOI7-PW-16-DGT_20220324**					
Arsenic		3.7	1.0		ug	SW846 6010D
JD41762-62F	**AOI7-PW-19-DGT_20220324**					
Arsenic		1.5	1.0		ug	SW846 6010D
JD41762-63F	**AOI7-PW-13-DGT_20220324**					
Arsenic		2.4	1.0		ug	SW846 6010D
JD41762-64F	**AOI7-PW-15-DGT_20220324**					
No hits reported in this sample.						
JD41762-65F	**AOI7-PW-07-DGT_20220323**					
Arsenic		2.4	1.0		ug	SW846 6010D
JD41762-66F	**AOI7-PW-05-DGT_20220323**					
No hits reported in this sample.						
JD41762-67F	**AOI7-PW-25-DGT_20220323**					
No hits reported in this sample.						
JD41762-68F	**AOI7-PW-11-DGT_20220324**					
No hits reported in this sample.						
JD41762-69F	**AOI7-PW-21-DGT_20220324**					
No hits reported in this sample.						
JD41762-70F	**AOI7-PW-03-DGT_20220324**					
No hits reported in this sample.						

Summary of Hits

Job Number: JD41762B
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/23/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-71F	**AOI7-PW-24-DGT_20220324**					
No hits reported in this sample.						
JD41762-72F	**AOI7-PW-23-DGT_20220325**					
No hits reported in this sample.						
JD41762-73F	**AOI7-PW-20-DGT_20220325**					
No hits reported in this sample.						
JD41762-74F	**AOI7-PW-17-DGT_20220325**					
No hits reported in this sample.						
JD41762-75F	**AOI7-PW-28-DGT_20220325**					
Arsenic		2.2	1.0		ug	SW846 6010D
JD41762-76F	**AOI7-PW-08-DGT_20220325**					
No hits reported in this sample.						
JD41762-77F	**AOI7-PW-09-DGT_20220325**					
No hits reported in this sample.						
JD41762-78F	**AOI7-PW-02-DGT_20220325**					
No hits reported in this sample.						
JD41762-79F	**AOI7-PW-01-DGT_20220325**					
Arsenic		9.5	1.0		ug	SW846 6010D
JD41762-80F	**AOI7-PW-04-DGT_20220325**					
Arsenic		4.0	1.0		ug	SW846 6010D

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	AOI7-PW-27-DGT_20220324		
Lab Sample ID:	JD41762-60F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-16-DGT_20220324		
Lab Sample ID:	JD41762-61F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	3.7	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-19-DGT_20220324		
Lab Sample ID:	JD41762-62F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	1.5	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-13-DGT_20220324		
Lab Sample ID:	JD41762-63F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.4	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-15-DGT_20220324		
Lab Sample ID:	JD41762-64F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-07-DGT_20220323		
Lab Sample ID:	JD41762-65F	**Date Sampled:**	03/23/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.4	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-05-DGT_20220323		
Lab Sample ID:	JD41762-66F	**Date Sampled:**	03/23/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-25-DGT_20220323		
Lab Sample ID:	JD41762-67F	**Date Sampled:**	03/23/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-11-DGT_20220324		
Lab Sample ID:	JD41762-68F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-21-DGT_20220324		
Lab Sample ID:	JD41762-69F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-03-DGT_20220324		
Lab Sample ID:	JD41762-70F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-24-DGT_20220324		
Lab Sample ID:	JD41762-71F	**Date Sampled:**	03/24/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-23-DGT_20220325		
Lab Sample ID:	JD41762-72F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-20-DGT_20220325		
Lab Sample ID:	JD41762-73F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-17-DGT_20220325		
Lab Sample ID:	JD41762-74F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-28-DGT_20220325		
Lab Sample ID:	JD41762-75F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	2.2	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-08-DGT_20220325		
Lab Sample ID:	JD41762-76F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-09-DGT_20220325		
Lab Sample ID:	JD41762-77F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-02-DGT_20220325		
Lab Sample ID:	JD41762-78F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 1.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32523

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-01-DGT_20220325		
Lab Sample ID:	JD41762-79F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	9.5	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-04-DGT_20220325		
Lab Sample ID:	JD41762-80F	**Date Sampled:**	03/25/22
Matrix:	WIPE - Wipe Sample	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	4.0	1.0	ug	1	04/14/22	04/21/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52278
(2) Prep QC Batch: MP32522

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

SED

JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

VP-031422-240

FED-EX Tracking #
Bottle Order Control #
SGS Quote # 2022 219
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City / State / Zip: Fort Washington, PA, 19034
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts
Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010					CENTRIFUGE?	NOTES	LAB USE ONLY
1	A017-SED-25.20220322		03/22/22	13:15	CSS												1						[illegible]	D22
2	A017-SED-26.20220322			13:35	CSS												1						3 on hold	
3	A017-SED-10.20220322			10:40	CSS												1							
	~~A017-SED-07-20220322~~			~~10:10~~	~~CSS~~												~~1~~							
4	A017-SED-007-20220322			10:10	CSS												1							
	A017-SED-007-MS.20220322			10:10													1							
	A017-SED-007-MSD.20220322			10:10													1							
5	A017-SED-05.20220322			12:20													1						3 on hold	
6	A017-SED-007-FD.20220322			10:10													1							
7	A017-SED-04.20220322			08:40													1							
8	A017-SED-01.20220322			09:20													1							
9	A017-SED-02.20220322			12:10													1						3-on hold	
10	A017-SED-08.20220322			12:35													1						3-on hold	

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 4 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] Other
- [ ] Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

Commercial "A" (Level 1) NYASP Category A
Commercial "B" (Level 2) NYASP Category B
FULLT1 (Level 3+4) State Forms
NJ Reduced x REDT1 X EDD Format SHA EQuIS
Commercial "C" Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Chelsey Shepsko	14:40	1 [signature]	2 [signature]	3/22/22 1733	2 James [signature]
3		3	4		4
5		5	Custody Seal # ☐ Intact ☐ Not intact	Preserved where applicable ☐	On Ice ☐ On Ice ☐ Cooler Temp. 3.8°C

Initial Assessment BB-3A

Label Verification

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xls Page 1 of

Sanborn, Head & Associates, Inc.

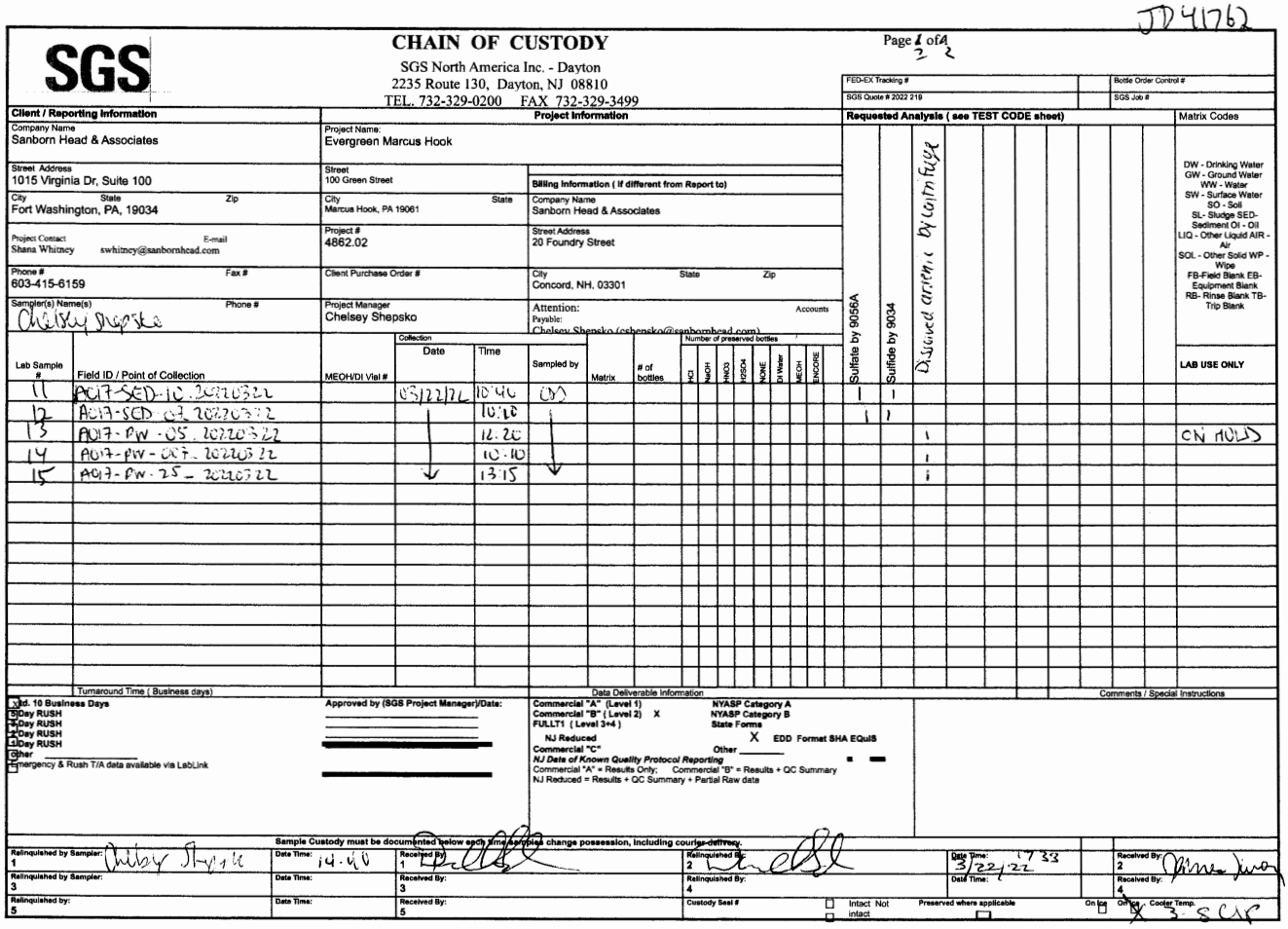
5.1

5

JD41762B: Chain of Custody
Page 1 of 24

JD41762

SGS



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2 2

FED-EX Tracking #
Bottle Order Control #
SGS Quote # 2022 219
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City / State / Zip: Fort Washington, PA, 19034
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts
Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by centrifuge								LAB USE ONLY
11	A017-SED-10.20220322		03/22/22	10:40	CDS											1	1									
12	A017-SED-07.20220322			10:10												1	1									
13	A017-PW-05.20220322			12:20														1								ON HOLD
14	A017-PW-007.20220322			10:10														1								
15	A017-PW-25_20220322			13:15														1								

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Turnaround Time (Business days)

Data Deliverable Information

Comments / Special Instructions

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 4 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] Other
- [ ] Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Commercial "A" (Level 1) NYASP Category A
Commercial "B" (Level 2) X NYASP Category B
FULLT1 (Level 3+4) State Forms
NJ Reduced X EDD Format SHA EQuIS
Commercial "C" Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Chelsey Shepsko	14:40	1 [signature]	2 [signature]	3/22/22 1733	2 [signature]
3		3	4		4
5		5			

Custody Seal # ☐ Intact Not intact ☐ Preserved where applicable ☐ On Ice ☐ On Ice X Cooler Temp. 3.8 C/F

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

5.1

5

JD41762B: Chain of Custody
Page 2 of 24

SGS Sample Receipt Summary

Job Number: JD41762 **Client:** SANBORN HEAD & ASSOCIATES, INC. **Project:** SANHPAFW: MARCUS HOOK, PA

Date / Time Received: 3/22/2022 5:33:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

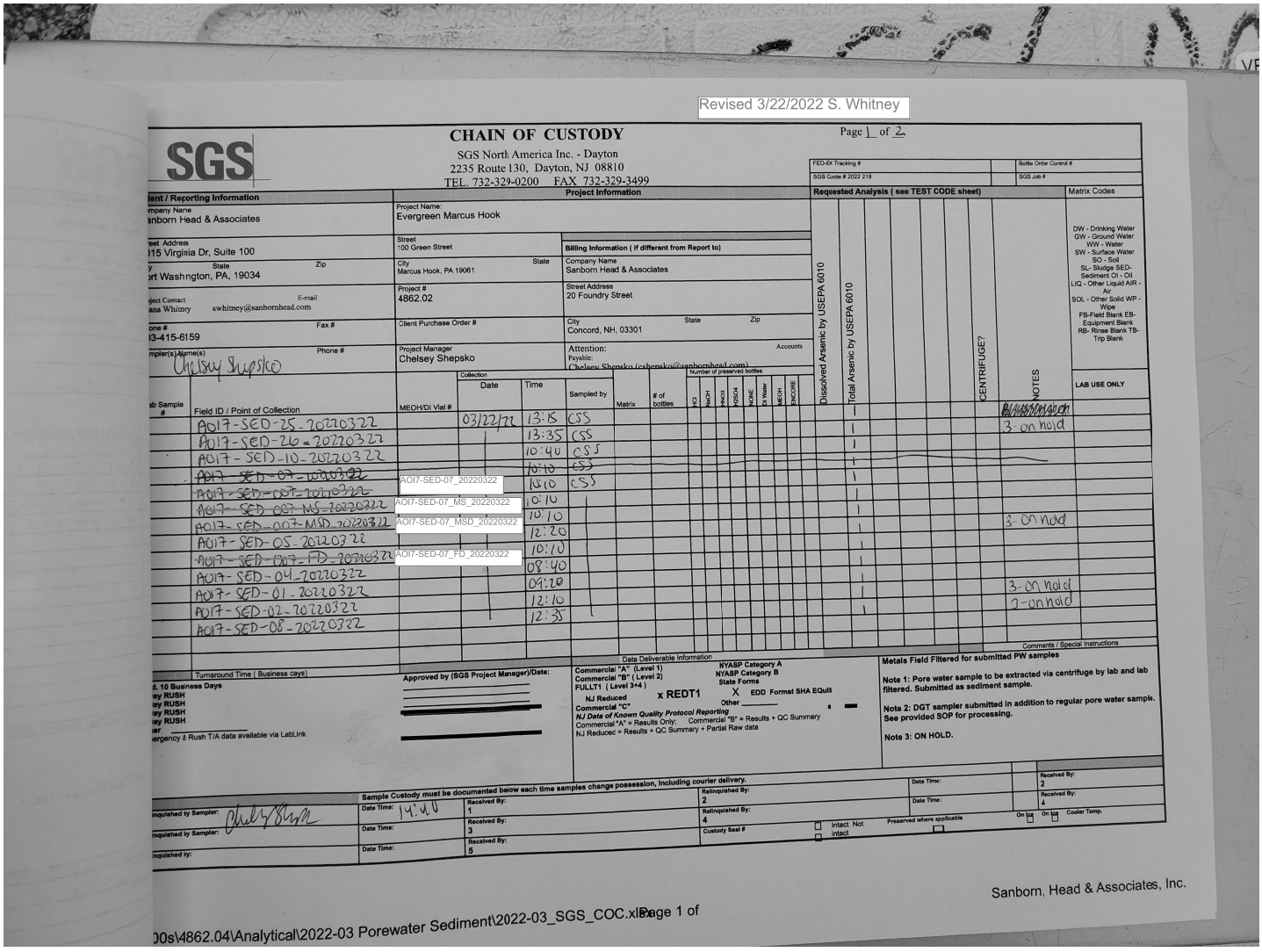
Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17



Revised 3/22/2022 S. Whitney

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 215 Virginia Dr, Suite 100
City: Fort Washington, PA, 19034
Project Contact: Dana Whitney
E-mail: swhitney@sanbornhead.com
Phone #: 913-415-6159
Fax #:
Sampler(s) Name(s): Chelsey Shepsko

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061
State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301
State:
Zip:
Attention:
Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219:
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
	A017-SED-25-20220322		03/22/22	13:15	CSS															
	A017-SED-26-20220322			13:35	CSS														3-on hold	
	A017-SED-10-20220322			10:40	CSS															
	~~A017-SED-09-20220322~~			10:10	CSS															
	A017-SED-007-20220322	AOI7-SED-07_20220322		10:10																
	A017-SED-007-MS-20220322	AOI7-SED-07_MS_20220322		10:10																
	A017-SED-007-MSD-20220322	AOI7-SED-07_MSD_20220322		12:20															3-on hold	
	A017-SED-05-20220322			10:10																
	A017-SED-007-FD-20220322	AOI7-SED-07_FD_20220322		08:40																
	A017-SED-04-20220322			09:20																
	A017-SED-01-20220322			12:10															3-on hold	
	A017-SED-02-20220322			12:35															3-on hold	
	A017-SED-08-20220322																			

Comments / Special Instructions

Turnaround Time (Business days)
10 Business Days
RUSH
RUSH
RUSH
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reducec = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
x REDT1
X EDD Format SHA EQuIS
Other

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

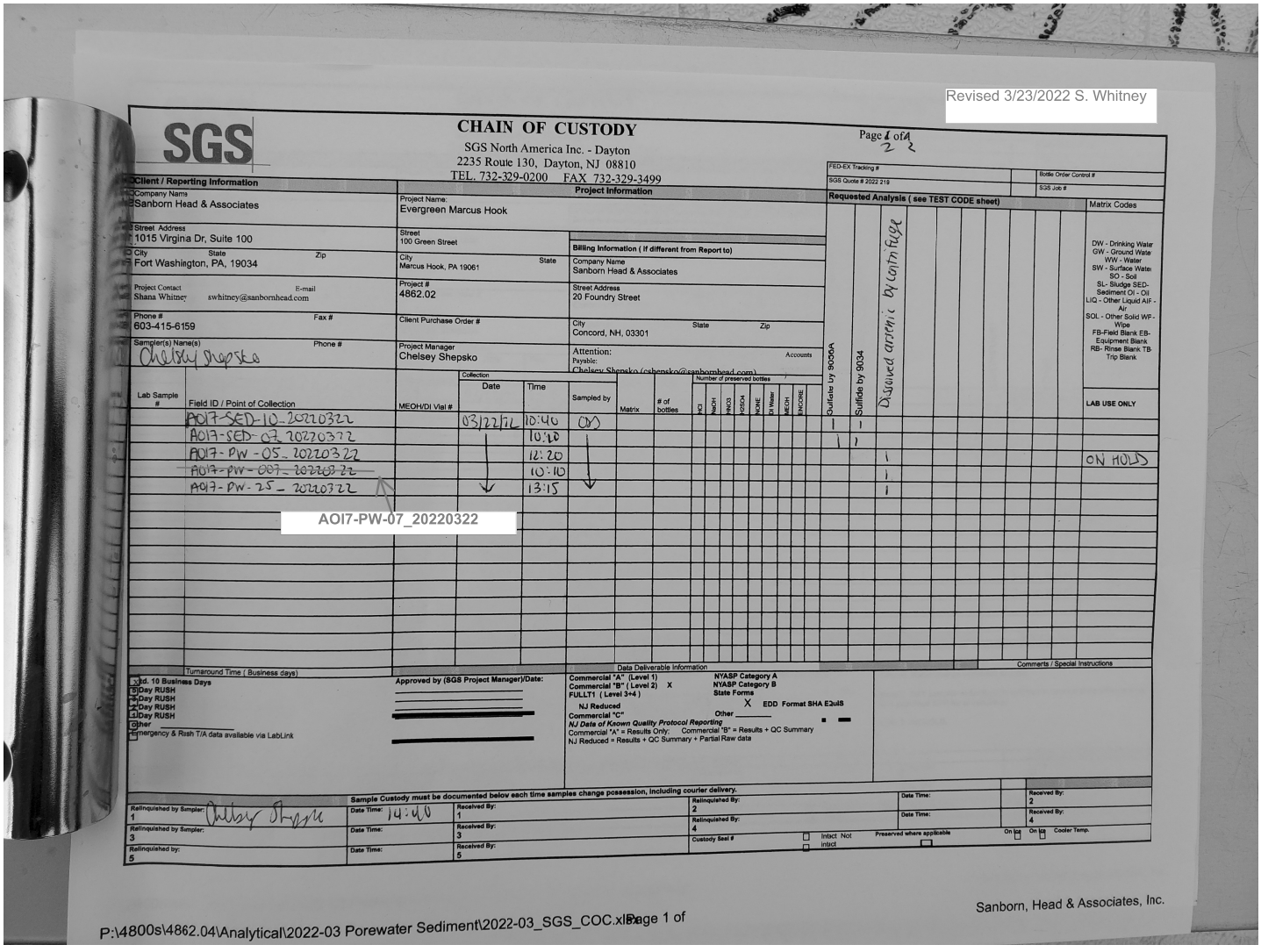
Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
	14:00	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable
		5			On Ice / Cooler Temp.

Sanborn, Head & Associates, Inc.



Revised 3/23/2022 S. Whitney

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 1015 Virgina Dr, Suite 100
City: Fort Washington, PA, 19034 State: Zip:
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention:
Payable: Accounts
Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIF - Air; SOL - Other Solid WF - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by Lumifuge	LAB USE ONLY
	AOI7-SED-10_20220322		03/22/22	10:40	CS											1	1		
	AOI7-SED-07_20220322			10:20												1	1		
	AOI7-PW-05_20220322			12:20														1	ON HOLD
	AOI7-PW-007_20220322			10:10														1	
	AOI7-PW-25_20220322			13:15														1	

AOI7-PW-07_20220322

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2) X
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA E2ui8
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:40	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact Not intact	Preserved where applicable	On Ice	On Ice	Cooler Temp.

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

5.1.5

JD41762B: Chain of Custody
Page 5 of 24

Job Change Order: JD41762

Requested Date: 3/24/2022 **Received Date:** 3/22/2022

Account Name: Sunoco/Evergreen **Due Date:** 3/24/2022

Project Description: SANHPAFW: Marcus Hook, PA **Deliverable:** REDT2

C/O Initiated By: VICKYP **PM:** VP **TAT (Days):** 7

==========

Sample #: JD41762-13 **Change:**

Dept: Please create new -F sample for lab filtered volume and place on HOL

TAT: 7

AOI7-PW-05_20220322

==========

==========

Sample #: JD41762-14, -15 **Change:**

Dept: Please create new -F sample for lab filtered volume. Log in for FILTEF AS(6010)

TAT: 7

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

Job Change Order: JD41762

Requested Date:	3/24/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/24/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-11, -12

Dept:

TAT: 7

Change:
Please move to -A job

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD41762B: Chain of Custody
Page 7 of 24

Job Change Order: JD41762

Requested Date:	3/25/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/25/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-29,-31

Change:
Please move to -A job

Dept:

TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/25/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

6w
SO

VP-031422-240

SGS CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of __

JD 41762

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote # 2022 219 | SGS Job #:

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington | State: PA | Zip: 19034
Project Contact: Shana Whitney | E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 | Fax #:
Sampler(s) Name(s): Chelsey Shepsko | Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook | State: PA, 19061
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 | State | Zip
Attention: | Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010			CENTRIFUGE?	NOTES	LAB USE ONLY
16F	AOI7-PW-16_20220323		3/23/22	07:50	CS	GW	1			1						1						AS
17F	AOI7-PW-11_20220323			12:15			1			1						1					3 on hold	D24
18	AOI7-PW-24-20220323			12:45			1			1		1				1				X		
19	AOI7-PW-24-FD_20220323			12:45			1			1		1				1				X	on hold	
20	AOI7-PW-24-MS_20220323			12:45			1			1		1				1				X	on hold	
21	AOI7-PW-24-MSD_20220323			12:45			1			1		1				1				X	on hold	
22	AOI7-PW-15_20220323			11:35			1			1		1				1				X	on hold	
23	AOI7-PW-21_20220323			13:10			1			1		1				1				X	on hold	
24	AOI7-PW-27-20220323			13:45			1			1		1				1				X	on hold	
25	AOI7-PW-12_20220323			08:10			1			1		1				1				X		
26	AOI7-PW-03_20220323			10:05			1			1		1				1				X	on hold	
27	AOI7-PW-19_20220323			09:00			1					1				1				X		
28	AOI7-SED-13_20220323			08:10		SO	1					1					1					
29	AOI7-SED-16_20220323			07:50		SO	1					1					1					
30	AOI7-SED-28_20220322		3/22/22	13:00		SO	1										1					

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1) | NYASP Category A
Commercial "B" (Level 2) | NYASP Category B
FULL1T1 (Level 3+4) | State Forms
NJ Reduced | x REDT1 | X EDD Format SHA EQuIS
Commercial "C" | Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions
Metals Field Filtered for submitted PW samples
Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.
Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.
Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	3/23/22 15:00	1	2	17:35	2
3		3	4		4
5		5	Custody Seal #	Intact / Not Intact	Preserved where applicable: On Ice / Cooler Temp.

Label Verification

C70 2.7

CHAIN OF CUSTODY

Page 2 of 2

JD 41762

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

FED-EX Tracking #
Bottle Order Control #
SGS Quote # 2022 219
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington, PA, 19034 State: Zip:
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB-Equipment Blank; RB- Rinse Blank TB-Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	MeOH	NaOH	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	Sulfate / Sulfide	CENTRIFUGE?	NOTES	LAB USE ONLY
29 31	AD17-SED-12_20220323		03/23/22	10:25	CSS		2					2					1	1		On hold for arsenic only	
30 32	AD17-SED-03_20220323			10:05			1					1					1				
31 33	AD17-SED-11_20220323			12:15			2					2					1	1		on hold for current only	
32 34	AD17-SED-19_20220323			09:00			1					1					1				
33 35	AD17-SED-14_20220323			12:00			1					1					1			on hold	
34 36	AD17-SED-15_20220323			11:35			1					1					1			on hold	
35 37	AD17-SED-18_20220323			11:26			1					1					1			on hold	
36 38	AD17-SED-06_20220323			09:45			1					1					1			on hold	
37 39	AD17-SED-29_20220323			09:25			1					1					1			on hold	
38 40	AD17-SED-21_20220323			13:10			1					1					1			on hold	
39 41	AD17-SED-22_20220323			08:40			1					1					1				
40 42	AD17-SED-24_20220323			12:45			1					1					1			on hold	
41 43	AD17-SED-27_20220323			13:45			1					1					1			on hold	
42 44	AD17-SED-09_20220323			16:45			1					1					1			on hold	
43 45	AD17-SED-30_20220323			13:35			1					1					1			on hold	

Turnaround Time (Business days)

Std. 10 Business Days
10Day RUSH
5Day RUSH
2Day RUSH
1Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced x REDT1
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA EQuIS
Other

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	3/23/22 15:00	1	2	3/23/22 17:30	2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable
5		5			On Ice / Cooler Temp.

CZP 2.7

SGS

EHSA-QAC-0023-04-FORM-Standard COC

SO
GW
EB

CHAIN OF CUSTODY

Reference JD41762

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 1 of 2

FED-EX Tracking #	Bottle Order Control # VP-031422-240
SGS Quote #	SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates	Project Name: Evergreen Marcus Hook
Street Address: 1015 Virginia Drive	Street: 100 Green Street
City / State / Zip: Fort Washington, PA 19034	City / State: Marcus Hook, PA 19061
Project Contact / E-mail: Shana Whitney swhitney@sanborn head.com	Project #: 4862.04
Phone #: 603-415-6159	Client Purchase Order #:
Sampler(s) Name(s): Chelsey Shepsko / Phone #: 732-830-8592	Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name	Sanborn Head & Associates
Street Address	20 Foundry Street
City / State / Zip	Concord, NH, 03301
Attention:	Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved Arsenic by USEPA 6010	
Total Arsenic by USEPA + 6010	
ON HOLD?	
CENTRIFUGE?	

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA + 6010	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
44	A017-SED-23-20220324		03/24/22	7:50	CSS	G		SO	1					1					1	X		1310
45	A017-SED-20-20220324			8:15				SO	1					1					1	X		A5
46	A017-SED-17-20220324			8:35				SO	1					1					1	X		
47	A017-PW-17-20220324			8:35				GW	2			1		1				1		X	X	
48	A017-PW-13-20220324			11:20					1			1						1				
49	A017-PW-20-20220324			8:15					2			1		1				1		X	X	
50	A017-PW-20-FD-20220324			8:15					1			1						1		X		
51	A017-PW-04-20220324			10:15					2			1		1				1			X	Filter in lab
52	A017-PW-14-20220324			11:45					1			1						1		X		Filter in lab
53	A017-PW-11-20220324			13:30					1					1						X	X	
54	A017-PW-23-20220324			7:50					1					1						X	X	
55	A017-PW-16-20220324			13:45					1					1							X	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

VERIFIED 3B SM
Verified By:

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [X] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered submitted as sediment sample.

Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	3/24/22 16:00	1 [signature]	2 [signature]	3/24/22 1831	2 Jeema Patel
3		3	4		4
5		5	Custody Seal #	Therm ID:	On Ice / Cooler Temp. °C

☐ Intact ☐ Not intact ☐ Absent ☐ See Sample Receipt Summary ☒ 3.2 CIP

5.1

5

JD41762B: Chain of Custody
Page 11 of 24

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

Page 2 of 2

FED-EX Tracking #	Bottle Order Control #
SGS Quote #	SGS Job # JD41762

Client / Reporting Information

Company Name:	Sanborn Head & Associates
Street Address	1015 Virginia Drive
City / State / Zip	Fort Washington, PA 19034
Project Contact / E-mail	Shana Whitney swhitney@sanborn head.com
Phone #	603-415-6159
Sampler(s) Name(s) / Phone #	Chelsey Shepsko 732-850-8592

Project Information

Project Name:	Evergreen Marcus Hook
Street	100 Green Street
City / State	Marcus Hook, PA
Project #	4862-04
Client Purchase Order #	
Project Manager	Chelsey Shepsko

Billing Information (if different from Report to)

Company Name	Sanborn Head & Associates
Street Address	20 Foundry Street
City / State / Zip	Concord NH 03301
Attention:	Chelsey Shepsko (cshepsko@sanborn head.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
56	A017-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted as a DGT sampler. See provided SOP for processing

Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 Chelsey Shepsko	3/24/22 16:00	1 [signature]	2 [signature]	3/24/22 1831	2 Jeemit Patel
3		3	4		4
5		5			

Custody Seal # ☐ Intact ☐ Not intact ☐ Absent

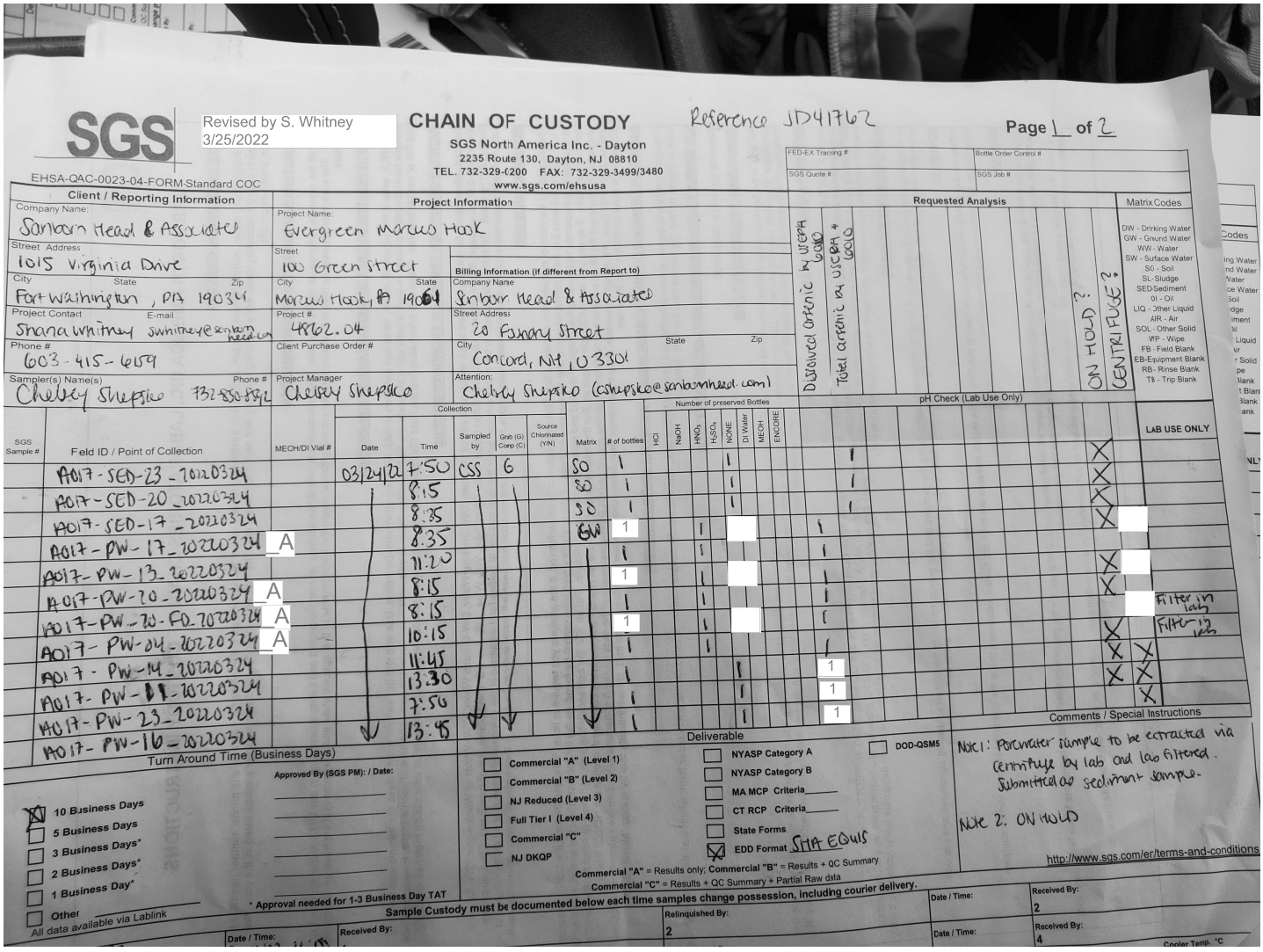
Therm ID: See Sample Receipt Summary

On Ice ☑ Cooler Temp. °C 3.2 CIP

5.1

5

JD41762B: Chain of Custody
Page 12 of 24



SGS

Revised by S. Whitney 3/25/2022

EHSA-QAC-0023-04-FORM-Standard COC

CHAIN OF CUSTODY

Reference JD41762

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shana Whitney E-mail: swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8842

Project Information

Project Name: Evergreen Marina Hook
Street: 100 Green Street
City: Marina Hook State: PA 19061
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved Arsenic in USEPA 6010
Total Arsenic in USEPA 6010
ON HOLD?
CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB - Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
	A017-SED-23_20220324		03/24/22	7:50	CSS	6		SO	1					1					X
	A017-SED-20_20220324			8:15				SO	1					1					X
	A017-SED-17_20220324			8:35				SO	1					1					X
	A017-PW-17_20220324_A			8:35				GW	1				1					1		
	A017-PW-13_20220324			11:20					1				1					1	X	
	A017-PW-20_20220324_A			8:15					1				1					1	X	
	A017-PW-20-FD_20220324_A			8:15					1				1					1		Filter 17 here
	A017-PW-04_20220324_A			10:15					1				1					1	X	Filter 13 here
	A017-PW-14_20220324			11:45					1				1					1	X	X
	A017-PW-11_20220324			13:30					1				1					1	X	X
	A017-PW-23_20220324			7:50					1				1					1		X
	A017-PW-16_20220324			13:45					1				1					1		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [X] EDD Format STATEGIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

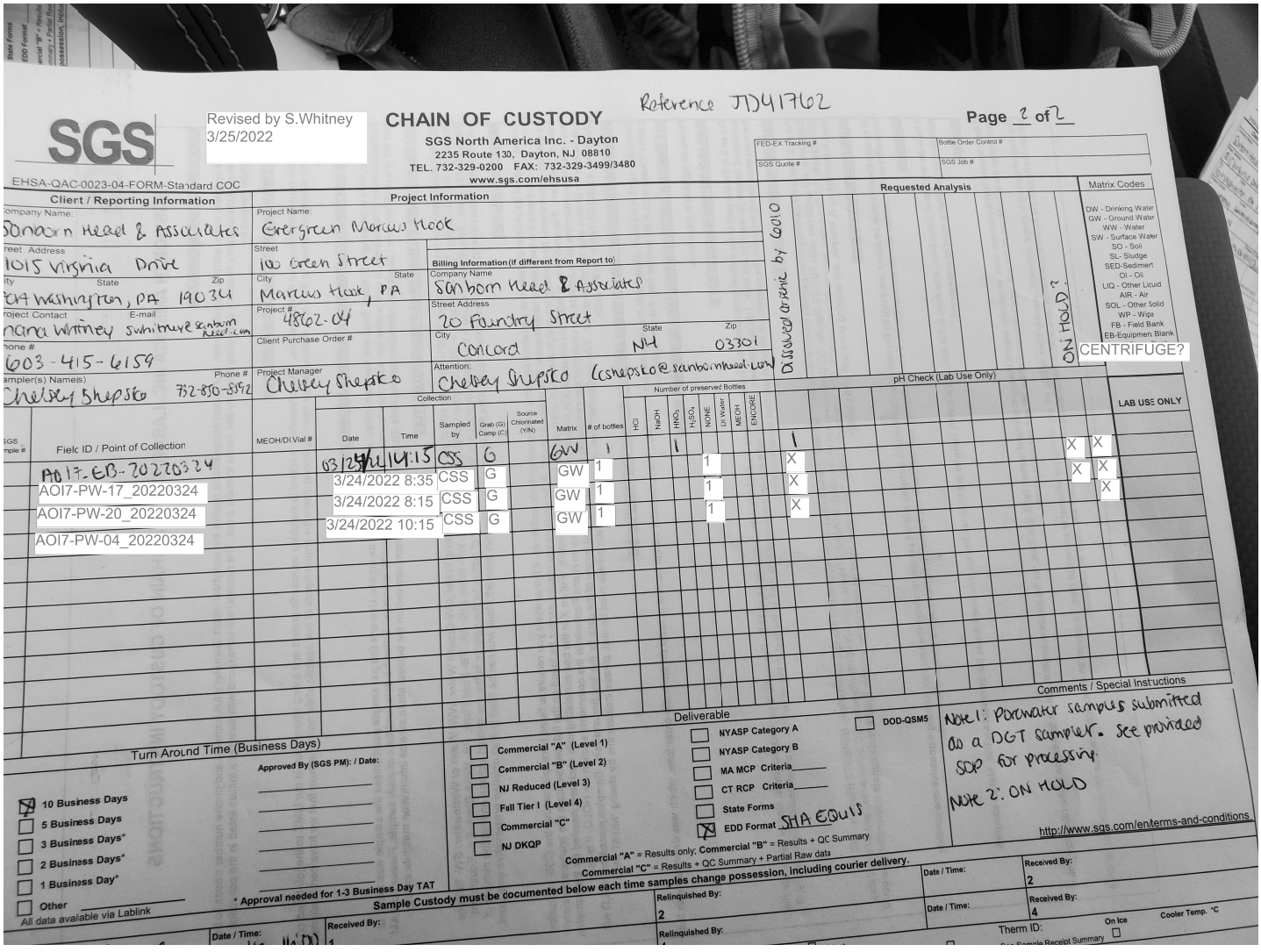
Note 2: ON HOLD

http://www.sgs.com/er/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished By:	Date / Time:	Received By:
2		2
	Date / Time:	Received By:
		4

Cooler Temp. °C



Revised by S.Whitney
3/25/2022

Reference JD41762

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 2 of 2

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #
Bottle Order Control #
SGS Quote #
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: West Washington State: PA Zip: 19034
Project Contact: Nana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-5592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 4862-04
Client Purchase Order #

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

CENTRIFUGE?

pH Check (Lab Use Only)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipmen Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
	AOI7-EB-20220324		03/24/2022	14:15	CSS	G		GW	1			1						
	AOI7-PW-17_20220324		3/24/2022	8:35	CSS	G		GW	1					1				
	AOI7-PW-20_20220324		3/24/2022	8:15	CSS	G		GW	1					1				
	AOI7-PW-04_20220324		3/24/2022	10:15	CSS	G		GW	1					1				

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EDuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted on a DGT sampler. See provided SOP for processing.

Note 2: ON HOLD

http://www.sgs.com/enterms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Received By:	Date / Time:	Relinquished By:	Date / Time:	Received By:
1		2		2
				4

Therm ID: On Ice Cooler Temp. °C

Sample Receipt Summary

5.1 5

GW

Reference JD41762

PIN

CHAIN OF CUSTODY

Page 1 of 3

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #:
Bottle Order Control #: VP-031482-240
SGS Quote #:
SGS Job #: JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington PA 19034
Project Contact / E-mail: Shane Whitney
Phone #: 603-415-6159
Sampler(s) Name(s) / Phone #: Chelsey Shapsko 732-850-8592
Project Manager: Chelsey Shapsko

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 48807.04
Client Purchase Order #:

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord NH 03301
Attention: Chelsey Shapsko, cshapsko@sanbornhead.com

Requested Analysis

Dissolved arsenic by 6010

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	DGT Sample?	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
60	AOI7-PW-27-DGT-20220324		03/24/22	14:05	CSS	G		GW	1					1				1	X	X		B10
61	AOI7-PW-16-DGT-20220324		03/24/22	09:05					1					1				1	X	X		A35
62	AOI7-PW-19-DGT-20220324		03/24/22	09:07					1					1				1	X	X		G-FIR
63	AOI7-PW-13-DGT-20220324		03/24/22	09:00					1					1				1	X			
64	AOI7-PW-15-DGT-20220324		03/24/22	11:50					1					1				1	X	X		
65	AOI7-PW-07-DGT-20220323		03/23/22	11:00					1					1				1	X			
66	AOI7-PW-05-DGT-20220323		03/23/22	12:25					1					1				1	X	X		
67	AOI7-PW-25-DGT-20220323		03/23/22	13:25					1					1				1	X			
68	AOI7-PW-11-DGT-20220324		03/24/22	12:30					1					1				1	X	X		
69	AOI7-PW-21-DGT-20220324		03/24/22	13:55					1					1				1	X	X		
70	AOI7-PW-03-DGT-20220324		03/24/22	10:20					1					1				1	X	X		
71	AOI7-PW-24-DGT-20220324		03/24/22	14:00					1					1				1	X	X		

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment VG 2A
Label Verification

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format SMA EGUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Chelsey Shapsko	03/25/22 11:15	James Kuss			
2						Keith Mordell
3						
4						
5						

Custody Seal #: ☐ Intact ☐ Not intact ☐ Absent
Therm ID: See Sample Receipt Summary
On Ice ☐
Cooler Temp. °C: 3.8

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job # JD41762

Client / Reporting Information

Company Name: Sunborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Sheina Whitney E-mail:
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8892

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 48621.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sunborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko, cshepsko@sunbornhead.com

Requested Analysis

Dissolved arsenic by 6010
Total arsenic by 6010
DOT sample?
On Hold?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	Total arsenic by 6010	DOT sample?	On Hold?	CENTRIFUGE?	LAB USE ONLY
72	AOI7-PW-23-DGT-20220325		03/25/22	9:55	CSS	G		GW	1					1					1		X	X		
73	AOI7-PW-20-DGT-20220325			9:55					1					1					1		X	X		
74	AOI7-PW-17-DGT-20220325			10:02					1					1					1		X	X		
75	AOI7-PW-25-DGT-20220325			9:50					1					1					1		X			
76	AOI7-PW-08-DGT-20220325			10:05					1					1					1		X	X		
77	AOI7-PW-09-DGT-20220325			10:03					1					1					1		X	X		
78	AOI7-PW-02-DGT-20220325			9:10					1					1					1		X	X		
79	AOI7-PW-01-DGT-20220325			10:10					1					1					1		X			
80	AOI7-PW-04-DGT-20220325			10:07					1					1					1		X			
81	AOI7-EB-02-20220325			11:50					1				1						1	1				

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [ ] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only, Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1		03/25/22 1425	1	2		2
3			3	4		4
5			5			

Custody Seal # | [ ] Intact [ ] Not intact | [ ] Absent
Therm ID: | On Ice | Cooler Temp. °C | See Sample Receipt Summary

5.1.5

Reference JD41762

Page 3 of 3

SGS

EHSA-QAC-0023-04-FORM-Standard COC

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

FED-EX Tracking #:
Bottle Order Control #:
SGS Quote #:
SGS Job #: JD41762

Client / Reporting Information	Project Information	
Company Name: Sanborn Head & Associates	Project Name: Evergreen Marcus Hook	
Street Address: 1015 Virginia Drive	Street: 100 Green Street	Billing Information (if different from Report to)
City / State / Zip: Fort Washington, PA 19034	City / State: Marcus Hook, PA	Company Name: Sanborn Head & Associates
Project Contact: Shang Whitney / E-mail: swhitney@sanbornhead.com	Project #: 4862.04	Street Address: 20 Foundry Street
Phone #: 603-415-6159	Client Purchase Order #:	City: Concord / State: NH / Zip: 03301
Sampler(s) Name(s): Chelsey Shepsko / Phone #: 732-850-8592	Project Manager: Chelsey Shepsko	Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis: Dissolved arsenic by 6010; ON HOLD ?; CENTRIFUGE

Matrix Codes: DW - Drinking Water, GW - Ground Water, WW - Water, SW - Surface Water, SO - Soil, SL- Sludge, SED-Sediment, OI - Oil, LIQ - Other Liquid, AIR - Air, SOL - Other Solid, WP - Wipe, FB - Field Blank, EB-Equipment Blank, RB - Rinse Blank, TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Dissolved arsenic by 6010	ON HOLD ?	CENTRIFUGE	LAB USE ONLY
82	A017-PW-27_20220325		03/25/22	07:50	CSS	G		GW	1					1				1	X	X	
83	A017-PW-21_20220325			09:20					1					1				1	X	X	
84	A017-PW-23_20220325			09:40					2					2				2	X	X	
85	A017-PW-02_20220325			09:00					2					2				2	X	X	
86	A017-PW-09_20220325			08:50					2					2				2	X	X	
87	A017-PW-27_20220325_A			07:50					1			1						1	X		
88	A017-PW-09_20220325_A			08:50					1			1						1	X		
89	A017-PW-24_20220325_A			11:15					1			1						1	X		
90	A017-PW-25_20220325_A			10:50					1			1						1			

Turn Around Time (Business Days) — Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria______
- [ ] CT RCP Criteria______
- [ ] State Forms
- [x] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	03/25/22 14:05	1 [signature]	2		2
3		3	4		4
5		5	Custody Seal #	☐ Intact ☐ Not intact ☐ Absent	Therm ID: On Ice ☐ Cooler Temp. °C See Sample Receipt Summary

5.1

5

JD41762B: Chain of Custody
Page 17 of 24

Job Change Order: JD41762

Requested Date:	3/28/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/28/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-56 **Change:**

Dept: Revise ID to AOI7-EB-01_20220324

TAT: 7

AOI7-EB_20220324

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/28/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-23, -25, -59

Dept:

TAT: 7

Change:
Please create new -F sample for lab filtered volume. Log in for FIL TEF and AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

JD41762B: Chain of Custody
Page 19 of 24

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-17F,-47F,-49F,-50F,-52F,-87F-88F,-89F
Change: Off HOLD for AS
Dept:
TAT: 7

==========
==========

Sample #: JD41762-13
Change: Off HOLD for CENTRIFUGE
Dept:
TAT: 7

AOI7-PW-05_20220322

==========
==========

Sample #: JD41762-13F
Change: Off HOLD for FILTERMET, AS
Dept:
TAT: 7

AOI7-PW-05_20220322

==========
==========

Sample #: JD41762-60,-64,-66,-68 to -74, -76 to-78
Change: Off HOLD for SPECIALPREP
Dept:
TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762B: Chain of Custody
Page 20 of 24

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-18,-18D,-18S,-19 to-22,-24 **Change:**

Dept: Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS

TAT: 7

==========

==========

Sample #: JD41762-53,-55,-57,-58,-84,-85,-86 **Change:**

Dept: Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS

TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762B: Chain of Custody
Page 21 of 24

Job Change Order: JD41762

Requested Date:	4/11/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/11/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-5, -33, -46

Dept:

TAT: 7

Change:
Off HOLD for SOL104, AS

==========

Above Changes Per: Shana Whitney **Date/Time:** 4/11/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762B: Chain of Custody
Page 22 of 24

Job Change Order: JD41762

Requested Date:	4/14/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/14/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-60 to -80

Dept:

TAT: 7

Change:
Please create new -F sample for lab filtered volume. Log in for FIL TEF and AS

==========

Above Changes Per: VP **Date/Time:** 4/14/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 1 of 1

Job Change Order: JD41762

Requested Date:	4/20/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/20/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-60 to -80, -60F to -80F	**Change:**	
Dept:		Please move to the separate job	
TAT:	7		

==========

Above Changes Per: Shana Whitney **Date/Time:** 4/20/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Metals Analysis

QC Data Summaries

ATTACHMENT F

DATA VALIDATION REPORT

ENVIRONMENTAL® STANDARDS

Setting the Standards for Innovative Environmental Solutions

QUALITY ASSURANCE REVIEW

OF THE SEDIMENT AND POREWATER SAMPLES AND AQUEOUS BLANKS

COLLECTED ON MARCH 22, 23, 24, AND 25, 2022

AT THE MARCUS HOOK INDUSTRIAL COMPLEX SITE

IN MARCUS HOOK, PENNSYLVANIA

May 19, 2022

Prepared for:

EVERGREEN RESOURCES GROUP, LLC
2 Righter Parkway, Suite 120
Wilmington, DE 19803

Prepared by:

ENVIRONMENTAL STANDARDS, INC.
1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

Issued to:

SANBORN, HEAD & ASSOCIATES, INC.
20 Foundry Street
Concord, NH 03301

© 2022 Environmental Standards, Inc. - All Rights Reserved

TABLE OF CONTENTS

1.0 Introduction

2.0 Findings

3.0 Qualifier Summary

4.0 Overall Assessment

5.0 Inorganic Data Qualifiers and Reason Codes

6.0 Signatures

7.0 Analytical Results

8.0 Supporting Documentation

1.0 Introduction

This quality assurance (QA) review is based upon a rigorous examination of all data generated from the analyses of the sediment and porewater samples (including quality control [QC] samples and two aqueous blanks) that were collected by Sanborn, Head & Associates, Inc. (Sanborn Head), on March 22, 23, 24, and 25, 2022, at the Marcus Hook Industrial Complex Site in Marcus Hook, Pennsylvania. The samples included in this QA review are specified on Table 1.

This review has been performed with guidance from the "National Functional Guidelines for Inorganic Data Review" (US EPA, February 1994). This document specifically addresses analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods. These validation guidelines are, therefore, not completely applicable to the type of analyses and analytical protocol performed for these samples. This document has been used to aid the data reviewer in the interpretation of the QC analysis results and in the overall evaluation of the sample data deliverables. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the requirements in the analytical methods utilized by the laboratory.

Details of this QA review are presented in Section 2 of this report. The reported analytical results are presented as a summary of the data in Section 7. Data were examined to determine the usability of the analytical results and the compliance relative to the requirements specified in the published analytical method. Qualifier codes have been placed next to results to enable the data user to quickly assess the qualitative and/or quantitative reliability of any result. This critical QA review identifies data quality issues for specific samples and specific evaluation criteria. The data qualifications allow the data's end-user to best understand the usability of the analytical results. Data not qualified in this report should be considered valid based on the QC criteria that have been reviewed. This report was prepared to provide a critical review of the laboratory analyses and reported analytical results. Rigorous QA reviews of laboratory-generated data routinely identify various problems associated with analytical measurements, even from the most experienced and capable laboratories.

TABLE 1

SAMPLES INCLUDED IN THIS QUALITY ASSURANCE REVIEW

Field Sample Identification	Laboratory Sample Identification	Laboratory Login Number	Matrix	Date Sample Collected	Parameter Examined
AOI7-SED-04_20220322	JD41762-7	JD41762	Sed	3/22/22	As
AOI7-SED-01_20220322	JD41762-8	JD41762	Sed	3/22/22	As
AOI7-SED-07_20220322	JD41762-4	JD41762	Sed	3/22/22	As
AOI7-SED-07_FD_20220322 (Field Duplicate of AOI7-SED-07_20220322)	JD41762-6	JD41762	Sed	3/22/22	As
AOI7-SED-07_MS_20220322 (Matrix Spike)	MP31902-S1	JD41762	Sed	3/22/22	As
AOI7-SED-07_MSD_20220322 (Matrix Spike Duplicate)	MP31902-S2	JD41762	Sed	3/22/22	As
AOI7-SED-10_20220322	JD41762-3	JD41762	Sed	3/22/22	As
AOI7-SED-05_20220322	JD41762-5	JD41762	Sed	3/22/22	As
AOI7-SED-28_20220322	JD41762-28	JD41762	Sed	3/22/22	As
AOI7-SED-25_20220322	JD41762-1	JD41762	Sed	3/22/22	As
AOI7-PW-16_20220323	JD41762-16F	JD41762	PW	3/23/22	As*
AOI7-PW-16_MS_20220323 (Matrix Spike)	MP31934-S1	JD41762	PW	3/23/22	As*
AOI7-PW-16_MSD_20220323 (Matrix Spike Duplicate)	MP31934-S2	JD41762	PW	3/23/22	As*
AOI7-SED-16_20220323	JD41762-27	JD41762	Sed	3/23/22	As
AOI7-SED-13_20220323	JD41762-26	JD41762	Sed	3/23/22	As
AOI7-SED-22_20220323	JD41762-39	JD41762	Sed	3/23/22	As
AOI7-SED-19_20220323	JD41762-32	JD41762	Sed	3/23/22	As
AOI7-SED-03_20220323	JD41762-30	JD41762	Sed	3/23/22	As
AOI7-SED-14_20220323	JD41762-33	JD41762	Sed	3/23/22	As
AOI7-PW-11_20220323	JD41762-17F	JD41762	PW	3/23/22	As*
AOI7-PW-11_MS_20220323 (Matrix Spike)	MP32014-S1	JD41762	PW	3/23/22	As*
AOI7-PW-11_MSD_20220323 (Matrix Spike Duplicate)	MP32014-S2	JD41762	PW	3/23/22	As*

TABLE 1 (Cont.)

Field Sample Identification	Laboratory Sample Identification	Laboratory Login Number	Matrix	Date Sample Collected	Parameter Examined
AOI7-PW-20_20220324_A	JD41762-49F	JD41762	PW	3/24/22	As*
AOI7-PW-20_FD_20220324_A (Field Duplicate of AOI7-PW-20_20220324_A)	JD41762-50F	JD41762	PW	3/24/22	As*
AOI7-PW-17_20220324_A	JD41762-47F	JD41762	PW	3/24/22	As*
AOI7-SED-17_20220324	JD41762-46	JD41762	Sed	3/24/22	As
AOI7-PW-04_20220324_A	JD41762-51F	JD41762	PW	3/24/22	As*
AOI7-PW-13_20220324	JD41762-48F	JD41762	PW	3/24/22	As*
AOI7-PW-13_MS_20220324 (Matrix Spike)	MP31989-S1	JD41762	PW	3/24/22	As*
AOI7-PW-13_MSD_20220324 (Matrix Spike Duplicate)	MP31989-S2	JD41762	PW	3/24/22	As*
AOI7-PW-14_20220324	JD41762-52F	JD41762	PW	3/24/22	As*
AOI7-EB-01_20220324 (Equipment Blank)	JD41762-56F	JD41762	Aq	3/24/22	As*
AOI7-PW-27_20220325_A	JD41762-87F	JD41762	PW	3/25/22	As*
AOI7-PW-09_20220325_A	JD41762-88F	JD41762	PW	3/25/22	As*
AOI7-PW-25_20220325_A	JD41762-90F	JD41762	PW	3/25/22	As*
AOI7-PW-24_20220325_A	JD41762-89F	JD41762	PW	3/25/22	As*
AOI7-PW-24_MS_20220323 (Matrix Spike)	MP32191-S1	JD41762	PW	3/23/22	As*
AOI7-PW-24_MSD_20220323 (Matrix Spike Duplicate)	MP32191-S2	JD41762	PW	3/23/22	As*
AOI7-EB-02_20220325 (Equipment Blank)	JD41762-81	JD41762	Aq	3/25/22	As

NOTES:

As - Total Arsenic by SW-846 Method 6010D. (18 samples)
As* - Dissolved Arsenic by SW-846 Method 6010D. (21 samples)
Aq - Aqueous.
PW - Porewater.
Sed - Sediment.

2.0 Findings

Complete support documentation for this inorganic QA review is presented in Section 8.0 of this report.

Thirty-nine samples (including QC samples) were analyzed for total or dissolved inductively coupled plasma (ICP) metals (specifically, arsenic) by SW-846 Method 6010D by SGS North America, Inc. of Dayton, New Jersey, and reported in Sample Delivery Group (SDG) JD41762. The findings offered in this report for this fraction are based on the items on the following table:

Item Reviewed	Acceptable	Acceptable with Qualification	Not Acceptable
Holding Times	√		
Sample Condition Upon Receipt	√		
Blank Analysis Results	√		
MS/MSD Results	√		
LCS Results	√		
Field Duplicate Precision		√	
Serial Dilution Results	√		
Percent Solids Results	√		
Detection Limits/Sensitivity	√		
Calibrations	√		
Continuing Calibrations	√		
RL Standard Recoveries	√		
ICP Interference Check Samples	√		
Linear Range Check Results	√		
Analytical Sequence	√		
Sample Preparation	√		
Sample Login	√		

Field Duplicate Precision: The reported positive results for total arsenic in sample AOI7-SED-07_20220322 and its field duplicate, sample AOI7-SED-07_FD_20220322, should be considered estimated and have been flagged “J” on the data tables. A large discrepancy (the relative percent difference [RPD] was > 40% when both results were ≥ 5× the reporting limit [RL]) was observed between the results for total arsenic in the field duplicate pair. (Reason Code: FD)

3.0 Qualifier Summary

Analyte(s)	Login Number	Samples	Validation Qualifier	Reason for Qualification
total arsenic	JD41762	AOI7-SED-07_20220322, and AOI7-SED-07_FD_20220322	J	FD – Field duplicate imprecision

4.0 Overall Assessment

Based on this QA review, the results for total arsenic in two samples were qualified as estimated due to field duplicate imprecision. In addition, the results for total arsenic in sediment samples AOI7-SED-04_20220322, AOI7-SED-13_20220323 and AOI7-SED-16_20220323 were above the action limit of 170 mg/kg. The results for dissolved arsenic in all porewater samples included in this report were below the action limit of 1253 µg/L.

5.0 Inorganic Data Qualifiers and Reason Codes

Inorganic Data Qualifiers

U The analyte was not detected above the associated reporting limit.

UB The analyte should be considered "not-detected" because it was observed in an associated laboratory or field blank at a similar level. The analyte was positively identified; the associated numerical value represents the concentration reported by the laboratory but may be impacted by contamination.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- The result is an estimated quantity and should be considered biased low.

J+ The result is an estimated quantity and should be considered biased high.

UJ The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The analyte was reported as detected, but sample results are unreliable due to serious analytical deficiencies. The presence or absence of the analyte cannot be verified.

UR The analyte was reported as not detected, but the determination that the analyte was not present in the sample is unreliable due to serious analytical deficiencies. The presence or absence of the analyte cannot be verified.

Reason Code[1]	Description
H	Bias in sample result likely to be high
L	Bias in sample result likely to be low
I	Bias in sample result is indeterminate
EC	Result exceeds the calibration range.
HT	Holding time requirement was not met
MB	Method blank or preparation blank contamination
LCS	Laboratory control sample evaluation criteria not met
FB	Field blank contamination
RB	Rinsate blank contamination
SQL	The analysis meets all qualitative identification criteria, but the measured concentration is less than the reporting limit.
FD	Field duplicate evaluation criteria not met
TvP	Total to Partial criteria not met
RL	Reporting limit exceeds decision criteria (for non-detects)
ICV	Initial calibration verification evaluation criteria not met
CCV	Continuing calibration verification evaluation criteria not met
CCB	Continuing calibration blank contamination
PB	Preparation Blank
ICS	Interference check sample evaluation criteria not met
D	Laboratory duplicate or spike duplicate precision evaluation criteria not met

Reason Code[1]	Description
MS	Matrix spike recovery outside acceptance range
PDS	Post-digestion spike recovery outside acceptance range
MSA	Method of standard additions correction coefficient _0.995
DL	Serial dilution results did not meet evaluation criteria
TUNE	Instrument performance (tuning) criteria not met
ICAL	Initial calibration evaluation criteria not met
CCAL	Continuing calibration evaluation criteria not met
SUR	Surrogate recovery outside acceptance range
MS/SD	Matrix spike/matrix spike duplicate precision criteria not met
MS	Matrix spike recovery outside acceptance range
IS	Internal standard evaluation criteria not met
LM	The PFK lock mass SICPs indicate that ion suppression evident
ID	Target compound identification criteria not met
NSR	Not selected for reporting because the result was qualified as unusable
NSDL	Not selected for reporting because diluted resulted was selected for reporting
NSQ	Not selected for reporting because result was lesser quality based on data validation.
NSO	Not selected for reporting because of other reason

6.0 Signatures

Report Prepared by,

Dwight M. Hoster
Quality Assurance Chemist

Report Reviewed by,

Thomas H. Weinmann
Senior Quality Assurance Chemist

Report Reviewed by,

Ammie L. Martin
Senior Technical Chemist
Project Manager

Report Reviewed and Approved by,

Rock J. Vitale, CEAC
Technical Director of Chemistry/
Principal

ENVIRONMENTAL STANDARDS, INC.
1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

(610) 935-5577

Date: 5/19/22

7.0 ANALYTICAL RESULTS

Analytical Results

Laboratory ID	Field ID	Sample Date	Type	Parent Sample	Matrix	Method	Fraction	CAS #	Analyte	Result	QL	Units	Laboratory Qualifiers	Validator Qualifiers	Reason Code
JD41762-7	AOI7-SED-04_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	353	2.6	mg/kg			
JD41762-8	AOI7-SED-01_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	102	4.1	mg/kg			
JD41762-4	AOI7-SED-07_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	92.3	3.9	mg/kg		J	FD
JD41762-6	AOI7-SED-07_FD_20220322	22-Mar-22	FD	AOI7-SED-07_20220322	SE	SW6010D	T	7440-38-2	ARSENIC	52.9	3.8	mg/kg		J	FD
JD41762-3	AOI7-SED-10_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	60.2	2.5	mg/kg			
JD41762-5	AOI7-SED-05_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	92.6	5.7	mg/kg			
JD41762-28	AOI7-SED-28_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	41.0	4.3	mg/kg			
JD41762-1	AOI7-SED-25_20220322	22-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	132	3.1	mg/kg			
JD41762-16F	AOI7-PW-16_20220323	23-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	7.7	3.0	ug/L			
JD41762-27	AOI7-SED-16_20220323	23-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	227	4.6	mg/kg			
JD41762-26	AOI7-SED-13_20220323	23-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	198	3.1	mg/kg			
JD41762-39	AOI7-SED-22_20220323	23-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	87.8	4.2	mg/kg			
JD41762-32	AOI7-SED-19_20220323	23-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	62.6	3.2	mg/kg			
JD41762-30	AOI7-SED-03_20220323	23-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	29.9	3.1	mg/kg			
JD41762-33	AOI7-SED-14_20220323	23-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	18.7	3.5	mg/kg			
JD41762-17F	AOI7-PW-11_20220323	23-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC		3.0	ug/L	U	U	
JD41762-49F	AOI7-PW-20_20220324_A	24-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	69.3	3.0	ug/L			
JD41762-50F	AOI7-PW-20_FD_20220324_A	24-Mar-22	FD	AOI7-PW-20_20220324_A	PORE	SW6010D	D	7440-38-2	ARSENIC	75.7	3.0	ug/L			
JD41762-47F	AOI7-PW-17_20220324_A	24-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	71.5	6.0	ug/L			
JD41762-46	AOI7-SED-17_20220324	24-Mar-22	N		SE	SW6010D	T	7440-38-2	ARSENIC	15.6	3.4	mg/kg			
JD41762-51F	AOI7-PW-04_20220324_A	24-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	442	3.0	ug/L			
JD41762-48F	AOI7-PW-13_20220324	24-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	276	3.0	ug/L			
JD41762-52F	AOI7-PW-14_20220324	24-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	47.6	3.0	ug/L			
JD41762-56F	AOI7-EB-01_20220324	24-Mar-22	EB		WQ	SW6010D	D	7440-38-2	ARSENIC		3.0	ug/L	U	U	
JD41762-87F	AOI7-PW-27_20220325_A	25-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	11.0	3.0	ug/L			
JD41762-88F	AOI7-PW-09_20220325_A	25-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	10.7	3.0	ug/L			
JD41762-90F	AOI7-PW-25_20220325_A	25-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	178	6.0	ug/L			
JD41762-89F	AOI7-PW-24_20220325_A	25-Mar-22	N		PORE	SW6010D	D	7440-38-2	ARSENIC	32.7	3.0	ug/L			
JD41762-81	AOI7-EB-02_20220325	25-Mar-22	EB		WQ	SW6010D	T	7440-38-2	ARSENIC		3.0	ug/L	U	U	

8.0 SUPPORTING DOCUMENTATION

ENVIRONMENTAL STANDARDS

INORGANIC ANALYSIS SUPPORT DOCUMENTATION

Client Name:	Evergreen Resources Group	EnvStd Project Manager:	Ammie Martin
Site/Project Name:	SANHPAFW: Marcus Hook, PA	Reviewed by:	Dwight M. Hoster
Job Number/Task/Subtask:	018041	Approved by:	Tom Weinmann
Laboratory/Location:	SGS / Dayton, NJ	Completion Date:	5/2022
SDG:	18041762	Validation Level:	2B
Sample Collection Dates:	3/22/22 - 3/25/22		

The following table indicates criteria that were examined, the identified problems, and support documentation attachments.

Criteria Examined in Detail	Problems Identified
Note: All items examined have been included in the Support Document unless otherwise noted.	

Check (√) if Yes or Footnote Letter for Comments Below

Parameter/ Method	6010D (Arsenic)							6010D (Arsenic)						
Condition upon Receipt	√													
Sample Preservation	√													
Holding Times	√													
Blank Analysis Results	√													
Laboratory Control Sample	√													
Matrix Spike (Pre-Digestion Spike)	√													
Laboratory Duplicate														
Field Duplicate	√							√						
Total *vs.* Dissolved Results Comparison														
Sample Preparation	√													
Mass Tuning														
Initial Calibrations	√													
Continuing Calibrations	√													
Detection Limit/Reporting Limit Standards	√													
Negative Bias	√													
Interference Checks	√													
Post-Digestion Spike														
Serial Dilution	√													
Analytical Sequence	√													
Linear Range Analysis														
Interelement Correction Factors														
Detection Limit/Sensitivity	√													
Dilutions	√													
Internal Standard Performance														
Quantitation of Results														
Multiple Exposures %RSD														
Percent Solids	√													
Deliverable was Complete	√													
Others:														

Comments: Quantitation of Results and Multiple Exposures are not included in the Support Documentation unless a problem was identified.

Project Checklist Form

Stantec

Flat File Validation Checklist

Main fields in flat file that may change			
result_text	√	detected value becomes non-detect, remove value in this field and highlight red, otherwise leave as is	DMH 5/11/22
result_numeric	√	detected value becomes non-detect, remove value in this field and highlight red, otherwise leave as is	DMH 5/11/22
reporting_detection_limit	√	does this value change? If so, change and highlight red, if not, leave as is	DMH 5/11/22
method_detection_limit	√	check for correct limit, if this changes, highlight red, if not, leave as is	DMH 5/11/22
quantitation_limit	√	check for correct limit, if this changes, highlight red, if not, leave as is	DMH 5/11/22
detect_flag	√	detected value to become non-detect, change from Y to N and highlight red, otherwise leave as is	DMH 5/11/22
validator_qualifiers	√	apply appropriate validation qualifiers in this field	DMH 5/11/22
interpreted_qualifiers	√	copy validator_qualifiers and any lab_qualifiers that may remain to be reported (this is the final, reportable qualifier)	DMH 5/11/22
reportable_result	√	if validation results in result to become not reportable, change from "Yes" to "No"	DMH 5/11/22
approval_code	√	change approval code to SH-USB	DMH 5/11/22
approval_a	√	apply appropriate reason code, one per field, first code here (See Validation Codes tab)	DMH 5/11/22
approval_b	√	apply appropriate reason code, one per field, second code here (See Validation Codes tab)	DMH 5/11/22
approval_c	√	apply appropriate reason code, one per field, third code here (See Validation Codes tab)	DMH 5/11/22
approval_d	√	apply appropriate reason code, one per field, fourth code here (See Validation Codes tab)	DMH 5/11/22
validated_yn	√	change from "N" to "Y" for applicable validations (individual records)	DMH 5/11/22

ENVIRONMENTAL STANDARDS, INC.
EVALUATION OF DUPLICATE RESULTS

Matrix: ○ Aqueous ◉ Non-aq.
Reporting Level: ○ MDL ◉ QL
Units: mg/kg

PRECISION OBJECTIVES:
If Both Results ≥ 5 × Their QL, RPD ≤: 40
If Either Result < 5 × Its QL, Dif. ≤: 2 **× Highest QL**

Sample ID: AOI7-SED-07_20220322 **Duplicate Sample ID:** AOI7-SED-07_FD_20220322

Analyte	Sample Concentration	Qual	QL	MDL	Duplicate Concentration	Qual	QL	MDL	Difference	RPD	Flag
				NA				NA			
Total Arsenic	92.3		3.9	NA	52.9		3.8	NA	NA	54%	J
% Solids	51.3		0	NA	53.5		0	NA	NA	4%	
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			

NOTES:

Qual: Qualifier(s) based on evaluation(s) other than Total/ vs. Dissolved comparison, if applicable (J, U, U* or B)
RPD: Relative Percent Difference
QL: Quantitation Limit
MDL: Method Detection Limit
RL: Reporting Limit. RL = QL for QL reporting and MDL for MDL reporting
J: The analyte concentration should be considered estimated
U: The analyte was not detected in the sample at or above the RL indicated. The RL will be used for comparison purposes.
UJ: The analyte was not detected in the sample at or above the Reporting Limit Indicated. The RL is approximate.
R: The analyte was analyzed for and detected, but sample results are unreliable. The presence or absence of the analyte cannot be verified.
UR: The analyte was analyzed for and not detected, but the determination that the analyte was not present in the sample is unreliable. The presence or absence of the analyte cannot be verified.
U* The result was blank qualified. The RL will be used for comparison purposes.
NA: The MDL (for QL reporting), RPD or Difference is not applicable

Comments:

ENVIRONMENTAL STANDARDS, INC.
EVALUATION OF DUPLICATE RESULTS

Matrix: (●) Aqueous ( ) Non-aq.
Reporting Level: ( ) MDL (●) QL
Units: µg/L

PRECISION OBJECTIVES:
If Both Results ≥ 5 × Their QL, RPD ≤: 20
If Either Result < 5 × Its QL, Dif. ≤: 1 **× Highest QL**

Sample ID:	AOI7-PW-20_20220324_A				**Duplicate Sample ID:**	AOI7-PW-20_FD_20220324_A					
Analyte	**Sample Concentration**	**Qual**	**QL**	**MDL**	**Duplicate Concentration**	**Qual**	**QL**	**MDL**	**Difference**	**RPD**	**Flag**
				NA				NA			
Dissolved Arsenic	69.3		3	NA	75.7		3	NA	NA	9%	
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			
				NA				NA			

NOTES:

Qual: Qualifier(s) based on evaluation(s) other than Total/ vs. Dissolved comparison, if applicable (J, U, U* or B)
RPD: Relative Percent Difference
QL: Quantitation Limit
MDL: Method Detection Limit
RL: Reporting Limit. RL = QL for QL reporting and MDL for MDL reporting
J: The analyte concentration should be considered estimated
U: The analyte was not detected in the sample at or above the RL indicated. The RL will be used for comparison purposes.
UJ: The analyte was not detected in the sample at or above the Reporting Limit Indicated. The RL is approximate.
R: The analyte was analyzed for and detected, but sample results are unreliable. The presence or absence of the analyte cannot be verified.
UR: The analyte was analyzed for and not detected, but the determination that the analyte was not present in the sample is unreliable. The presence or absence of the analyte cannot be verified.
U* The result was blank qualified. The RL will be used for comparison purposes.
NA: The MDL (for QL reporting), RPD or Difference is not applicable

Comments:

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Sunoco/Evergreen

SANHPAFW: Marcus Hook, PA

4862.02

SGS Job Number: JD41762

Sampling Dates: 03/22/22 - 03/25/22

Report to:

Sanborn Head & Associates, Inc.
1015 Virginia Drive Suite 100
Fort Washington, PA 19034
swhitney@sanbornhead.com; cshepsko@sanbornhead.com

ATTN: Chelsey Shepsko

Total number of pages in report: **683**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS is the sole authority for authorizing edits or modifications to this document.
Unauthorized modification of this report is strictly prohibited.
Review standard terms at: http://www.sgs.com/en/terms-and-conditions

Please share your ideas about how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Table of Contents

Section 1: Sample Summary 4
Section 2: Case Narrative/Conformance Summary 11
Section 3: Summary of Hits 14
Section 4: Sample Results 19
4.1: JD41762-1: AOI7-SED-25_20220322 20
4.2: JD41762-3: AOI7-SED-10_20220322 21
4.3: JD41762-4: AOI7-SED-07_20220322 22
4.4: JD41762-5: AOI7-SED-05_20220322 23
4.5: JD41762-6: AOI7-SED-07_FD_20220322 24
4.6: JD41762-7: AOI7-SED-04_20220322 25
4.7: JD41762-8: AOI7-SED-01_20220322 26
4.8: JD41762-13F: AOI7-PW-05_20220322 27
4.9: JD41762-14F: AOI7-PW-07_20220322 28
4.10: JD41762-15F: AOI7-PW-25_20220322 29
4.11: JD41762-16F: AOI7-PW-16_20220323 30
4.12: JD41762-17F: AOI7-PW-11_20220323 31
4.13: JD41762-18F: AOI7-PW-24_20220323 32
4.14: JD41762-19F: AOI7-PW-24_FD_20220323 33
4.15: JD41762-20F: AOI7-PW-15_20220323 34
4.16: JD41762-21F: AOI7-PW-21_20220323 35
4.17: JD41762-22F: AOI7-PW-27_20220323 36
4.18: JD41762-23F: AOI7-PW-13_20220323 37
4.19: JD41762-24F: AOI7-PW-03_20220323 38
4.20: JD41762-25F: AOI7-PW-19_20220323 39
4.21: JD41762-26: AOI7-SED-13_20220323 40
4.22: JD41762-27: AOI7-SED-16_20220323 41
4.23: JD41762-28: AOI7-SED-28_20220322 42
4.24: JD41762-30: AOI7-SED-03_20220323 43
4.25: JD41762-32: AOI7-SED-19_20220323 44
4.26: JD41762-33: AOI7-SED-14_20220323 45
4.27: JD41762-39: AOI7-SED-22_20220323 46
4.28: JD41762-46: AOI7-SED-17_20220324 47
4.29: JD41762-47F: AOI7-PW-17_20220324_A 48
4.30: JD41762-48F: AOI7-PW-13_20220324 49
4.31: JD41762-49F: AOI7-PW-20_20220324_A 50
4.32: JD41762-50F: AOI7-PW-20_FD_20220324_A 51
4.33: JD41762-51F: AOI7-PW-04_20220324_A 52
4.34: JD41762-52F: AOI7-PW-14_20220324 53
4.35: JD41762-53F: AOI7-PW-11_20220324 54
4.36: JD41762-55F: AOI7-PW-16_20220324 55
4.37: JD41762-56F: AOI7-EB-01_20220324 56
4.38: JD41762-57F: AOI7-PW-17_20220324 57

Table of Contents

4.39: JD41762-58F: AOI7-PW-20_20220324 58
4.40: JD41762-59F: AOI7-PW-04_20220324 59
4.41: JD41762-81: AOI7-EB-02_20220325 60
4.42: JD41762-84F: AOI7-PW-23_20220325 61
4.43: JD41762-85F: AOI7-PW-02_20220325 62
4.44: JD41762-86F: AOI7-PW-09_20220325 63
4.45: JD41762-87F: AOI7-PW-27_20220325_A 64
4.46: JD41762-88F: AOI7-PW-09_20220325_A 65
4.47: JD41762-89F: AOI7-PW-24_20220325_A 66
4.48: JD41762-90F: AOI7-PW-25_20220325_A 67
Section 5: Misc. Forms 68
5.1: Chain of Custody 69
5.2: Sample Tracking Chronicle 93
5.3: Internal Chain of Custody 100
Section 6: Metals Analysis - QC Data Summaries 116
6.1: Inst QC MA52118: As 117
6.2: Inst QC MA52132: As 140
6.3: Inst QC MA52135: As 169
6.4: Inst QC MA52141: As 195
6.5: Inst QC MA52146: As 258
6.6: Inst QC MA52155: As 285
6.7: Inst QC MA52164: As 326
6.8: Inst QC MA52201: As 352
6.9: Inst QC MA52204: As 374
6.10: Inst QC MA52222: As 401
6.11: Inst QC MA52223: As 423
6.12: Inst QC MA52224: As 447
6.13: Inst QC MA52233: As 510
6.14: Inst QC MA52240: As 536
6.15: Inst QC MA52241: As 556
6.16: Prep QC MP31902: As 584
6.17: Prep QC MP31934: As 594
6.18: Prep QC MP31947: As 604
6.19: Prep QC MP31989: As 616
6.20: Prep QC MP32014: As 626
6.21: Prep QC MP32191: As 636
6.22: Prep QC MP32253: As 646
6.23: Prep QC MP32280: As 656
6.24: Prep QC MP32331: As 668
Section 7: General Chemistry - QC Data Summaries 680
7.1: Percent Solids Raw Data Summary 681

Sample Summary

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-1	03/22/22	13:15	CSS	03/22/22	SO	Sediment	AOI7-SED-25_20220322
JD41762-2	03/22/22	13:35	CSS	03/22/22	SO	Sediment	AOI7-SED-26_20220322
JD41762-3	03/22/22	10:40	CSS	03/22/22	SO	Sediment	AOI7-SED-10_20220322
JD41762-4	03/22/22	10:10	CSS	03/22/22	SO	Sediment	AOI7-SED-07_20220322
JD41762-4D	03/22/22	10:10	CSS	03/22/22	SO	Soil Dup/MSD	AOI7-SED-07_MSD_20220322
JD41762-4S	03/22/22	10:10	CSS	03/22/22	SO	Soil Matrix Spike	AOI7-SED-07_MS_20220322
JD41762-5	03/22/22	12:20	CSS	03/22/22	SO	Sediment	AOI7-SED-05_20220322
JD41762-6	03/22/22	10:10	CSS	03/22/22	SO	Sediment	AOI7-SED-07_FD_20220322
JD41762-7	03/22/22	08:40	CSS	03/22/22	SO	Sediment	AOI7-SED-04_20220322
JD41762-8	03/22/22	09:20	CSS	03/22/22	SO	Sediment	AOI7-SED-01_20220322
JD41762-9	03/22/22	12:10	CSS	03/22/22	SO	Sediment	AOI7-SED-02_20220322
JD41762-10	03/22/22	12:35	CSS	03/22/22	SO	Sediment	AOI7-SED-08_20220322
JD41762-13	03/22/22	12:20	CSS	03/22/22	SO	Soil	AOI7-PW-05_20220322

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-13F	03/22/22	12:20	CSS	03/22/22	AQ	Water Filtered	AOI7-PW-05_20220322
JD41762-14	03/22/22	10:10	CSS	03/22/22	SO	Soil	FOI7-PW-07_20220322
JD41762-14F	03/22/22	10:10	CSS	03/22/22	AQ	Water Filtered	AOI7-PW-07_20220322
JD41762-15	03/22/22	13:15	CSS	03/22/22	SO	Soil	AOI7-PW-25_20220322
JD41762-15F	03/22/22	13:15	CSS	03/22/22	AQ	Water Filtered	AOI7-PW-25_20220322
JD41762-16F	03/23/22	07:50	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-16_20220323
JD41762-17F	03/23/22	12:15	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-11_20220323
JD41762-18	03/23/22	12:45	CSS	03/23/22	SO	Soil	AOI7-PW-24_20220323
JD41762-18D	03/23/22	12:45	CSS	03/23/22	SO	Soil Dup/MSD	AOI7-PW-24_MSD_20220323
JD41762-18DF	03/23/22	12:45	CSS	03/23/22	AQ	Water Dup/MSD	AOI7-PW-24_MSD_20220323
JD41762-18F	03/23/22	12:45	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-24_20220323
JD41762-18S	03/23/22	12:45	CSS	03/23/22	SO	Soil Matrix Spike	AOI7-PW-24_MS_20220323
JD41762-18SF	03/23/22	12:45	CSS	03/23/22	AQ	Water Matrix Spike	AOI7-PW-24_MS_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-19	03/23/22	12:45	CSS	03/23/22	SO	Soil	AOI7-PW-24_FD_20220323
JD41762-19F	03/23/22	12:45	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-24_FD_20220323
JD41762-20	03/23/22	11:35	CSS	03/23/22	SO	Soil	AOI7-PW-15_20220323
JD41762-20F	03/23/22	11:35	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-15_20220323
JD41762-21	03/23/22	13:10	CSS	03/23/22	SO	Soil	AOI7-PW-21_20220323
JD41762-21F	03/23/22	13:10	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-21_20220323
JD41762-22	03/23/22	13:45	CSS	03/23/22	SO	Soil	AOI7-PW-27_20220323
JD41762-22F	03/23/22	13:45	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-27_20220323
JD41762-23	03/23/22	08:10	CSS	03/23/22	SO	Soil	AOI7-PW-13_20220323
JD41762-23F	03/23/22	08:10	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-13_20220323
JD41762-24	03/23/22	10:05	CSS	03/23/22	SO	Soil	AOI7-PW-03_20220323
JD41762-24F	03/23/22	10:05	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-03_20220323
JD41762-25	03/23/22	09:00	CSS	03/23/22	SO	Soil	AOI7-PW-19_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-25F	03/23/22	09:00	CSS	03/23/22	AQ	Water Filtered	AOI7-PW-19_20220323
JD41762-26	03/23/22	08:10	CSS	03/23/22	SO	Sediment	AOI7-SED-13_20220323
JD41762-27	03/23/22	07:50	CSS	03/23/22	SO	Sediment	AOI7-SED-16_20220323
JD41762-28	03/22/22	13:00	CSS	03/23/22	SO	Sediment	AOI7-SED-28_20220322
JD41762-30	03/23/22	10:05	CSS	03/23/22	SO	Sediment	AOI7-SED-03_20220323
JD41762-32	03/23/22	09:00	CSS	03/23/22	SO	Sediment	AOI7-SED-19_20220323
JD41762-33	03/23/22	12:00	CSS	03/23/22	SO	Sediment	AOI7-SED-14_20220323
JD41762-34	03/23/22	11:35	CSS	03/23/22	SO	Sediment	AOI7-SED-15_20220323
JD41762-35	03/23/22	11:20	CSS	03/23/22	SO	Sediment	AOI7-SED-18_20220323
JD41762-36	03/23/22	09:45	CSS	03/23/22	SO	Sediment	AOI7-SED-06_20220323
JD41762-37	03/23/22	09:25	CSS	03/23/22	SO	Sediment	AOI7-SED-29_20220323
JD41762-38	03/23/22	13:10	CSS	03/23/22	SO	Sediment	AOI7-SED-21_20220323
JD41762-39	03/23/22	08:40	CSS	03/23/22	SO	Sediment	AOI7-SED-22_20220323

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-40	03/23/22	12:45	CSS	03/23/22	SO	Sediment	AOI7-SED-24_20220323
JD41762-41	03/23/22	13:45	CSS	03/23/22	SO	Sediment	AOI7-SED-27_20220323
JD41762-42	03/23/22	10:45	CSS	03/23/22	SO	Sediment	AOI7-SED-09_20220323
JD41762-43	03/23/22	13:35	CSS	03/23/22	SO	Sediment	AOI7-SED-30_20220323
JD41762-44	03/24/22	07:50	CSS	03/24/22	SO	Sediment	AOI7-SED-23_20220324
JD41762-45	03/24/22	08:15	CSS	03/24/22	SO	Sediment	AOI7-SED-20_20220324
JD41762-46	03/24/22	08:35	CSS	03/24/22	SO	Sediment	AOI7-SED-17_20220324
JD41762-47F	03/24/22	08:35	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-17_20220324_A
JD41762-48F	03/24/22	11:20	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-13_20220324
JD41762-49F	03/24/22	08:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-20_20220324_A
JD41762-50F	03/24/22	08:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-20_FD_20220324_A
JD41762-51F	03/24/22	10:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-04_20220324_A
JD41762-52F	03/24/22	11:45	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-14_20220324

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-53	03/24/22	13:30	CSS	03/24/22	SO	Soil	AOI7-PW-11_20220324
JD41762-53F	03/24/22	13:30	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-11_20220324
JD41762-54	03/24/22	07:50	CSS	03/24/22	SO	Soil	AOI7-PW-23_20220324
JD41762-55	03/24/22	13:45	CSS	03/24/22	SO	Soil	AOI7-PW-16_20220324
JD41762-55F	03/24/22	13:45	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-16_20220324
JD41762-56F	03/24/22	14:15	CSS	03/24/22	AQ	Equip Blank Filtered	AOI7-EB-01_20220324
JD41762-57	03/24/22	08:35	CSS	03/24/22	SO	Soil	AOI7-PW-17_20220324
JD41762-57F	03/24/22	08:35	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-17_20220324
JD41762-58	03/24/22	08:15	CSS	03/24/22	SO	Soil	AOI7-PW-20_20220324
JD41762-58F	03/24/22	08:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-20_20220324
JD41762-59	03/24/22	10:15	CSS	03/24/22	SO	Soil	AOI7-PW-04_20220324
JD41762-59F	03/24/22	10:15	CSS	03/24/22	AQ	Water Filtered	AOI7-PW-04_20220324
JD41762-81	03/25/22	11:50	CSS	03/25/22	AQ	Equipment Blank	AOI7-EB-02_20220325

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD41762-82	03/25/22	07:50	CSS	03/25/22	SO	Soil	AOI7-PW-27_20220325
JD41762-83	03/25/22	09:20	CSS	03/25/22	SO	Soil	AOI7-PW-21_20220325
JD41762-84	03/25/22	09:40	CSS	03/25/22	SO	Soil	AOI7-PW-23_20220325
JD41762-84F	03/25/22	09:40	CSS	03/25/22	AQ	Water Filtered	AOI7-PW-23_20220325
JD41762-85	03/25/22	09:00	CSS	03/25/22	SO	Soil	AOI7-PW-02_20220325
JD41762-85F	03/25/22	09:00	CSS	03/25/22	AQ	Water Filtered	AOI7-PW-02_20220325
JD41762-86	03/25/22	08:50	CSS	03/25/22	SO	Soil	AOI7-PW-09_20220325
JD41762-86F	03/25/22	08:50	CSS	03/25/22	AQ	Water Filtered	AOI7-PW-09_20220325
JD41762-87F	03/25/22	07:50	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-27_20220325_A
JD41762-88F	03/25/22	08:50	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-09_20220325_A
JD41762-89F	03/25/22	11:15	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-24_20220325_A
JD41762-90F	03/25/22	10:50	CSS	03/25/22	AQ	Groundwater Filtered	AOI7-PW-25_20220325_A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Sunoco/Evergreen **Job No:** JD41762

Site: SANHPAFW: Marcus Hook, PA **Report Date** 4/21/2022 12:13:01 P

Between 03/22/2022 and 03/25/2022, 48 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD41762 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

Metals Analysis By Method SW846 6010D

Matrix: AQ **Batch ID:** MP31934

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-16FMS, JD41762-16FMSD, JD41762-16FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP31934-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-14F for Arsenic: Elevated sample detection limit due to limited volume.

Matrix: AQ **Batch ID:** MP31989

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-48FMS, JD41762-48FMSD, JD41762-48FSDL were used as the QC samples for metals.

Matrix: AQ **Batch ID:** MP32014

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-17FMS, JD41762-17FMSD, JD41762-17FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP32014-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-47F for Arsenic: Elevated detection limit due to dilution required for high interfering element.
- JD41762-23F for Arsenic: Elevated sample detection limit due to difficult sample matrix.

Matrix: AQ **Batch ID:** MP32191

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-18FMS, JD41762-18FMSD, JD41762-18FSDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP32191-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-86F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-13F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-20F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-84F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-24F for Arsenic: Elevated sample detection limit due to limited volume.
- JD41762-85F for Arsenic: Elevated sample detection limit due to limited volume.

Metals Analysis By Method SW846 6010D

Matrix: AQ **Batch ID:** MP32253

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD42841-1MS, JD42841-1MSD, JD42841-1SDL were used as the QC samples for metals.

Matrix: SO **Batch ID:** MP31902

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41762-4MS, JD41762-4MSD, JD41762-4SDL were used as the QC samples for metals.

Matrix: SO **Batch ID:** MP31947

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD41893-1MS, JD41893-1MSD, JD41893-1SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP31947-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
- JD41762-27 for Arsenic: Elevated detection limit due to dilution required for high interfering element.

Matrix: SO **Batch ID:** MP32280

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD42834-2MS, JD42834-2MSD, JD42834-2SDL were used as the QC samples for metals.
- RPD(s) for Serial Dilution for Arsenic are outside control limits for sample MP32280-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: SO **Batch ID:** MP32331

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD42270-3MS, JD42270-3PS, JD42270-3SDL, JD42270-3MSD were used as the QC samples for metals.
- Matrix Spike Duplicate Recovery(s) for Arsenic are outside control limits. Probable cause due to matrix interference.
- RPD(s) for MSD for Arsenic are outside control limits for sample MP32331-S2. High rpd due to possible sample nonhomogeneity.
- JD41762-5 for Arsenic: Elevated detection limit due to dilution required for high interfering element.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO **Batch ID:** GN27548

- Sample(s) JD41762-4DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN27623

- Sample(s) JD41848-1DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN28112

- Sample(s) JD42470-25RDUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-1	**AOI7-SED-25_20220322**					
Arsenic		132	3.1		mg/kg	SW846 6010D
JD41762-3	**AOI7-SED-10_20220322**					
Arsenic		60.2	2.5		mg/kg	SW846 6010D
JD41762-4	**AOI7-SED-07_20220322**					
Arsenic		92.3	3.9		mg/kg	SW846 6010D
JD41762-5	**AOI7-SED-05_20220322**					
Arsenic [a]		92.6	5.7		mg/kg	SW846 6010D
JD41762-6	**AOI7-SED-07_FD_20220322**					
Arsenic		52.9	3.8		mg/kg	SW846 6010D
JD41762-7	**AOI7-SED-04_20220322**					
Arsenic		353	2.6		mg/kg	SW846 6010D
JD41762-8	**AOI7-SED-01_20220322**					
Arsenic		102	4.1		mg/kg	SW846 6010D
JD41762-13F	**AOI7-PW-05_20220322**					
Arsenic [b]		31.8	6.0		ug/l	SW846 6010D
JD41762-14F	**AOI7-PW-07_20220322**					
Arsenic [b]		145	7.5		ug/l	SW846 6010D
JD41762-15F	**AOI7-PW-25_20220322**					
Arsenic		75.0	6.0		ug/l	SW846 6010D
JD41762-16F	**AOI7-PW-16_20220323**					
Arsenic		7.7	3.0		ug/l	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-17F	**AOI7-PW-11_20220323**					
No hits reported in this sample.						
JD41762-18F	**AOI7-PW-24_20220323**					
Arsenic		19.6	3.0		ug/l	SW846 6010D
JD41762-19F	**AOI7-PW-24_FD_20220323**					
Arsenic		15.3	3.0		ug/l	SW846 6010D
JD41762-20F	**AOI7-PW-15_20220323**					
Arsenic [b]		34.4	6.0		ug/l	SW846 6010D
JD41762-21F	**AOI7-PW-21_20220323**					
Arsenic		18.8	3.0		ug/l	SW846 6010D
JD41762-22F	**AOI7-PW-27_20220323**					
Arsenic		14.5	3.0		ug/l	SW846 6010D
JD41762-23F	**AOI7-PW-13_20220323**					
Arsenic [c]		71.0	6.0		ug/l	SW846 6010D
JD41762-24F	**AOI7-PW-03_20220323**					
Arsenic [b]		10.0	6.0		ug/l	SW846 6010D
JD41762-25F	**AOI7-PW-19_20220323**					
Arsenic		131	6.0		ug/l	SW846 6010D
JD41762-26	**AOI7-SED-13_20220323**					
Arsenic		198	3.1		mg/kg	SW846 6010D
JD41762-27	**AOI7-SED-16_20220323**					
Arsenic [a]		227	4.6		mg/kg	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-28	**AOI7-SED-28_20220322**					
Arsenic		41.0	4.3		mg/kg	SW846 6010D
JD41762-30	**AOI7-SED-03_20220323**					
Arsenic		29.9	3.1		mg/kg	SW846 6010D
JD41762-32	**AOI7-SED-19_20220323**					
Arsenic		62.6	3.2		mg/kg	SW846 6010D
JD41762-33	**AOI7-SED-14_20220323**					
Arsenic		18.7	3.5		mg/kg	SW846 6010D
JD41762-39	**AOI7-SED-22_20220323**					
Arsenic		87.8	4.2		mg/kg	SW846 6010D
JD41762-46	**AOI7-SED-17_20220324**					
Arsenic		15.6	3.4		mg/kg	SW846 6010D
JD41762-47F	**AOI7-PW-17_20220324_A**					
Arsenic [a]		71.5	6.0		ug/l	SW846 6010D
JD41762-48F	**AOI7-PW-13_20220324**					
Arsenic		276	3.0		ug/l	SW846 6010D
JD41762-49F	**AOI7-PW-20_20220324_A**					
Arsenic		69.3	3.0		ug/l	SW846 6010D
JD41762-50F	**AOI7-PW-20_FD_20220324_A**					
Arsenic		75.7	3.0		ug/l	SW846 6010D
JD41762-51F	**AOI7-PW-04_20220324_A**					
Arsenic		442	3.0		ug/l	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-52F	**AOI7-PW-14_20220324**					
Arsenic		47.6	3.0		ug/l	SW846 6010D
JD41762-53F	**AOI7-PW-11_20220324**					
Arsenic		73.0	3.0		ug/l	SW846 6010D
JD41762-55F	**AOI7-PW-16_20220324**					
Arsenic		68.3	3.0		ug/l	SW846 6010D
JD41762-56F	**AOI7-EB-01_20220324**					
No hits reported in this sample.						
JD41762-57F	**AOI7-PW-17_20220324**					
Arsenic		48.6	3.0		ug/l	SW846 6010D
JD41762-58F	**AOI7-PW-20_20220324**					
Arsenic		102	3.0		ug/l	SW846 6010D
JD41762-59F	**AOI7-PW-04_20220324**					
Arsenic		163	6.0		ug/l	SW846 6010D
JD41762-81	**AOI7-EB-02_20220325**					
No hits reported in this sample.						
JD41762-84F	**AOI7-PW-23_20220325**					
Arsenic [b]		33.2	6.0		ug/l	SW846 6010D
JD41762-85F	**AOI7-PW-02_20220325**					
Arsenic [b]		124	6.0		ug/l	SW846 6010D
JD41762-86F	**AOI7-PW-09_20220325**					
Arsenic [b]		10.0	6.0		ug/l	SW846 6010D

Summary of Hits

Job Number: JD41762
Account: Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Collected: 03/22/22 thru 03/25/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD41762-87F	**AOI7-PW-27_20220325_A**					
Arsenic		11.0	3.0		ug/l	SW846 6010D
JD41762-88F	**AOI7-PW-09_20220325_A**					
Arsenic		10.7	3.0		ug/l	SW846 6010D
JD41762-89F	**AOI7-PW-24_20220325_A**					
Arsenic		32.7	3.0		ug/l	SW846 6010D
JD41762-90F	**AOI7-PW-25_20220325_A**					
Arsenic		178	6.0		ug/l	SW846 6010D

(a) Elevated detection limit due to dilution required for high interfering element.
(b) Elevated sample detection limit due to limited volume.
(c) Elevated sample detection limit due to difficult sample matrix.

Sample Results

Report of Analysis

Samples for DV

lab_sample_id	loc_name
JD41762-1	AOI7-SED-25
JD41762-1	AOI7-SED-25
JD41762-16F	AOI7-PW-16
JD41762-17F	AOI7-PW-11
JD41762-26	AOI7-SED-13
JD41762-26	AOI7-SED-13
JD41762-27	AOI7-SED-16
JD41762-27	AOI7-SED-16
JD41762-28	AOI7-SED-28
JD41762-28	AOI7-SED-28
JD41762-3	AOI7-SED-10
JD41762-3	AOI7-SED-10
JD41762-30	AOI7-SED-03
JD41762-30	AOI7-SED-03
JD41762-32	AOI7-SED-19
JD41762-32	AOI7-SED-19
JD41762-33	AOI7-SED-14
JD41762-33	AOI7-SED-14
JD41762-39	AOI7-SED-22
JD41762-39	AOI7-SED-22
JD41762-4	AOI7-SED-07
JD41762-4	AOI7-SED-07
JD41762-46	AOI7-SED-17
JD41762-46	AOI7-SED-17
JD41762-47F	AOI7-PW-17
JD41762-48F	AOI7-PW-13
JD41762-49F	AOI7-PW-20
JD41762-5	AOI7-SED-05
JD41762-5	AOI7-SED-05
JD41762-50F	AOI7-PW-20
JD41762-51F	AOI7-PW-04
JD41762-52F	AOI7-PW-14
JD41762-56F	EB
JD41762-6	AOI7-SED-07
JD41762-6	AOI7-SED-07
JD41762-7	AOI7-SED-04
JD41762-7	AOI7-SED-04
JD41762-8	AOI7-SED-01
JD41762-8	AOI7-SED-01
JD41762-81	EB
JD41762-87F	AOI7-PW-27
JD41762-88F	AOI7-PW-09
JD41762-89F	AOI7-PW-24
JD41762-90F	AOI7-PW-25

Report of Analysis

Client Sample ID:	AOI7-SED-25_20220322		
Lab Sample ID:	JD41762-1	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	43.3
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	132	3.1	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-10_20220322		
Lab Sample ID:	JD41762-3	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	53.1
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	60.2	2.5	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-07_20220322		
Lab Sample ID:	JD41762-4	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	51.3
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	92.3	3.9	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-05_20220322		
Lab Sample ID:	JD41762-5	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	47.4
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	92.6	5.7	mg/kg	2	04/14/22	04/15/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52241
(2) Prep QC Batch: MP32331

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-07_FD_20220322		
Lab Sample ID:	JD41762-6	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	53.5
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	52.9	3.8	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-04_20220322		
Lab Sample ID:	JD41762-7	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	50.7
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	353	2.6	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-01_20220322		
Lab Sample ID:	JD41762-8	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/22/22
		Percent Solids:	48.5
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	102	4.1	mg/kg	1	03/24/22	03/25/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52118
(2) Prep QC Batch: MP31902

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-05_20220322		
Lab Sample ID:	JD41762-13F	**Date Sampled:**	03/22/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/22/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	31.8	6.0	ug/l	1	04/08/22	04/11/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52204
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-07_20220322		
Lab Sample ID:	JD41762-14F	**Date Sampled:**	03/22/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/22/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	145	7.5	ug/l	1	03/26/22	03/29/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31934

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-25_20220322		
Lab Sample ID:	JD41762-15F	**Date Sampled:**	03/22/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/22/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	75.0	6.0	ug/l	1	03/26/22	03/29/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31934

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-16_20220323		
Lab Sample ID:	JD41762-16F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	7.7	3.0	ug/l	1	03/26/22	03/29/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31934

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-11_20220323		
Lab Sample ID:	JD41762-17F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-24_20220323		
Lab Sample ID:	JD41762-18F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	19.6	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-24_FD_20220323		
Lab Sample ID:	JD41762-19F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	15.3	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-15_20220323		
Lab Sample ID:	JD41762-20F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	34.4	6.0	ug/l	1	04/08/22	04/11/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52204
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-21_20220323		
Lab Sample ID:	JD41762-21F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	18.8	3.0	ug/l	1	04/08/22	04/11/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52204
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-27_20220323		
Lab Sample ID:	JD41762-22F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	14.5	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-13_20220323		
Lab Sample ID:	JD41762-23F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	71.0	6.0	ug/l	1	03/31/22	04/04/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52164
(2) Prep QC Batch: MP32014

(a) Elevated sample detection limit due to difficult sample matrix.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-03_20220323		
Lab Sample ID:	JD41762-24F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	10.0	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-19_20220323		
Lab Sample ID:	JD41762-25F	**Date Sampled:**	03/23/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/23/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	131	6.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-13_20220323		
Lab Sample ID:	JD41762-26	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	45.0
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	198	3.1	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-16_20220323		
Lab Sample ID:	JD41762-27	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	57.0
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	227	4.6	mg/kg	2	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52135
(2) Prep QC Batch: MP31947

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-28_20220322		
Lab Sample ID:	JD41762-28	**Date Sampled:**	03/22/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	46.1
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	41.0	4.3	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-03_20220323		
Lab Sample ID:	JD41762-30	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	61.0
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	29.9	3.1	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-19_20220323		
Lab Sample ID:	JD41762-32	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	40.5
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	62.6	3.2	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-14_20220323		
Lab Sample ID:	JD41762-33	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	54.3
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	18.7	3.5	mg/kg	1	04/13/22	04/14/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52233
(2) Prep QC Batch: MP32280

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-22_20220323		
Lab Sample ID:	JD41762-39	**Date Sampled:**	03/23/22
Matrix:	SO - Sediment	**Date Received:**	03/23/22
		Percent Solids:	49.9
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	87.8	4.2	mg/kg	1	03/28/22	03/29/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52132
(2) Prep QC Batch: MP31947

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-SED-17_20220324		
Lab Sample ID:	JD41762-46	**Date Sampled:**	03/24/22
Matrix:	SO - Sediment	**Date Received:**	03/24/22
		Percent Solids:	56.8
Project:	SANHPAFW: Marcus Hook, PA		

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	15.6	3.4	mg/kg	1	04/13/22	04/14/22	ND	SW846 6010D [1]	SW846 3050B [2]

(1) Instrument QC Batch: MA52233
(2) Prep QC Batch: MP32280

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-17_20220324_A		
Lab Sample ID:	JD41762-47F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	71.5	6.0	ug/l	2	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

(a) Elevated detection limit due to dilution required for high interfering element.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-13_20220324		
Lab Sample ID:	JD41762-48F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	276	3.0	ug/l	1	03/30/22	03/31/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52146
(2) Prep QC Batch: MP31989

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-20_20220324_A		
Lab Sample ID:	JD41762-49F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	69.3	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-20_FD_20220324_A		
Lab Sample ID:	JD41762-50F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	75.7	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-04_20220324_A		
Lab Sample ID:	JD41762-51F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	442	3.0	ug/l	1	03/30/22	03/31/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52146
(2) Prep QC Batch: MP31989

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-14_20220324		
Lab Sample ID:	JD41762-52F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	47.6	3.0	ug/l	1	04/12/22	04/13/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52223
(2) Prep QC Batch: MP32253

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-11_20220324		
Lab Sample ID:	JD41762-53F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	73.0	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-16_20220324		
Lab Sample ID:	JD41762-55F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	68.3	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-EB-01_20220324		
Lab Sample ID:	JD41762-56F	**Date Sampled:**	03/24/22
Matrix:	AQ - Equip Blank Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	03/30/22	03/31/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52146
(2) Prep QC Batch: MP31989

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-17_20220324		
Lab Sample ID:	JD41762-57F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	48.6	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-20_20220324		
Lab Sample ID:	JD41762-58F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	102	3.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-04_20220324		
Lab Sample ID:	JD41762-59F	**Date Sampled:**	03/24/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/24/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	163	6.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-EB-02_20220325		
Lab Sample ID:	JD41762-81	**Date Sampled:**	03/25/22
Matrix:	AQ - Equipment Blank	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	< 3.0	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-23_20220325		
Lab Sample ID:	JD41762-84F	**Date Sampled:**	03/25/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	33.2	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-02_20220325		
Lab Sample ID:	JD41762-85F	**Date Sampled:**	03/25/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	124	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Not included in DV

SGS North America Inc.

Report of Analysis

Client Sample ID:	AOI7-PW-09_20220325		
Lab Sample ID:	JD41762-86F	**Date Sampled:**	03/25/22
Matrix:	AQ - Water Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic [a]	10.0	6.0	ug/l	1	04/08/22	04/09/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52201
(2) Prep QC Batch: MP32191

(a) Elevated sample detection limit due to limited volume.

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-27_20220325_A		
Lab Sample ID:	JD41762-87F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	11.0	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-09_20220325_A		
Lab Sample ID:	JD41762-88F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	10.7	3.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-24_20220325_A		
Lab Sample ID:	JD41762-89F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	32.7	3.0	ug/l	1	03/31/22	04/04/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52164
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Report of Analysis

Client Sample ID:	AOI7-PW-25_20220325_A		
Lab Sample ID:	JD41762-90F	**Date Sampled:**	03/25/22
Matrix:	AQ - Groundwater Filtered	**Date Received:**	03/25/22
		Percent Solids:	n/a
Project:	SANHPAFW: Marcus Hook, PA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Arsenic	178	6.0	ug/l	1	03/31/22	04/01/22	ND	SW846 6010D [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA52155
(2) Prep QC Batch: MP32014

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

SED

JD41762

VP-031422-240

SGS CHAIN OF CUSTODY

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

FED-EX Tracking #

Bottle Order Control #

SGS Quote # 2022 219

SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates

Street Address: 1015 Virginia Dr, Suite 100

City: Fort Washington, State: PA, Zip: 19034

Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com

Phone #: 603-415-6159, Fax #:

Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook

Street: 100 Green Street

City: Marcus Hook, State: PA 19061

Project #: 4862.02

Client Purchase Order #:

Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates

Street Address: 20 Foundry Street

City: Concord, State: NH, Zip: 03301

Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
1	AOI7-SED-25.20220322		03/22/22	13:15	CSS												1		Dissolved	D22
2	AOI7-SED-26-20220322			13:35	CSS												1		3 on hold	
3	AOI7-SED-10.20220322			10:40	CSS												1			
	~~AOI7-SED-07-20220322~~			~~10:10~~	~~CSS~~												~~1~~			
4	AOI7-SED-DUP-20220322			10:10	CSS												1			
	AOI7-SED-OC7-MS-20220322			10:10													1			
	AOI7-SED-OC7-MSD-20220322			10:10													1			
5	AOI7-SED-05-20220322			12:20													1		3 on hold	
6	AOI7-SED-DUP-FD-20220322			10:10													1			
7	AOI7-SED-04-20220322			08:40													1			
8	AOI7-SED-01.20220322			09:20													1			
9	AOI7-SED-02-20220322			12:10													1		3 on hold	
10	AOI7-SED-03-20220322			12:35													1		3 on hold	

Turnaround Time (Business days)

Std. 10 Business Days
10 Day RUSH
5 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

Commercial "A" (Level 1) — NYASP Category A
Commercial "B" (Level 2) — NYASP Category B
FULLT1 (Level 3+4) — State Forms
NJ Reduced — x REDT1 — X EDD Format SHA EQuIS
Commercial "C" — Other
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summery
NJ Reduced = Results + QC Summery + Partial Raw data

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

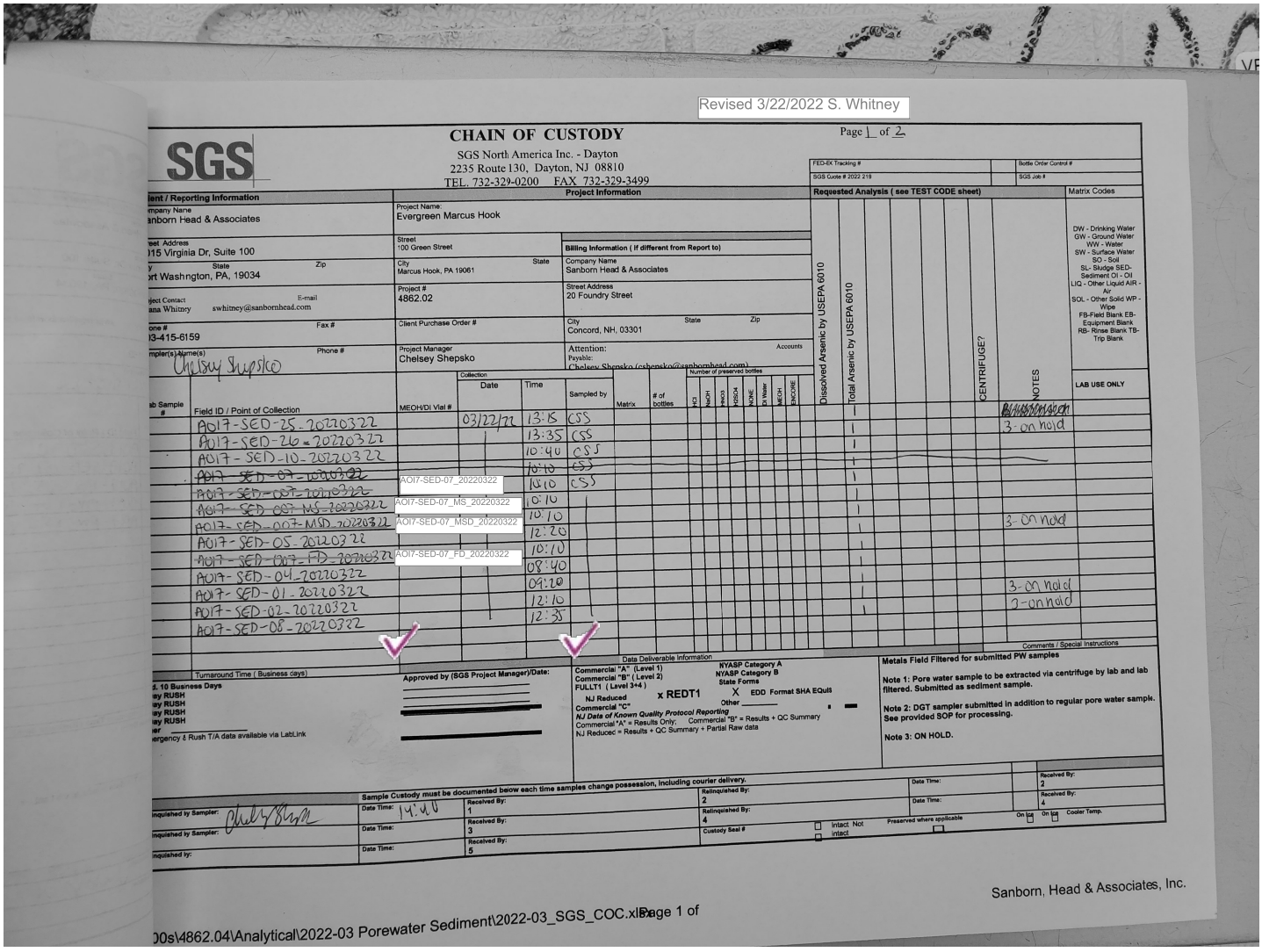
Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:46	Received By: 1	Relinquished By: 2	Date Time: 3/22/22 1732	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable: On Ice / On Ice; Cooler Temp: 3.8°C

Initial Assessment BB-3A

Label Verification

Refer to revised COC
for accurate Field IDs



Revised 3/22/2022 S. Whitney

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 215 Virginia Dr, Suite 100
City: Fort Washington, PA, 19034
Project Contact: Dana Whitney
E-mail: swhitney@sanbornhead.com
Phone #: 913-415-6159
Fax #:
Sampler(s) Name(s): Chelsey Shepsko

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061
State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301
State:
Zip:
Attention:
Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219:
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
	A017-SED-25-20220322		03/22/22	13:15	CSS															
	A017-SED-26-20220322			13:35	CSS														3-on hold	
	A017-SED-10-20220322			10:40	CSS															
	~~A017-SED-09-20220322~~			10:10	CSS															
	A017-SED-007-20220322	A017-SED-07_20220322		10:10																
	A017-SED-007-MS-20220322	A017-SED-07_MS_20220322		10:10																
	A017-SED-007-MSD-20220322	A017-SED-07_MSD_20220322		12:20															3-on hold	
	A017-SED-05-20220322			10:10																
	A017-SED-007-FD-20220322	A017-SED-07_FD_20220322		08:40																
	A017-SED-04-20220322			09:20																
	A017-SED-01-20220322			12:10															3-on hold	
	A017-SED-02-20220322			12:35															3-on hold	
	A017-SED-08-20220322																			

Turnaround Time (Business days)
10 Business Days
RUSH
RUSH
RUSH
RUSH
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reducec = Results + QC Summary + Partial Raw data
x REDT1
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA EQuIS
Other

Comments / Special Instructions
Metals Field Filtered for submitted PW samples
Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.
Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.
Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
	14:00	1	2		2
Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3	4		4
Relinquished by:	Date Time:	Received By:	Custody Seal #	Intact / Not intact	Preserved where applicable
		5			On Ice / Cooler Temp.

Sanborn, Head & Associates, Inc.

)0s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsPage 1 of

5.1 5

JD41762

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

FED-EX Tracking #
SGS Quote # 2022 219
Bottle Order Control #
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City / State / Zip: Fort Washington, PA, 19034
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA 19061
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord, NH, 03301
Attention: Accounts
Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by centrifuge	LAB USE ONLY
11	A017-SED-10.20220322		03/22/22	10:40	CDS											1	1		
12	A017-SED-07.20220322			10:10												1	1		
13	A017-PW-05.20220322			12:20														1	ON HOLD
14	A017-PW-007.20220322			10:10														1	
15	A017-PW-25_20220322			13:15														1	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Turnaround Time (Business days)

Data Deliverable Information

Comments / Special Instructions

Std. 10 Business Days
5 Day RUSH
4 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Commercial "A" (Level 1)
Commercial "B" (Level 2) X
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA EQuIS
Other

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 Chelsey Shepsko	14:40	1 [signature]	2 [signature]	3/22/22 1733	2 [signature]
3		3	4		4
5		5			

Custody Seal # ☐ Intact Not intact ☐ Preserved where applicable ☐ On Ice ☐ On Ice X Cooler Temp. 3 SCIP

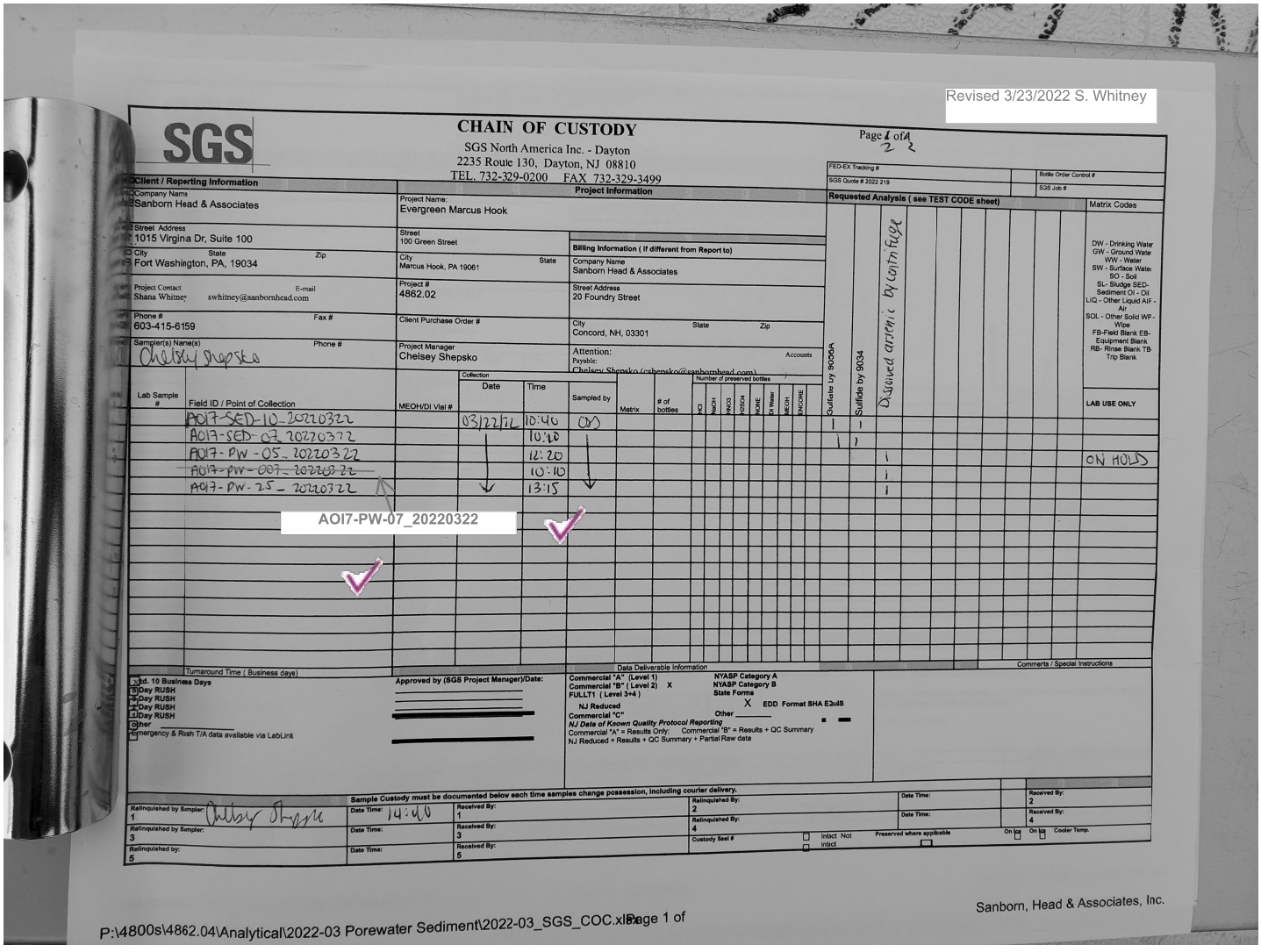
P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

Refer to revised COC
for accurate Field IDs

JD41762: Chain of Custody
Page 2 of 24

5.1
5



Revised 3/23/2022 S. Whitney

SGS

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of 2

Client / Reporting Information
Company Name: Sanborn Head & Associates
Street Address: 1015 Virgina Dr, Suite 100
City: Fort Washington, PA, 19034 State: Zip:
Project Contact: Shana Whitney E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159 Fax #:
Sampler(s) Name(s): Chelsey Shepsko Phone #:

Project Information
Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA 19061 State:
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, NH, 03301 State: Zip:
Attention:
Payable: Accounts
Chelsey Shepsko (cshepsko@sanbornhead.com)

FED-EX Tracking #:
SGS Quote # 2022 219
Bottle Order Control #:
SGS Job #:

Requested Analysis (see TEST CODE sheet)

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Sulfate by 9056A	Sulfide by 9034	Dissolved arsenic by Lumifuge	LAB USE ONLY
	AOI7-SED-10_20220322		03/22/22	10:40	CMS											1	1		
	AOI7-SED-07_20220322			10:20												1	1		
	AOI7-PW-05_20220322			12:20														1	ON HOLD
	AOI7-PW-007_20220322			10:10														1	
	AOI7-PW-25_20220322			13:15														1	

AOI7-PW-07_20220322

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment OI - Oil; LIQ - Other Liquid AIF - Air; SOL - Other Solid WF - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2) X
FULLT1 (Level 3+4)
NJ Reduced
Commercial "C"
NJ Date of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
X EDD Format SHA E2ul8
Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 14:40	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact Not intact	Preserved where applicable	On Ice	On Ice	Cooler Temp.

P:\4800s\4862.04\Analytical\2022-03 Porewater Sediment\2022-03_SGS_COC.xlsx Page 1 of

Sanborn, Head & Associates, Inc.

5.1.5

SGS Sample Receipt Summary

Job Number: JD41762 **Client:** SANBORN HEAD & ASSOCIATES, INC. **Project:** SANHPAFW: MARCUS HOOK, PA

Date / Time Received: 3/22/2022 5:33:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify)

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JD41762

Requested Date:	3/24/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/24/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-13

Dept:

TAT: 7

Change:

Please create new -F sample for lab filtered volume and place on HOL

AOI7-PW-05_20220322

==========

==========

Sample #: JD41762-14, -15

Dept:

TAT: 7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762: Chain of Custody

Page 6 of 24

Job Change Order: JD41762

Requested Date:	3/24/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/24/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-11, -12

Dept:

TAT: 7

Change:
Please move to -A job

==========

Above Changes Per: VP **Date/Time:** 3/24/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/25/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/25/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-29,-31

Dept:

TAT: 7

Change:
Please move to -A job

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/25/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

JD41762: Chain of Custody
Page 8 of 24

6w
SO

VP-031422-240

JD 41762

SGS CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 1 of

FED-EX Tracking #
Bottle Order Control #
SGS Quote # 2022 219
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Dr, Suite 100
City: Fort Washington, State: PA, Zip: 19034
Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com
Phone #: 603-415-6159, Fax #:
Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, State: PA, 19061
Project #: 4862.02
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (If different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord, State: NH, Zip: 03301
Attention: Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Dissolved Arsenic by USEPA 6010
Total Arsenic by USEPA 6010
CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB- Equipment Blank; RB- Rinse Blank TB- Trip Blank

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved bottles: HCl	MeOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	CENTRIFUGE?	NOTES	LAB USE ONLY
16F	AOI7-PW-16-20220323		3/23/22	07:50	CS	GW	1			1						1				AS
17F	AOI7-PW-11-20220323			12:15			1			1						1			3 on hold	D24
18	AOI7-PW-24-20220323			12:45			1			1		1				1		X	on hold	
19	AOI7-PW-24-FD-20220323			12:45			1			1		1				1		X	on hold	
20	AOI7-PW-24-MS-20220323			12:45			1			1		1				1		X	on hold	
21	AOI7-PW-24-MSD-20220323			12:45			1			1		1				1		X	on hold	
22	AOI7-PW-15-20220323			11:35			1			1		1				1		X	on hold	
23	AOI7-PW-21-20220323			13:10			1			1		1				1		X	on hold	
24	AOI7-PW-27-20220323			13:45			1			1		1				1		X	on hold	
25	AOI7-PW-13-20220323			08:10			1			1		1				1		X		
26	AOI7-PW-03-20220323			10:05			1			1		1				1		X	on hold	
27	AOI7-PW-19-20220323			09:00			1					1				1		X		
28	AOI7-SED-13-20220323			08:10		SO	1					1					1			
29	AOI7-SED-16-20220323			07:50		SO	1					1					1			
30	AOI7-SED-27-20220322		3/22/22	13:00		SO	1					1					1			

Turnaround Time (Business days)
Std. 10 Business Days
5 Day RUSH
4 Day RUSH
3 Day RUSH
2 Day RUSH
1 Day RUSH
Other
Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Field Assessment GC 2A
Label Verification

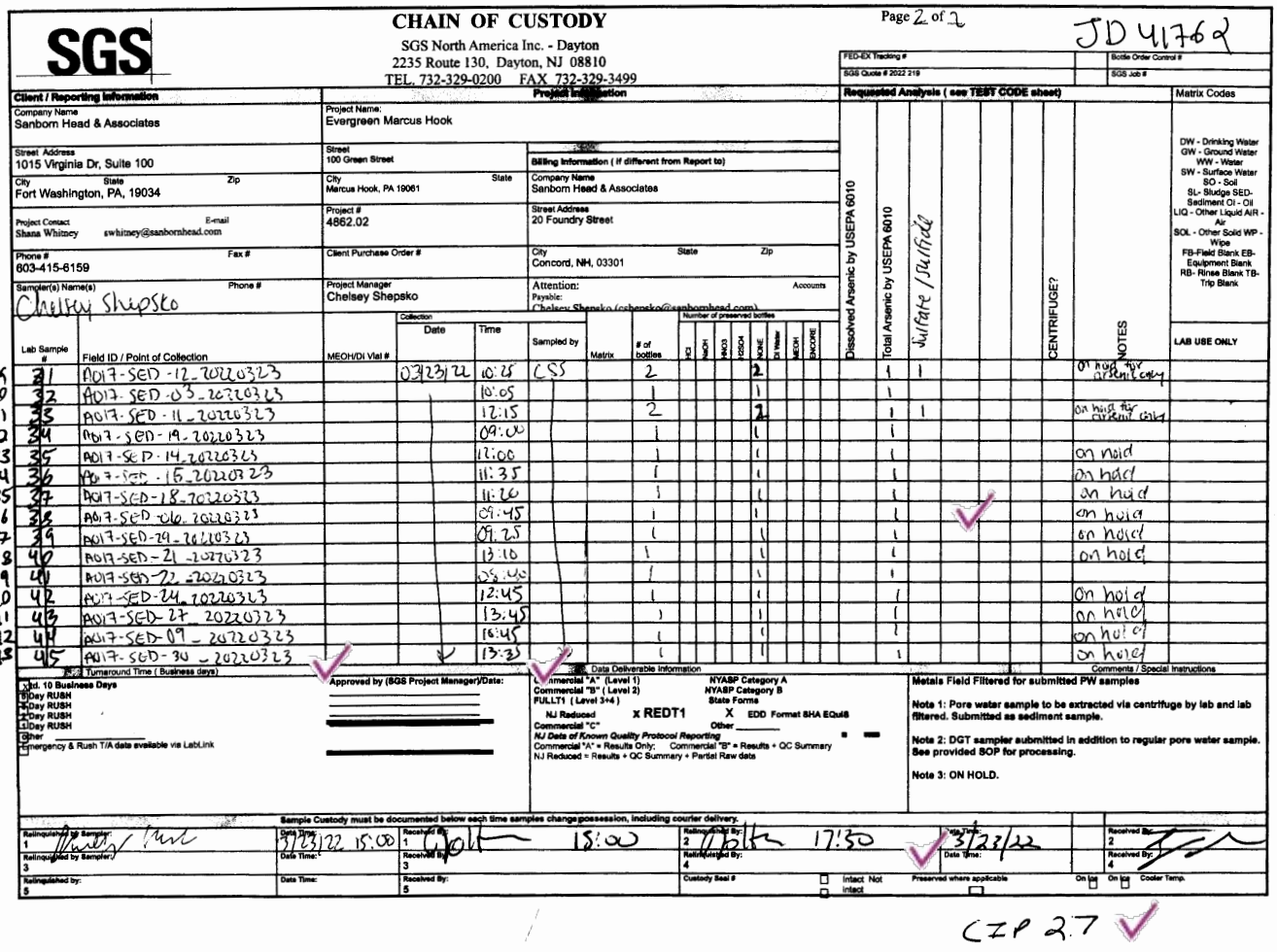
Data Deliverable Information
Commercial "A" (Level 1)
Commercial "B" (Level 2)
FULL1T (Level 3+4)
NJ Reduced
Commercial "C"
NJ Data of Known Quality Protocol Reporting
Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data
NYASP Category A
NYASP Category B
State Forms
x REDT1
X EDD Format SHA EQuIS
Other

Comments / Special Instructions
Metals Field Filtered for submitted PW samples
Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.
Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.
Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	3/23/22 15:00	1	2	17:35	2
3		3	4		4
5		5	Custody Seal #	Intact / Not Intact	Preserved where applicable: On Ice / Cooler Temp.

C70 2.7



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499

Page 2 of 2

JD 41762

FED-EX Tracking #

Bottle Order Control #

SGS Quote # 2022 219

SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates

Street Address: 1015 Virginia Dr, Suite 100

City: Fort Washington, State: PA, Zip: 19034

Project Contact: Shana Whitney, E-mail: swhitney@sanbornhead.com

Phone #: 603-415-6159, Fax #:

Sampler(s) Name(s): Chelsey Shepsko, Phone #:

Project Information

Project Name: Evergreen Marcus Hook

Street: 100 Green Street

City: Marcus Hook, State: PA 19061

Project #: 4862.02

Client Purchase Order #:

Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates

Street Address: 20 Foundry Street

City: Concord, State: NH, Zip: 03301

Attention:

Accounts Payable: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis (see TEST CODE sheet)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge SED- Sediment Oil - Oil; LIQ - Other Liquid AIR - Air; SOL - Other Solid WP - Wipe; FB-Field Blank EB-Equipment Blank; RB- Rinse Blank TB-Trip Blank

	Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	MeOH	NaOH	H2SO4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA 6010	Sulfate / Sulfide		CENTRIFUGE?	NOTES	LAB USE ONLY
29	31	AD17-SED-12_20220323		03/23/22	10:25	CSS		2					2					1	1				on hold for arsenic only	
30	32	AD17-SED-03_20220323			10:05			1					1					1						
31	33	AD17-SED-11_20220323			12:15			2					2					1	1				on hold for current cost	
32	34	AD17-SED-19_20220323			09:00			1					1					1						
33	35	AD17-SED-14_20220323			12:00			1					1					1					on hold	
34	36	AD17-SED-15_20220323			11:35			1					1					1					on hold	
35	37	AD17-SED-18_20220323			11:26			1					1					1					on hold	
36	38	AD17-SED-06_20220323			09:45			1					1					1					on hold	
37	39	AD17-SED-29_20220323			09:25			1					1					1					on hold	
38	40	AD17-SED-21_20220323			13:10			1					1					1					on hold	
39	41	AD17-SED-22_20220323			08:40			1					1					1						
40	42	AD17-SED-24_20220323			12:45			1					1					1					on hold	
41	43	AD17-SED-27_20220323			13:45			1					1					1					on hold	
42	44	AD17-SED-09_20220323			15:45			1					1					1					on hold	
43	45	AD17-SED-30_20220323			13:35			1					1					1					on hold	

Turnaround Time (Business days)

- Std. 10 Business Days
- 10Day RUSH
- 5Day RUSH
- 2Day RUSH
- 1Day RUSH
- Other
- Emergency & Rush T/A data available via LabLink

Approved by (SGS Project Manager)/Date:

Data Deliverable Information

- Commercial "A" (Level 1)
- Commercial "B" (Level 2)
- FULLT1 (Level 3+4)
- NJ Reduced
- x REDT1
- Commercial "C"
- NJ Data of Known Quality Protocol Reporting
- Commercial "A" = Results Only; Commercial "B" = Results + QC Summary
- NJ Reduced = Results + QC Summary + Partial Raw data
- NYASP Category A
- NYASP Category B
- State Forms
- X EDD Format SHA EQuIS
- Other

Comments / Special Instructions

Metals Field Filtered for submitted PW samples

Note 1: Pore water sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: DGT sampler submitted in addition to regular pore water sample. See provided SOP for processing.

Note 3: ON HOLD.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time: 3/23/22 15:00	Received By: 1	Relinquished By: 2	Date Time: 3/23/22 17:30	Received By: 2		
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4		
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Intact / Not intact	Preserved where applicable	On Ice	Cooler Temp.

CIP 2.7

SGS

EHSA-QAC-0023-04-FORM-Standard COC

SO
GW
EB

CHAIN OF CUSTODY

Reference JD41762

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 1 of 2

FED-EX Tracking #
Bottle Order Control # VP-031422-240
SGS Quote #
SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact / E-mail: Shana Whitney swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko
Phone #: 732-830-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA 19061
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord, NH, 03301
Attention: Chelsey Shepsko (cshepsko@sanborn head.com)

Requested Analysis

Dissolved Arsenic by USEPA 6010
Total Arsenic by USEPA + 6010
ON HOLD?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	Dissolved Arsenic by USEPA 6010	Total Arsenic by USEPA + 6010	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
44	A017-SED-23-20220324		03/24/22	7:50	CSS	G		SO	1					1					1	X		1310
45	A017-SED-20-20220324			8:15				SO	1					1					1	X		A5
46	A017-SED-17-20220324			8:35				SO	1					1					1	X		
47	A017-PW-17-20220324			8:35				GW	2			1		1				1		X	X	
48	A017-PW-13-20220324			11:20					1			1						1				
49	A017-PW-20-20220324			8:15					2			1		1				1		X	X	
50	A017-PW-20-FD-20220324			8:15					1			1						1		X		
51	A017-PW-04-20220324			10:15					2			1		1				1			X	Filter in lab
52	A017-PW-14-20220324			11:45					1			1						1		X		Filter in lab
53	A017-PW-11-20220324			13:30					1					1						X	X	
54	A017-PW-23-20220324			7:50					1					1						X	X	
55	A017-PW-16-20220324			13:45					1					1							X	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

VERIFIED 3B SM
Verified By:

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered submitted as sediment sample.

Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

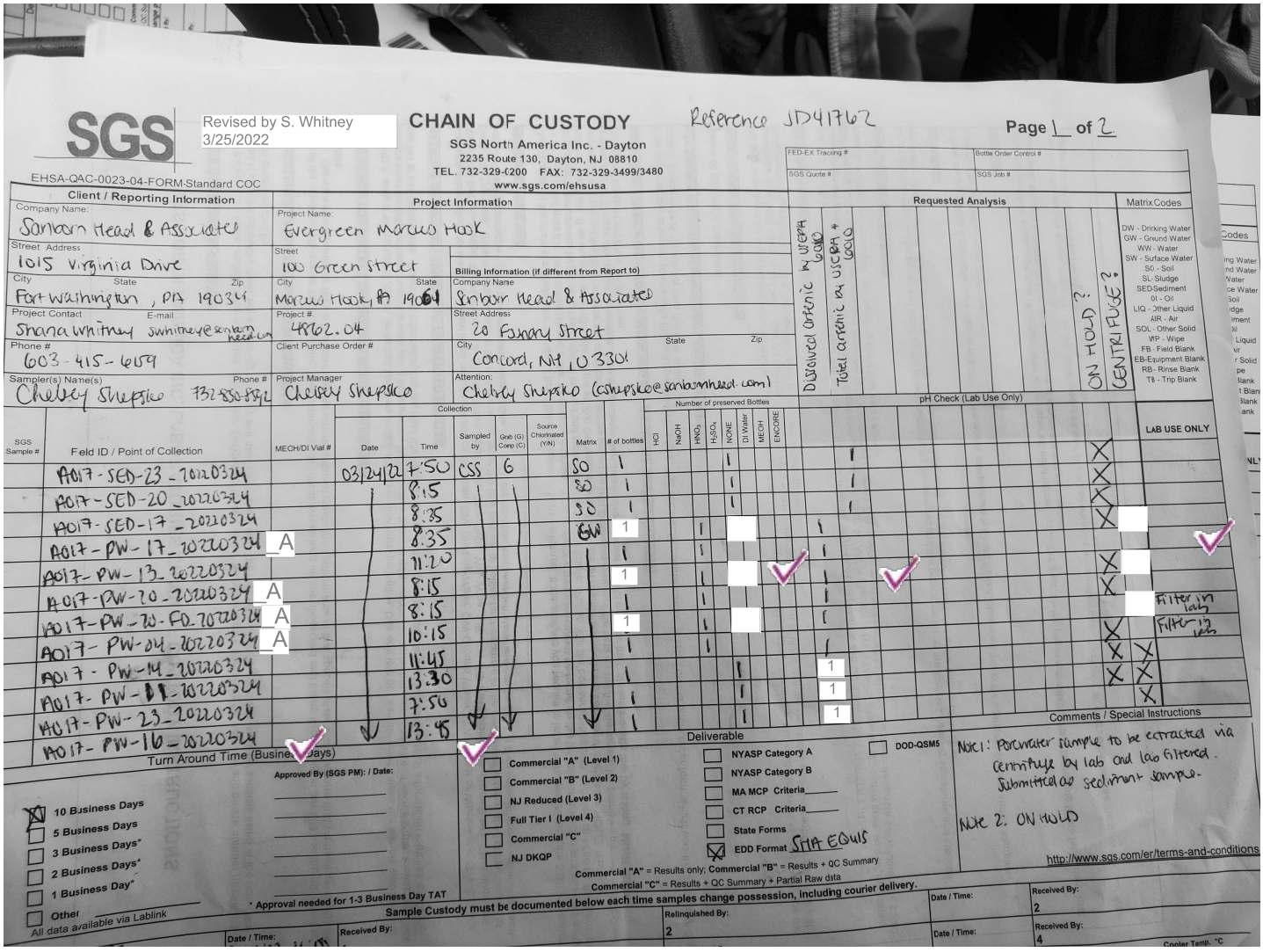
Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1 [signature]	3/24/22 16:00	1 [signature]	2 [signature]	3/24/22 1831	2 Jeema Patel
3		3	4		4
5		5	Custody Seal #	Therm ID:	On Ice / Cooler Temp. °C

☐ Intact ☐ Not intact ☐ Absent ☐ See Sample Receipt Summary ☒ 3.2 CIP

Refer to revised COC for accurate Field IDs & preservation/centrifuge direction

5.1
5

JD41762: Chain of Custody
Page 11 of 24



SGS

Revised by S. Whitney
3/25/2022

CHAIN OF CUSTODY

Reference JD41762

Page 1 of 2

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #
Bottle Order Control #
SGS Quote #
SGS Job #

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact: Shana Whitney E-mail: swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA 19061
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord, NH, 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by USEPA 6010
Total arsenic by USEPA 6010
ON HOLD?
CENTRIFUGE?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED - Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB - Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MECH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE													LAB USE ONLY
	A017-SED-23-20220324		03/24/22	7:50	CSS	G		SO	1					1						1								X		
	A017-SED-20-20220324			8:15				SO	1					1						1								X		
	A017-SED-17-20220324			8:35				SO	1					1						1								X		
	A017-PW-17-20220324	A		8:35				GW	1			1							1									X		
	A017-PW-13-20220324			11:20					1			1							1											
	A017-PW-20-20220324	A		8:15					1			1							1									X		
	A017-PW-20-FD-20220324	A		8:15					1			1							1									X		Filter in lab
	A017-PW-04-20220324	A		10:15					1			1							1									X		Filter in lab
	A017-PW-14-20220324			11:45					1			1							1									X	X	
	A017-PW-11-20220324			13:30					1						1				1									X	X	
	A017-PW-23-20220324			7:50					1						1				1										X	
	A017-PW-16-20220324			13:45					1						1				1											

Turn Around Time (Business Days)

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

Approved By (SGS PM): / Date:

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater sample to be extracted via centrifuge by lab and lab filtered. Submitted as sediment sample.

Note 2: ON HOLD

http://www.sgs.com/er/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Date / Time: | Received By: | Relinquished By: 2 | Date / Time: | Received By: 2 | Date / Time: | Received By: 4 | Cooler Temp. °C

Reference JD41762

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #: —
Bottle Order Control #: —
SGS Quote #: —
SGS Job #: JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Sharla Whitney E-mail: swhitney@sanborn.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-3592

Project Information

Project Name: Evergreen Marcus Hook
Street: 10 Green Street
City: Marcus Hook State: PA
Project #: 48862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanborn.com)

Requested Analysis

Dissolved Arsenic by 6010

ON HOLD?

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	LAB USE ONLY
56	AOI7-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [X] EDD Format SHAEQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted on a DGT sampler. See provided SOP for processing

Note 2: ON HOLD

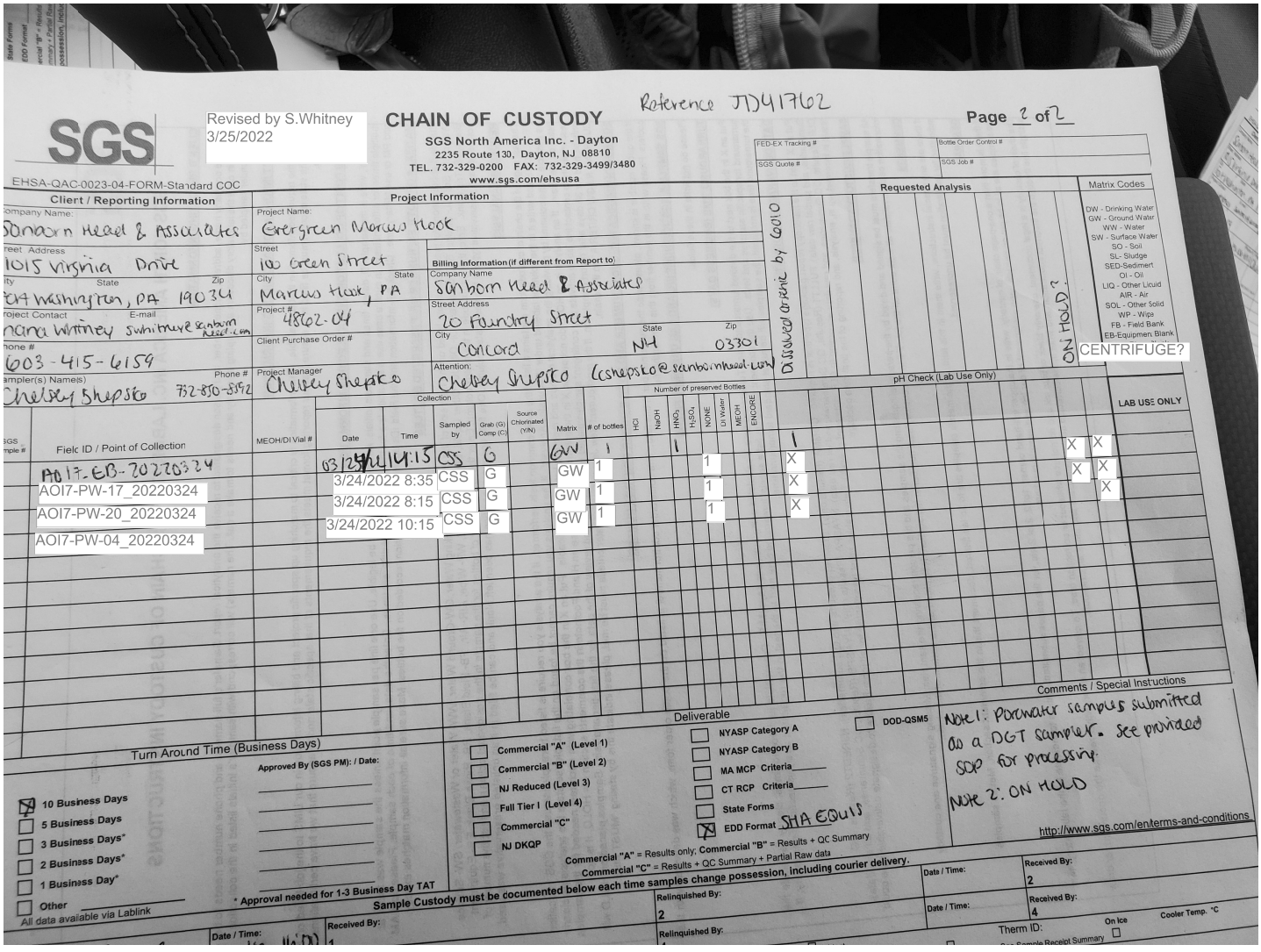
http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1	Chelsey Shepsko	3/24/22 16:00	1	2	3/24/22 1821	2 Jeemit Patel
3			3	4		4
5			5	Custody Seal #	Intact / Not intact / Absent	Therm ID: / See Sample Receipt Summary	On Ice: Y	Cooler Temp.: 3.2 C/P

Does not match Sample Summary = AOI7-EB-01_20220324 Refer to Job Change Order, OK

Reference JD41762



Revised by S.Whitney
3/25/2022

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

Page 2 of 2

FED-EX Tracking #
Bottle Order Control #
SGS Quote #
SGS Job #

EHSA-QAC-0023-04-FORM-Standard COC

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City / State / Zip: Fort Washington, PA 19034
Project Contact / E-mail: Nana Whitney swhitney@sanborn head.com
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko
Phone #: 732-850-8592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City / State: Marcus Hook, PA
Project #: 4862-04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)
Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City / State / Zip: Concord NH 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by 6010

ON HOLD?

CENTRIFUGE?

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Bank; EB-Equipment Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)			LAB USE ONLY
	AOI7-EB-20220324		03/24/22	14:15	CSS	G		GW	1			1						1	X	X	
	AOI7-PW-17_20220324		3/24/2022 8:35		CSS	G		GW	1					1				X	X	X	
	AOI7-PW-20_20220324		3/24/2022 8:15		CSS	G		GW	1					1				X		X	
	AOI7-PW-04_20220324		3/24/2022 10:15		CSS	G		GW	1					1				X			

Turn Around Time (Business Days)

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink

Approved By (SGS PM): / Date:

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria____
- [ ] CT RCP Criteria____
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Note 1: Porewater samples submitted as a DGT sampler. See provided SOP for processing.
Note 2: ON HOLD

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Date / Time: | Received By: 1 | Relinquished By: 2 | Date / Time: | Received By: 2 | Date / Time: | Received By: 4 | Therm ID: | On Ice | Cooler Temp. °C | See Sample Receipt Summary

JD41762: Chain of Custody
Page 14 of 24

GW

Reference JD41762

PIN

Page 1 of 3

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #

Bottle Order Control # VP-031482-240

SGS Quote #

SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shana Whitney E-mail:
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shapsko Phone #: 732-580-8582

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook, PA State:
Project #: 48807.04
Client Purchase Order #:
Project Manager: Chelsey Shapsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shapsko, cshapsko@sanbornhead.com

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	DGT Samples?	ON HOLD?	CENTRIFUGE?	LAB USE ONLY
60	A017-PW-27-DGT-20220324		03/24/22	14:05	CSS	G		GW	1					1					1	X	X		B10
61	A017-PW-16-DGT-20220324		03/24/22	09:05					1					1					1	X	X		A35
62	A017-PW-19-DGT-20220324		03/24/22	09:07					1					1					1	X	X		G-FIR
63	A017-PW-13-DGT-20220324		03/24/22	09:00					1					1					1	X			
64	A017-PW-15-DGT-20220324		03/24/22	11:50					1					1					1	X	X		
65	A017-PW-07-DGT-20220323		03/23/22	11:00					1					1					1	X			
66	A017-PW-05-DGT-20220323		03/23/22	12:25					1					1					1	X	X		
67	A017-PW-25-DGT-20220323		03/23/22	13:25					1					1					1	X			
68	A017-PW-11-DGT-20220324		03/24/22	12:30					1					1					1	X	X		
69	A017-PW-21-DGT-20220324		03/24/22	13:55					1					1					1	X	X		
70	A017-PW-03-DGT-20220324		03/24/22	10:20					1					1					1	X	X		
71	A017-PW-24-DGT-20220324		03/24/22	14:00					1					1					1	X	X		

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

Initial Assessment VG 2A

Label Verification:

All data available via Lablink

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [ ] EDD Format SMA EGUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished By:	Date / Time:	Received By:
1	Chelsey Shapsko	03/25/22 14:15	1 James Russ
2			2 Keith Mordell
3			3
4			4
5			5

Custody Seal # ☐ Intact ☐ Not intact | ☐ Absent

Therm ID: See Sample Receipt Summary

☐ On Ice

Cooler Temp. °C: 3.8

Not Samples of interest

Reference JD41762

CHAIN OF CUSTODY

SGS

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking # | Bottle Order Control #
SGS Quote # | SGS Job # JD41762

Client / Reporting Information

Company Name: Sunborn Head & Associates
Street Address: 1015 Virginia Drive
City: Fort Washington State: PA Zip: 19034
Project Contact: Shona Whitney E-mail:
Phone #: 603-415-6159
Sampler(s) Name(s): Chelsey Shepsko Phone #: 732-850-8892

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City: Marcus Hook State: PA
Project #: 48621.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sunborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko, cshepsko@sunbornhead.com

Requested Analysis

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB - Field Blank; EB-Equipment Blank; RB - Rinse Blank; TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	Total arsenic by 6010	DOT sample?	On Hold?	CENTRIFUGE?	LAB USE ONLY
72	AOI7-PW-23-DGT-20220325		03/25/22	9:55	CSS	G		GW	1					1				1			X	X		
73	AOI7-PW-20-DGT-20220325			9:55					1					1				1			X	X		
74	AOI7-PW-17-DGT-20220325			10:02					1					1				1			X	X		
75	AOI7-PW-25-DGT-20220325			9:50					1					1				1			X			
76	AOI7-PW-08-DGT-20220325			10:05					1					1				1			X	X		
77	AOI7-PW-09-DGT-20220325			10:03					1					1				1			X	X		
78	AOI7-PW-02-DGT-20220325			9:10					1					1				1			X	X		
79	AOI7-PW-01-DGT-20220325			10:10					1					1				1			X			
80	AOI7-PW-04-DGT-20220325			10:07					1					1				1			X			
81	AOI7-EB-02-20220325			11:50					1				1			✓		1	1	✓				

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [X] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Lablink
* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria_____
- [ ] CT RCP Criteria_____
- [ ] State Forms
- [ ] EDD Format SHA EQuIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date / Time:	Received By:	Relinquished By:	Date / Time:	Received By:
1		03/25/22 1425	1	2		2
3			3	4		4
5			5			

Custody Seal # | [ ] Intact [ ] Not intact | [ ] Absent
Therm ID: | On Ice | Cooler Temp. °C | See Sample Receipt Summary

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking # | Bottle Order Control #

SGS Quote # | SGS Job # JD41762

Client / Reporting Information

Company Name: Sanborn Head & Associates
Street Address: 1015 Virginia Drive
City State Zip: Fort Washington, PA 19034
Project Contact E-mail: Shang Whitney swhitney@sanbornhead.com
Phone #: 603 415-6159
Sampler(s) Name(s) Phone #: Chelsey Shepsko 732-850-5592

Project Information

Project Name: Evergreen Marcus Hook
Street: 100 Green Street
City State: Marcus Hook, PA
Project #: 4862.04
Client Purchase Order #:
Project Manager: Chelsey Shepsko

Billing Information (if different from Report to)

Company Name: Sanborn Head & Associates
Street Address: 20 Foundry Street
City: Concord State: NH Zip: 03301
Attention: Chelsey Shepsko (cshepsko@sanbornhead.com)

Requested Analysis

Dissolved arsenic by 6010
ON HOLD
CENTRIFUGE

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB - Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB - Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Grab (G) Comp (C)	Source Chlorinated (Y/N)	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO_3	H_2SO_4	NONE	DI Water	MEOH	ENCORE	pH Check (Lab Use Only)	Dissolved arsenic by 6010	ON HOLD	CENTRIFUGE	LAB USE ONLY
82	AOI7-PW-27_20220325		03/25/22	07:50	CSS	G		GW	1					1				1		X	X	
83	AOI7-PW-28_20220325			09:20					1					1				1		X	X	
84	AOI7-PW-23_20220325			09:40					2					2				2		X	X	
85	AOI7-PW-02_20220325			09:00					2					2				2		X	X	
86	AOI7-PW-09_20220325			08:50					2					2				2		X	X	
87	AOI7-PW-27_20220325_A			07:50					1				1					1		X		
88	AOI7-PW-09_20220325_A			08:50					1				1					1		X		
89	AOI7-PW-24_20220325_A			11:15					1				1					1		X		
90	AOI7-PW-25_20220325_A			10:50					1				1					1				

Turn Around Time (Business Days)

Approved By (SGS PM): / Date:

- [x] 10 Business Days
- [ ] 5 Business Days
- [ ] 3 Business Days*
- [ ] 2 Business Days*
- [ ] 1 Business Day*
- [ ] Other

All data available via Labline

* Approval needed for 1-3 Business Day TAT

Deliverable

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] NJ Reduced (Level 3)
- [ ] Full Tier I (Level 4)
- [ ] Commercial "C"
- [ ] NJ DKQP
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] MA MCP Criteria
- [ ] CT RCP Criteria
- [ ] State Forms
- [x] EDD Format SHA EQUIS
- [ ] DOD-QSM5

Commercial "A" = Results only; Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC Summary + Partial Raw data

Comments / Special Instructions

http://www.sgs.com/en/terms-and-conditions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished By:	Date / Time:	Received By:
1		03/25/22 14:05	1
2			2
3			3
4			4
5			5

Custody Seal # | Intact | Not intact | Absent

Therm ID: | On Ice | Cooler Temp. °C | See Sample Receipt Summary

Job Change Order: JD41762

Requested Date:	3/28/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/28/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

Sample #: JD41762-56

Change:
Revise ID to AOI7-EB-01_20220324

Dept:

TAT: 7

AOI7-EB_20220324

Above Changes Per: Shana Whitney **Date/Time:** 3/28/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-23, -25, -59
Dept:	
TAT:	7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF and AS(6010)

==========

Above Changes Per: VP **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-17F,-47F,-49F,-50F,-52F,-87F-88F,-89F
Change: Off HOLD for AS
Dept:
TAT: 7

==========
==========

Sample #: JD41762-13
Change: Off HOLD for CENTRIFUGE
Dept:
TAT: 7

AOI7-PW-05_20220322

==========
==========

Sample #: JD41762-13F
Change: Off HOLD for FILTERMET, AS
Dept:
TAT: 7

AOI7-PW-05_20220322

==========
==========

Sample #: JD41762-60,-64,-66,-68 to -74, -76 to-78
Change: Off HOLD for SPECIALPREP
Dept:
TAT: 7

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	3/29/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	3/29/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-18,-18D,-18S,-19 to-22,-24	**Change:**
Dept:		Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS
TAT:	7	

==========

==========

Sample #:	JD41762-53,-55,-57,-58,-84,-85,-86	**Change:**
Dept:		Off HOLD for CENTRIFUGE. Create new -F sample for lab filtered volu Log in for FILTERMET, AS
TAT:	7	

==========

Above Changes Per: Shana Whitney **Date/Time:** 3/29/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	4/11/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/11/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #: JD41762-5, -33, -46

Dept:

TAT: 7

Change:
Off HOLD for SOL104, AS

==========

Above Changes Per: Shana Whitney **Date/Time:** 4/11/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	4/14/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/14/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-60 to -80
Dept:	
TAT:	7

Change:

Please create new -F sample for lab filtered volume. Log in for FILTEF and AS

==========

Above Changes Per: VP **Date/Time:** 4/14/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD41762

Requested Date:	4/20/2022	**Received Date:**	3/22/2022
Account Name:	Sunoco/Evergreen	**Due Date:**	4/20/2022
Project Description:	SANHPAFW: Marcus Hook, PA	**Deliverable:**	REDT2
C/O Initiated By:	VICKYP **PM:** VP	**TAT (Days):**	7

==========

Sample #:	JD41762-60 to -80, -60F to -80F	**Change:**	Please move to the separate job
Dept:			
TAT:	7		

==========

Above Changes Per: Shana Whitney **Date/Time:** 4/20/2022

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-1	Collected: 22-MAR-22 13:15 By: CSS AOI7-SED-25_20220322		Received: 22-MAR-22		By: JK	
JD41762-1	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-1	SW846 6010D	25-MAR-22 09:00	ND	24-MAR-22	SF	AS
JD41762-3	Collected: 22-MAR-22 10:40 By: CSS AOI7-SED-10_20220322		Received: 22-MAR-22		By: JK	
JD41762-3	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-3	SW846 6010D	25-MAR-22 09:05	ND	24-MAR-22	SF	AS
JD41762-4	Collected: 22-MAR-22 10:10 By: CSS AOI7-SED-07_20220322		Received: 22-MAR-22		By: JK	
JD41762-4	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-4	SW846 6010D	25-MAR-22 08:50	ND	24-MAR-22	SF	AS
JD41762-5	Collected: 22-MAR-22 12:20 By: CSS AOI7-SED-05_20220322		Received: 22-MAR-22		By: JK	
JD41762-5	SM2540 G 18TH ED MOD	11-APR-22 15:49	BG			SOL104
JD41762-5	SW846 6010D	15-APR-22 13:41	ND	14-APR-22	SF	AS
JD41762-6	Collected: 22-MAR-22 10:10 By: CSS AOI7-SED-07_FD_20220322		Received: 22-MAR-22		By: JK	
JD41762-6	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-6	SW846 6010D	25-MAR-22 09:10	ND	24-MAR-22	SF	AS
JD41762-7	Collected: 22-MAR-22 08:40 By: CSS AOI7-SED-04_20220322		Received: 22-MAR-22		By: JK	
JD41762-7	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104
JD41762-7	SW846 6010D	25-MAR-22 09:25	ND	24-MAR-22	SF	AS
JD41762-8	Collected: 22-MAR-22 09:20 By: CSS AOI7-SED-01_20220322		Received: 22-MAR-22		By: JK	
JD41762-8	SM2540 G 18TH ED MOD	24-MAR-22 16:27	BG			SOL104

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-8	SW846 6010D	25-MAR-22 09:30	ND	24-MAR-22	SF	AS
JD41762-26	Collected: 23-MAR-22 08:10 By: CSS AOI7-SED-13_20220323		Received: 23-MAR-22 By: JK			
JD41762-26	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-26	SW846 6010D	29-MAR-22 09:34	ND	28-MAR-22	SF	AS
JD41762-27	Collected: 23-MAR-22 07:50 By: CSS AOI7-SED-16_20220323		Received: 23-MAR-22 By: JK			
JD41762-27	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-27	SW846 6010D	29-MAR-22 16:39	ND	28-MAR-22	SF	AS
JD41762-28	Collected: 22-MAR-22 13:00 By: CSS AOI7-SED-28_20220322		Received: 23-MAR-22 By: JK			
JD41762-28	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-28	SW846 6010D	29-MAR-22 09:54	ND	28-MAR-22	SF	AS
JD41762-30	Collected: 23-MAR-22 10:05 By: CSS AOI7-SED-03_20220323		Received: 23-MAR-22 By: JK			
JD41762-30	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-30	SW846 6010D	29-MAR-22 09:59	ND	28-MAR-22	SF	AS
JD41762-32	Collected: 23-MAR-22 09:00 By: CSS AOI7-SED-19_20220323		Received: 23-MAR-22 By: JK			
JD41762-32	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-32	SW846 6010D	29-MAR-22 10:04	ND	28-MAR-22	SF	AS
JD41762-33	Collected: 23-MAR-22 12:00 By: CSS AOI7-SED-14_20220323		Received: 23-MAR-22 By: JK			
JD41762-33	SM2540 G 18TH ED MOD	13-APR-22 15:49	BG			SOL104
JD41762-33	SW846 6010D	14-APR-22 10:51	ND	13-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-39	Collected: 23-MAR-22 08:40 By: CSS AOI7-SED-22_20220323		Received: 23-MAR-22 By: JK			
JD41762-39	SM2540 G 18TH ED MOD	27-MAR-22 17:12	BG			SOL104
JD41762-39	SW846 6010D	29-MAR-22 10:09	ND	28-MAR-22	SF	AS
JD41762-46	Collected: 24-MAR-22 08:35 By: CSS AOI7-SED-17_20220324		Received: 24-MAR-22 By: JP			
JD41762-46	SM2540 G 18TH ED MOD	12-APR-22 15:49	BG			SOL104
JD41762-46	SW846 6010D	14-APR-22 10:56	ND	13-APR-22	AK	AS
JD41762-81	Collected: 25-MAR-22 11:50 By: CSS AOI7-EB-02_20220325		Received: 25-MAR-22 By: KG			
JD41762-81	SW846 6010D	01-APR-22 09:18	ND	31-MAR-22	SF	AS
JD41762-13F	Collected: 22-MAR-22 12:20 By: CSS AOI7-PW-05_20220322		Received: 22-MAR-22 By: JK			
JD41762-13F	SW846 6010D	11-APR-22 08:17	ND	08-APR-22	AK	AS
JD41762-14F	Collected: 22-MAR-22 10:10 By: CSS AOI7-PW-07_20220322		Received: 22-MAR-22 By: JK			
JD41762-14F	SW846 6010D	29-MAR-22 11:05	ND	26-MAR-22	SF	AS
JD41762-15F	Collected: 22-MAR-22 13:15 By: CSS AOI7-PW-25_20220322		Received: 22-MAR-22 By: JK			
JD41762-15F	SW846 6010D	29-MAR-22 11:10	ND	26-MAR-22	SF	AS
JD41762-16F	Collected: 23-MAR-22 07:50 By: CSS AOI7-PW-16_20220323		Received: 23-MAR-22 By: JK			
JD41762-16F	SW846 6010D	29-MAR-22 10:54	ND	26-MAR-22	SF	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-17K	Collected: 23-MAR-22 12:15 By: CSS AOI7-PW-11_20220323			Received: 23-MAR-22	By: JK	
JD41762-17S	SW846 6010D	01-APR-22 09:08	ND	31-MAR-22	SF	AS
JD41762-18K	Collected: 23-MAR-22 12:45 By: CSS AOI7-PW-24_20220323			Received: 23-MAR-22	By: JK	
JD41762-18S	SW846 6010D	09-APR-22 07:53	ND	08-APR-22	AK	AS
JD41762-19K	Collected: 23-MAR-22 12:45 By: CSS AOI7-PW-24_FD_20220323			Received: 23-MAR-22	By: JK	
JD41762-19S	SW846 6010D	09-APR-22 08:09	ND	08-APR-22	AK	AS
JD41762-20K	Collected: 23-MAR-22 11:35 By: CSS AOI7-PW-15_20220323			Received: 23-MAR-22	By: JK	
JD41762-20S	SW846 6010D	11-APR-22 08:22	ND	08-APR-22	AK	AS
JD41762-21K	Collected: 23-MAR-22 13:10 By: CSS AOI7-PW-21_20220323			Received: 23-MAR-22	By: JK	
JD41762-21S	SW846 6010D	11-APR-22 08:27	ND	08-APR-22	AK	AS
JD41762-22K	Collected: 23-MAR-22 13:45 By: CSS AOI7-PW-27_20220323			Received: 23-MAR-22	By: JK	
JD41762-22S	SW846 6010D	09-APR-22 08:35	ND	08-APR-22	AK	AS
JD41762-23K	Collected: 23-MAR-22 08:10 By: CSS AOI7-PW-13_20220323			Received: 23-MAR-22	By: JK	
JD41762-23S	SW846 6010D	04-APR-22 10:48	ND	31-MAR-22	SF	AS
JD41762-24K	Collected: 23-MAR-22 10:05 By: CSS AOI7-PW-03_20220323			Received: 23-MAR-22	By: JK	
JD41762-24S	SW846 6010D	09-APR-22 08:40	ND	08-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-25K	Collected: 23-MAR-22 09:00 By: CSS AOI7-PW-19_20220323		Received: 23-MAR-22 By: JK			
JD41762-25I	SW846 6010D	01-APR-22 09:28	ND	31-MAR-22	SF	AS
JD41762-47K	Collected: 24-MAR-22 08:35 By: CSS AOI7-PW-17_20220324_A		Received: 24-MAR-22 By: JP			
JD41762-47I	SW846 6010D	01-APR-22 11:05	ND	31-MAR-22	SF	AS
JD41762-48K	Collected: 24-MAR-22 11:20 By: CSS AOI7-PW-13_20220324		Received: 24-MAR-22 By: JP			
JD41762-48I	SW846 6010D	31-MAR-22 08:12	ND	30-MAR-22	AK	AS
JD41762-49K	Collected: 24-MAR-22 08:15 By: CSS AOI7-PW-20_20220324_A		Received: 24-MAR-22 By: JP			
JD41762-49I	SW846 6010D	01-APR-22 09:54	ND	31-MAR-22	SF	AS
JD41762-50K	Collected: 24-MAR-22 08:15 By: CSS AOI7-PW-20_FD_20220324_A		Received: 24-MAR-22 By: JP			
JD41762-50I	SW846 6010D	09-APR-22 08:45	ND	08-APR-22	AK	AS
JD41762-51K	Collected: 24-MAR-22 10:15 By: CSS AOI7-PW-04_20220324_A		Received: 24-MAR-22 By: JP			
JD41762-51I	SW846 6010D	31-MAR-22 08:22	ND	30-MAR-22	AK	AS
JD41762-52K	Collected: 24-MAR-22 11:45 By: CSS AOI7-PW-14_20220324		Received: 24-MAR-22 By: JP			
JD41762-52I	SW846 6010D	13-APR-22 12:16	ND	12-APR-22	SF	AS
JD41762-53K	Collected: 24-MAR-22 13:30 By: CSS AOI7-PW-11_20220324		Received: 24-MAR-22 By: JP			
JD41762-53I	SW846 6010D	09-APR-22 08:50	ND	08-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-55F	Collected: 24-MAR-22 13:45 By: CSS AOI7-PW-16_20220324		Received: 24-MAR-22 By: JP			
JD41762-55I	SW846 6010D	09-APR-22 08:55	ND	08-APR-22	AK	AS
JD41762-56F	Collected: 24-MAR-22 14:15 By: CSS AOI7-EB-01_20220324		Received: 24-MAR-22 By: JP			
JD41762-56I	SW846 6010D	31-MAR-22 08:27	ND	30-MAR-22	AK	AS
JD41762-57F	Collected: 24-MAR-22 08:35 By: CSS AOI7-PW-17_20220324		Received: 24-MAR-22 By: KG			
JD41762-57I	SW846 6010D	09-APR-22 09:01	ND	08-APR-22	AK	AS
JD41762-58F	Collected: 24-MAR-22 08:15 By: CSS AOI7-PW-20_20220324		Received: 24-MAR-22 By: KG			
JD41762-58I	SW846 6010D	09-APR-22 09:06	ND	08-APR-22	AK	AS
JD41762-59F	Collected: 24-MAR-22 10:15 By: CSS AOI7-PW-04_20220324		Received: 24-MAR-22 By: KG			
JD41762-59I	SW846 6010D	01-APR-22 09:59	ND	31-MAR-22	SF	AS
JD41762-84F	Collected: 25-MAR-22 09:40 By: CSS AOI7-PW-23_20220325		Received: 25-MAR-22 By: KG			
JD41762-84I	SW846 6010D	09-APR-22 09:11	ND	08-APR-22	AK	AS
JD41762-85F	Collected: 25-MAR-22 09:00 By: CSS AOI7-PW-02_20220325		Received: 25-MAR-22 By: KG			
JD41762-85I	SW846 6010D	09-APR-22 09:31	ND	08-APR-22	AK	AS
JD41762-86F	Collected: 25-MAR-22 08:50 By: CSS AOI7-PW-09_20220325		Received: 25-MAR-22 By: KG			
JD41762-86I	SW846 6010D	09-APR-22 09:37	ND	08-APR-22	AK	AS

Internal Sample Tracking Chronicle

Sunoco/Evergreen

Job No: JD41762

SANHPAFW: Marcus Hook, PA
Project No: 4862.02

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD41762-87K	Collected: 25-MAR-22 07:50 By: CSS AOI7-PW-27_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-87L	SW846 6010D	01-APR-22 10:04	ND	31-MAR-22	SF	AS
JD41762-88K	Collected: 25-MAR-22 08:50 By: CSS AOI7-PW-09_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-88L	SW846 6010D	01-APR-22 10:09	ND	31-MAR-22	SF	AS
JD41762-89K	Collected: 25-MAR-22 11:15 By: CSS AOI7-PW-24_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-89L	SW846 6010D	04-APR-22 10:53	ND	31-MAR-22	SF	AS
JD41762-90K	Collected: 25-MAR-22 10:50 By: CSS AOI7-PW-25_20220325_A			Received: 25-MAR-22	By: KG	
JD41762-90L	SW846 6010D	01-APR-22 10:19	ND	31-MAR-22	SF	AS

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-1.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-1.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-1.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-1.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-1.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-1.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-1.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-1.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-1.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-1.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-1.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-1.1
JD41762-1.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-1.1
JD41762-1.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-2.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-3.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-3.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-3.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-3.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-3.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-3.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-3.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-3.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-3.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-3.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-3.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-3.1
JD41762-3.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-3.1
JD41762-3.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-4.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-4.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-4.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-4.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-4.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-4.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-4.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-4.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-4.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-4.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-4.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-4.1
JD41762-4.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-4.1
JD41762-4.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-4.2	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-4.3	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-5.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-5.1	Secured Storage	Benjamin Gaines	04/12/22 10:27	Retrieve from Storage
JD41762-5.1	Benjamin Gaines	Secured Staging Area	04/12/22 10:27	Return to Storage
JD41762-5.1	Secured Staging Area	Benjamin Gaines	04/12/22 10:28	Retrieve from Storage
JD41762-5.1	Benjamin Gaines	Secured Storage	04/12/22 13:36	Return to Storage
JD41762-5.1	Tyler Strong	Secured Staging Area	04/12/22 20:36	Return to Storage
stage				
JD41762-5.1	Secured Staging Area	Alyssa Koshy	04/13/22 08:51	Retrieve from Storage
JD41762-5.1	Alyssa Koshy	Secured Storage	04/13/22 12:28	Return to Storage
JD41762-5.1	Secured Storage	Todd Shoemaker	04/14/22 14:21	Retrieve from Storage
JD41762-5.1	Todd Shoemaker	Secured Staging Area	04/14/22 14:21	Return to Storage
JD41762-5.1	Secured Staging Area	Alyssa Koshy	04/14/22 14:33	Retrieve from Storage
JD41762-5.1	Alyssa Koshy	Secured Storage	04/14/22 14:46	Return to Storage
JD41762-5.1.1	Alyssa Koshy	Metals Digestion	04/13/22 11:32	Digestate from JD41762-5.1
JD41762-5.1.1	Metals Digestion	Alyssa Koshy	04/13/22 11:32	Digestate from JD41762-5.1
JD41762-5.1.1	Alyssa Koshy	Metals Digestate Storage	04/13/22 11:32	Return to Storage
JD41762-5.1.2	Alyssa Koshy	Metals Digestion	04/14/22 14:43	Digestate from JD41762-5.1
JD41762-5.1.2	Metals Digestion	Alyssa Koshy	04/14/22 14:44	Digestate from JD41762-5.1
JD41762-5.1.2	Alyssa Koshy	Metals Digestate Storage	04/14/22 14:44	Return to Storage
JD41762-6.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-6.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-6.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-6.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-6.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-6.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-6.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-6.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-6.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-6.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-6.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-6.1
JD41762-6.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-6.1
JD41762-6.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-7.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-7.1	Secured Storage	Dave Hunkele	03/24/22 07:20	Retrieve from Storage
JD41762-7.1	Dave Hunkele	Secured Staging Area	03/24/22 07:21	Return to Storage
JD41762-7.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:05	Retrieve from Storage
JD41762-7.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-7.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-7.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-7.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-7.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-7.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-7.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-7.1
JD41762-7.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-7.1
JD41762-7.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-8.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-8.1	Secured Storage	Alyssa Koshy	03/24/22 09:58	Retrieve from Storage
JD41762-8.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-8.1	Secured Storage	Benjamin Gaines	03/24/22 10:52	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-8.1	Benjamin Gaines	Secured Staging Area	03/24/22 10:52	Return to Storage
JD41762-8.1	Secured Staging Area	Benjamin Gaines	03/24/22 10:53	Retrieve from Storage
JD41762-8.1	Secured Storage	Alyssa Koshy	03/24/22 12:13	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-8.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-8.1.1	Alyssa Koshy	Metals Digestion	03/24/22 12:14	Digestate from JD41762-8.1
JD41762-8.1.1	Metals Digestion	Alyssa Koshy	03/24/22 12:15	Digestate from JD41762-8.1

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-8.1.1	Alyssa Koshy	Metals Digestate Storage	03/24/22 12:15	Return to Storage
JD41762-9.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-10.1	Germain Cruz	Secured Storage	03/23/22 17:22	Return to Storage
JD41762-13.1	Germain Cruz	Secured Storage	03/23/22 17:24	Return to Storage
JD41762-13F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-13F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-13F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-13F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-13F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-13F.1
JD41762-13F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-13F.1
JD41762-13F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-14.1	Germain Cruz	Secured Storage	03/23/22 17:24	Return to Storage
JD41762-14.1	Secured Storage	Dave Hunkele	03/24/22 07:42	Retrieve from Storage
JD41762-14.1	Dave Hunkele	Secured Staging Area	03/24/22 07:43	Return to Storage
JD41762-14.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:04	Retrieve from Storage
JD41762-14.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-14F.1	Secured Storage	Bisma Rizvi	03/25/22 16:59	Retrieve from Storage
JD41762-14F.1	Bisma Rizvi	Secured Storage	03/26/22 11:59	Return to Storage
JD41762-14F.1.1	Bisma Rizvi	Metals Digestion	03/25/22 17:00	Digestate from JD41762-14F.1
JD41762-14F.1.1	Metals Digestion	Bisma Rizvi	03/25/22 17:01	Digestate from JD41762-14F.1
JD41762-14F.1.1	Bisma Rizvi	Metals Digestate Storage	03/25/22 17:01	Return to Storage
JD41762-15.1	Germain Cruz	Secured Storage	03/23/22 17:24	Return to Storage
JD41762-15.1	Secured Storage	Dave Hunkele	03/24/22 07:42	Retrieve from Storage
JD41762-15.1	Dave Hunkele	Secured Staging Area	03/24/22 07:43	Return to Storage
JD41762-15.1	Secured Staging Area	Alyssa Koshy	03/24/22 08:04	Retrieve from Storage
JD41762-15.1	Alyssa Koshy	Secured Storage	03/24/22 12:15	Return to Storage
JD41762-15F.1	Secured Storage	Bisma Rizvi	03/25/22 16:59	Retrieve from Storage
JD41762-15F.1	Bisma Rizvi	Secured Storage	03/26/22 11:59	Return to Storage
JD41762-15F.1.1	Bisma Rizvi	Metals Digestion	03/25/22 17:00	Digestate from JD41762-15F.1
JD41762-15F.1.1	Metals Digestion	Bisma Rizvi	03/25/22 17:01	Digestate from JD41762-15F.1
JD41762-15F.1.1	Bisma Rizvi	Metals Digestate Storage	03/25/22 17:01	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-16F.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-16F.1	Secured Storage	Todd Shoemaker	03/25/22 15:52	Retrieve from Storage
JD41762-16F.1	Todd Shoemaker	Secured Staging Area	03/25/22 15:52	Return to Storage
JD41762-16F.1	Secured Staging Area	Bisma Rizvi	03/25/22 16:37	Retrieve from Storage
JD41762-16F.1	Bisma Rizvi	Secured Storage	03/26/22 11:59	Return to Storage
JD41762-16F.1.1	Bisma Rizvi	Metals Digestion	03/25/22 17:00	Digestate from JD41762-16F.1
JD41762-16F.1.1	Metals Digestion	Bisma Rizvi	03/25/22 17:01	Digestate from JD41762-16F.1
JD41762-16F.1.1	Bisma Rizvi	Metals Digestate Storage	03/25/22 17:01	Return to Storage
JD41762-17F.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-17F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-17F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-17F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-17F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-17F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-17F.1
JD41762-17F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-17F.1
JD41762-17F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-18.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-18.2	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-18.3	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-18F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-18F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-18F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-18F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-18F.2	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-18F.2	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-18F.2	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-18F.2	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-18F.2.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-18F.2
JD41762-18F.2.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-18F.2
JD41762-18F.2.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-19.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-19F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-19F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-19F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-19F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-19F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-19F.1
JD41762-19F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-19F.1
JD41762-19F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-20.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-20F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
JD41762-20F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-20F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-20F.1
JD41762-20F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-20F.1
JD41762-20F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-21.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-21F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-21F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-21F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-21F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-21F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-21F.1
JD41762-21F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-21F.1
JD41762-21F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-22.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-22F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-22F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-22F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-22F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-22F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-22F.1
JD41762-22F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-22F.1
JD41762-22F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-23.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-23F.1	Secured Storage	Dave Hunkele	03/29/22 15:11	Retrieve from Storage
JD41762-23F.1	Dave Hunkele	Secured Staging Area	03/29/22 15:12	Return to Storage
JD41762-23F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-23F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-23F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-23F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-23F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-23F.1
JD41762-23F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-23F.1
JD41762-23F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-24.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-24F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-24F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-24F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-24F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-24F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-24F.1
JD41762-24F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-24F.1
JD41762-24F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-25.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-25F.1	Secured Storage	Dave Hunkele	03/29/22 15:11	Retrieve from Storage
JD41762-25F.1	Dave Hunkele	Secured Staging Area	03/29/22 15:12	Return to Storage
JD41762-25F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-25F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-25F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-25F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-25F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-25F.1
JD41762-25F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-25F.1
JD41762-25F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-26.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-26.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-26.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-26.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-26.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-26.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-26.1
JD41762-26.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-26.1
JD41762-26.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-26.1
JD41762-26.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-27.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-27.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-27.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-27.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-27.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-27.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-27.1
JD41762-27.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-27.1
JD41762-27.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-27.1
JD41762-27.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-28.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-28.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-28.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-28.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-28.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-28.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-28.1
JD41762-28.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-28.1
JD41762-28.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-28.1
JD41762-28.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-29.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-29.1	Secured Storage	Todd Shoemaker	03/28/22 14:04	Retrieve from Storage
JD41762-29.1	Todd Shoemaker	Secured Staging Area	03/28/22 14:04	Return to Storage
JD41762-29.1	Secured Staging Area	Joseph Dye	03/28/22 14:07	Retrieve from Storage
JD41762-29.1	Joseph Dye	Secured Storage	03/28/22 15:07	Return to Storage
JD41762-29.2	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-29.2	Secured Storage	Todd Shoemaker	03/25/22 14:30	Retrieve from Storage
JD41762-29.2	Todd Shoemaker	Secured Staging Area	03/25/22 14:30	Return to Storage
JD41762-29.2	Secured Staging Area	Mahendra Patel	03/26/22 09:54	Retrieve from Storage
JD41762-29.2	Mahendra Patel	Secured Storage	03/26/22 13:07	Return to Storage
JD41762-29.2	Secured Storage	Todd Shoemaker	03/28/22 09:50	Retrieve from Storage
JD41762-29.2	Todd Shoemaker	Secured Staging Area	03/28/22 09:50	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-29.2	Secured Staging Area	Mahendra Patel	03/28/22 18:44	Retrieve from Storage
JD41762-29.2	Mahendra Patel	Secured Storage	03/29/22 08:26	Return to Storage
JD41762-30.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-30.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-30.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-30.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-30.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-30.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-30.1
JD41762-30.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-30.1
JD41762-30.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-30.1
JD41762-30.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-31.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-31.1	Secured Storage	Todd Shoemaker	03/28/22 14:04	Retrieve from Storage
JD41762-31.1	Todd Shoemaker	Secured Staging Area	03/28/22 14:04	Return to Storage
JD41762-31.1	Secured Staging Area	Joseph Dye	03/28/22 14:07	Retrieve from Storage
JD41762-31.1	Joseph Dye	Secured Storage	03/28/22 15:07	Return to Storage
JD41762-31.2	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-31.2	Secured Storage	Todd Shoemaker	03/25/22 14:30	Retrieve from Storage
JD41762-31.2	Todd Shoemaker	Secured Staging Area	03/25/22 14:30	Return to Storage
JD41762-31.2	Secured Staging Area	Mahendra Patel	03/26/22 09:54	Retrieve from Storage
JD41762-31.2	Mahendra Patel	Secured Storage	03/26/22 13:07	Return to Storage
JD41762-31.2	Secured Storage	Todd Shoemaker	03/28/22 09:50	Retrieve from Storage
JD41762-31.2	Todd Shoemaker	Secured Staging Area	03/28/22 09:50	Return to Storage
JD41762-31.2	Secured Staging Area	Mahendra Patel	03/28/22 18:44	Retrieve from Storage
JD41762-31.2	Mahendra Patel	Secured Storage	03/29/22 08:26	Return to Storage
JD41762-32.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-32.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-32.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-32.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-32.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-32.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-32.1
JD41762-32.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-32.1
JD41762-32.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-32.1
JD41762-32.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-33.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-33.1	Secured Storage	Benjamin Gaines	04/12/22 10:27	Retrieve from Storage
JD41762-33.1	Benjamin Gaines	Secured Staging Area	04/12/22 10:27	Return to Storage
JD41762-33.1	Secured Staging Area	Benjamin Gaines	04/12/22 10:28	Retrieve from Storage
JD41762-33.1	Benjamin Gaines	Secured Storage	04/12/22 13:36	Return to Storage
JD41762-33.1	Tyler Strong	Secured Staging Area	04/12/22 20:36	Return to Storage
stage				
JD41762-33.1	Secured Staging Area	Alyssa Koshy	04/13/22 08:51	Retrieve from Storage
JD41762-33.1	Alyssa Koshy	Secured Storage	04/13/22 12:28	Return to Storage
JD41762-33.1.1	Alyssa Koshy	Metals Digestion	04/13/22 11:32	Digestate from JD41762-33.1
JD41762-33.1.1	Metals Digestion	Alyssa Koshy	04/13/22 11:32	Digestate from JD41762-33.1
JD41762-33.1.1	Alyssa Koshy	Metals Digestate Storage	04/13/22 11:32	Return to Storage
JD41762-34.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-35.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-36.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-37.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-38.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-39.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-39.1	Secured Storage	Benjamin Gaines	03/27/22 09:21	Retrieve from Storage
JD41762-39.1	Benjamin Gaines	Secured Staging Area	03/27/22 09:21	Return to Storage
JD41762-39.1	Secured Staging Area	Alyssa Koshy	03/28/22 08:23	Retrieve from Storage
JD41762-39.1	Alyssa Koshy	Secured Storage	03/28/22 11:31	Return to Storage
JD41762-39.1.1	Alyssa Koshy	Metals Digestion	03/28/22 10:29	Digestate from JD41762-39.1
JD41762-39.1.2	Alyssa Koshy	Metals Digestion	03/28/22 10:33	Digestate from JD41762-39.1
JD41762-39.1.2	Metals Digestion	Alyssa Koshy	03/28/22 10:34	Digestate from JD41762-39.1
JD41762-39.1.2	Alyssa Koshy	Metals Digestate Storage	03/28/22 10:34	Return to Storage
JD41762-40.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-41.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-42.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-43.1	Christian King	Secured Storage	03/24/22 20:43	Return to Storage
JD41762-44.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-45.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-46.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-46.1	Secured Storage	Benjamin Gaines	04/12/22 10:27	Retrieve from Storage
JD41762-46.1	Benjamin Gaines	Secured Staging Area	04/12/22 10:27	Return to Storage
JD41762-46.1	Secured Staging Area	Benjamin Gaines	04/12/22 10:28	Retrieve from Storage
JD41762-46.1	Benjamin Gaines	Secured Storage	04/12/22 13:36	Return to Storage
JD41762-46.1	Tyler Strong	Secured Staging Area	04/12/22 20:36	Return to Storage
stage				
JD41762-46.1	Secured Staging Area	Alyssa Koshy	04/13/22 08:51	Retrieve from Storage
JD41762-46.1	Alyssa Koshy	Secured Storage	04/13/22 12:28	Return to Storage
JD41762-46.1.1	Alyssa Koshy	Metals Digestion	04/13/22 11:32	Digestate from JD41762-46.1
JD41762-46.1.1	Metals Digestion	Alyssa Koshy	04/13/22 11:32	Digestate from JD41762-46.1
JD41762-46.1.1	Alyssa Koshy	Metals Digestate Storage	04/13/22 11:32	Return to Storage
JD41762-47.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-47.2	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-47F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-47F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-47F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-47F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-47F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-47F.1
JD41762-47F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-47F.1
JD41762-47F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-48.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-48.1	Secured Storage	Alyssa Koshy	03/29/22 16:06	Retrieve from Storage
JD41762-48.1	Secured Storage	Benjamin Gaines	03/29/22 16:34	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-48.1	Benjamin Gaines	Secured Staging Area	03/29/22 16:35	Return to Storage
JD41762-48.1	Secured Staging Area	Alyssa Koshy	03/30/22 08:44	Retrieve from Storage
JD41762-48.1	Alyssa Koshy	Secured Storage	03/30/22 12:07	Return to Storage
JD41762-48.1.1	Alyssa Koshy	Metals Digestion	03/30/22 10:56	Digestate from JD41762-48.1
JD41762-48.1.1	Metals Digestion	Alyssa Koshy	03/30/22 10:57	Digestate from JD41762-48.1
JD41762-48.1.1	Alyssa Koshy	Metals Digestate Storage	03/30/22 10:57	Return to Storage
JD41762-49.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-49.2	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-49F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-49F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-49F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-49F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-49F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-49F.1
JD41762-49F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-49F.1
JD41762-49F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-50.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-50F.1	Secured Storage	Dave Hunkele	04/08/22 07:08	Retrieve from Storage
JD41762-50F.1	Dave Hunkele	Secured Staging Area	04/08/22 07:08	Return to Storage
JD41762-50F.1	Secured Staging Area	Alyssa Koshy	04/08/22 08:21	Retrieve from Storage
JD41762-50F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-50F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-50F.1
JD41762-50F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-50F.1
JD41762-50F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-51.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-51.1	Secured Storage	Alyssa Koshy	03/29/22 16:06	Retrieve from Storage
JD41762-51.1	Secured Storage	Benjamin Gaines	03/29/22 16:34	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-51.1	Benjamin Gaines	Secured Staging Area	03/29/22 16:35	Return to Storage
JD41762-51.1	Secured Staging Area	Alyssa Koshy	03/30/22 08:44	Retrieve from Storage
JD41762-51.1	Alyssa Koshy	Secured Storage	03/30/22 12:07	Return to Storage
JD41762-51.1.1	Alyssa Koshy	Metals Digestion	03/30/22 10:56	Digestate from JD41762-51.1
JD41762-51.1.1	Metals Digestion	Alyssa Koshy	03/30/22 10:57	Digestate from JD41762-51.1
JD41762-51.1.1	Alyssa Koshy	Metals Digestate Storage	03/30/22 10:57	Return to Storage
JD41762-51.2	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-52.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-52.1	Christian King	Secured Staging Area	04/11/22 18:52	Return to Storage
stage				
JD41762-52.1	Secured Staging Area	Alyssa Koshy	04/12/22 08:58	Retrieve from Storage
JD41762-52.1	Alyssa Koshy	Secured Storage	04/12/22 13:15	Return to Storage
JD41762-52.1.1	Alyssa Koshy	Metals Digestion	04/12/22 12:20	Digestate from JD41762-52.1
JD41762-52.1.1	Metals Digestion	Alyssa Koshy	04/12/22 12:21	Digestate from JD41762-52.1

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-52.1.1	Alyssa Koshy	Metals Digestate Storage	04/12/22 12:21	Return to Storage
JD41762-53.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-53F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-53F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-53F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-53F.1	Alyssa Koshy		04/08/22 12:02	Depleted
JD41762-53F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-53F.1
JD41762-53F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-53F.1
JD41762-53F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-54.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-55.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-55F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-55F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-55F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-55F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-55F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-55F.1
JD41762-55F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-55F.1
JD41762-55F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-56.1	James Kwon	Secured Storage	03/25/22 12:27	Return to Storage
JD41762-56.1	Secured Storage	Alyssa Koshy	03/29/22 16:06	Retrieve from Storage
JD41762-56.1	Secured Storage	Benjamin Gaines	03/29/22 16:34	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-56.1	Benjamin Gaines	Secured Staging Area	03/29/22 16:35	Return to Storage
JD41762-56.1	Secured Staging Area	Alyssa Koshy	03/30/22 08:44	Retrieve from Storage
JD41762-56.1	Alyssa Koshy	Secured Storage	03/30/22 12:07	Return to Storage
JD41762-56.1.1	Alyssa Koshy	Metals Digestion	03/30/22 10:56	Digestate from JD41762-56.1
JD41762-56.1.1	Metals Digestion	Alyssa Koshy	03/30/22 10:57	Digestate from JD41762-56.1
JD41762-56.1.1	Alyssa Koshy	Metals Digestate Storage	03/30/22 10:57	Return to Storage
JD41762-57F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-57F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-57F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-57F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-57F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-57F.1
JD41762-57F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-57F.1
JD41762-57F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-58F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
JD41762-58F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-58F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-58F.1
JD41762-58F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-58F.1
JD41762-58F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-59F.1	Secured Storage	Dave Hunkele	03/29/22 15:11	Retrieve from Storage
JD41762-59F.1	Dave Hunkele	Secured Staging Area	03/29/22 15:12	Return to Storage
JD41762-59F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
Bottle was returned to secure storage, but inadvertently not scanned.				
JD41762-59F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-59F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-59F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-59F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-59F.1
JD41762-59F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-59F.1
JD41762-59F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-81.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-81.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-81.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-81.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-81.1	Secured Storage	Todd Shoemaker	04/14/22 09:44	Retrieve from Storage
JD41762-81.1	Todd Shoemaker	Secured Staging Area	04/14/22 09:44	Return to Storage
JD41762-81.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-81.1
JD41762-81.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-81.1
JD41762-81.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-84F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-84F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-84F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-84F.1	Alyssa Koshy		04/08/22 12:02	Depleted
JD41762-84F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-84F.1
JD41762-84F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-84F.1

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-84F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-85F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-85F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-85F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-85F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-85F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-85F.1
JD41762-85F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-85F.1
JD41762-85F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-86F.1	Secured Storage	Dave Hunkele	04/07/22 07:06	Retrieve from Storage
JD41762-86F.1	Dave Hunkele	Secured Staging Area	04/07/22 07:07	Return to Storage
JD41762-86F.1	Secured Storage	Alyssa Koshy	04/07/22 15:47	Retrieve from Storage
Analyst unavailable for custody transfer.				
JD41762-86F.1	Alyssa Koshy	Secured Storage	04/08/22 12:03	Return to Storage
JD41762-86F.1.1	Alyssa Koshy	Metals Digestion	04/08/22 11:02	Digestate from JD41762-86F.1
JD41762-86F.1.1	Metals Digestion	Alyssa Koshy	04/08/22 11:04	Digestate from JD41762-86F.1
JD41762-86F.1.1	Alyssa Koshy	Metals Digestate Storage	04/08/22 11:04	Return to Storage
JD41762-87F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-87F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-87F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-87F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-87F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-87F.1
JD41762-87F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-87F.1
JD41762-87F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-88F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-88F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-88F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-88F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-88F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-88F.1
JD41762-88F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-88F.1
JD41762-88F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-89F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-89F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-89F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-89F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage

SGS Internal Chain of Custody

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA
Received: 03/22/22

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JD41762-89F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-89F.1
JD41762-89F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-89F.1
JD41762-89F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage
JD41762-90F.1	Secured Storage	Todd Shoemaker	03/30/22 15:01	Retrieve from Storage
JD41762-90F.1	Todd Shoemaker	Secured Staging Area	03/30/22 15:01	Return to Storage
JD41762-90F.1	Secured Staging Area	Alyssa Koshy	03/31/22 08:17	Retrieve from Storage
JD41762-90F.1	Alyssa Koshy	Secured Storage	03/31/22 13:21	Return to Storage
JD41762-90F.1	Secured Storage	Todd Shoemaker	04/14/22 09:44	Retrieve from Storage
JD41762-90F.1	Todd Shoemaker	Secured Staging Area	04/14/22 09:44	Return to Storage
JD41762-90F.1.1	Alyssa Koshy	Metals Digestion	03/31/22 11:50	Digestate from JD41762-90F.1
JD41762-90F.1.1	Metals Digestion	Alyssa Koshy	03/31/22 11:51	Digestate from JD41762-90F.1
JD41762-90F.1.1	Alyssa Koshy	Metals Digestate Storage	03/31/22 11:51	Return to Storage

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Instrument Runlogs
- Initial and Continuing Calibration Blanks
- Initial and Continuing Calibration Checks
- High and Low Check Standards
- Interfering Element Check Standards
- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:41	MA52118-STD1	1		STDA
06:46	MA52118-STD2	1		STDB
06:51	MA52118-ICV1	1		
07:05	MA52118-ICB1	1		
07:17	MA52118-CCV1	1		
07:22	MA52118-CCB1	1		
07:27	MA52118-CRI1	1		
07:32	MA52118-CRID1	1		
07:37	MA52118-ICSA1	1		
07:42	MA52118-ICSAB1	1		
07:47	MA52118-HSTD1	1		
07:52	MA52118-HSTD2	1		
07:58	ZZZZZZ	1		
08:03	ZZZZZZ	1		
08:08	ZZZZZZ	1		
08:13	ZZZZZZ	1		
08:20	MA52118-CCV2	1		
08:25	MA52118-CCB2	1		
08:31	MP31902-MB1	1		
08:36	MP31902-B1	1		
08:40	MP31902-S1	1		
08:45	MP31902-S2	1		
08:50	JD41762-4	1		
08:55	MP31902-SD1	5		
09:00	JD41762-1	1		
09:05	JD41762-3	1		
09:10	JD41762-6	1		
09:15	MA52118-CCV3	1		
09:20	MA52118-CCB3	1		
09:25	JD41762-7	1		
09:30	JD41762-8	1		
09:35	JD41762-1	2		
09:40	JD41762-3	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:45	JD41762-7	5		
----------->	Last reportable sample/prep for job JD41762			
09:50	ZZZZZZ	1		
09:55	ZZZZZZ	1		
10:00	MA52118-CRI2	1		
10:05	MA52118-ICSA2	1		
10:11	MA52118-ICSAB2	1		
10:15	MA52118-CCV4	1		
10:20	MA52118-CCB4	1		
----------->	Last reportable CCB for job JD41762			
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:46	MP31905-B1	1		
10:50	MP31905-MB1	1		
10:56	MP31905-S1	1		Na,S high, see rerun
11:00	MP31905-S2	1		
11:05	JD41787-12	1		(sample used for QC only; not part of login JD41762)
11:13	MA52118-CCV5	1		
11:17	MA52118-CCB5	1		
11:23	MP31905-SD1	5		
11:28	ZZZZZZ	1		
11:33	MP31859-S1	5		
11:38	MP31859-S2	5		
11:43	JD41584-6	5		(sample used for QC only; not part of login JD41762)
11:48	MP31859-SD1	25		
11:54	MP31828-S1	2		
11:58	MP31828-S2	2		
12:03	JD41563-4	2		(sample used for QC only; not part of login JD41762)
12:08	MA52118-CCV6	1		
12:13	MA52118-CCB6	1		
12:18	MP31828-SD1	10		
12:23	ZZZZZZ	5		
12:29	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:34	ZZZZZZ	5		
12:39	ZZZZZZ	10		
12:44	ZZZZZZ	10		
12:49	ZZZZZZ	2		
12:54	ZZZZZZ	5		
13:00	MA52118-CCV7	1		
13:04	MA52118-CCB7	1		
13:10	ZZZZZZ	1		
13:15	ZZZZZZ	1		
13:20	ZZZZZZ	1		
13:28	MP31905-S1	2		
13:33	MP31905-S2	2		
13:38	JD41787-12	2		(sample used for QC only; not part of login JD41762)
13:43	MP31905-SD1	10		
13:48	MA52118-CCV8	1		
13:53	MA52118-CCB8	1		
13:58	ZZZZZZ	1		
14:03	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Element: Dilution	As
06:51	MA52118-ICV1	1	X
07:05	MA52118-ICB1	1	X
07:17	MA52118-CCV1	1	X
07:22	MA52118-CCB1	1	X
07:27	MA52118-CRI1	1	X
07:32	MA52118-CRID1	1	X
07:37	MA52118-ICSA1	1	X
07:42	MA52118-ICSAB1	1	X
07:47	MA52118-HSTD1	1	X
07:52	MA52118-HSTD2	1	
07:58	ZZZZZZ	1	
08:03	ZZZZZZ	1	
08:08	ZZZZZZ	1	
08:13	ZZZZZZ	1	
08:20	MA52118-CCV2	1	X
08:25	MA52118-CCB2	1	X
08:31	MP31902-MB1	1	X
08:36	MP31902-B1	1	X
08:40	MP31902-S1	1	X
08:45	MP31902-S2	1	X
08:50	JD41762-4	1	X
08:55	MP31902-SD1	5	X
09:00	JD41762-1	1	X
09:05	JD41762-3	1	X
09:10	JD41762-6	1	X
09:15	MA52118-CCV3	1	X
09:20	MA52118-CCB3	1	X
09:25	JD41762-7	1	X
09:30	JD41762-8	1	X
09:35	JD41762-1	2	
09:40	JD41762-3	2	
09:45	JD41762-7	5	
09:50	ZZZZZZ	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:55	ZZZZZZ	1		
10:00	MA52118-CRI2	1	X	
10:05	MA52118-ICSA2	1	X	
10:11	MA52118-ICSAB2	1	X	
10:15	MA52118-CCV4	1	X	
10:20	MA52118-CCB4	1	X	
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:46	MP31905-B1	1	X	
10:50	MP31905-MB1	1	X	
10:56	MP31905-S1	1	X	
11:00	MP31905-S2	1	X	
11:05	JD41787-12	1		(a)
11:13	MA52118-CCV5	1	X	
11:17	MA52118-CCB5	1	X	
11:23	MP31905-SD1	5	X	
11:28	ZZZZZZ	1		
11:33	MP31859-S1	5		
11:38	MP31859-S2	5		
11:43	JD41584-6	5		(a)
11:48	MP31859-SD1	25		
11:54	MP31828-S1	2	X	
11:58	MP31828-S2	2	X	
12:03	JD41563-4	2		(a)
12:08	MA52118-CCV6	1	X	
12:13	MA52118-CCB6	1	X	
12:18	MP31828-SD1	10	X	
12:23	ZZZZZZ	5		
12:29	ZZZZZZ	1		
12:34	ZZZZZZ	5		
12:39	ZZZZZZ	10		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Dilution	Element: As
12:44	ZZZZZZ	10	
12:49	ZZZZZZ	2	
12:54	ZZZZZZ	5	
13:00	MA52118-CCV7	1	X
13:04	MA52118-CCB7	1	X
13:10	ZZZZZZ	1	
13:15	ZZZZZZ	1	
13:20	ZZZZZZ	1	
13:28	MP31905-S1	2	
13:33	MP31905-S2	2	
13:38	JD41787-12	2	(a)
13:43	MP31905-SD1	10	
13:48	MA52118-CCV8	1	X
13:53	MA52118-CCB8	1	X
13:58	ZZZZZZ	1	
14:03	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:41	MA52118-STD1	2247 R	70214 R	6865 R	7090 R
06:46	MA52118-STD2	2113	64760	6680	6136
06:51	MA52118-ICV1	2182	65868	6824	6412
07:05	MA52118-ICB1	2235	70017	6780	7068
07:17	MA52118-CCV1	2158	66221	6722	6363
07:22	MA52118-CCB1	2229	69655	6811	7038
07:27	MA52118-CRI1	2202	68731	6800	6875
07:32	MA52118-CRID1	2225	69339	6795	7009
07:37	MA52118-ICSA1	2050	61432	6763	5745
07:42	MA52118-ICSAB1	2044	61391	6777	5741
07:47	MA52118-HSTD1	2195	68138	6824	6842
07:52	MA52118-HSTD2	2048	61993	6674	5719
07:58	ZZZZZZ	1912	58494	6516	5437
08:03	ZZZZZZ	2010	61791	6641	5655
08:08	ZZZZZZ	2119	67035	6777	6657
08:13	ZZZZZZ	2190	68344	6809	6827
08:20	MA52118-CCV2	2184	67099	6812	6419
08:25	MA52118-CCB2	2239	70154	6866	7076
08:31	MP31902-MB1	2237	71137	7028	7099
08:36	MP31902-B1	2225	68914	7011	6658
08:40	MP31902-S1	2291	70359	7422	6562
08:45	MP31902-S2	2322	70589	7476	6594
08:50	JD41762-4	2299	70418	7367	6662
08:55	MP31902-SD1	2298	70756	7074	6989
09:00	JD41762-1	2356	71492	7556	6659
09:05	JD41762-3	2339	71335	7540	6632
09:10	JD41762-6	2293	70538	7355	6673
09:15	MA52118-CCV3	2189	66901	6803	6441
09:20	MA52118-CCB3	2240	69421	6820	7051
09:25	JD41762-7	2275	70137	7480	6585
09:30	JD41762-8	2285	70483	7438	6669
09:35	JD41762-1	2284	69588	7148	6684
09:40	JD41762-3	2286	68743	7288	6692

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:45	JD41762-7	2257	69344	7085	6839
09:50	ZZZZZZ	2221	68935	6877	7089
09:55	ZZZZZZ	2245	68618	6839	7151
10:00	MA52118-CRI2	2204	68802	6876	6828
10:05	MA52118-ICSA2	2026	60370	6670	5667
10:11	MA52118-ICSAB2	2059	61440	6842	5762
10:15	MA52118-CCV4	2180	66260	6851	6398
10:20	MA52118-CCB4	2236	69799	6885	7042
10:25	ZZZZZZ	2293	70526	7295	6690
10:30	ZZZZZZ	2243	68523	7050	6813
10:35	ZZZZZZ	2277	69598	7404	6310
10:40	ZZZZZZ	2371	74273	8028	5781
10:46	MP31905-B1	2178	67098	6938	6525
10:50	MP31905-MB1	2223	70123	6949	7059
10:56	MP31905-S1	2220	68791	7210	6110
11:00	MP31905-S2	2218	68749	7270	6135
11:05	JD41787-12	2277	70265	7322	6278
11:13	MA52118-CCV5	2178	66258	6742	6378
11:17	MA52118-CCB5	2210	69337	6878	7006
11:23	MP31905-SD1	2229	68670	6953	6728
11:28	ZZZZZZ	2219	64525	7167	6179
11:33	MP31859-S1	2124	64726	6746	6076
11:38	MP31859-S2	2115	64835	6794	6054
11:43	JD41584-6	2095	63996	6699	6082
11:48	MP31859-SD1	2196	67639	6801	6619
11:54	MP31828-S1	2146	66042	6819	6302
11:58	MP31828-S2	2144	66283	6880	6314
12:03	JD41563-4	2173	66653	6777	6504
12:08	MA52118-CCV6	2222	67168	6880	6479
12:13	MA52118-CCB6	2278	70778	6955	7152
12:18	MP31828-SD1	2274	69960	6959	6981
12:23	ZZZZZZ	2005	60895	6632	5650
12:29	ZZZZZZ	1990	59745	6688	5410

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52118
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:34	ZZZZZZ	2052	61683	6629	5708
12:39	ZZZZZZ	2156	65444	6807	6292
12:44	ZZZZZZ	2191	67220	6975	6370
12:49	ZZZZZZ	2313	70497	7306	6625
12:54	ZZZZZZ	2272	70125	7194	6450
13:00	MA52118-CCV7	2166	65804	6855	6340
13:04	MA52118-CCB7	2235	69507	6892	6993
13:10	ZZZZZZ	2200	68109	6813	6951
13:15	ZZZZZZ	2204	69769	6905	7062
13:20	ZZZZZZ	2234	68924	6811	7047
13:28	MP31905-S1	2252	69364	7170	6401
13:33	MP31905-S2	2206	67849	7057	6297
13:38	JD41787-12	2233	68773	6997	6472
13:43	MP31905-SD1	2219	68614	6864	6803
13:48	MA52118-CCV8	2169	66077	6794	6352
13:53	MA52118-CCB8	2232	69300	6802	7010
13:58	ZZZZZZ	2230	69974	6920	7030
14:03	ZZZZZZ	2244	70213	6983	7048

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time: / Sample ID:			07:05 ICB1		07:22 CCB1		08:25 CCB2		09:20 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16	anr							
Antimony	6.0	2.5	anr							
Arsenic	3.0	2	-1.10	<3.0	0.300	<3.0	1.20	<3.0	0.500	<3.0
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	1.9								
Cadmium	3.0	.4	anr							
Calcium	5000	5.6	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.5	anr							
Copper	10	1	anr							
Iron	100	11	anr							
Lead	3.0	1.2	anr							
Lithium	50	2.3								
Magnesium	5000	65	anr							
Manganese	15	.2	anr							
Molybdenum	20	.4								
Nickel	10	.3	anr							
Phosphorus	50	4.1								
Potassium	10000	55	anr							
Selenium	10	3.5	anr							
Silicon	200	1.6								
Silver	10	1.1	anr							
Sodium	10000	11	anr							
Strontium	10	.1								
Sulfur	50	4.4								
Thallium	10	2.5	anr							
Tin	10	1								
Titanium	10	.4								
Tungsten	50	2.8								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time:			07:05		07:22		08:25		09:20	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time:			10:20	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Aluminum	200	16	anr	
Antimony	6.0	2.5	anr	
Arsenic	3.0	2	-0.600	<3.0
Barium	200	.4	anr	
Beryllium	1.0	.1	anr	
Bismuth	20	3.6		
Boron	100	1.9		
Cadmium	3.0	.4	anr	
Calcium	5000	5.6	anr	
Cerium	100			
Chromium	10	.5	anr	
Cobalt	50	.5	anr	
Copper	10	1	anr	
Iron	100	11	anr	
Lead	3.0	1.2	anr	
Lithium	50	2.3		
Magnesium	5000	65	anr	
Manganese	15	.2	anr	
Molybdenum	20	.4		
Nickel	10	.3	anr	
Phosphorus	50	4.1		
Potassium	10000	55	anr	
Selenium	10	3.5	anr	
Silicon	200	1.6		
Silver	10	1.1	anr	
Sodium	10000	11	anr	
Strontium	10	.1		
Sulfur	50	4.4		
Thallium	10	2.5	anr	
Tin	10	1		
Titanium	10	.4		
Tungsten	50	2.8		
Vanadium	50	.6	anr	

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52118 Units: ug/l

Time:			10:20	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Zinc	20	.1	anr	
Zirconium	10	.4		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

90-110%

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		06:51			07:17			08:20	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1990	99.5	2000	1980	99.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		06:51			07:17			08:20	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		09:15			10:15	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	1940	97.0	2000	1970	98.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52118 Units: ug/l

Time:		09:15			10:15	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52118 Units: ug/l

Time:		07:47			07:52	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7450	93.1			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52118 Units: ug/l

Time:		07:47			07:52	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

70-130%

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52118 Units: ug/l

Time: / Sample ID: / Metal	CRI True	CRIA True	CRID True	07:27 CRI1 Results	% Rec	07:32 CRID1 Results	% Rec	10:00 CRI2 Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	8.70	108.8	2.60	86.7	9.20	115.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52118 Units: ug/l

Time:				07:27		07:32		10:00	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

80-120%

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52118 Units: ug/l

Time:			07:37		07:42		10:05		10:11	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	482000	96.4	489000	97.8	489000	97.8	486000	97.2
Antimony		1000	-2.80		1010	101.0	-3.50		1000	100.0
Arsenic		1000	0.900		1010	101.0	0.500		998	99.8
Barium		500	-44.0		458	91.6	-44.7		458	91.6
Beryllium		500	-0.300		484	96.8	-0.200		483	96.6
Bismuth		500	3.00		524	104.8	0.700		519	103.8
Boron		500	-2.50		477	95.4	-3.30		473	94.6
Cadmium		1000	1.20		1040	104.0	1.40		1030	103.0
Calcium	400000	400000	365000	91.3	372000	93.0	370000	92.5	370000	92.5
Cerium			93.3				93.7			
Chromium		500	-2.10		477	95.4	-1.90		474	94.8
Cobalt		500	-0.500		475	95.0	-1.10		471	94.2
Copper		500	8.30		516	103.2	8.90		513	102.6
Iron	200000	200000	180000	90.0	183000	91.5	183000	91.5	182000	91.0
Lead		1000	-0.200		958	95.8	-1.10		952	95.2
Lithium		500	0.100		535	107.0	0.500		538	107.6
Magnesium	500000	500000	475000	95.0	484000	96.8	481000	96.2	480000	96.0
Manganese		500	0.100		500	100.0	0.100		497	99.4
Molybdenum		500	-3.10		464	92.8	-3.30		460	92.0
Nickel		1000	-1.60		958	95.8	-2.20		951	95.1
Phosphorus		500	12.4		477	95.4	15.4		462	92.4
Potassium			231		232		260		248	
Selenium		1000	6.80		950	95.0	6.20		941	94.1
Silicon		500	-8.80		521	104.2	-8.10		516	103.2
Silver		1000	3.10		1100	110.0	2.70		1100	110.0
Sodium			-38.0		-47.7		-52.4		-46.5	
Strontium		500	1.00		501	100.2	1.10		501	100.2
Sulfur		500	7.80		481	96.2	8.90		483	96.6
Thallium		1000	-2.10		950	95.0	-3.80		945	94.5
Tin		500	-1.30		454	90.8	-2.80		453	90.6
Titanium		500	-0.700		500	100.0	-0.100		496	99.2
Tungsten		500	5.50		479	95.8	5.00		475	95.0
Vanadium		500	0.900		476	95.2	1.50		475	95.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE032522M1.ICP Date Analyzed: 03/25/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52118 Units: ug/l

Time:			07:37		07:42		10:05		10:11	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	4.60		941	94.1	4.40		931	93.1
Zirconium		500	-2.30		511	102.2	-2.10		508	101.6

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:18	MA52132-STD1	1		STDA
07:23	MA52132-STD2	1		STDB
07:29	MA52132-ICV1	1		
07:37	MA52132-ICB1	1		
07:42	MA52132-ICCV1	1		
07:51	MA52132-CCB1	1		
07:56	MA52132-CRID1	1		
08:01	MA52132-CRI1	1		
08:06	MA52132-ICSA1	1		
08:12	MA52132-ICSAB1	1		
08:17	MA52132-HSTD1	1		
08:23	MA52132-HSTD2	1		
08:28	ZZZZZZ	1		
08:33	ZZZZZZ	1		
08:38	MA52132-CRI2	1		
08:43	ZZZZZZ	1		
08:49	MA52132-CCV1	1		
08:53	MA52132-CCB2	1		
08:59	MP31947-MB1	1		
09:04	MP31947-B1	1		
09:09	MP31947-S1	1		
09:14	MP31947-S2	1		
09:19	JD41893-1	1		(sample used for QC only; not part of login JD41762)
09:24	MP31947-SD1	5		
09:29	MP31947-PS1	1		
09:34	JD41762-26	1		
09:39	JD41762-27	1		FE high
09:44	MA52132-CCV2	1		
09:49	MA52132-CCB3	1		
09:54	JD41762-28	1		
09:59	JD41762-30	1		
10:04	JD41762-32	1		
10:09	JD41762-39	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:15	MP31934-B1	1		
10:19	MP31934-B2	1		
10:24	MP31934-MB1	1		
10:29	MP31934-MB2	1		
10:34	MP31934-S1	1		
10:39	MA52132-CCV3	1		
10:44	MA52132-CCB4	1		
10:50	MP31934-S2	1		
10:54	JD41762-16F	1		
11:00	MP31934-SD1	5		
11:05	JD41762-14F	1		
11:10	JD41762-15F	1		
---------->	Last reportable sample/prep for job JD41762			
11:15	MP31915-B1	1		
11:20	MP31915-MB1	1		
11:25	MP31915-S1	1		FE, Ti high
11:30	MP31915-S2	1		FE, Ti high
11:35	MA52132-CCV4	1		
11:40	MA52132-CCB5	1		
11:45	JD41803-1	1		(sample used for QC only; not part of login JD41762)
11:51	MP31915-SD1	5		FE, Ti high
11:56	MP31915-PS1	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:27	MA52132-CCV5	1		
12:32	MA52132-CCB6	1		
12:37	MA52132-CRID2	1		
12:42	MA52132-CRI3	1		
12:49	MA52132-ICSA2	1		
12:54	MA52132-ICSAB2	1		
12:59	MA52132-CCV6	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:04	MA52132-CCB7	1		
---------->	Last reportable CCB for job JD41762			
13:10	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Element: Dilution	As
07:29	MA52132-ICV1	1	X
07:37	MA52132-ICB1	1	X
07:42	MA52132-ICCV1	1	X
07:51	MA52132-CCB1	1	X
07:56	MA52132-CRID1	1	X
08:01	MA52132-CRI1	1	
08:06	MA52132-ICSA1	1	X
08:12	MA52132-ICSAB1	1	X
08:17	MA52132-HSTD1	1	X
08:23	MA52132-HSTD2	1	X
08:28	ZZZZZZ	1	
08:33	ZZZZZZ	1	
08:38	MA52132-CRI2	1	X
08:43	ZZZZZZ	1	
08:49	MA52132-CCV1	1	X
08:53	MA52132-CCB2	1	X
08:59	MP31947-MB1	1	X
09:04	MP31947-B1	1	X
09:09	MP31947-S1	1	X
09:14	MP31947-S2	1	X
09:19	JD41893-1	1	X (a)
09:24	MP31947-SD1	5	X
09:29	MP31947-PS1	1	
09:34	JD41762-26	1	X
09:39	JD41762-27	1	FE high
09:44	MA52132-CCV2	1	X
09:49	MA52132-CCB3	1	X
09:54	JD41762-28	1	X
09:59	JD41762-30	1	X
10:04	JD41762-32	1	X
10:09	JD41762-39	1	X
10:15	MP31934-B1	1	X
10:19	MP31934-B2	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:24	MP31934-MB1	1	X	
10:29	MP31934-MB2	1	X	
10:34	MP31934-S1	1	X	
10:39	MA52132-CCV3	1	X	
10:44	MA52132-CCB4	1	X	
10:50	MP31934-S2	1	X	
10:54	JD41762-16F	1	X	
11:00	MP31934-SD1	5	X	
11:05	JD41762-14F	1	X	
11:10	JD41762-15F	1	X	
11:15	MP31915-B1	1		
11:20	MP31915-MB1	1		
11:25	MP31915-S1	1		
11:30	MP31915-S2	1		
11:35	MA52132-CCV4	1	X	
11:40	MA52132-CCB5	1	X	
11:45	JD41803-1	1		(a)
11:51	MP31915-SD1	5		
11:56	MP31915-PS1	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:27	MA52132-CCV5	1	X	
12:32	MA52132-CCB6	1	X	
12:37	MA52132-CRID2	1	X	
12:42	MA52132-CRI3	1	X	
12:49	MA52132-ICSA2	1	X	
12:54	MA52132-ICSAB2	1	X	
12:59	MA52132-CCV6	1	X	
13:04	MA52132-CCB7	1	X	
13:10	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Element: Dilution	As

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:18	MA52132-STD1	9365 R	310520 R	32407 R	11261 R
07:23	MA52132-STD2	8943	272310	32391	10195
07:29	MA52132-ICV1	9228	280160	33012	10588
07:37	MA52132-ICB1	9466	293010	33084	11392
07:42	MA52132-ICCV1	9269	284400	33150	10674
07:51	MA52132-CCB1	9558	299350	33338	11501
07:56	MA52132-CRID1	9497	292020	33160	11408
08:01	MA52132-CRI1	No results reported for the elements associated with this internal standard.			
08:06	MA52132-ICSA1	8823	263450	33359	9795
08:12	MA52132-ICSAB1	8852	265400	33458	9832
08:17	MA52132-HSTD1	9426	292220	33567	11362
08:23	MA52132-HSTD2	8832	266670	33181	9760
08:28	ZZZZZZ	9320	287370	32842	11430
08:33	ZZZZZZ	9342	297470	32997	11444
08:38	MA52132-CRI2	9511	298800	33700	11371
08:43	ZZZZZZ	9467	291390	32947	11492
08:49	MA52132-CCV1	9347	286350	33503	10764
08:53	MA52132-CCB2	9549	304860	33550	11508
08:59	MP31947-MB1	9659	303260	34184	11639
09:04	MP31947-B1	9515	291650	34376	11104
09:09	MP31947-S1	9534	293280	34771	10843
09:14	MP31947-S2	9548	293340	34936	10843
09:19	JD41893-1	9671	301460	35050	11172
09:24	MP31947-SD1	9714	301890	34223	11469
09:29	MP31947-PS1	9532	296580	34623	10888
09:34	JD41762-26	9617	296460	35254	11110
09:39	JD41762-27	No results reported for the elements associated with this internal standard.			
09:44	MA52132-CCV2	9422	289210	33928	10883
09:49	MA52132-CCB3	9641	304460	34005	11661
09:54	JD41762-28	9727	299920	35595	11272
09:59	JD41762-30	9666	296260	35422	11215
10:04	JD41762-32	9747	301660	36002	11249
10:09	JD41762-39	9759	298880	35657	11317

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:15	MP31934-B1	9731	298870	35156	11347
10:19	MP31934-B2	9753	304090	35452	11391
10:24	MP31934-MB1	9914	313420	35347	11986
10:29	MP31934-MB2	10098	317000	36116	12184
10:34	MP31934-S1	9701	300590	35426	11220
10:39	MA52132-CCV3	9538	297190	34447	11020
10:44	MA52132-CCB4	9767	307630	34378	11804
10:50	MP31934-S2	9693	298460	35336	11217
10:54	JD41762-16F	9806	309040	35315	11657
11:00	MP31934-SD1	9834	307460	34827	11839
11:05	JD41762-14F	9812	313540	35647	11720
11:10	JD41762-15F	9835	311350	35657	11650
11:15	MP31915-B1	9725	303270	35179	11399
11:20	MP31915-MB1	9820	311270	35225	11912
11:25	MP31915-S1	9498	293160	35522	10758
11:30	MP31915-S2	9517	291810	35618	10816
11:35	MA52132-CCV4	9583	296750	34834	11107
11:40	MA52132-CCB5	9884	309970	34804	11965
11:45	JD41803-1	9627	296580	35825	10931
11:51	MP31915-SD1	9846	306860	35116	11509
11:56	MP31915-PS1	9612	293480	35940	10926
12:01	ZZZZZZ	10042	309600	36216	11754
12:06	ZZZZZZ	9943	308300	36209	11688
12:12	ZZZZZZ	9913	311480	34754	11994
12:17	ZZZZZZ	9919	310590	34774	11887
12:22	ZZZZZZ	9974	310230	34875	12013
12:27	MA52132-CCV5	9607	302070	35022	11113
12:32	MA52132-CCB6	10076	314690	35263	12106
12:37	MA52132-CRID2	10028	313840	35205	12049
12:42	MA52132-CRI3	10027	312990	35178	11976
12:49	MA52132-ICSA2	9272	280840	35236	10275
12:54	MA52132-ICSAB2	9230	282140	35171	10244
12:59	MA52132-CCV6	9836	301660	35265	11353

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52132
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:04	MA52132-CCB7	10146	318730	35191	12222
13:10	ZZZZZZ	10182	319710	35469	12224

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time: / Sample ID:			07:37 ICB1		07:51 CCB1		08:53 CCB2		09:49 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.900	<3.0	1.60	<3.0	1.20	<3.0	1.80	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time:			07:37		07:51		08:53		09:49	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time: / Sample ID:			10:44 CCB4		11:40 CCB5		12:32 CCB6		13:04 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	1.30	<3.0	0.900	<3.0	1.00	<3.0	1.60	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52132 Units: ug/l

Time:			10:44		11:40		12:32		13:04	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52132 Units: ug/l

Time:		07:42	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1930	96.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52132 Units: ug/l

Time:		07:42	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		07:29			08:49			09:44	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1990	99.5	2000	1900	95.0	2000	1880	94.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		07:29			08:49			09:44	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		10:39			11:35			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1850	92.5	2000	1860	93.0	2000	1840	92.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		10:39			11:35			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		12:59	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1780	89.0*(a)
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

Associated w/ QC only, no qual

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52132 Units: ug/l

Time:		12:59	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested
(a) No samples reported for this element in the area bracketed by this QC.

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52132 Units: ug/l

Time:		08:17			08:23	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7330	91.6			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52132 Units: ug/l

Time:		08:17			08:23	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				07:56		08:38		12:37	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	2.80	93.3	8.90	111.3	3.40	113.3
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				07:56		08:38		12:37	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				12:42	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	9.20	115.0
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52132 Units: ug/l

Time:				12:42	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52132 Units: ug/l

Time:			08:06		08:12		12:49		12:54	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	480000	96.0	482000	96.4	441000	88.2	454000	90.8
Antimony		1000	-3.60		973	97.3	-3.20		925	92.5
Arsenic		1000	-0.600		966	96.6	-0.800		913	91.3
Barium		500	5.60		493	98.6	5.40		466	93.2
Beryllium		500	0.100		469	93.8	0.200		433	86.6
Bismuth		500	12.8		520	104.0	12.7		498	99.6
Boron		500	1.40		476	95.2	-0.500		451	90.2
Cadmium		1000	0.400		1010	101.0	0.400		946	94.6
Calcium	400000	400000	363000	90.8	363000	90.8	332000	83.0	337000	84.3
Cerium			17.7		492*		14.1		462*	
Chromium		500	-2.00		468	93.6	-1.90		434	86.8
Cobalt		500	0.800		480	96.0	0.700		455	91.0
Copper		500	3.50		497	99.4	3.70		464	92.8
Iron	200000	200000	183000	91.5	183000	91.5	166000	83.0	168000	84.0
Lead		1000	2.40		945	94.5	0.100		892	89.2
Lithium		500	-8.70		521	104.2	-9.40		493	98.6
Magnesium	500000	500000	475000	95.0	478000	95.6	432000	86.4	439000	87.8
Manganese		500	0.900		501	100.2	0.800		464	92.8
Molybdenum		500	-2.20		456	91.2	-2.00		435	87.0
Nickel		1000	0.100		952	95.2	0.200		906	90.6
Phosphorus		500	1.00		466	93.2	3.10		446	89.2
Potassium			-497		-501		-469		-488	
Selenium		1000	-1.20		932	93.2	-2.50		885	88.5
Silicon		500	5.90		500	100.0	3.20		474	94.8
Silver		1000	4.80		1030	103.0	4.70		961	96.1
Sodium			78.5		79.2		73.6		69.4	
Strontium		500	-0.900		493	98.6	-0.700		469	93.8
Sulfur		500	-23.7		459	91.8	-21.6		434	86.8
Thallium		1000	-7.30		934	93.4	-4.30		887	88.7
Tin		500	-6.40		449	89.8	-4.90		425	85.0
Titanium		500	-2.10		470	94.0	-1.70		436	87.2
Tungsten		500	0.100		456	91.2	3.00		442	88.4
Vanadium		500	-2.80		477	95.4	-3.30		440	88.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M1.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52132 Units: ug/l

Time:			08:06		08:12		12:49		12:54	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	3.00		944	94.4	2.50		890	89.0
Zirconium		500	0.400		488	97.6	0.700		474	94.8

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:46	MA52135-STD1	1		STDA
13:51	MA52135-STD2	1		STDB
13:57	MA52135-ICV1	1		
14:04	MA52135-ICB1	1		
14:10	MA52135-CCV1	1		
14:14	MA52135-CCB1	1		
14:20	MA52135-CRID1	1		
14:25	MA52135-CRI1	1		
14:30	MA52135-ICSA1	1		
14:35	MA52135-ICSAB1	1		
14:40	ZZZZZZ	1		
14:46	MA52135-HSTD1	1		
14:52	ZZZZZZ	1		
14:57	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	ZZZZZZ	1		
15:13	MA52135-CCV2	1		
15:18	MA52135-CCB2	1		
15:23	MP31917-B1	1		
15:28	MP31917-MB1	1		
15:33	MA52135-HSTD2	1		
15:39	MP31917-LC1	1		
15:44	MP31917-LC2	1		
15:49	MP31917-S1	1		
15:54	MP31917-S2	1		
15:59	JD41833-5	1		(sample used for QC only; not part of login JD41762)
16:04	MP31917-SD1	5		
16:09	MP31917-PS1	1		
16:14	MA52135-CCV3	1		
16:18	MA52135-CCB3	1		
16:24	ZZZZZZ	1		
16:29	ZZZZZZ	1		
16:34	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:39	JD41762-27	2		
----------->	Last reportable sample/prep for job JD41762			
16:44	ZZZZZZ	1		
16:49	MA52135-CRI2	1		
16:54	MA52135-CRI3	1		
16:59	MA52135-CCV4	1		
17:04	MA52135-CCB4	1		
17:09	MA52135-ICSA2	1		
17:14	MA52135-ICSAB2	1		
17:20	MA52135-CCV5	1		
17:24	MA52135-CCB5	1		
----------->	Last reportable CCB for job JD41762			
17:30	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:45	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:55	ZZZZZZ	1		
18:00	ZZZZZZ	1		
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	MA52135-CCV6	1		
18:20	MA52135-CCB6	1		
18:25	ZZZZZZ	1		
18:30	ZZZZZZ	1		
18:36	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	MP31933-B1	1		
18:56	MP31933-MB1	1		
19:01	MP31933-S1	1		
19:06	MP31933-S2	1		
19:11	MA52135-CCV7	1		
19:16	MA52135-CCB7	1		
19:21	JD41871-4	1		(sample used for QC only; not part of login JD41762)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:27	MP31933-SD1	5		
19:32	MP31933-S1	2		
19:37	MP31933-S2	2		
19:42	JD41871-4	2		(sample used for QC only; not part of login JD41762)
19:47	MP31933-SD1	10		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	MA52135-CCV8	1		
20:18	MA52135-CCB8	1		
20:23	ZZZZZZ	1		
20:28	ZZZZZZ	1		
20:33	ZZZZZZ	1		
20:38	ZZZZZZ	1		
20:43	ZZZZZZ	1		
05:38	MA52135-CCV9	1		
05:46	MA52135-CCB9	1		
05:51	MA52135-CCV10	1		
05:59	MA52135-CCB10	1		
06:04	MP31952-MB1	1		Batch to reanalyze, curve out
06:10	MP31952-LB1	1		
06:14	MP31952-B1	1		
06:19	MP31952-LS1	1		
06:24	MP31952-S1	1		
06:29	MP31952-S2	1		
06:35	JD41780-1	1		(sample used for QC only; not part of login JD41762)
06:39	MP31952-SD1	5		
06:44	ZZZZZZ	1		
06:49	MA52135-CCV11	1		
06:55	MA52135-CCV12	1		
06:59	MA52135-CCB11	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:57	MA52135-ICV1	1	X	
14:04	MA52135-ICB1	1	X	
14:10	MA52135-CCV1	1	X	
14:14	MA52135-CCB1	1	X	
14:20	MA52135-CRID1	1	X	
14:25	MA52135-CRI1	1	X	
14:30	MA52135-ICSA1	1	X	
14:35	MA52135-ICSAB1	1	X	
14:40	ZZZZZZ	1		
14:46	MA52135-HSTD1	1	X	
14:52	ZZZZZZ	1		
14:57	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	ZZZZZZ	1		
15:13	MA52135-CCV2	1	X	
15:18	MA52135-CCB2	1	X	
15:23	MP31917-B1	1	X	
15:28	MP31917-MB1	1	X	
15:33	MA52135-HSTD2	1	X	
15:39	MP31917-LC1	1	X	
15:44	MP31917-LC2	1	X	
15:49	MP31917-S1	1	X	
15:54	MP31917-S2	1	X	
15:59	JD41833-5	1	X	(a)
16:04	MP31917-SD1	5	X	
16:09	MP31917-PS1	1		
16:14	MA52135-CCV3	1	X	
16:18	MA52135-CCB3	1	X	
16:24	ZZZZZZ	1		
16:29	ZZZZZZ	1		
16:34	ZZZZZZ	1		
16:39	JD41762-27	2	X	
16:44	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Element: Dilution	As	
16:49	MA52135-CRI2	1	X	
16:54	MA52135-CRI3	1	X	
16:59	MA52135-CCV4	1	X	
17:04	MA52135-CCB4	1	X	
17:09	MA52135-ICSA2	1	X	
17:14	MA52135-ICSAB2	1	X	
17:20	MA52135-CCV5	1	X	
17:24	MA52135-CCB5	1	X	
17:30	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:45	ZZZZZZ	1		
17:50	ZZZZZZ	1		
17:55	ZZZZZZ	1		
18:00	ZZZZZZ	1		
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	MA52135-CCV6	1	X	
18:20	MA52135-CCB6	1	X	
18:25	ZZZZZZ	1		
18:30	ZZZZZZ	1		
18:36	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	MP31933-B1	1		
18:56	MP31933-MB1	1		
19:01	MP31933-S1	1		
19:06	MP31933-S2	1		
19:11	MA52135-CCV7	1	X	
19:16	MA52135-CCB7	1	X	
19:21	JD41871-4	1		(a)
19:27	MP31933-SD1	5		
19:32	MP31933-S1	2		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Element: Dilution	As
19:37	MP31933-S2	2	
19:42	JD41871-4	2	(a)
19:47	MP31933-SD1	10	
19:52	ZZZZZZ	1	
19:57	ZZZZZZ	1	
20:03	ZZZZZZ	1	
20:08	ZZZZZZ	1	
20:13	MA52135-CCV8	1	X
20:18	MA52135-CCB8	1	X
20:23	ZZZZZZ	1	
20:28	ZZZZZZ	1	
20:33	ZZZZZZ	1	
20:38	ZZZZZZ	1	
20:43	ZZZZZZ	1	
05:38	MA52135-CCV9	1	
05:46	MA52135-CCB9	1	
05:51	MA52135-CCV10	1	X
05:59	MA52135-CCB10	1	X
06:04	MP31952-MB1	1	Batch to reanalyze, curve out
06:10	MP31952-LB1	1	
06:14	MP31952-B1	1	
06:19	MP31952-LS1	1	
06:24	MP31952-S1	1	
06:29	MP31952-S2	1	
06:35	JD41780-1	1	
06:39	MP31952-SD1	5	
06:44	ZZZZZZ	1	
06:49	MA52135-CCV11	1	
06:55	MA52135-CCV12	1	
06:59	MA52135-CCB11	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:46	MA52135-STD1	10093 R	316510 R	35359 R	12175 R
13:51	MA52135-STD2	9629	295890	35164	10980
13:57	MA52135-ICV1	9933	304890	35474	11420
14:04	MA52135-ICB1	10190	319030	35727	12270
14:10	MA52135-CCV1	9974	307170	35747	11457
14:14	MA52135-CCB1	10228	322560	35760	12312
14:20	MA52135-CRID1	10171	319320	35817	12236
14:25	MA52135-CRI1	10195	315460	35905	12160
14:30	MA52135-ICSA1	9461	284840	35687	10469
14:35	MA52135-ICSAB1	9479	286100	35784	10490
14:40	ZZZZZZ	999999 !	313370	36120	999999 !
14:46	MA52135-HSTD1	9444	291820	35583	10420
14:52	ZZZZZZ	10186	314330	36251	12232
14:57	ZZZZZZ	10112	314820	35701	12364
15:03	ZZZZZZ	10122	318730	35662	12363
15:08	ZZZZZZ	10266	320220	35443	12413
15:13	MA52135-CCV2	10122	311920	36227	11602
15:18	MA52135-CCB2	10412	326420	36340	12527
15:23	MP31917-B1	10371	323090	37241	12047
15:28	MP31917-MB1	10504	329610	36894	12631
15:33	MA52135-HSTD2	10261	319350	36506	12321
15:39	MP31917-LC1	10413	322740	37657	11882
15:44	MP31917-LC2	10439	321610	37905	11901
15:49	MP31917-S1	10373	322880	37524	11787
15:54	MP31917-S2	10405	318940	37862	11816
15:59	JD41833-5	10372	325580	37307	12136
16:04	MP31917-SD1	10540	328550	36787	12469
16:09	MP31917-PS1	10349	318410	37691	11860
16:14	MA52135-CCV3	10291	302620	36516	11772
16:18	MA52135-CCB3	10558	331850	36646	12652
16:24	ZZZZZZ	10631	330780	37892	12353
16:29	ZZZZZZ	10602	329340	37797	12307
16:34	ZZZZZZ	10639	331160	37833	12357

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:39	JD41762-27	10530	326060	37934	12278
16:44	ZZZZZZ	10666	335630	37408	12777
16:49	MA52135-CRI2	10581	332240	37086	12548
16:54	MA52135-CRI3	10624	332170	37123	12614
16:59	MA52135-CCV4	10382	320100	36860	11853
17:04	MA52135-CCB4	10678	327200	36917	12778
17:09	MA52135-ICSA2	9745	297500	36700	10763
17:14	MA52135-ICSAB2	9783	296010	36742	10775
17:20	MA52135-CCV5	10413	320660	36880	11898
17:24	MA52135-CCB5	10623	337500	37008	12715
17:30	ZZZZZZ	10494	327890	37975	12145
17:34	ZZZZZZ	10761	331060	38669	12287
17:39	ZZZZZZ	10642	332010	38267	12263
17:45	ZZZZZZ	10852	332690	38719	12414
17:50	ZZZZZZ	10715	335700	38321	12316
17:55	ZZZZZZ	10713	331980	38120	12369
18:00	ZZZZZZ	10901	335850	38884	12295
18:05	ZZZZZZ	10850	335300	38481	12509
18:10	ZZZZZZ	10739	331410	38183	12355
18:15	MA52135-CCV6	10473	322630	36829	11966
18:20	MA52135-CCB6	10755	338390	37011	12862
18:25	ZZZZZZ	10835	335050	38428	12511
18:30	ZZZZZZ	10692	330800	37938	12483
18:36	ZZZZZZ	11048	336840	39205	12456
18:41	ZZZZZZ	10399	310510	37824	11597
18:46	ZZZZZZ	10846	340490	37824	12811
18:51	MP31933-B1	10715	334340	38156	12418
18:56	MP31933-MB1	10903	344660	38091	13088
19:01	MP31933-S1	10073	311810	37527	11163
19:06	MP31933-S2	10145	314090	37440	11222
19:11	MA52135-CCV7	10545	326360	37259	12070
19:16	MA52135-CCB7	10834	342040	37290	12973
19:21	JD41871-4	10125	313350	37348	11393

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:27	MP31933-SD1	10581	326130	37378	12328
19:32	MP31933-S1	10370	318020	37518	11689
19:37	MP31933-S2	10383	319210	37216	11707
19:42	JD41871-4	10354	311980	37334	11844
19:47	MP31933-SD1	10706	319510	37443	12601
19:52	ZZZZZZ	10909	340360	38208	12936
19:57	ZZZZZZ	10875	331680	38124	12854
20:03	ZZZZZZ	10866	340030	38173	12815
20:08	ZZZZZZ	10886	340290	38196	12923
20:13	MA52135-CCV8	10583	326600	37107	12118
20:18	MA52135-CCB8	10808	343400	37438	12961
20:23	ZZZZZZ	10979	342370	38188	13049
20:28	ZZZZZZ	10725	335270	37836	12596
20:33	ZZZZZZ	10867	341340	37412	12957
20:38	ZZZZZZ	10869	340120	37716	12910
20:43	ZZZZZZ	10832	339490	37810	12854
05:38	MA52135-CCV9	No results reported for the elements associated with this internal standard.			
05:46	MA52135-CCB9	No results reported for the elements associated with this internal standard.			
05:51	MA52135-CCV10	10360	315490	36078	11914
05:59	MA52135-CCB10	10628	333390	35666	12805
06:04	MP31952-MB1	No results reported for the elements associated with this internal standard.			
06:10	MP31952-LB1	No results reported for the elements associated with this internal standard.			
06:14	MP31952-B1	No results reported for the elements associated with this internal standard.			
06:19	MP31952-LS1	No results reported for the elements associated with this internal standard.			
06:24	MP31952-S1	No results reported for the elements associated with this internal standard.			
06:29	MP31952-S2	No results reported for the elements associated with this internal standard.			
06:35	JD41780-1	No results reported for the elements associated with this internal standard.			
06:39	MP31952-SD1	No results reported for the elements associated with this internal standard.			
06:44	ZZZZZZ	No results reported for the elements associated with this internal standard.			
06:49	MA52135-CCV11	No results reported for the elements associated with this internal standard.			
06:55	MA52135-CCV12	No results reported for the elements associated with this internal standard.			
06:59	MA52135-CCB11	11065	344200	37075	13307

R = Reference for ISTD limits. ! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52135
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time: / Sample ID:			14:04 ICB1		14:14 CCB1		15:18 CCB2		16:18 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	-0.500	<3.0	-0.200	<3.0	0.200	<3.0	1.10	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time:			14:04		14:14		15:18		16:18	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time:			17:04		17:24	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Aluminum	200	17	anr			
Antimony	6.0	1.7	anr			
Arsenic	3.0	2.1	0.400	<3.0	-0.500	<3.0
Barium	200	.8	anr			
Beryllium	1.0	.3	anr			
Bismuth	20	2.3				
Boron	100	2.3				
Cadmium	3.0	.3	anr			
Calcium	5000	6.6	anr			
Cerium	100					
Chromium	10	.3	anr			
Cobalt	50	.4	anr			
Copper	10	.8	anr			
Iron	100	5.3	anr			
Lead	3.0	1.1	anr			
Lithium	50	4.8				
Magnesium	5000	32	anr			
Manganese	15	.1	anr			
Molybdenum	20	.6				
Nickel	10	.4	anr			
Phosphorus	50	1.2				
Potassium	10000	77	anr			
Selenium	10	3.2	anr			
Silicon	200	1.7				
Silver	10	1	anr			
Sodium	10000	34	anr			
Strontium	10	.3				
Sulfur	50	3				
Thallium	10	1.8	anr			
Tin	10	.8				
Titanium	10	.5				
Tungsten	50	2.6				
Vanadium	50	.6	anr			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52135 Units: ug/l

Time:			17:04		17:24	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.1	anr			
Zirconium	10	.3				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		13:57			14:10			15:13	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1920	96.0	2000	1890	94.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		13:57			14:10			15:13	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		16:14			16:59			17:20	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1860	93.0	2000	1840	92.0	2000	1850	92.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52135 Units: ug/l

Time:		16:14			16:59			17:20	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52135 Units: ug/l

Time:		14:46			15:33	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony						
Arsenic				8000	7210	90.1
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium	anr					
Cerium						
Chromium						
Cobalt						
Copper						
Iron	anr					
Lead						
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium	anr					
Selenium						
Silicon						
Silver						
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52135 Units: ug/l

Time:		14:46			15:33	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc						
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				14:20		14:25		16:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	3.50	116.7	7.40	92.5	8.40	105.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				14:20		14:25		16:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				16:54	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	8.20	102.5
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52135 Units: ug/l

Time:				16:54	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52135 Units: ug/l

Time:			14:30		14:35		17:09		17:14	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	480000	96.0	487000	97.4	461000	92.2	469000	93.8
Antimony		1000	-3.00		972	97.2	-3.60		940	94.0
Arsenic		1000	1.80		970	97.0	0.600		935	93.5
Barium		500	5.60		500	100.0	5.70		486	97.2
Beryllium		500	0.100		473	94.6	0.100		456	91.2
Bismuth		500	15.7		529	105.8	13.2		510	102.0
Boron		500	1.60		476	95.2	2.70		461	92.2
Cadmium		1000	0.200		987	98.7	0.400		951	95.1
Calcium	400000	400000	356000	89.0	367000	91.8	350000	87.5	350000	87.5
Cerium			16.1		494*		16.4		477*	
Chromium		500	-2.40		466	93.2	-1.70		448	89.6
Cobalt		500	0.600		476	95.2	0.800		460	92.0
Copper		500	2.60		484	96.8	2.20		469	93.8
Iron	200000	200000	182000	91.0	184000	92.0	174000	87.0	177000	88.5
Lead		1000	-2.70		942	94.2	-0.500		907	90.7
Lithium		500	-6.80		529	105.8	-5.20		513	102.6
Magnesium	500000	500000	471000	94.2	479000	95.8	450000	90.0	459000	91.8
Manganese		500	0.900		497	99.4	0.800		478	95.6
Molybdenum		500	-2.40		454	90.8	-2.10		436	87.2
Nickel		1000	-0.200		951	95.1	0.400		921	92.1
Phosphorus		500	1.30		463	92.6	3.70		447	89.4
Potassium			-518		-437		-499		-458	
Selenium		1000	1.10		919	91.9	0.600		885	88.5
Silicon		500	4.90		498	99.6	4.50		480	96.0
Silver		1000	4.80		1030	103.0	4.50		998	99.8
Sodium			62.0		65.4		52.7		63.7	
Strontium		500	-0.800		497	99.4	-0.800		480	96.0
Sulfur		500	-26.3		457	91.4	-20.6		443	88.6
Thallium		1000	-7.60		938	93.8	-4.70		909	90.9
Tin		500	-6.00		443	88.6	-4.60		426	85.2
Titanium		500	-2.10		473	94.6	-1.80		458	91.6
Tungsten		500	-0.700		457	91.4	-0.700		441	88.2
Vanadium		500	-3.60		469	93.8	-3.20		452	90.4

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC032922M2.ICP Date Analyzed: 03/29/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52135 Units: ug/l

Time:			14:30		14:35		17:09		17:14	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.50		937	93.7	2.00		900	90.0
Zirconium		500	0.800		502	100.4	0.900		485	97.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:01	MA52141-STD1	1		STDA
09:06	MA52141-STD2	1		STDB
09:11	MA52141-ICV1	1		
09:19	MA52141-ICB1	1		
09:30	MA52141-ICCV1	1		
09:46	MA52141-CCB1	1		
09:50	MA52141-CRI1	1		
09:55	MA52141-CRID1	1		
10:01	MA52141-ICSA1	1		
10:06	MA52141-ICSAB1	1		
10:11	MA52141-HSTD1	1		
10:17	MA52141-HSTD2	1		
10:22	ZZZZZZ	1		
10:27	ZZZZZZ	1		
10:32	ZZZZZZ	1		
10:37	MA52141-CCV1	1		
10:42	MA52141-CCB2	1		
10:47	MA52141-CRI2	1		
10:52	ZZZZZZ	1		
10:57	MP31964-B1	1		
11:02	MP31964-MB1	1		
11:07	MP31964-S1	1		
11:13	MP31964-S2	1		
11:18	JD41963-17	1		(sample used for QC only; not part of login JD41762)
11:23	MP31964-SD1	5		
11:28	ZZZZZZ	1		
11:33	MA52141-CCV2	1		
11:38	MA52141-CCB3	1		
11:43	ZZZZZZ	1		
11:49	ZZZZZZ	1		
11:54	ZZZZZZ	1		
11:59	ZZZZZZ	1		
12:04	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:10	ZZZZZZ	1		
12:15	ZZZZZZ	1		
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	1		
12:33	MA52141-CCV3	1		
12:38	MA52141-CCB4	1		
12:43	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:53	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:19	ZZZZZZ	1		
13:24	ZZZZZZ	1		
13:31	MA52141-CCV4	1		
13:36	MA52141-CCB5	1		
13:41	MP31966A-MB1	1		
13:46	MP31966A-B1	1		
13:51	MP31966A-S1	1		
13:55	MP31966A-S2	1		
14:00	JD41895-3	1		(sample used for QC only; not part of login JD41762)
14:05	MP31966A-SD1	5		
14:10	ZZZZZZ	1		
14:15	MP31965-B1	1		
14:19	MP31965-MB1	1		
14:24	MA52141-CCV5	1		
14:29	MA52141-CCB6	1		
14:34	MP31965-S1	1		
14:39	MP31965-S2	1		
14:44	JD41989-2	1		(sample used for QC only; not part of login JD41762)
14:50	MP31965-SD1	5		
14:55	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:00	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:15	ZZZZZZ	1		
15:20	MA52141-CCV6	1		
15:25	MA52141-CCB7	1		
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	1		
15:59	ZZZZZZ	1		
16:04	ZZZZZZ	1		
16:09	ZZZZZZ	1		
16:15	ZZZZZZ	1		
16:20	ZZZZZZ	1		
16:27	MA52141-CCV7	1		
16:32	MA52141-CCB8	1		
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:48	ZZZZZZ	1		
16:53	ZZZZZZ	1		
16:58	MP31964-S1	2		
17:03	MP31964-S2	2		
17:07	JD41963-17	2		(sample used for QC only; not part of login JD41762)
17:13	MP31964-SD1	10		
17:17	ZZZZZZ	5		
17:22	ZZZZZZ	5		
17:30	MA52141-CCV8	1		
17:34	MA52141-CCB9	1		
17:39	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:49	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:54	ZZZZZZ	5		
17:59	ZZZZZZ	5		
18:04	ZZZZZZ	2		
18:09	ZZZZZZ	10		
18:14	ZZZZZZ	100		
18:19	ZZZZZZ	5		
18:24	ZZZZZZ	5		
18:29	MA52141-CCV9	1		
18:34	MA52141-CCB10	1		
18:39	MP31965-S1	10		
18:44	MP31965-S2	10		
18:49	JD41989-2	10		(sample used for QC only; not part of login JD41762)
18:54	MP31965-SD1	50		
18:59	ZZZZZZ	2		
19:04	ZZZZZZ	5		
19:09	ZZZZZZ	50		
19:14	ZZZZZZ	10		
19:19	MP31972-MB1	1		
19:24	MP31972-B1	1		
19:29	MA52141-CCV10	1		
19:34	MA52141-CCB11	1		
19:39	MP31972-S1	1		
19:44	MP31972-S2	1		
19:49	JD41953-2	1		(sample used for QC only; not part of login JD41762)
19:54	MP31972-SD1	5		
19:59	MP31972-PS1	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:19	ZZZZZZ	1		
20:24	MA52141-CCV11	1		
20:29	MA52141-CCB12	1		
20:34	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:39	ZZZZZZ	1		
20:44	ZZZZZZ	1		
20:49	ZZZZZZ	1		
20:54	ZZZZZZ	1		
20:59	ZZZZZZ	1		
21:04	ZZZZZZ	1		
21:09	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:24	MA52141-CCV12	1		
21:29	MA52141-CCB13	1		
21:34	MP31965-MB1	1		
21:39	MP31995-MB1	1		
21:44	MP31995-B1	1		
21:49	ZZZZZZ	1		
21:54	ZZZZZZ	1		
21:59	ZZZZZZ	1		
22:04	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:15	ZZZZZZ	1		
22:20	MA52141-CCV13	1		
22:24	MA52141-CCB14	1		
22:30	MP31996-MB1	1		
22:35	MP31996-LB1	1		
22:40	MP31996-B1	1		
22:44	MP31996-LS1	1		
22:49	MP31996-S1	1		
22:54	MP31996-S2	1		
22:59	JD39100-3U	1		(sample used for QC only; not part of login JD41762)
23:03	MP31996-SD1	5		
23:08	ZZZZZZ	1		
23:13	MA52141-CCV14	1		
23:18	MA52141-CCB15	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:23	MP31997-MB1	1		
23:28	MP31997-LB1	1		
23:33	MP31997-B1	1		
23:38	MP31997-LS1	1		
23:43	MP31997-S1	1		
23:47	MP31997-S2	1		
23:52	JD40983-3T	1		(sample used for QC only; not part of login JD41762)
23:57	MP31997-SD1	5		
00:02	ZZZZZZ	1		
00:07	MA52141-CCV15	1		
00:12	MA52141-CCB16	1		
00:17	ZZZZZZ	1		
00:22	MP31941-S1	10		
00:27	MP31941-S2	10		rerun for AG
00:32	JD41763-4	10		(sample used for QC only; not part of login JD41762)
00:37	MP31941-SD1	50		
00:42	ZZZZZZ	2		
00:47	ZZZZZZ	150		
00:52	ZZZZZZ	5		
00:57	ZZZZZZ	5		
01:02	MA52141-CCV16	1		
01:07	MA52141-CCB17	1		
01:12	ZZZZZZ	5		
01:17	ZZZZZZ	2		
01:22	ZZZZZZ	10		
01:27	ZZZZZZ	5		
01:32	ZZZZZZ	5		
01:37	ZZZZZZ	5		
01:42	MA52141-CCV17	1		
01:46	MA52141-CCB18	1		
01:51	ZZZZZZ	1		
01:56	ZZZZZZ	1		
02:02	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
02:07	ZZZZZZ	1		
02:12	ZZZZZZ	1		
02:17	ZZZZZZ	1		
02:22	MA52141-CCV18	1		
02:27	MA52141-CCB19	1		
02:32	MP31992-MB1	1		
02:37	MP31992-B1	1		
02:42	MP31992-S1	1		
02:46	MP31992-S2	1		
02:51	JD42036-1	1		(sample used for QC only; not part of login JD41762)
02:56	MP31992-SD1	5		
03:01	ZZZZZZ	1		
03:06	ZZZZZZ	1		
03:12	ZZZZZZ	1		
03:17	MA52141-CCV19	1		
03:22	MA52141-CCB20	1		
03:27	ZZZZZZ	1		
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:53	ZZZZZZ	1		
03:58	ZZZZZZ	1		
04:03	ZZZZZZ	1		
04:08	ZZZZZZ	1		
04:13	MA52141-CCV20	1		
04:18	MA52141-CCB21	1		
04:23	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:33	ZZZZZZ	1		
04:38	ZZZZZZ	1		
04:43	ZZZZZZ	1		
04:48	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:53	ZZZZZZ	1		
04:58	MP31989-MB1	1		
05:03	MP31989-B1	1		
---------->	Last reportable sample/prep for job JD41762			
05:08	ZZZZZZ	1		
05:13	MA52141-CCV21	1		
05:18	MA52141-CCB22	1		
---------->	Last reportable CCB for job JD41762			
05:23	ZZZZZZ	1		
05:28	ZZZZZZ	1		
05:33	ZZZZZZ	1		
05:38	ZZZZZZ	1		
05:43	ZZZZZZ	1		
05:48	ZZZZZZ	1		
05:53	ZZZZZZ	1		
05:58	ZZZZZZ	1		
06:03	ZZZZZZ	1		
06:08	MA52141-CCV22	1		
06:13	MA52141-CCB23	1		
06:18	ZZZZZZ	1		
06:23	ZZZZZZ	1		
06:28	ZZZZZZ	1		
06:33	ZZZZZZ	1		
06:38	ZZZZZZ	1		
06:43	ZZZZZZ	1		
06:48	ZZZZZZ	1		
06:53	MA52141-CCV23	1		
06:58	MA52141-CCB24	1		
07:03	ZZZZZZ	2		
07:08	ZZZZZZ	2		
07:13	MP31929-MB2	1		rerun for Ag
07:18	MP31929-B2	1		
07:23	MP31929-S3	1		FE high. Needs post spike
07:28	MP31929-S4	1		FE high
07:33	JD41894-17	1		(sample used for QC only; not part of login JD41762)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:38	MP31929-SD2	5		FE high
07:43	MA52141-CCV24	1		
07:48	MA52141-CCB25	1		
07:54	ZZZZZZ	2		
07:59	ZZZZZZ	50		
08:04	ZZZZZZ	10		
08:09	ZZZZZZ	10		
08:14	ZZZZZZ	100		
08:19	ZZZZZZ	10		
08:24	ZZZZZZ	100		
08:29	ZZZZZZ	5		
08:34	ZZZZZZ	5		
08:40	MA52141-CCV25	1		
08:45	MA52141-CCB26	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As
09:11	MA52141-ICV1	1	X
09:19	MA52141-ICB1	1	X
09:30	MA52141-ICCV1	1	X
09:46	MA52141-CCB1	1	X
09:50	MA52141-CRI1	1	X
09:55	MA52141-CRID1	1	X
10:01	MA52141-ICSA1	1	X
10:06	MA52141-ICSAB1	1	X
10:11	MA52141-HSTD1	1	X
10:17	MA52141-HSTD2	1	X
10:22	ZZZZZZ	1	
10:27	ZZZZZZ	1	
10:32	ZZZZZZ	1	
10:37	MA52141-CCV1	1	X
10:42	MA52141-CCB2	1	X
10:47	MA52141-CRI2	1	X
10:52	ZZZZZZ	1	
10:57	MP31964-B1	1	
11:02	MP31964-MB1	1	
11:07	MP31964-S1	1	
11:13	MP31964-S2	1	
11:18	JD41963-17	1	(a)
11:23	MP31964-SD1	5	
11:28	ZZZZZZ	1	
11:33	MA52141-CCV2	1	X
11:38	MA52141-CCB3	1	X
11:43	ZZZZZZ	1	
11:49	ZZZZZZ	1	
11:54	ZZZZZZ	1	
11:59	ZZZZZZ	1	
12:04	ZZZZZZ	1	
12:10	ZZZZZZ	1	
12:15	ZZZZZZ	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	1		
12:33	MA52141-CCV3	1	X	
12:38	MA52141-CCB4	1	X	
12:43	ZZZZZZ	1		
12:48	ZZZZZZ	1		
12:53	ZZZZZZ	1		
12:58	ZZZZZZ	1		
13:03	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:19	ZZZZZZ	1		
13:24	ZZZZZZ	1		
13:31	MA52141-CCV4	1	X	
13:36	MA52141-CCB5	1	X	
13:41	MP31966A-MB1	1		
13:46	MP31966A-B1	1		
13:51	MP31966A-S1	1		
13:55	MP31966A-S2	1		
14:00	JD41895-3	1		(a)
14:05	MP31966A-SD1	5		
14:10	ZZZZZZ	1		
14:15	MP31965-B1	1	X	
14:19	MP31965-MB1	1		
14:24	MA52141-CCV5	1	X	
14:29	MA52141-CCB6	1	X	
14:34	MP31965-S1	1	X	
14:39	MP31965-S2	1	X	
14:44	JD41989-2	1		(a)
14:50	MP31965-SD1	5	X	
14:55	ZZZZZZ	1		
15:00	ZZZZZZ	1		
15:04	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
15:09	ZZZZZZ	1		
15:15	ZZZZZZ	1		
15:20	MA52141-CCV6	1	X	
15:25	MA52141-CCB7	1	X	
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	1		
15:59	ZZZZZZ	1		
16:04	ZZZZZZ	1		
16:09	ZZZZZZ	1		
16:15	ZZZZZZ	1		
16:20	ZZZZZZ	1		
16:27	MA52141-CCV7	1	X	
16:32	MA52141-CCB8	1	X	
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:48	ZZZZZZ	1		
16:53	ZZZZZZ	1		
16:58	MP31964-S1	2		
17:03	MP31964-S2	2		
17:07	JD41963-17	2		(a)
17:13	MP31964-SD1	10		
17:17	ZZZZZZ	5		
17:22	ZZZZZZ	5		
17:30	MA52141-CCV8	1	X	
17:34	MA52141-CCB9	1	X	
17:39	ZZZZZZ	5		
17:44	ZZZZZZ	5		
17:49	ZZZZZZ	5		
17:54	ZZZZZZ	5		
17:59	ZZZZZZ	5		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
18:04	ZZZZZZ	2		
18:09	ZZZZZZ	10		
18:14	ZZZZZZ	100		
18:19	ZZZZZZ	5		
18:24	ZZZZZZ	5		
18:29	MA52141-CCV9	1	X	
18:34	MA52141-CCB10	1	X	
18:39	MP31965-S1	10		
18:44	MP31965-S2	10		
18:49	JD41989-2	10		(a)
18:54	MP31965-SD1	50		
18:59	ZZZZZZ	2		
19:04	ZZZZZZ	5		
19:09	ZZZZZZ	50		
19:14	ZZZZZZ	10		
19:19	MP31972-MB1	1	X	
19:24	MP31972-B1	1	X	
19:29	MA52141-CCV10	1	X	
19:34	MA52141-CCB11	1	X	
19:39	MP31972-S1	1	X	
19:44	MP31972-S2	1	X	
19:49	JD41953-2	1	X	(a)
19:54	MP31972-SD1	5	X	
19:59	MP31972-PS1	1		
20:03	ZZZZZZ	1		
20:08	ZZZZZZ	1		
20:13	ZZZZZZ	1		
20:19	ZZZZZZ	1		
20:24	MA52141-CCV11	1	X	
20:29	MA52141-CCB12	1	X	
20:34	ZZZZZZ	1		
20:39	ZZZZZZ	1		
20:44	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
20:49	ZZZZZZ	1		
20:54	ZZZZZZ	1		
20:59	ZZZZZZ	1		
21:04	ZZZZZZ	1		
21:09	ZZZZZZ	1		
21:14	ZZZZZZ	1		
21:19	ZZZZZZ	1		
21:24	MA52141-CCV12	1	X	
21:29	MA52141-CCB13	1	X	
21:34	MP31965-MB1	1	X	
21:39	MP31995-MB1	1		
21:44	MP31995-B1	1		
21:49	ZZZZZZ	1		
21:54	ZZZZZZ	1		
21:59	ZZZZZZ	1		
22:04	ZZZZZZ	1		
22:09	ZZZZZZ	1		
22:15	ZZZZZZ	1		
22:20	MA52141-CCV13	1	X	
22:24	MA52141-CCB14	1	X	
22:30	MP31996-MB1	1		
22:35	MP31996-LB1	1		
22:40	MP31996-B1	1		
22:44	MP31996-LS1	1		
22:49	MP31996-S1	1		
22:54	MP31996-S2	1		
22:59	JD39100-3U	1		(a)
23:03	MP31996-SD1	5		
23:08	ZZZZZZ	1		
23:13	MA52141-CCV14	1	X	
23:18	MA52141-CCB15	1	X	
23:23	MP31997-MB1	1		
23:28	MP31997-LB1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
23:33	MP31997-B1	1		
23:38	MP31997-LS1	1		
23:43	MP31997-S1	1		
23:47	MP31997-S2	1		
23:52	JD40983-3T	1		(a)
23:57	MP31997-SD1	5		
00:02	ZZZZZZ	1		
00:07	MA52141-CCV15	1	X	
00:12	MA52141-CCB16	1	X	
00:17	ZZZZZZ	1		
00:22	MP31941-S1	10		
00:27	MP31941-S2	10		
00:32	JD41763-4	10		(a)
00:37	MP31941-SD1	50		
00:42	ZZZZZZ	2		
00:47	ZZZZZZ	150		
00:52	ZZZZZZ	5		
00:57	ZZZZZZ	5		
01:02	MA52141-CCV16	1	X	
01:07	MA52141-CCB17	1	X	
01:12	ZZZZZZ	5		
01:17	ZZZZZZ	2		
01:22	ZZZZZZ	10		
01:27	ZZZZZZ	5		
01:32	ZZZZZZ	5		
01:37	ZZZZZZ	5		
01:42	MA52141-CCV17	1	X	
01:46	MA52141-CCB18	1	X	
01:51	ZZZZZZ	1		
01:56	ZZZZZZ	1		
02:02	ZZZZZZ	1		
02:07	ZZZZZZ	1		
02:12	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As	
02:17	ZZZZZZ	1		
02:22	MA52141-CCV18	1	X	
02:27	MA52141-CCB19	1	X	
02:32	MP31992-MB1	1		
02:37	MP31992-B1	1		
02:42	MP31992-S1	1		
02:46	MP31992-S2	1		
02:51	JD42036-1	1		(a)
02:56	MP31992-SD1	5		
03:01	ZZZZZZ	1		
03:06	ZZZZZZ	1		
03:12	ZZZZZZ	1		
03:17	MA52141-CCV19	1	X	
03:22	MA52141-CCB20	1	X	
03:27	ZZZZZZ	1		
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:53	ZZZZZZ	1		
03:58	ZZZZZZ	1		
04:03	ZZZZZZ	1		
04:08	ZZZZZZ	1		
04:13	MA52141-CCV20	1	X	
04:18	MA52141-CCB21	1	X	
04:23	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:33	ZZZZZZ	1		
04:38	ZZZZZZ	1		
04:43	ZZZZZZ	1		
04:48	ZZZZZZ	1		
04:53	ZZZZZZ	1		
04:58	MP31989-MB1	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As
05:03	MP31989-B1	1	X
05:08	ZZZZZZ	1	
05:13	MA52141-CCV21	1	X
05:18	MA52141-CCB22	1	X
05:23	ZZZZZZ	1	
05:28	ZZZZZZ	1	
05:33	ZZZZZZ	1	
05:38	ZZZZZZ	1	
05:43	ZZZZZZ	1	
05:48	ZZZZZZ	1	
05:53	ZZZZZZ	1	
05:58	ZZZZZZ	1	
06:03	ZZZZZZ	1	
06:08	MA52141-CCV22	1	X
06:13	MA52141-CCB23	1	X
06:18	ZZZZZZ	1	
06:23	ZZZZZZ	1	
06:28	ZZZZZZ	1	
06:33	ZZZZZZ	1	
06:38	ZZZZZZ	1	
06:43	ZZZZZZ	1	
06:48	ZZZZZZ	1	
06:53	MA52141-CCV23	1	X
06:58	MA52141-CCB24	1	X
07:03	ZZZZZZ	2	
07:08	ZZZZZZ	2	
07:13	MP31929-MB2	1	X
07:18	MP31929-B2	1	X
07:23	MP31929-S3	1	
07:28	MP31929-S4	1	
07:33	JD41894-17	1	(a)
07:38	MP31929-SD2	5	
07:43	MA52141-CCV24	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Element: Dilution	As
07:48	MA52141-CCB25	1	X
07:54	ZZZZZZ	2	
07:59	ZZZZZZ	50	
08:04	ZZZZZZ	10	
08:09	ZZZZZZ	10	
08:14	ZZZZZZ	100	
08:19	ZZZZZZ	10	
08:24	ZZZZZZ	100	
08:29	ZZZZZZ	5	
08:34	ZZZZZZ	5	
08:40	MA52141-CCV25	1	X
08:45	MA52141-CCB26	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:01	MA52141-STD1	4444 R	234460 R	27859 R	9009 R
09:06	MA52141-STD2	4249	222540	27590	8125
09:11	MA52141-ICV1	4402	230100	27865	8443
09:19	MA52141-ICB1	4492	238020	28376	9049
09:30	MA52141-ICCV1	4388	231640	28529	8389
09:46	MA52141-CCB1	4490	238630	28505	9002
09:50	MA52141-CRI1	4455	234800	28289	8851
09:55	MA52141-CRID1	4479	233830	28032	8968
10:01	MA52141-ICSA1	4094	211920	27646	7558
10:06	MA52141-ICSAB1	4102	210780	27739	7595
10:11	MA52141-HSTD1	4406	233490	28676	8927
10:17	MA52141-HSTD2	4152	215120	27790	7619
10:22	ZZZZZZ	4483	232890	28819	9154
10:27	ZZZZZZ	4446	238490	29141	9099
10:32	ZZZZZZ	4564	238090	29052	9175
10:37	MA52141-CCV1	4368	229760	28510	8329
10:42	MA52141-CCB2	4486	238310	28800	8974
10:47	MA52141-CRI2	4453	234830	28673	8827
10:52	ZZZZZZ	4484	237000	28847	9078
10:57	MP31964-B1	4423	234480	29132	8522
11:02	MP31964-MB1	4487	238890	29051	9001
11:07	MP31964-S1	4220	222510	28463	7863
11:13	MP31964-S2	4207	224080	28626	7838
11:18	JD41963-17	4195	223510	28411	7908
11:23	MP31964-SD1	4379	231040	28455	8529
11:28	ZZZZZZ	4265	224840	28496	7934
11:33	MA52141-CCV2	4370	230810	28597	8340
11:38	MA52141-CCB3	4476	239950	28916	8951
11:43	ZZZZZZ	4023	210620	27781	7418
11:49	ZZZZZZ	4189	222550	28285	7895
11:54	ZZZZZZ	4070	216060	27931	7558
11:59	ZZZZZZ	4337	230390	28869	8122
12:04	ZZZZZZ	4395	234200	29150	8522

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:10	ZZZZZZ	4206	218720	28398	7830
12:15	ZZZZZZ	4243	224210	28480	7942
12:20	ZZZZZZ	4231	221090	28371	7722
12:25	ZZZZZZ	4251	225060	28475	7957
12:33	MA52141-CCV3	4346	230210	28630	8278
12:38	MA52141-CCB4	4409	235070	28649	8830
12:43	ZZZZZZ	4274	229680	28370	8219
12:48	ZZZZZZ	4362	233950	28813	8545
12:53	ZZZZZZ	4449	238410	28651	8952
12:58	ZZZZZZ	4242	227820	28269	8100
13:03	ZZZZZZ	4339	232260	28676	8441
13:08	ZZZZZZ	3965	208920	27244	7504
13:13	ZZZZZZ	4124	213830	26929	7673
13:19	ZZZZZZ	4061	219200	27166	7587
13:24	ZZZZZZ	4370	234910	27779	8770
13:31	MA52141-CCV4	4230	222560	26967	8112
13:36	MA52141-CCB5	4345	231800	27204	8716
13:41	MP31966A-MB1	4348	232570	27098	8729
13:46	MP31966A-B1	4254	226290	26887	8266
13:51	MP31966A-S1	4227	224750	27007	8185
13:55	MP31966A-S2	4228	223680	27140	8199
14:00	JD41895-3	4305	230880	27147	8552
14:05	MP31966A-SD1	4305	230200	27149	8652
14:10	ZZZZZZ	4261	228670	26891	8480
14:15	MP31965-B1	4194	223820	26748	8172
14:19	MP31965-MB1	4238	229520	26593	8554
14:24	MA52141-CCV5	4181	220900	26706	8044
14:29	MA52141-CCB6	4269	228330	26676	8615
14:34	MP31965-S1	3693	194880	25401	6757
14:39	MP31965-S2	3720	195330	25827	6807
14:44	JD41989-2	3687	195870	26064	6772
14:50	MP31965-SD1	4062	214740	26851	7711
14:55	ZZZZZZ	4273	229500	28050	8187

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4	
15:00	ZZZZZZ	4257	229520	27975	8182	
15:04	ZZZZZZ	4279	228800	27921	8226	
15:09	ZZZZZZ	3503	182510	25215	6357	
15:15	ZZZZZZ	3865	203690	27193	7121	
15:20	MA52141-CCV6	4245	227980	28162	8227	
15:25	MA52141-CCB7	4376	237830	28546	8899	
15:30	ZZZZZZ	4068	218630	27491	7892	
15:35	ZZZZZZ	4231	227350	28213	8125	
15:40	ZZZZZZ	3938	210940	27364	7446	
15:45	ZZZZZZ	4345	238260	28279	8853	
15:50	ZZZZZZ	3950	211080	27412	7382	
15:59	ZZZZZZ	4180	226610	28405	8029	
16:04	ZZZZZZ	4229	229450	27922	8391	
16:09	ZZZZZZ	3422	171950	24255	6156	!a
16:15	ZZZZZZ	3874	203310	27311	7076	
16:20	ZZZZZZ	3207	179920	25717	6274	!a
16:27	MA52141-CCV7	4257	229350	28243	8227	
16:32	MA52141-CCB8	4340	235760	28235	8823	
16:37	ZZZZZZ	3202	179220	24940	6266	!a
16:42	ZZZZZZ	4020	216150	27392	7506	
16:48	ZZZZZZ	4377	237920	28454	8924	
16:53	ZZZZZZ	4025	215000	27719	7568	
16:58	MP31964-S1	4202	227820	28490	8051	
17:03	MP31964-S2	4174	226990	28377	8022	
17:07	JD41963-17	4181	226180	27930	8149	
17:13	MP31964-SD1	4275	234080	28745	8590	
17:17	ZZZZZZ	4264	230700	28153	8436	
17:22	ZZZZZZ	4171	227050	28441	8106	
17:30	MA52141-CCV8	4230	228870	28316	8204	
17:34	MA52141-CCB9	4331	236380	28321	8838	
17:39	ZZZZZZ	4191	225810	28123	8192	
17:44	ZZZZZZ	4249	229520	28374	8325	
17:49	ZZZZZZ	4267	231410	28245	8443	

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:54	ZZZZZZ	4242	228200	28509	8264
17:59	ZZZZZZ	4295	230950	28562	8514
18:04	ZZZZZZ	4269	232530	28774	8500
18:09	ZZZZZZ	4253	232210	28389	8501
18:14	ZZZZZZ	4339	236860	28533	8849
18:19	ZZZZZZ	4222	229350	28349	8333
18:24	ZZZZZZ	4222	227260	28052	8325
18:29	MA52141-CCV9	4256	230030	28427	8282
18:34	MA52141-CCB10	4341	237500	28109	8902
18:39	MP31965-S1	4197	226050	28068	8123
18:44	MP31965-S2	4216	228580	28437	8168
18:49	JD41989-2	4223	227920	28544	8193
18:54	MP31965-SD1	4363	237090	28852	8751
18:59	ZZZZZZ	4399	239070	29565	8635
19:04	ZZZZZZ	4029	211740	27979	7546
19:09	ZZZZZZ	4279	232330	28627	8457
19:14	ZZZZZZ	4297	232230	28769	8399
19:19	MP31972-MB1	4456	243130	29571	9107
19:24	MP31972-B1	4326	236490	29356	8541
19:29	MA52141-CCV10	4262	232050	28579	8299
19:34	MA52141-CCB11	4360	237850	28618	8930
19:39	MP31972-S1	4459	236250	30324	8355
19:44	MP31972-S2	4423	235370	30139	8295
19:49	JD41953-2	4513	242840	30011	8590
19:54	MP31972-SD1	4393	238480	28934	8759
19:59	MP31972-PS1	4424	237060	30013	8442
20:03	ZZZZZZ	4611	245470	31118	8521
20:08	ZZZZZZ	4418	239590	29111	8796
20:13	ZZZZZZ	4394	241020	30005	8593
20:19	ZZZZZZ	4427	236000	29893	8506
20:24	MA52141-CCV11	4201	228540	28251	8210
20:29	MA52141-CCB12	4318	235910	28212	8859
20:34	ZZZZZZ	4487	239690	30038	8442

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:39	ZZZZZZ	4830	256700	32651	8599
20:44	ZZZZZZ	4520	241990	30699	8765
20:49	ZZZZZZ	4776	255170	32394	8917
20:54	ZZZZZZ	4210	225880	28470	7919
20:59	ZZZZZZ	4468	237440	29666	8598
21:04	ZZZZZZ	4488	237850	29683	8698
21:09	ZZZZZZ	4470	238520	30459	8317
21:14	ZZZZZZ	4302	231230	28880	8466
21:19	ZZZZZZ	4259	230210	28806	8388
21:24	MA52141-CCV12	4196	227800	27992	8218
21:29	MA52141-CCB13	4290	235940	28279	8845
21:34	MP31965-MB1	4294	236050	28049	8853
21:39	MP31995-MB1	4311	238440	28567	8906
21:44	MP31995-B1	4261	232010	28550	8483
21:49	ZZZZZZ	3946	203360	26499	7328
21:54	ZZZZZZ	3978	211340	28767	7385
21:59	ZZZZZZ	3903	207060	27030	7159
22:04	ZZZZZZ	3864	201610	26917	7244
22:09	ZZZZZZ	3973	206380	27153	7291
22:15	ZZZZZZ	3910	207890	27027	7232
22:20	MA52141-CCV13	4223	231760	28555	8332
22:24	MA52141-CCB14	4308	235980	27892	8937
22:30	MP31996-MB1	4310	235080	27823	8954
22:35	MP31996-LB1	4292	235420	27862	8937
22:40	MP31996-B1	4243	229210	27782	8478
22:44	MP31996-LS1	4193	229250	28154	8403
22:49	MP31996-S1	4184	226730	27527	8383
22:54	MP31996-S2	4187	228480	27604	8384
22:59	JD39100-3U	4265	233440	27569	8758
23:03	MP31996-SD1	4248	231480	27231	8821
23:08	ZZZZZZ	4167	228070	27238	8528
23:13	MA52141-CCV14	4161	224250	27084	8251
23:18	MA52141-CCB15	4258	233530	27247	8880

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:23	MP31997-MB1	4256	233440	27323	8863
23:28	MP31997-LB1	4267	232680	27790	8888
23:33	MP31997-B1	4214	228440	27552	8437
23:38	MP31997-LS1	4211	228410	27647	8417
23:43	MP31997-S1	4194	225900	27518	8390
23:47	MP31997-S2	4184	227150	27525	8376
23:52	JD40983-3T	4250	232770	27662	8797
23:57	MP31997-SD1	4265	232060	27168	8856
00:02	ZZZZZZ	4279	233690	27635	8828
00:07	MA52141-CCV15	4153	224210	27017	8224
00:12	MA52141-CCB16	4252	232550	27520	8849
00:17	ZZZZZZ	4248	231690	27084	8831
00:22	MP31941-S1	4178	223830	26782	8337
00:27	MP31941-S2	4170	226040	27182	8336
00:32	JD41763-4	4164	225530	27027	8364
00:37	MP31941-SD1	4202	228210	27003	8666
00:42	ZZZZZZ	4114	223100	26616	8316
00:47	ZZZZZZ	No results reported for the elements associated with this internal standard.			
00:52	ZZZZZZ	4122	224620	26743	8361
00:57	ZZZZZZ	4126	223290	26233	8446
01:02	MA52141-CCV16	4073	218510	26203	8137
01:07	MA52141-CCB17	4181	227440	26392	8760
01:12	ZZZZZZ	4054	220070	26194	8213
01:17	ZZZZZZ	3987	218600	26097	8132
01:22	ZZZZZZ	4017	218120	25667	8170
01:27	ZZZZZZ	4043	216310	25799	8032
01:32	ZZZZZZ	4084	220060	25797	8308
01:37	ZZZZZZ	4093	223130	26127	8409
01:42	MA52141-CCV17	4032	218720	26082	8069
01:46	MA52141-CCB18	4126	227460	26199	8681
01:51	ZZZZZZ	4076	225620	25961	8577
01:56	ZZZZZZ	4140	224880	25798	8752
02:02	ZZZZZZ	4180	228520	26433	8928

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
02:07	ZZZZZZ	3882	213080	26111	7827
02:12	ZZZZZZ	4213	232890	27259	8865
02:17	ZZZZZZ	4178	229800	26946	8806
02:22	MA52141-CCV18	4108	223210	27183	8242
02:27	MA52141-CCB19	4204	232320	27192	8882
02:32	MP31992-MB1	4194	232980	27165	8867
02:37	MP31992-B1	4150	226690	27151	8448
02:42	MP31992-S1	4046	221900	27438	8059
02:46	MP31992-S2	4030	220010	27110	8034
02:51	JD42036-1	4063	221450	27095	8233
02:56	MP31992-SD1	4139	226380	27064	8658
03:01	ZZZZZZ	3868	211670	26512	7635
03:06	ZZZZZZ	3373	176070	25054	6290 !a
03:12	ZZZZZZ	3763	203690	26651	7242
03:17	MA52141-CCV19	4060	221540	27087	8207
03:22	MA52141-CCB20	4143	229050	26584	8802
03:27	ZZZZZZ	3785	205700	26249	7426
03:32	ZZZZZZ	3867	210980	26527	7596
03:37	ZZZZZZ	3544	187390	25482	6739
03:42	ZZZZZZ	4005	219210	26951	8047
03:47	ZZZZZZ	3854	209950	26423	7556
03:53	ZZZZZZ	4199	233230	27409	8936
03:58	ZZZZZZ	4161	232070	27351	8855
04:03	ZZZZZZ	4111	226940	27069	8511
04:08	ZZZZZZ	4020	219780	26856	8123
04:13	MA52141-CCV20	4076	222200	26625	8247
04:18	MA52141-CCB21	4146	228910	26637	8816
04:23	ZZZZZZ	4040	220200	26508	8220
04:28	ZZZZZZ	4094	226040	27178	8393
04:33	ZZZZZZ	4177	232230	27034	8899
04:38	ZZZZZZ	4019	221170	26730	8213
04:43	ZZZZZZ	3767	206870	26066	7487
04:48	ZZZZZZ	4076	226700	26037	8707

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:53	ZZZZZZ	4096	224970	25645	8740
04:58	MP31989-MB1	4124	229190	26471	8786
05:03	MP31989-B1	4046	221870	26469	8328
05:08	ZZZZZZ	3861	206960	26002	7579
05:13	MA52141-CCV21	4008	220220	26701	8155
05:18	MA52141-CCB22	4126	228850	26726	8818
05:23	ZZZZZZ	4016	219020	26835	8053
05:28	ZZZZZZ	4140	229970	26824	8879
05:33	ZZZZZZ	3858	206270	26031	7591
05:38	ZZZZZZ	3990	215890	26161	8055
05:43	ZZZZZZ	3882	211550	26164	7721
05:48	ZZZZZZ	4079	225990	26576	8607
05:53	ZZZZZZ	4050	224580	27064	8406
05:58	ZZZZZZ	4051	223870	27104	8408
06:03	ZZZZZZ	3772	201680	25869	7413
06:08	MA52141-CCV22	4019	219390	26436	8229
06:13	MA52141-CCB23	4140	230950	26871	8908
06:18	ZZZZZZ	4083	225360	27463	8477
06:23	ZZZZZZ	4131	228660	27145	8810
06:28	ZZZZZZ	4119	227830	27196	8727
06:33	ZZZZZZ	3851	204780	26587	7544
06:38	ZZZZZZ	4093	227560	27341	8502
06:43	ZZZZZZ	4181	233170	27516	8900
06:48	ZZZZZZ	4190	234730	28371	8825
06:53	MA52141-CCV23	4082	225750	27786	8344
06:58	MA52141-CCB24	4179	234340	27733	8982
07:03	ZZZZZZ	3978	213750	27014	7945
07:08	ZZZZZZ	3941	215150	27299	7871
07:13	MP31929-MB2	4216	234280	27444	9045
07:18	MP31929-B2	4136	228650	27325	8588
07:23	MP31929-S3	4133	226060	28879	7981
07:28	MP31929-S4	4191	230700	29528	8218
07:33	JD41894-17	4240	231990	28998	8444

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52141
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:38	MP31929-SD2	4161	230230	27612	8699
07:43	MA52141-CCV24	4077	224730	27161	8341
07:48	MA52141-CCB25	4169	232200	27007	8994
07:54	ZZZZZZ	3505	188540	26064	6718
07:59	ZZZZZZ	4020	222240	26936	8323
08:04	ZZZZZZ	4004	219340	26687	8216
08:09	ZZZZZZ	3842	206680	25992	7750
08:14	ZZZZZZ	4063	223460	26724	8577
08:19	ZZZZZZ	3868	210020	26416	7808
08:24	ZZZZZZ	4069	226910	27017	8580
08:29	ZZZZZZ	4018	221810	26715	8294
08:34	ZZZZZZ	4030	220450	26543	8370
08:40	MA52141-CCV25	4066	222220	26747	8357
08:45	MA52141-CCB26	4180	230760	26930	9019

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			09:19 ICB1		09:46 CCB1		10:42 CCB2		11:38 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.400	<3.0	0.00	<3.0	-0.100	<3.0	-0.500	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			09:19		09:46		10:42		11:38	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			12:38		13:36		14:29		15:25	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-1.10	<3.0	-0.100	<3.0	-0.300	<3.0	-0.200	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			12:38		13:36		14:29		15:25	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			16:32 CCB8		17:34 CCB9		18:34 CCB10		19:34 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-1.10	<3.0	-1.50	<3.0	1.20	<3.0	0.200	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			16:32		17:34		18:34		19:34	
Sample ID:			CCB8		CCB9		CCB10		CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			20:29 CCB12		21:29 CCB13		22:24 CCB14		23:18 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.200	<3.0	-0.400	<3.0	0.200	<3.0	-0.800	<100
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			20:29		21:29		22:24		23:18	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			00:12 CCB16		01:07 CCB17		01:46 CCB18		02:27 CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-1.00	<100	-0.900	<3.0	-0.700	<3.0	-0.100	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1	anr							
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			00:12		01:07		01:46		02:27	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time: / Sample ID:			03:22 CCB20		04:18 CCB21		05:18 CCB22	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	27	anr					
Antimony	6.0	2.2	anr					
Arsenic	3.0	1.3	0.100	<3.0	-1.00	<3.0	-0.400	<3.0
Barium	200	1	anr					
Beryllium	1.0	.2	anr					
Bismuth	20	2.1						
Boron	100	1	anr					
Cadmium	3.0	.2	anr					
Calcium	5000	7.7	anr					
Cerium	100							
Chromium	10	.5	anr					
Cobalt	50	.4	anr					
Copper	10	6.8	anr					
Iron	100	15	anr					
Lead	3.0	1.6	anr					
Lithium	50	3.7						
Magnesium	5000	54	anr					
Manganese	15	.1	anr					
Molybdenum	20	.5	anr					
Nickel	10	.3	anr					
Phosphorus	50	1.8						
Potassium	10000	77	anr					
Selenium	10	2	anr					
Silicon	200	1.3						
Silver	10	.9	anr					
Sodium	10000	23	anr					
Strontium	10	.4						
Sulfur	50	4.1	anr					
Thallium	10	1.6	anr					
Tin	10	.9	anr					
Titanium	10	.9	anr					
Tungsten	50	2						
Vanadium	50	.8	anr					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52141 Units: ug/l

Time:			03:22		04:18		05:18	
Sample ID:			CCB20		CCB21		CCB22	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.2	anr					
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52141 Units: ug/l

Time:		09:30	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1930	96.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin	anr		
Titanium	anr		
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52141 Units: ug/l

Time:		09:30	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		09:11			10:37			11:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1960	98.0	2000	1940	97.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		09:11			10:37			11:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		12:33			13:31			14:24	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2000	100.0	2000	2000	100.0	2000	2010	100.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		12:33			13:31			14:24	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		15:20			16:27			17:30	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	2020	101.0	2000	2020	101.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		15:20			16:27			17:30	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		18:29			19:29			20:24	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2030	101.5	2000	2040	102.0	2000	2050	102.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		18:29			19:29			20:24	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		21:24			22:20			23:13	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2030	101.5	2000	2050	102.5	2000	2060	103.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		21:24			22:20			23:13	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		00:07			01:02			01:42	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2060	103.0	2000	2060	103.0	2000	2060	103.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		00:07			01:02			01:42	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		02:22			03:17			04:13	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2070	103.5	2000	2070	103.5	2000	2080	104.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		02:22			03:17			04:13	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		05:13	
Sample ID:	CCV	CCV21	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	2080	104.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin	anr		
Titanium	anr		
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52141 Units: ug/l

Time:		05:13	
Sample ID:	CCV	CCV21	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52141 Units: ug/l

Time:		10:11			10:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7420	92.8			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur	anr					
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52141 Units: ug/l

Time:		10:11			10:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52141 Units: ug/l

Time:				09:50		09:55		10:47	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	7.30	91.3	3.10	103.3	7.70	96.3
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20			anr					
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50			anr					
Thallium	10		2.0	anr					
Tin	10			anr					
Titanium	10			anr					
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52141 Units: ug/l

Time:				09:50		09:55		10:47	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52141 Units: ug/l

Time:			10:01		10:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	484000	96.8	486000	97.2
Antimony		1000	0.800		1030	103.0
Arsenic		1000	2.50		1030	103.0
Barium		500	-44.6		484	96.8
Beryllium		500	0.200		508	101.6
Bismuth		500	4.70		534	106.8
Boron		500	-3.00		492	98.4
Cadmium		1000	-2.40		1020	102.0
Calcium	400000	400000	370000	92.5	378000	94.5
Cerium			39.9		526*	
Chromium		500	1.60		486	97.2
Cobalt		500	-0.300		479	95.8
Copper		500	-0.900		505	101.0
Iron	200000	200000	187000	93.5	190000	95.0
Lead		1000	2.00		984	98.4
Lithium		500	-3.40		544	108.8
Magnesium	500000	500000	484000	96.8	494000	98.8
Manganese		500	-9.10		514	102.8
Molybdenum		500	-3.10		470	94.0
Nickel		1000	0.500		993	99.3
Phosphorus		500	14.3		499	99.8
Potassium			-123		-122	
Selenium		1000	8.00		975	97.5
Silicon		500	-22.8		502	100.4
Silver		1000	4.80		1130	113.0
Sodium			-125		-141	
Strontium		500	0.800		527	105.4
Sulfur		500	-32.4		469	93.8
Thallium		1000	4.00		994	99.4
Tin		500	-3.90		459	91.8
Titanium		500	-1.30		485	97.0
Tungsten		500	2.20		476	95.2
Vanadium		500	-4.20		488	97.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD033022M1.ICP Date Analyzed: 03/30/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52141 Units: ug/l

Time:			10:01		10:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	2.30		956	95.6
Zirconium		500	2.20		530	106.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:08	MA52146-STD1	1		STDA
06:13	MA52146-STD2	1		STDB
06:18	ZZZZZZ	1		
06:26	ZZZZZZ	1		
06:31	MA52146-ICV1	1		
06:36	MA52146-ICB1	1		
06:41	MA52146-CCV1	1		
06:46	MA52146-CCB1	1		
06:51	MA52146-CRI1	1		
06:56	MA52146-CRID1	1		
07:01	MA52146-ICSA1	1		
07:07	MA52146-ICSAB1	1		
07:11	MA52146-HSTD1	1		
07:16	MA52146-HSTD2	1		
07:22	ZZZZZZ	1		
07:27	ZZZZZZ	1		
07:32	ZZZZZZ	1		
07:37	ZZZZZZ	1		
07:42	MA52146-CCV2	1		
07:47	MA52146-CCB2	1		
07:52	MP31989-MB1	1		
07:58	MP31989-B1	1		
08:02	MP31989-S1	1		
08:07	MP31989-S2	1		
08:12	JD41762-48F	1		
08:17	MP31989-SD1	5		
08:22	JD41762-51F	1		
08:27	JD41762-56F	1		
08:33	MA52146-CCV3	1		
08:37	MA52146-CCB3	1		
08:43	MP31995-MB1	1		
08:48	MP31995-LB1	1		
08:53	MP31995-B1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:58	MP31995-LS1	1		
09:03	MP31995-S1	1		
09:08	MP31995-S2	1		
09:13	JD41931-1A	1		(sample used for QC only; not part of login JD41762)
09:18	MP31995-SD1	5		
09:23	ZZZZZZ	1		
09:29	JD41762-51F	5		
---------->	Last reportable sample/prep for job JD41762			
09:35	MA52146-CCV4	1		
09:39	MA52146-CCB4	1		
09:45	ZZZZZZ	1		
09:50	MA52146-CRID2	1		
09:55	MP31993-B1	1		
10:00	MP31993-S1	1		
10:05	MP31993-S2	1		
10:09	JD42034-2	1		(sample used for QC only; not part of login JD41762)
10:14	MP31993-SD1	5		
10:19	ZZZZZZ	1		
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	MA52146-CCV5	1		
10:40	MA52146-CCB5	1		
10:45	MP31993-MB1	1		CCV out
10:50	ZZZZZZ	1		
10:55	MA52146-CRI2	1		
11:01	MA52146-ICSA2	1		
11:06	MA52146-ICSAB2	1		
11:10	MP31987-MB1	1		CCV out
12:01	MP31987-B1	1		CCV out
12:08	ZZZZZZ	1		
12:13	MA52146-CCV6	1		
12:20	MA52146-CCB6	1		
---------->	Last reportable CCB for job JD41762			
12:24	ZZZZZZ	2		
12:28	ZZZZZZ	2		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:33	ZZZZZZ	2		
12:38	ZZZZZZ	1		
12:44	ZZZZZZ	1		
12:48	MA52146-CCV7	1		
12:56	MA52146-CCB7	1		
13:00	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Element: Dilution	As
06:18	ZZZZZZ	1	
06:26	ZZZZZZ	1	
06:31	MA52146-ICV1	1	X
06:36	MA52146-ICB1	1	X
06:41	MA52146-CCV1	1	X
06:46	MA52146-CCB1	1	X
06:51	MA52146-CRI1	1	X
06:56	MA52146-CRID1	1	X
07:01	MA52146-ICSA1	1	X
07:07	MA52146-ICSAB1	1	X
07:11	MA52146-HSTD1	1	X
07:16	MA52146-HSTD2	1	X
07:22	ZZZZZZ	1	
07:27	ZZZZZZ	1	
07:32	ZZZZZZ	1	
07:37	ZZZZZZ	1	
07:42	MA52146-CCV2	1	X
07:47	MA52146-CCB2	1	X
07:52	MP31989-MB1	1	X
07:58	MP31989-B1	1	X
08:02	MP31989-S1	1	X
08:07	MP31989-S2	1	X
08:12	JD41762-48F	1	X
08:17	MP31989-SD1	5	X
08:22	JD41762-51F	1	X
08:27	JD41762-56F	1	X
08:33	MA52146-CCV3	1	X
08:37	MA52146-CCB3	1	X
08:43	MP31995-MB1	1	X
08:48	MP31995-LB1	1	
08:53	MP31995-B1	1	X
08:58	MP31995-LS1	1	X
09:03	MP31995-S1	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:08	MP31995-S2	1	X	
09:13	JD41931-1A	1	X	(a)
09:18	MP31995-SD1	5	X	
09:23	ZZZZZZ	1		
09:29	JD41762-51F	5		
09:35	MA52146-CCV4	1	X	
09:39	MA52146-CCB4	1	X	
09:45	ZZZZZZ	1		
09:50	MA52146-CRID2	1	X	
09:55	MP31993-B1	1		
10:00	MP31993-S1	1		
10:05	MP31993-S2	1		
10:09	JD42034-2	1		(a)
10:14	MP31993-SD1	5		
10:19	ZZZZZZ	1		
10:25	ZZZZZZ	1		
10:30	ZZZZZZ	1		
10:35	MA52146-CCV5	1	X	
10:40	MA52146-CCB5	1	X	
10:45	MP31993-MB1	1		
10:50	ZZZZZZ	1		
10:55	MA52146-CRI2	1	X	
11:01	MA52146-ICSA2	1	X	
11:06	MA52146-ICSAB2	1	X	
11:10	MP31987-MB1	1	X	
12:01	MP31987-B1	1	X	
12:08	ZZZZZZ	1		
12:13	MA52146-CCV6	1	X	
12:20	MA52146-CCB6	1	X	
12:24	ZZZZZZ	2		
12:28	ZZZZZZ	2		
12:33	ZZZZZZ	2		
12:38	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Dilution	Element: As
12:44	ZZZZZZ	1	
12:48	MA52146-CCV7	1	X
12:56	MA52146-CCB7	1	X
13:00	ZZZZZZ	1	

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:08	MA52146-STD1	2295 R	66145 R	6486 R	6943 R
06:13	MA52146-STD2	2186	61161	6392	6039
06:18	ZZZZZZ	2261	64361	6473	6740
06:26	ZZZZZZ	2279	65610	6491	6935
06:31	MA52146-ICV1	2213	62187	6390	6254
06:36	MA52146-ICB1	2236	65330	6443	6829
06:41	MA52146-CCV1	2201	62162	6392	6237
06:46	MA52146-CCB1	2244	66051	6490	6831
06:51	MA52146-CRI1	2244	64900	6445	6743
06:56	MA52146-CRID1	2249	65333	6387	6865
07:01	MA52146-ICSA1	2045	56743	6250	5572
07:07	MA52146-ICSAB1	2053	56693	6209	5578
07:11	MA52146-HSTD1	2211	63317	6342	6636
07:16	MA52146-HSTD2	2051	57630	6185	5569
07:22	ZZZZZZ	2219	63982	6335	6842
07:27	ZZZZZZ	2203	64921	6367	6914
07:32	ZZZZZZ	2255	64901	6397	6878
07:37	ZZZZZZ	2267	65523	6362	7023
07:42	MA52146-CCV2	2189	61573	6338	6227
07:47	MA52146-CCB2	2268	65906	6450	6939
07:52	MP31989-MB1	2269	66687	6580	6978
07:58	MP31989-B1	2220	63788	6547	6403
08:02	MP31989-S1	2186	62396	6535	6194
08:07	MP31989-S2	2182	62526	6548	6196
08:12	JD41762-48F	2198	64005	6554	6409
08:17	MP31989-SD1	2253	64830	6472	6771
08:22	JD41762-51F	2229	63333	6728	6194
08:27	JD41762-56F	2264	66365	6557	6943
08:33	MA52146-CCV3	2218	62444	6434	6291
08:37	MA52146-CCB3	2278	65746	6474	6962
08:43	MP31995-MB1	2275	66495	6666	6956
08:48	MP31995-LB1	2009	56972	6373	5419
08:53	MP31995-B1	2223	62865	6518	6365

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:58	MP31995-LS1	2019	56839	6303	5274
09:03	MP31995-S1	2001	56227	6293	5235
09:08	MP31995-S2	2011	55614	6293	5269
09:13	JD41931-1A	1983	56332	6300	5306
09:18	MP31995-SD1	2157	59646	6342	5970
09:23	ZZZZZZ	2023	56922	6347	5324
09:29	JD41762-51F	2258	64136	6523	6569
09:35	MA52146-CCV4	2212	61936	6416	6227
09:39	MA52146-CCB4	2249	64641	6412	6834
09:45	ZZZZZZ	2255	65407	6555	6865
09:50	MA52146-CRID2	2275	65534	6414	6890
09:55	MP31993-B1	2203	62385	6490	6290
10:00	MP31993-S1	2173	61691	6515	6141
10:05	MP31993-S2	2170	61666	6498	6131
10:09	JD42034-2	2191	63396	6510	6468
10:14	MP31993-SD1	2226	64213	6514	6712
10:19	ZZZZZZ	2145	61925	6534	6076
10:25	ZZZZZZ	2136	62012	6601	6096
10:30	ZZZZZZ	2145	62032	6553	6086
10:35	MA52146-CCV5	2175	61005	6436	6081
10:40	MA52146-CCB5	2260	65183	6544	6833
10:45	MP31993-MB1	2227	64222	6449	6725
10:50	ZZZZZZ	2201	63408	6482	6556
10:55	MA52146-CRI2	2208	63421	6415	6578
11:01	MA52146-ICSA2	2003	55150	6291	5382
11:06	MA52146-ICSAB2	2000	55423	6314	5395
11:10	MP31987-MB1	2263	66307	6774	6869
12:01	MP31987-B1	2220	61506	8368	6140
12:08	ZZZZZZ	2180	61560	8559 !a	6631
12:13	MA52146-CCV6	2227	61085	8314	6041
12:20	MA52146-CCB6	2276	63474	8353	6644
12:24	ZZZZZZ	2259	62429	8436 !a	6303
12:28	ZZZZZZ	2238	62692	8487 !a	6362

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
Analyst: ND Run ID: MA52146
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:33	ZZZZZZ	2032	55738	8234	5216
12:38	ZZZZZZ	2229	62953	8708 !a	6315
12:44	ZZZZZZ	2256	63962	8646 !	6626
12:48	MA52146-CCV7	2196	60013	8563 !a	5971
12:56	MA52146-CCB7	2248	63328	8561 !a	6602
13:00	ZZZZZZ	2284	64129	8572 !	6694

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			06:36		06:46		07:47		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16								
Antimony	6.0	2.5	anr							
Arsenic	3.0	2	-0.100	<3.0	-1.10	<3.0	0.00	<3.0	-0.200	<3.0
Barium	200	.4	anr							
Beryllium	1.0	.1	anr							
Bismuth	20	3.6								
Boron	100	1.9								
Cadmium	3.0	.4	anr							
Calcium	5000	5.6	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.5								
Copper	10	1	anr							
Iron	100	11	anr							
Lead	3.0	1.2	anr							
Lithium	50	2.3								
Magnesium	5000	65								
Manganese	15	.2	anr							
Molybdenum	20	.4								
Nickel	10	.3	anr							
Phosphorus	50	4.1								
Potassium	10000	55	anr							
Selenium	10	3.5	anr							
Silicon	200	1.6								
Silver	10	1.1	anr							
Sodium	10000	11	anr							
Strontium	10	.1								
Sulfur	50	4.4	anr							
Thallium	10	2.5	anr							
Tin	10	1								
Titanium	10	.4								
Tungsten	50	2.8								
Vanadium	50	.6								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			06:36		06:46		07:47		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			09:39		10:40		12:20	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	16						
Antimony	6.0	2.5	anr					
Arsenic	3.0	2	0.600	<3.0	0.700	<3.0	0.00	<3.0
Barium	200	.4	anr					
Beryllium	1.0	.1	anr					
Bismuth	20	3.6						
Boron	100	1.9						
Cadmium	3.0	.4	anr					
Calcium	5000	5.6	anr					
Cerium	100							
Chromium	10	.5	anr					
Cobalt	50	.5						
Copper	10	1	anr					
Iron	100	11	anr					
Lead	3.0	1.2	anr					
Lithium	50	2.3						
Magnesium	5000	65						
Manganese	15	.2	anr					
Molybdenum	20	.4						
Nickel	10	.3	anr					
Phosphorus	50	4.1						
Potassium	10000	55	anr					
Selenium	10	3.5	anr					
Silicon	200	1.6						
Silver	10	1.1	anr					
Sodium	10000	11	anr					
Strontium	10	.1						
Sulfur	50	4.4	anr					
Thallium	10	2.5	anr					
Tin	10	1						
Titanium	10	.4						
Tungsten	50	2.8						
Vanadium	50	.6						

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: result < RL Run ID: MA52146 Units: ug/l

Time:			09:39		10:40		12:20	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.1	anr					
Zirconium	10	.4						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		06:31			06:41			07:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony	anr								
Arsenic	2000	1940	97.0	2000	1930	96.5	2000	1960	98.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		06:31			06:41			07:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		08:33			09:35			10:35	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1960	98.0	2000	1970	98.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		08:33			09:35			10:35	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		12:13	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum			
Antimony	anr		
Arsenic	2000	1910	95.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52146 Units: ug/l

Time:		12:13	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52146 Units: ug/l

Time:		07:11			07:16	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7620	95.3			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur	anr					
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52146 Units: ug/l

Time:		07:11			07:16	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				06:51		06:56		09:50	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	7.70	96.3	3.40	113.3	3.00	100.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0						
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50			anr					
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				06:51		06:56		09:50	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				10:55	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100		
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	7.80	97.5
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0		
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100		
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50			anr	
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52146 Units: ug/l

Time:				10:55	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52146 Units: ug/l

Time:			07:01		07:07		11:01		11:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	491000	98.2	495000	99.0	506000	101.2	508000	101.6
Antimony		1000	0.400		1010	101.0	-1.30		1020	102.0
Arsenic		1000	-1.70		999	99.9	-0.800		1010	101.0
Barium		500	-45.4		450	90.0	-45.3		464	92.8
Beryllium		500	-0.300		485	97.0	-0.300		489	97.8
Bismuth		500	3.00		506	101.2	3.00		514	102.8
Boron		500	-2.40		479	95.8	-1.70		485	97.0
Cadmium		1000	1.40		1050	105.0	1.50		1060	106.0
Calcium	400000	400000	371000	92.8	379000	94.8	370000	92.5	376000	94.0
Cerium			89.6		581*		83.1		581*	
Chromium		500	-2.50		465	93.0	-2.40		471	94.2
Cobalt		500	-0.800		468	93.6	-1.00		474	94.8
Copper		500	8.20		515	103.0	7.40		535	107.0
Iron	200000	200000	185000	92.5	192000	96.0	187000	93.5	193000	96.5
Lead		1000	0.00		939	93.9	-0.400		948	94.8
Lithium		500	1.20		545	109.0	-0.700		556	111.2
Magnesium	500000	500000	487000	97.4	486000	97.2	484000	96.8	479000	95.8
Manganese		500	0.300		497	99.4	1.00		505	101.0
Molybdenum		500	-3.30		465	93.0	-3.30		472	94.4
Nickel		1000	-1.80		927	92.7	-1.70		929	92.9
Phosphorus		500	15.6		430	86.0	15.0		421	84.2
Potassium			214		231		212		228	
Selenium		1000	4.50		936	93.6	-3.50		944	94.4
Silicon		500	-6.50		537	107.4	-8.30		547	109.4
Silver		1000	3.90		999	99.9	2.90		1020	102.0
Sodium			-38.3		-23.2		10.9		21.6	
Strontium		500	1.00		490	98.0	1.10		505	101.0
Sulfur		500	36.0		497	99.4	36.9		475	95.0
Thallium		1000	-5.10		913	91.3	4.30		838	83.8
Tin		500	-3.30		453	90.6	-1.60		454	90.8
Titanium		500	-0.500		486	97.2	-0.600		479	95.8
Tungsten		500	4.50		488	97.6	6.80		485	97.0
Vanadium		500	-0.500		471	94.2	-0.700		485	97.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE033122M1.ICP Date Analyzed: 03/31/22 Methods: SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52146 Units: ug/l

Time:			07:01		07:07		11:01		11:06	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	4.50		925	92.5	4.40		920	92.0
Zirconium		500	-2.40		458	91.6	-3.30		467	93.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:11	MA52155-STD1	1		STDA
07:16	MA52155-STD2	1		STDB
07:21	MA52155-ICV1	1		
07:29	MA52155-ICB1	1		
07:35	MA52155-ICCV1	1		
07:44	MA52155-CCB1	1		
07:50	MA52155-CRI1	1		
07:55	MA52155-CRID1	1		
08:01	MA52155-ICSA1	1		
08:06	MA52155-ICSAB1	1		
08:11	MA52155-HSTD1	1		
08:17	MA52155-HSTD2	1		
08:22	ZZZZZZ	1		
08:27	ZZZZZZ	1		
08:32	ZZZZZZ	1		
08:37	MA52155-CCV1	1		
08:42	MA52155-CCB2	1		
08:48	ZZZZZZ	1		
08:53	MP32014-B1	1		ICSA out
08:58	MP32014-S1	1		ICSA out
09:03	MP32014-S2	1		ICSA out
09:08	JD41762-17F	1		ICSA out
09:13	MP32014-SD1	5		ICSA out
09:18	JD41762-81	1		
09:23	JD41762-23F	1		high rsd
09:28	JD41762-25F	1		
09:33	MA52155-CCV2	1		
09:38	MA52155-CCB3	1		
09:44	MP32014-MB1	1		ICSA out
09:49	JD41762-47F	1		
09:54	JD41762-49F	1		
09:59	JD41762-59F	1		
10:04	JD41762-87F	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:09	JD41762-88F	1		
10:14	JD41762-89F	1		high rsd
10:19	JD41762-90F	1		
10:25	MA52155-CCV3	1		
10:30	MA52155-CCB4	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:55	ZZZZZZ	1		
11:00	ZZZZZZ	1		
11:05	JD41762-47F	2		
---------->	Last reportable sample/prep for job JD41762			
11:11	MA52155-CRID2	1		
11:17	MA52155-CCV4	1		
11:22	MA52155-CCB5	1		
11:27	MA52155-ICSA2	1		
11:32	MA52155-ICSAB2	1		
11:37	MP32021-B1	1		
11:42	MP32021-MB1	1		
11:47	MP32021-S1	1		multiple high elements
11:52	MP32021-S2	1		multiple high elements
11:58	JD42137-6	1		(sample used for QC only; not part of login JD41762)
12:03	MP32021-SD1	5		multiple high elements
12:08	MP32021-PS1	1		multiple high elements
12:14	MA52155-CCV5	1		
12:19	MA52155-CCB6	1		
---------->	Last reportable CCB for job JD41762			
12:24	MP32001-B1	1		
12:29	MP32001-MB1	1		
12:34	MP32001-S1	1		
12:39	MP32001-S2	1		
12:44	JD42091-2	1		(sample used for QC only; not part of login JD41762)
12:49	MP32001-SD1	5		
12:55	MP32001-S3	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:00	MP32001-S4	1		
13:05	JD42091-2F	1		(sample used for QC only; not part of login JD41762)
13:10	MP32001-SD2	5		
13:17	MA52155-CCV6	1		
13:22	MA52155-CCB7	1		
13:27	ZZZZZZ	1		
13:32	ZZZZZZ	1		
13:37	ZZZZZZ	1		
13:42	ZZZZZZ	1		
13:48	MP32012-MB1	1		
13:53	MP32012-B1	1		
13:58	MP32012-S1	1		
14:03	MP32012-S2	1		
14:08	JD42073-15A	1		(sample used for QC only; not part of login JD41762)
14:13	MP32012-SD1	5		
14:18	MA52155-CCV7	1		
14:23	MA52155-CCB8	1		
14:28	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:44	ZZZZZZ	1		
14:49	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:19	MA52155-CCV8	1		
15:24	MA52155-CCB9	1		
15:29	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	MP32011-MB1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
15:50	MP32011-B1	1		
15:55	MP32011-S1	1		
16:00	MP32011-S2	1		
16:05	JD42073-3A	1		(sample used for QC only; not part of login JD41762)
16:10	MP32011-SD1	5		
16:15	MA52155-CCV9	1		
16:20	MA52155-CCB10	1		
16:25	MP32011-S3	1		
16:30	MP32011-S4	1		
16:35	JD42073-3AF	1		(sample used for QC only; not part of login JD41762)
16:40	MP32011-SD2	5		
16:45	ZZZZZZ	1		
16:50	ZZZZZZ	1		
16:55	ZZZZZZ	1		
17:01	ZZZZZZ	1		
17:06	ZZZZZZ	1		
17:11	ZZZZZZ	1		
17:16	MA52155-CCV10	1		
17:21	MA52155-CCB11	1		
17:26	ZZZZZZ	1		
17:31	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:02	ZZZZZZ	1		
18:07	ZZZZZZ	1		
18:12	ZZZZZZ	1		
18:17	MA52155-CCV11	1		
18:21	MA52155-CCB12	1		
18:27	ZZZZZZ	1		
18:32	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
18:37	MP32057-MB1	1		
18:42	MP32057-B1	1		
18:47	MP32057-S1	1		
18:51	MP32057-S2	1		
18:56	JD42052-1	1		(sample used for QC only; not part of login JD41762)
19:01	MP32057-SD1	5		
19:06	ZZZZZZ	1		
19:11	ZZZZZZ	1		
19:16	MA52155-CCV12	1		
19:21	MA52155-CCB13	1		
19:26	ZZZZZZ	1		
19:32	ZZZZZZ	1		
19:36	ZZZZZZ	1		
19:41	ZZZZZZ	1		
19:46	ZZZZZZ	1		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:02	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:12	ZZZZZZ	1		
20:17	ZZZZZZ	1		
20:22	MA52155-CCV13	1		
20:27	MA52155-CCB14	1		
20:32	ZZZZZZ	1		
20:37	ZZZZZZ	1		
20:42	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:58	ZZZZZZ	1		
21:03	ZZZZZZ	1		
21:08	MA52155-CCV14	1		
21:13	MA52155-CCB15	1		
21:18	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
21:23	ZZZZZZ	1		
21:28	ZZZZZZ	1		
21:33	ZZZZZZ	1		
21:38	ZZZZZZ	1		
21:43	ZZZZZZ	1		
21:48	ZZZZZZ	1		
21:53	ZZZZZZ	1		
21:58	ZZZZZZ	1		
22:04	MA52155-CCV15	1		
22:09	MA52155-CCB16	1		
22:14	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:24	ZZZZZZ	1		
22:29	ZZZZZZ	1		
22:34	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:44	ZZZZZZ	1		
22:49	ZZZZZZ	1		
22:54	ZZZZZZ	1		
22:59	MA52155-CCV16	1		
23:04	MA52155-CCB17	1		
23:09	ZZZZZZ	1		
23:15	ZZZZZZ	1		
23:20	ZZZZZZ	1		
23:25	ZZZZZZ	1		
23:30	ZZZZZZ	1		
23:35	ZZZZZZ	1		
23:40	ZZZZZZ	1		
23:45	ZZZZZZ	1		
23:50	ZZZZZZ	1		
23:55	MA52155-CCV17	1		
00:00	MA52155-CCB18	1		
00:06	MP31924-S1	2		Needs higher dilution for S interference

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
00:11	MP31924-S2	2		Needs higher dilution for S interference
00:16	JD41689-2	2		(sample used for QC only; not part of login JD41762)
00:21	MP31924-SD1	10		Needs higher dilution for S interference
00:26	ZZZZZZ	2		
00:31	ZZZZZZ	5		
00:36	ZZZZZZ	5		
00:41	ZZZZZZ	2		
00:47	ZZZZZZ	2		
00:52	ZZZZZZ	5		
00:57	MA52155-CCV18	1		
01:02	MA52155-CCB19	1		
01:07	ZZZZZZ	5		
01:12	MP32030-B1	1		
01:17	MP32030-MB1	1		
01:22	MP32030-S1	1		
01:28	MP32030-S2	1		
01:33	JD42135-1A	1		(sample used for QC only; not part of login JD41762)
01:38	MP32030-SD1	5		
01:43	ZZZZZZ	1		
01:48	ZZZZZZ	1		
01:54	ZZZZZZ	1		
01:59	MA52155-CCV19	1		
02:04	MA52155-CCB20	1		
02:09	ZZZZZZ	1		
02:14	ZZZZZZ	1		
02:19	ZZZZZZ	1		
02:24	ZZZZZZ	1		
02:29	ZZZZZZ	1		
02:35	ZZZZZZ	1		
02:40	ZZZZZZ	1		
02:45	ZZZZZZ	1		
02:50	ZZZZZZ	1		
02:56	MA52155-CCV20	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
03:01	MA52155-CCB21	1		
03:06	ZZZZZZ	1		
03:11	ZZZZZZ	1		
03:16	ZZZZZZ	1		
03:22	ZZZZZZ	1		
03:27	ZZZZZZ	1		
03:32	ZZZZZZ	1		
03:37	MP32020-B1	1		
03:42	MP32020-MB1	1		
03:47	MA52155-CCV21	1		
03:52	MA52155-CCB22	1		
03:58	MP32020-S1	1		
04:03	MP32020-S2	1		
04:08	JD42145-1	1		(sample used for QC only; not part of login JD41762)
04:13	MP32020-SD1	5		
04:18	ZZZZZZ	1		
04:23	ZZZZZZ	1		
04:28	ZZZZZZ	1		
04:34	ZZZZZZ	1		
04:39	ZZZZZZ	1		
04:44	MA52155-CCV22	1		
04:49	MA52155-CCB23	1		
04:54	ZZZZZZ	1		
04:59	ZZZZZZ	1		
05:05	ZZZZZZ	1		
05:10	ZZZZZZ	1		
05:15	ZZZZZZ	1		
05:20	ZZZZZZ	1		
05:25	ZZZZZZ	1		
05:30	MA52155-CCV23	1		
05:35	MA52155-CCB24	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As
07:21	MA52155-ICV1	1	X
07:29	MA52155-ICB1	1	X
07:35	MA52155-ICCV1	1	X
07:44	MA52155-CCB1	1	X
07:50	MA52155-CRI1	1	X
07:55	MA52155-CRID1	1	X
08:01	MA52155-ICSA1	1	X
08:06	MA52155-ICSAB1	1	X
08:11	MA52155-HSTD1	1	X
08:17	MA52155-HSTD2	1	X
08:22	ZZZZZZ	1	
08:27	ZZZZZZ	1	
08:32	ZZZZZZ	1	
08:37	MA52155-CCV1	1	X
08:42	MA52155-CCB2	1	X
08:48	ZZZZZZ	1	
08:53	MP32014-B1	1	X
08:58	MP32014-S1	1	X
09:03	MP32014-S2	1	X
09:08	JD41762-17F	1	X
09:13	MP32014-SD1	5	X
09:18	JD41762-81	1	X
09:23	JD41762-23F	1	
09:28	JD41762-25F	1	X
09:33	MA52155-CCV2	1	X
09:38	MA52155-CCB3	1	X
09:44	MP32014-MB1	1	X
09:49	JD41762-47F	1	
09:54	JD41762-49F	1	X
09:59	JD41762-59F	1	X
10:04	JD41762-87F	1	X
10:09	JD41762-88F	1	X
10:14	JD41762-89F	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:19	JD41762-90F	1	X	
10:25	MA52155-CCV3	1	X	
10:30	MA52155-CCB4	1	X	
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:55	ZZZZZZ	1		
11:00	ZZZZZZ	1		
11:05	JD41762-47F	2	X	
11:11	MA52155-CRID2	1	X	
11:17	MA52155-CCV4	1	X	
11:22	MA52155-CCB5	1	X	
11:27	MA52155-ICSA2	1	X	
11:32	MA52155-ICSAB2	1	X	
11:37	MP32021-B1	1	X	
11:42	MP32021-MB1	1	X	
11:47	MP32021-S1	1		
11:52	MP32021-S2	1		
11:58	JD42137-6	1		(a)
12:03	MP32021-SD1	5		
12:08	MP32021-PS1	1		
12:14	MA52155-CCV5	1	X	
12:19	MA52155-CCB6	1	X	
12:24	MP32001-B1	1	X	
12:29	MP32001-MB1	1	X	
12:34	MP32001-S1	1	X	
12:39	MP32001-S2	1	X	
12:44	JD42091-2	1	X	(a)
12:49	MP32001-SD1	5	X	
12:55	MP32001-S3	1	X	
13:00	MP32001-S4	1	X	
13:05	JD42091-2F	1		(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:10	MP32001-SD2	5	X	
13:17	MA52155-CCV6	1	X	
13:22	MA52155-CCB7	1	X	
13:27	ZZZZZZ	1		
13:32	ZZZZZZ	1		
13:37	ZZZZZZ	1		
13:42	ZZZZZZ	1		
13:48	MP32012-MB1	1		
13:53	MP32012-B1	1		
13:58	MP32012-S1	1		
14:03	MP32012-S2	1		
14:08	JD42073-15A	1		(a)
14:13	MP32012-SD1	5		
14:18	MA52155-CCV7	1	X	
14:23	MA52155-CCB8	1	X	
14:28	ZZZZZZ	1		
14:34	ZZZZZZ	1		
14:39	ZZZZZZ	1		
14:44	ZZZZZZ	1		
14:49	ZZZZZZ	1		
14:54	ZZZZZZ	1		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:19	MA52155-CCV8	1	X	
15:24	MA52155-CCB9	1	X	
15:29	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	MP32011-MB1	1		
15:50	MP32011-B1	1		
15:55	MP32011-S1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
16:00	MP32011-S2	1		
16:05	JD42073-3A	1		(a)
16:10	MP32011-SD1	5		
16:15	MA52155-CCV9	1	X	
16:20	MA52155-CCB10	1	X	
16:25	MP32011-S3	1		
16:30	MP32011-S4	1		
16:35	JD42073-3AF	1		(a)
16:40	MP32011-SD2	5		
16:45	ZZZZZZ	1		
16:50	ZZZZZZ	1		
16:55	ZZZZZZ	1		
17:01	ZZZZZZ	1		
17:06	ZZZZZZ	1		
17:11	ZZZZZZ	1		
17:16	MA52155-CCV10	1	X	
17:21	MA52155-CCB11	1	X	
17:26	ZZZZZZ	1		
17:31	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:02	ZZZZZZ	1		
18:07	ZZZZZZ	1		
18:12	ZZZZZZ	1		
18:17	MA52155-CCV11	1	X	
18:21	MA52155-CCB12	1	X	
18:27	ZZZZZZ	1		
18:32	ZZZZZZ	1		
18:37	MP32057-MB1	1		
18:42	MP32057-B1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
18:47	MP32057-S1	1		
18:51	MP32057-S2	1		
18:56	JD42052-1	1		(a)
19:01	MP32057-SD1	5		
19:06	ZZZZZZ	1		
19:11	ZZZZZZ	1		
19:16	MA52155-CCV12	1	X	
19:21	MA52155-CCB13	1	X	
19:26	ZZZZZZ	1		
19:32	ZZZZZZ	1		
19:36	ZZZZZZ	1		
19:41	ZZZZZZ	1		
19:46	ZZZZZZ	1		
19:52	ZZZZZZ	1		
19:57	ZZZZZZ	1		
20:02	ZZZZZZ	1		
20:07	ZZZZZZ	1		
20:12	ZZZZZZ	1		
20:17	ZZZZZZ	1		
20:22	MA52155-CCV13	1	X	
20:27	MA52155-CCB14	1	X	
20:32	ZZZZZZ	1		
20:37	ZZZZZZ	1		
20:42	ZZZZZZ	1		
20:48	ZZZZZZ	1		
20:53	ZZZZZZ	1		
20:58	ZZZZZZ	1		
21:03	ZZZZZZ	1		
21:08	MA52155-CCV14	1	X	
21:13	MA52155-CCB15	1	X	
21:18	ZZZZZZ	1		
21:23	ZZZZZZ	1		
21:28	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
21:33	ZZZZZZ	1		
21:38	ZZZZZZ	1		
21:43	ZZZZZZ	1		
21:48	ZZZZZZ	1		
21:53	ZZZZZZ	1		
21:58	ZZZZZZ	1		
22:04	MA52155-CCV15	1	X	
22:09	MA52155-CCB16	1	X	
22:14	ZZZZZZ	1		
22:19	ZZZZZZ	1		
22:24	ZZZZZZ	1		
22:29	ZZZZZZ	1		
22:34	ZZZZZZ	1		
22:39	ZZZZZZ	1		
22:44	ZZZZZZ	1		
22:49	ZZZZZZ	1		
22:54	ZZZZZZ	1		
22:59	MA52155-CCV16	1	X	
23:04	MA52155-CCB17	1	X	
23:09	ZZZZZZ	1		
23:15	ZZZZZZ	1		
23:20	ZZZZZZ	1		
23:25	ZZZZZZ	1		
23:30	ZZZZZZ	1		
23:35	ZZZZZZ	1		
23:40	ZZZZZZ	1		
23:45	ZZZZZZ	1		
23:50	ZZZZZZ	1		
23:55	MA52155-CCV17	1	X	
00:00	MA52155-CCB18	1	X	
00:06	MP31924-S1	2		
00:11	MP31924-S2	2		
00:16	JD41689-2	2		(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As	
00:21	MP31924-SD1	10		
00:26	ZZZZZZ	2		
00:31	ZZZZZZ	5		
00:36	ZZZZZZ	5		
00:41	ZZZZZZ	2		
00:47	ZZZZZZ	2		
00:52	ZZZZZZ	5		
00:57	MA52155-CCV18	1	X	
01:02	MA52155-CCB19	1	X	
01:07	ZZZZZZ	5		
01:12	MP32030-B1	1		
01:17	MP32030-MB1	1		
01:22	MP32030-S1	1		
01:28	MP32030-S2	1		
01:33	JD42135-1A	1		(a)
01:38	MP32030-SD1	5		
01:43	ZZZZZZ	1		
01:48	ZZZZZZ	1		
01:54	ZZZZZZ	1		
01:59	MA52155-CCV19	1	X	
02:04	MA52155-CCB20	1	X	
02:09	ZZZZZZ	1		
02:14	ZZZZZZ	1		
02:19	ZZZZZZ	1		
02:24	ZZZZZZ	1		
02:29	ZZZZZZ	1		
02:35	ZZZZZZ	1		
02:40	ZZZZZZ	1		
02:45	ZZZZZZ	1		
02:50	ZZZZZZ	1		
02:56	MA52155-CCV20	1	X	
03:01	MA52155-CCB21	1	X	
03:06	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Element: Dilution	As
03:11	ZZZZZZ	1	
03:16	ZZZZZZ	1	
03:22	ZZZZZZ	1	
03:27	ZZZZZZ	1	
03:32	ZZZZZZ	1	
03:37	MP32020-B1	1	X
03:42	MP32020-MB1	1	X
03:47	MA52155-CCV21	1	X
03:52	MA52155-CCB22	1	X
03:58	MP32020-S1	1	X
04:03	MP32020-S2	1	X
04:08	JD42145-1	1	X (a)
04:13	MP32020-SD1	5	X
04:18	ZZZZZZ	1	
04:23	ZZZZZZ	1	
04:28	ZZZZZZ	1	
04:34	ZZZZZZ	1	
04:39	ZZZZZZ	1	
04:44	MA52155-CCV22	1	X
04:49	MA52155-CCB23	1	X
04:54	ZZZZZZ	1	
04:59	ZZZZZZ	1	
05:05	ZZZZZZ	1	
05:10	ZZZZZZ	1	
05:15	ZZZZZZ	1	
05:20	ZZZZZZ	1	
05:25	ZZZZZZ	1	
05:30	MA52155-CCV23	1	X
05:35	MA52155-CCB24	1	X

(a) Sample used for QC only; not part of login JD41762.

Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:11	MA52155-STD1	4762 R	253400 R	31221 R	11217 R
07:16	MA52155-STD2	4521	240920	31008	9940
07:21	MA52155-ICV1	4658	245150	31298	10344
07:29	MA52155-ICB1	4812	254850	31850	11278
07:35	MA52155-ICCV1	4679	243980	31768	10361
07:44	MA52155-CCB1	4618	255750	32030	10848
07:50	MA52155-CRI1	4570	238520	29151	10645
07:55	MA52155-CRID1	4641	243540	29601	10889
08:01	MA52155-ICSA1	4211	215610	28872	8992
08:06	MA52155-ICSAB1	4209	216370	28896	8981
08:11	MA52155-HSTD1	4532	241500	29695	10639
08:17	MA52155-HSTD2	4238	218370	28646	9034
08:22	ZZZZZZ	4680	242960	30360	11101
08:27	ZZZZZZ	4638	247310	30308	11132
08:32	ZZZZZZ	4757	246470	30320	11197
08:37	MA52155-CCV1	4506	234770	29401	10040
08:42	MA52155-CCB2	4648	242190	29635	10912
08:48	ZZZZZZ	4658	242430	29907	10921
08:53	MP32014-B1	4578	238560	29959	10311
08:58	MP32014-S1	4528	236060	29478	10112
09:03	MP32014-S2	4543	233780	29605	10158
09:08	JD41762-17F	4589	237380	29509	10538
09:13	MP32014-SD1	4651	240480	29758	10848
09:18	JD41762-81	4676	245170	29749	11005
09:23	JD41762-23F	4531	235560	29215	10514
09:28	JD41762-25F	4555	237490	29522	10474
09:33	MA52155-CCV2	4546	236380	29570	10072
09:38	MA52155-CCB3	4679	243400	29601	10951
09:44	MP32014-MB1	4685	243290	29728	10956
09:49	JD41762-47F	4643	239280	30135	10294
09:54	JD41762-49F	4543	236860	29519	10287
09:59	JD41762-59F	4545	237860	29542	10400
10:04	JD41762-87F	4583	239330	29769	10488

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:09	JD41762-88F	4657	240910	29990	10487
10:14	JD41762-89F	4534	236640	29509	10182
10:19	JD41762-90F	4582	239610	29661	10432
10:25	MA52155-CCV3	4571	235160	29553	10107
10:30	MA52155-CCB4	4710	246120	29557	11022
10:35	ZZZZZZ	4680	244700	29956	10870
10:40	ZZZZZZ	4682	243530	29972	10806
10:45	ZZZZZZ	4668	243990	29950	10816
10:50	ZZZZZZ	4717	248850	29983	11037
10:55	ZZZZZZ	4701	244080	30199	10907
11:00	ZZZZZZ	4682	247430	29932	10913
11:05	JD41762-47F	4686	244760	29900	10590
11:11	MA52155-CRID2	4742	249470	30072	11020
11:17	MA52155-CCV4	4573	238050	29516	10135
11:22	MA52155-CCB5	4711	247340	30004	11006
11:27	MA52155-ICSA2	4265	219080	28861	9078
11:32	MA52155-ICSAB2	4253	219120	28718	9076
11:37	MP32021-B1	4610	241910	29894	10399
11:42	MP32021-MB1	4738	249450	29694	11085
11:47	MP32021-S1	4123	223830	29243	10720
11:52	MP32021-S2	3932	215990	28518	10753
11:58	JD42137-6	4110	222440	28981	10526
12:03	MP32021-SD1	4494	236390	29689	10505
12:08	MP32021-PS1	4079	222280	29114	10424
12:14	MA52155-CCV5	4650	241460	29998	10289
12:19	MA52155-CCB6	4749	251070	29815	11123
12:24	MP32001-B1	4674	243110	30253	10449
12:29	MP32001-MB1	4764	250770	30170	11119
12:34	MP32001-S1	4655	239890	30271	10325
12:39	MP32001-S2	4641	240780	30075	10302
12:44	JD42091-2	4711	245230	30275	10822
12:49	MP32001-SD1	4795	248770	30591	11109
12:55	MP32001-S3	4673	242710	30284	10364

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:00	MP32001-S4	4690	242990	30342	10399
13:05	JD42091-2F	4723	246730	30241	10847
13:10	MP32001-SD2	4791	248790	29971	11133
13:17	MA52155-CCV6	4680	240720	30076	10326
13:22	MA52155-CCB7	4795	249230	30069	11161
13:27	ZZZZZZ	4669	242910	30008	10621
13:32	ZZZZZZ	4783	250720	29974	11176
13:37	ZZZZZZ	4633	242610	29813	10566
13:42	ZZZZZZ	4765	250210	29999	11168
13:48	MP32012-MB1	4782	251490	30167	11148
13:53	MP32012-B1	4662	243180	29846	10493
13:58	MP32012-S1	4540	236610	29724	9900
14:03	MP32012-S2	4533	236320	29327	9922
14:08	JD42073-15A	4568	238670	29666	10143
14:13	MP32012-SD1	4696	244420	29759	10820
14:18	MA52155-CCV7	4679	243990	29888	10347
14:23	MA52155-CCB8	4820	252950	30154	11243
14:28	ZZZZZZ	4683	245370	29908	10628
14:34	ZZZZZZ	4718	247490	30146	10707
14:39	ZZZZZZ	4715	245670	30052	10717
14:44	ZZZZZZ	4670	244770	30096	10580
14:49	ZZZZZZ	4646	242570	29834	10384
14:54	ZZZZZZ	4666	244140	29980	10617
14:59	ZZZZZZ	4660	244060	30093	10581
15:04	ZZZZZZ	4680	247230	30068	10746
15:09	ZZZZZZ	4670	244200	29845	10696
15:14	ZZZZZZ	4664	244620	29965	10651
15:19	MA52155-CCV8	4677	246170	29796	10327
15:24	MA52155-CCB9	4833	254780	30302	11232
15:29	ZZZZZZ	4559	240290	29587	10106
15:35	ZZZZZZ	4647	243100	29717	10408
15:40	ZZZZZZ	4676	247740	29816	10653
15:45	MP32011-MB1	4819	251920	30307	11247

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
15:50	MP32011-B1	4749	248100	30568	10622
15:55	MP32011-S1	4643	242620	30171	10179
16:00	MP32011-S2	4658	241680	30221	10219
16:05	JD42073-3A	4684	243760	30037	10505
16:10	MP32011-SD1	4778	248720	30164	10986
16:15	MA52155-CCV9	4719	243410	30083	10381
16:20	MA52155-CCB10	4862	253630	30295	11287
16:25	MP32011-S3	4674	242550	30333	10239
16:30	MP32011-S4	4640	243140	29919	10184
16:35	JD42073-3AF	4649	243260	29746	10441
16:40	MP32011-SD2	4776	249640	30066	10998
16:45	ZZZZZZ	4630	243510	30126	10282
16:50	ZZZZZZ	4652	244790	30221	10332
16:55	ZZZZZZ	4773	251760	30359	10854
17:01	ZZZZZZ	4720	247800	30236	10687
17:06	ZZZZZZ	4656	244060	29966	10323
17:11	ZZZZZZ	4662	242780	29823	10414
17:16	MA52155-CCV10	4693	243250	29945	10369
17:21	MA52155-CCB11	4846	255310	29975	11255
17:26	ZZZZZZ	4690	245970	29936	10483
17:31	ZZZZZZ	4705	247410	30147	10572
17:36	ZZZZZZ	4711	247910	30143	10537
17:41	ZZZZZZ	4637	243850	29944	10267
17:46	ZZZZZZ	4643	244770	29867	10306
17:51	ZZZZZZ	4755	251370	29757	10860
17:56	ZZZZZZ	4728	249660	30019	10709
18:02	ZZZZZZ	4642	244270	29681	10322
18:07	ZZZZZZ	4669	247530	29751	10462
18:12	ZZZZZZ	4674	248470	29911	10519
18:17	MA52155-CCV11	4702	249660	29788	10385
18:21	MA52155-CCB12	4854	257680	30029	11309
18:27	ZZZZZZ	4692	248970	29812	10570
18:32	ZZZZZZ	4671	248940	29726	10494

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
18:37	MP32057-MB1	4856	259540	30322	11332
18:42	MP32057-B1	4736	254200	30174	10622
18:47	MP32057-S1	4655	248480	29931	10244
18:51	MP32057-S2	4653	249380	30175	10240
18:56	JD42052-1	4667	251580	29856	10583
19:01	MP32057-SD1	4810	257670	30273	11120
19:06	ZZZZZZ	4829	258500	30208	11205
19:11	ZZZZZZ	4853	261210	30517	11267
19:16	MA52155-CCV12	4738	252840	29934	10417
19:21	MA52155-CCB13	4879	262130	30319	11315
19:26	ZZZZZZ	4856	259100	30272	11286
19:32	ZZZZZZ	4777	255300	29997	10830
19:36	ZZZZZZ	4765	254350	30222	10824
19:41	ZZZZZZ	4616	245410	30018	10214
19:46	ZZZZZZ	4672	248930	30033	10430
19:52	ZZZZZZ	4418	237270	29095	9814
19:57	ZZZZZZ	4692	250240	29843	10623
20:02	ZZZZZZ	4565	244250	29477	10134
20:07	ZZZZZZ	4633	249570	30118	10396
20:12	ZZZZZZ	4426	237490	29334	9846
20:17	ZZZZZZ	4853	257580	29879	11331
20:22	MA52155-CCV13	4717	251080	29568	10431
20:27	MA52155-CCB14	4852	261280	30014	11332
20:32	ZZZZZZ	4933	263650	30594	11474
20:37	ZZZZZZ	4904	263100	30264	11417
20:42	ZZZZZZ	4910	262920	30594	11374
20:48	ZZZZZZ	4928	263870	30518	11446
20:53	ZZZZZZ	4901	261870	30335	11454
20:58	ZZZZZZ	4907	262660	30424	11407
21:03	ZZZZZZ	4924	262100	30438	11448
21:08	MA52155-CCV14	4703	251870	29544	10425
21:13	MA52155-CCB15	4857	259370	29891	11358
21:18	ZZZZZZ	4975	265690	30904	11480

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
21:23	ZZZZZZ	4935	263870	30865	11287
21:28	ZZZZZZ	4975	266300	30904	11402
21:33	ZZZZZZ	4553	244920	30282	9961
21:38	ZZZZZZ	5063	267330	31808	11157
21:43	ZZZZZZ	4716	251380	30818	10259
21:48	ZZZZZZ	5008	268220	31497	11092
21:53	ZZZZZZ	5133	269570	32510	10782
21:58	ZZZZZZ	5019	265070	31775	11011
22:04	MA52155-CCV15	4731	253160	29908	10479
22:09	MA52155-CCB16	4879	261840	29840	11400
22:14	ZZZZZZ	5156	270010	32311	11022
22:19	ZZZZZZ	5152	271270	32492	10944
22:24	ZZZZZZ	4967	261250	31666	10945
22:29	ZZZZZZ	4706	251670	29637	10508
22:34	ZZZZZZ	4676	248190	29538	10412
22:39	ZZZZZZ	4707	251300	29710	10485
22:44	ZZZZZZ	4696	251170	29780	10455
22:49	ZZZZZZ	4718	251690	29936	10488
22:54	ZZZZZZ	4885	264460	30120	11386
22:59	MA52155-CCV16	4767	254580	30043	10520
23:04	MA52155-CCB17	4895	265040	30229	11410
23:09	ZZZZZZ	4270	223150	28705	9022
23:15	ZZZZZZ	4306	225860	28649	9158
23:20	ZZZZZZ	4326	227560	28858	9208
23:25	ZZZZZZ	4307	228000	28730	9167
23:30	ZZZZZZ	4408	234110	29219	9418
23:35	ZZZZZZ	4235	221660	28352	8951
23:40	ZZZZZZ	4900	263210	29997	11452
23:45	ZZZZZZ	4918	266360	30379	11479
23:50	ZZZZZZ	4774	256650	30032	10700
23:55	MA52155-CCV17	4751	255140	29869	10529
00:00	MA52155-CCB18	4920	266080	30091	11476
00:06	MP31924-S1	4812	259400	30639	10388

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
00:11	MP31924-S2	4784	256540	30483	10360
00:16	JD41689-2	4880	261200	30493	10643
00:21	MP31924-SD1	4894	263360	30168	11194
00:26	ZZZZZZ	4842	257240	30058	10568
00:31	ZZZZZZ	4736	250780	29543	10541
00:36	ZZZZZZ	4735	250610	29215	10694
00:41	ZZZZZZ	4843	257950	29878	10557
00:47	ZZZZZZ	4851	257500	30184	10573
00:52	ZZZZZZ	4755	252570	29732	10600
00:57	MA52155-CCV18	4731	254500	29388	10503
01:02	MA52155-CCB19	4893	263340	29909	11441
01:07	ZZZZZZ	4735	251920	29441	10708
01:12	MP32030-B1	4822	257300	30035	10874
01:17	MP32030-MB1	4896	265680	29878	11485
01:22	MP32030-S1	4705	253190	29964	10423
01:28	MP32030-S2	4710	252590	29960	10434
01:33	JD42135-1A	4762	254710	29845	10775
01:38	MP32030-SD1	4853	261750	29846	11260
01:43	ZZZZZZ	4668	247080	29577	10284
01:48	ZZZZZZ	4592	243800	29094	9903
01:54	ZZZZZZ	4879	264080	29757	11430
01:59	MA52155-CCV19	4751	252600	29505	10535
02:04	MA52155-CCB20	4905	264700	29441	11469
02:09	ZZZZZZ	4758	254830	29864	10632
02:14	ZZZZZZ	4864	264170	29837	11309
02:19	ZZZZZZ	4782	255740	29695	10857
02:24	ZZZZZZ	4739	253910	29356	10771
02:29	ZZZZZZ	4509	244190	28888	10126
02:35	ZZZZZZ	4804	259810	29852	10971
02:40	ZZZZZZ	4935	266540	29875	11500
02:45	ZZZZZZ	4146	216510	27947	8654
02:50	ZZZZZZ	4252	222580	27998	9020
02:56	MA52155-CCV20	4730	251490	28884	10528

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
03:01	MA52155-CCB21	4890	263300	29178	11466
03:06	ZZZZZZ	4515	239230	28556	9796
03:11	ZZZZZZ	4595	245020	28843	10088
03:16	ZZZZZZ	4335	226750	28118	9187
03:22	ZZZZZZ	4372	227450	28287	9218
03:27	ZZZZZZ	4534	235960	28756	9673
03:32	ZZZZZZ	4908	263490	29422	11494
03:37	MP32020-B1	4952	261800	30447	11110
03:42	MP32020-MB1	5042	269730	30387	11835
03:47	MA52155-CCV21	4747	252700	29239	10545
03:52	MA52155-CCB22	4937	263230	29382	11547
03:58	MP32020-S1	4823	255930	30389	10557
04:03	MP32020-S2	4807	253970	30346	10520
04:08	JD42145-1	4861	258120	30419	10802
04:13	MP32020-SD1	4879	259910	29388	11205
04:18	ZZZZZZ	4821	256790	30081	10815
04:23	ZZZZZZ	4821	255240	30066	10805
04:28	ZZZZZZ	4847	254550	30119	10687
04:34	ZZZZZZ	4685	250490	29627	10381
04:39	ZZZZZZ	4731	250650	29536	10399
04:44	MA52155-CCV22	4723	250580	28573	10471
04:49	MA52155-CCB23	4877	261050	28755	11415
04:54	ZZZZZZ	4885	263490	28979	11368
04:59	ZZZZZZ	4881	261880	28832	11368
05:05	ZZZZZZ	4893	264600	29010	11455
05:10	ZZZZZZ	4522	244910	28238	10131
05:15	ZZZZZZ	4414	238910	27350	9802
05:20	ZZZZZZ	5045	251800	30065	10557
05:25	ZZZZZZ	4894	265380	28958	11449
05:30	MA52155-CCV23	4760	252770	28788	10570
05:35	MA52155-CCB24	4914	263100	29217	11473

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52155
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

Istd#4	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time: / Sample ID:			07:29 ICB1		07:44 CCB1		08:42 CCB2		09:38 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.200	<3.0	-0.600	<3.0	-0.200	<3.0	-0.600	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5								
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9								
Titanium	10	.9								
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			07:29		07:44		08:42		09:38	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			10:30		11:22		12:19	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	27	anr					
Antimony	6.0	2.2	anr					
Arsenic	3.0	1.3	0.500	<3.0	0.500	<3.0	1.30	<3.0
Barium	200	1	anr					
Beryllium	1.0	.2	anr					
Bismuth	20	2.1						
Boron	100	1	anr					
Cadmium	3.0	.2	anr					
Calcium	5000	7.7	anr					
Cerium	100							
Chromium	10	.5	anr					
Cobalt	50	.4	anr					
Copper	10	6.8	anr					
Iron	100	15	anr					
Lead	3.0	1.6	anr					
Lithium	50	3.7						
Magnesium	5000	54	anr					
Manganese	15	.1	anr					
Molybdenum	20	.5						
Nickel	10	.3	anr					
Phosphorus	50	1.8						
Potassium	10000	77	anr					
Selenium	10	2	anr					
Silicon	200	1.3						
Silver	10	.9	anr					
Sodium	10000	23	anr					
Strontium	10	.4						
Sulfur	50	4.1						
Thallium	10	1.6	anr					
Tin	10	.9						
Titanium	10	.9						
Tungsten	50	2						
Vanadium	50	.8	anr					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52155 Units: ug/l

Time:			10:30		11:22		12:19	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.2	anr					
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52155 Units: ug/l

Time:		07:35	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1930	96.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52155 Units: ug/l

Time:		07:35	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		07:21			08:37			09:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1940	97.0	2000	1930	96.5	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		07:21			08:37			09:33	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		10:25			11:17			12:14	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1990	99.5	2000	1990	99.5	2000	1960	98.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52155 Units: ug/l

Time:		10:25			11:17			12:14	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52155 Units: ug/l

Time:		08:11			08:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7350	91.9			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52155 Units: ug/l

Time:		08:11			08:17	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52155 Units: ug/l

Time:				07:50		07:55		11:11	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	6.90	86.3	2.60	86.7	2.90	96.7
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10	anr					
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52155 Units: ug/l

Time:				07:50		07:55		11:11	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52155 Units: ug/l

Time:			08:01		08:06		11:27		11:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	475000	95.0	485000	97.0	479000	95.8	483000	96.6
Antimony		1000	-2.00		1010	101.0	-2.10		1010	101.0
Arsenic		1000	-1.20		1010	101.0	-1.80		1000	100.0
Barium		500	-42.7		472	94.4	-43.4		468	93.6
Beryllium		500	0.00		500	100.0	0.00		498	99.6
Bismuth		500	-9.40		516	103.2	-8.10		514	102.8
Boron		500	-5.60		483	96.6	-6.10		479	95.8
Cadmium		1000	0.900		1010	101.0	0.500		1010	101.0
Calcium	400000	400000	365000	91.3	374000	93.5	365000	91.3	376000	94.0
Cerium			51.3		540*		49.5		533*	
Chromium		500	1.90		485	97.0	2.10		485	97.0
Cobalt		500	3.00		475	95.0	2.70		477	95.4
Copper		500	-5.20		506	101.2	-4.70		498	99.6
Iron	200000	200000	187000	93.5	191000	95.5	188000	94.0	190000	95.0
Lead		1000	3.00*(a)		979	97.9	1.40		977	97.7
Lithium		500	-6.00		538	107.6	-7.10		536	107.2
Magnesium	500000	500000	491000	98.2	503000	100.6	496000	99.2	504000	100.8
Manganese		500	0.500		523	104.6	0.600		519	103.8
Molybdenum		500	-2.20		455	91.0	-2.00		458	91.6
Nickel		1000	4.50		969	96.9	4.20		968	96.8
Phosphorus		500	-7.10		481	96.2	-6.30		489	97.8
Potassium			-109		-140		-133		-147	
Selenium		1000	-2.70		939	93.9	3.20		949	94.9
Silicon		500	-20.9		484	96.8	-19.5		483	96.6
Silver		1000	0.700		1130	113.0	2.90		1120	112.0
Sodium			-134		-143		-210		-220	
Strontium		500	1.00		523	104.6	1.20		524	104.8
Sulfur		500	-34.1		459	91.8	-30.8		461	92.2
Thallium		1000	-5.30		963	96.3	-7.90		971	97.1
Tin		500	-4.20		459	91.8	-4.00		457	91.4
Titanium		500	-0.900		483	96.6	-0.800		482	96.4
Tungsten		500	3.50		467	93.4	-1.00		469	93.8
Vanadium		500	0.800		477	95.4	0.100		476	95.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD040122M1.ICP Date Analyzed: 04/01/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52155 Units: ug/l

Time:			08:01		08:06		11:27		11:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	1.80		960	96.0	1.80		968	96.8
Zirconium		500	2.20		534	106.8	2.40		528	105.6

(*) Outside of QC limits
(anr) Analyte not requested
(a) No AQ samples reported for this element in the area bracketed by this QC.

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:22	MA52164-STD1	1		STDA
08:27	MA52164-STD2	1		STDB
08:32	MA52164-ICV1	1		
08:40	MA52164-ICB1	1		
08:45	MA52164-CCV1	1		
08:50	MA52164-CCB1	1		
08:56	MA52164-CRI1	1		
09:01	MA52164-CRID1	1		
09:06	MA52164-ICSA1	1		
09:11	MA52164-ICSAB1	1		
09:16	MA52164-HSTD1	1		
09:21	MA52164-HSTD2	1		
09:26	ZZZZZZ	1		
09:31	ZZZZZZ	1		
09:37	ZZZZZZ	1		
09:42	MA52164-CCV2	1		
09:47	MA52164-CCB2	1		
09:52	MA52164-CRID2	1		
09:57	ZZZZZZ	1		
10:03	ZZZZZZ	5		
10:08	MP32014-MB1	1		
10:13	MP32014-B1	1		
10:18	MP32014-S1	1		
10:23	MP32014-S2	1		
10:28	JD41762-17F	1		
10:33	MP32014-SD1	5		
10:38	MA52164-CCV3	1		
10:43	MA52164-CCB3	1		
10:48	JD41762-23F	1		
10:53	JD41762-89F	1		
---------->	Last reportable sample/prep for job JD41762			
11:00	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:16	ZZZZZZ	1		
11:21	ZZZZZZ	1		
11:26	MA52164-CRID3	1		
11:32	MA52164-CCV4	1		
11:36	MA52164-CCB4	1		
11:42	MA52164-ICSA2	1		
11:47	MA52164-ICSAB2	1		
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	MP31924-S1	5		
12:07	MP31924-S2	5		
12:12	JD41689-2	5		(sample used for QC only; not part of login JD41762)
12:17	MP31924-SD1	25		
12:22	ZZZZZZ	5		
12:27	MA52164-CCV5	1		
12:32	MA52164-CCB5	1		
---------->	Last reportable CCB for job JD41762			
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:48	ZZZZZZ	10		
12:53	ZZZZZZ	5		
12:58	ZZZZZZ	5		
13:03	ZZZZZZ	10		
13:08	MP32054-MB2	1		
13:13	MP32054-MB1	1		
13:19	MP32054-B1	1		
13:23	MA52164-CCV6	1		
13:28	MA52164-CCB6	1		
13:34	MP32054-B2	1		
13:39	MP32054-S1	1		
13:44	MP32054-B2	1		
13:49	MP32054-S1	1		
13:54	MP32054-S2	1		
13:58	JD42120-5	1		(sample used for QC only; not part of login JD41762)

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:04	MP32054-SD1	5		
14:09	MP32054-S3	1		
14:14	MP32054-S4	1		
14:19	MA52164-CCV7	1		
14:23	MA52164-CCB7	1		
14:29	MP32093-MB1	1		
14:34	MP32093-B1	1		
14:39	MP32093-S1	1		
14:44	MP32093-S2	1		
14:49	JD42333-1	1		(sample used for QC only; not part of login JD41762)
14:54	MP32093-SD1	5		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:20	MA52164-CCV8	1		
15:24	MA52164-CCB8	1		
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	JD42120-5F	1		(sample used for QC only; not part of login JD41762)
15:50	MP32054-SD2	5		
15:55	ZZZZZZ	1		
16:01	ZZZZZZ	1		
16:06	ZZZZZZ	1		
16:11	ZZZZZZ	1		
16:16	MA52164-CCV9	1		
16:21	MA52164-CCB9	1		
16:26	ZZZZZZ	1		
16:31	ZZZZZZ	1		
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:47	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:52	ZZZZZZ	1		
16:57	ZZZZZZ	1		
17:03	ZZZZZZ	1		
17:08	ZZZZZZ	1		
17:13	MA52164-CCV10	1		
17:18	MA52164-CCB10	1		
17:23	ZZZZZZ	1		
17:28	ZZZZZZ	1		
17:34	ZZZZZZ	1		
17:39	ZZZZZZ	1		
17:44	ZZZZZZ	1		
17:49	ZZZZZZ	1		
17:55	MA52164-CCV11	1		
17:59	MA52164-CCB11	1		
18:05	ZZZZZZ	1		
18:10	ZZZZZZ	1		
18:15	ZZZZZZ	1		
18:20	ZZZZZZ	1		
18:26	ZZZZZZ	1		
18:31	ZZZZZZ	1		
18:36	MA52164-CCV12	1		
18:41	MA52164-CCB12	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As
08:32	MA52164-ICV1	1	X
08:40	MA52164-ICB1	1	X
08:45	MA52164-CCV1	1	X
08:50	MA52164-CCB1	1	X
08:56	MA52164-CRI1	1	X
09:01	MA52164-CRID1	1	
09:06	MA52164-ICSA1	1	X
09:11	MA52164-ICSAB1	1	X
09:16	MA52164-HSTD1	1	X
09:21	MA52164-HSTD2	1	X
09:26	ZZZZZZ	1	
09:31	ZZZZZZ	1	
09:37	ZZZZZZ	1	
09:42	MA52164-CCV2	1	X
09:47	MA52164-CCB2	1	X
09:52	MA52164-CRID2	1	X
09:57	ZZZZZZ	1	
10:03	ZZZZZZ	5	
10:08	MP32014-MB1	1	
10:13	MP32014-B1	1	
10:18	MP32014-S1	1	
10:23	MP32014-S2	1	
10:28	JD41762-17F	1	
10:33	MP32014-SD1	5	
10:38	MA52164-CCV3	1	X
10:43	MA52164-CCB3	1	X
10:48	JD41762-23F	1	X
10:53	JD41762-89F	1	X
11:00	ZZZZZZ	1	
11:06	ZZZZZZ	1	
11:11	ZZZZZZ	1	
11:16	ZZZZZZ	1	
11:21	ZZZZZZ	1	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As	
11:26	MA52164-CRID3	1	X	
11:32	MA52164-CCV4	1	X	
11:36	MA52164-CCB4	1	X	
11:42	MA52164-ICSA2	1	X	
11:47	MA52164-ICSAB2	1	X	
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	MP31924-S1	5		
12:07	MP31924-S2	5		
12:12	JD41689-2	5		(a)
12:17	MP31924-SD1	25		
12:22	ZZZZZZ	5		
12:27	MA52164-CCV5	1	X	
12:32	MA52164-CCB5	1	X	
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	1		
12:48	ZZZZZZ	10		
12:53	ZZZZZZ	5		
12:58	ZZZZZZ	5		
13:03	ZZZZZZ	10		
13:08	MP32054-MB2	1		
13:13	MP32054-MB1	1		
13:19	MP32054-B1	1		
13:23	MA52164-CCV6	1	X	
13:28	MA52164-CCB6	1	X	
13:34	MP32054-B2	1		
13:39	MP32054-S1	1		
13:44	MP32054-B2	1		
13:49	MP32054-S1	1		
13:54	MP32054-S2	1		
13:58	JD42120-5	1		(a)
14:04	MP32054-SD1	5		
14:09	MP32054-S3	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As	
14:14	MP32054-S4	1		
14:19	MA52164-CCV7	1	X	
14:23	MA52164-CCB7	1	X	
14:29	MP32093-MB1	1		
14:34	MP32093-B1	1		
14:39	MP32093-S1	1		
14:44	MP32093-S2	1		
14:49	JD42333-1	1		(a)
14:54	MP32093-SD1	5		
14:59	ZZZZZZ	1		
15:04	ZZZZZZ	1		
15:09	ZZZZZZ	1		
15:14	ZZZZZZ	1		
15:20	MA52164-CCV8	1	X	
15:24	MA52164-CCB8	1	X	
15:30	ZZZZZZ	1		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	1		
15:45	JD42120-5F	1		(a)
15:50	MP32054-SD2	5		
15:55	ZZZZZZ	1		
16:01	ZZZZZZ	1		
16:06	ZZZZZZ	1		
16:11	ZZZZZZ	1		
16:16	MA52164-CCV9	1	X	
16:21	MA52164-CCB9	1	X	
16:26	ZZZZZZ	1		
16:31	ZZZZZZ	1		
16:37	ZZZZZZ	1		
16:42	ZZZZZZ	1		
16:47	ZZZZZZ	1		
16:52	ZZZZZZ	1		
16:57	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Element: Dilution	As
17:03	ZZZZZZ	1	
17:08	ZZZZZZ	1	
17:13	MA52164-CCV10	1	X
17:18	MA52164-CCB10	1	X
17:23	ZZZZZZ	1	
17:28	ZZZZZZ	1	
17:34	ZZZZZZ	1	
17:39	ZZZZZZ	1	
17:44	ZZZZZZ	1	
17:49	ZZZZZZ	1	
17:55	MA52164-CCV11	1	X
17:59	MA52164-CCB11	1	X
18:05	ZZZZZZ	1	
18:10	ZZZZZZ	1	
18:15	ZZZZZZ	1	
18:20	ZZZZZZ	1	
18:26	ZZZZZZ	1	
18:31	ZZZZZZ	1	
18:36	MA52164-CCV12	1	X
18:41	MA52164-CCB12	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:22	MA52164-STD1	2144 R	69007 R	2623 R	5421 R
08:27	MA52164-STD2	2081	67039	2604	5215
08:32	MA52164-ICV1	2163	69895	2730	5354
08:40	MA52164-ICB1	2167	71343	2712	5469
08:45	MA52164-CCV1	2149	69901	2730	5337
08:50	MA52164-CCB1	2191	71932	2552	5538
08:56	MA52164-CRI1	2189	66927	2547	5514
09:01	MA52164-CRID1	No results reported for the elements associated with this internal standard.			
09:06	MA52164-ICSA1	1974	63659	2610	4984
09:11	MA52164-ICSAB1	2007	65025	2687	5071
09:16	MA52164-HSTD1	2157	70619	2749	5605
09:21	MA52164-HSTD2	2031	67054	2411	5074
09:26	ZZZZZZ	2225	66963	2530	5810
09:31	ZZZZZZ	2169	73613	2811	5634
09:37	ZZZZZZ	2209	73735	2792	5606
09:42	MA52164-CCV2	2190	72045	2830	5447
09:47	MA52164-CCB2	2246	74009	2824	5694
09:52	MA52164-CRID2	2226	73529	2806	5652
09:57	ZZZZZZ	2269	74888	2875	5757
10:03	ZZZZZZ	2208	73527	2823	5514
10:08	MP32014-MB1	2231	74409	2841	5660
10:13	MP32014-B1	2210	73067	2871	5520
10:18	MP32014-S1	2184	73043	2846	5440
10:23	MP32014-S2	2182	73272	2844	5438
10:28	JD41762-17F	2204	73855	2840	5539
10:33	MP32014-SD1	2227	73721	2814	5637
10:38	MA52164-CCV3	2164	71126	2793	5393
10:43	MA52164-CCB3	2233	73212	2831	5671
10:48	JD41762-23F	2201	73439	2830	5558
10:53	JD41762-89F	2168	72719	2820	5419
11:00	ZZZZZZ	2223	73888	2829	5629
11:06	ZZZZZZ	2229	74402	2876	5636
11:11	ZZZZZZ	No results reported for the elements associated with this internal standard.			

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:16	ZZZZZZ	2223	74748	2846	5620
11:21	ZZZZZZ	2240	74006	2853	5683
11:26	MA52164-CRID3	2213	73417	2810	5617
11:32	MA52164-CCV4	2182	72207	2816	5430
11:36	MA52164-CCB4	2206	73181	2850	5594
11:42	MA52164-ICSA2	2042	67640	2782	5125
11:47	MA52164-ICSAB2	2034	67243	2776	5120
11:52	ZZZZZZ	2223	74963	2878	5643
11:57	ZZZZZZ	2210	73481	2873	5519
12:02	MP31924-S1	2223	73843	2839	5482
12:07	MP31924-S2	2222	73855	2860	5478
12:12	JD41689-2	2225	74147	2890	5499
12:17	MP31924-SD1	2222	74888	2841	5587
12:22	ZZZZZZ	2235	74331	2851	5511
12:27	MA52164-CCV5	2186	72748	2805	5436
12:32	MA52164-CCB5	2220	74314	2831	5630
12:37	ZZZZZZ	2238	74682	2877	5691
12:42	ZZZZZZ	2228	74577	2841	5658
12:48	ZZZZZZ	2212	73730	2862	5515
12:53	ZZZZZZ	2247	74489	2898	5558
12:58	ZZZZZZ	2234	74217	2875	5518
13:03	ZZZZZZ	2199	73460	2847	5474
13:08	MP32054-MB2	2246	75269	2903	5681
13:13	MP32054-MB1	2234	74876	2879	5645
13:19	MP32054-B1	2186	73549	2878	5457
13:23	MA52164-CCV6	2190	72821	2829	5438
13:28	MA52164-CCB6	2242	75290	2857	5667
13:34	MP32054-B2	No results reported for the elements associated with this internal standard.			
13:39	MP32054-S1	No results reported for the elements associated with this internal standard.			
13:44	MP32054-B2	2196	73735	2888	5471
13:49	MP32054-S1	2122	71896	2825	5310
13:54	MP32054-S2	2120	71941	2856	5311
13:58	JD42120-5	2150	73062	2854	5386

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:04	MP32054-SD1	2203	74412	2859	5547
14:09	MP32054-S3	2148	72121	2846	5371
14:14	MP32054-S4	2170	72848	2859	5418
14:19	MA52164-CCV7	2232	73212	2835	5541
14:23	MA52164-CCB7	2268	74905	2882	5737
14:29	MP32093-MB1	2270	75391	2928	5746
14:34	MP32093-B1	2245	74339	2881	5582
14:39	MP32093-S1	2189	72375	2863	5360
14:44	MP32093-S2	2159	72510	2887	5312
14:49	JD42333-1	2179	73251	2891	5371
14:54	MP32093-SD1	2219	73948	2898	5563
14:59	ZZZZZZ	2190	73381	2888	5375
15:04	ZZZZZZ	2229	73628	2910	5458
15:09	ZZZZZZ	2240	73932	2921	5482
15:14	ZZZZZZ	2216	74152	2891	5427
15:20	MA52164-CCV8	2213	73502	2880	5499
15:24	MA52164-CCB8	2259	75578	2881	5711
15:30	ZZZZZZ	2198	74203	2897	5404
15:35	ZZZZZZ	2198	74076	2913	5384
15:40	ZZZZZZ	2184	74300	2928	5354
15:45	JD42120-5F	2189	74108	2889	5476
15:50	MP32054-SD2	2284	76049	2923	5729
15:55	ZZZZZZ	2227	74295	2889	5592
16:01	ZZZZZZ	2250	74661	2894	5634
16:06	ZZZZZZ	2176	74090	2938	5392
16:11	ZZZZZZ	2178	73360	2928	5469
16:16	MA52164-CCV9	2209	73646	2896	5485
16:21	MA52164-CCB9	2267	75655	2916	5727
16:26	ZZZZZZ	2165	73725	2865	5457
16:31	ZZZZZZ	2138	72816	2870	5357
16:37	ZZZZZZ	2156	73139	2875	5410
16:42	ZZZZZZ	2258	76166	2963	5728
16:47	ZZZZZZ	2120	73238	2868	5332

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52164
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:52	ZZZZZZ	2215	74509	2892	5567
16:57	ZZZZZZ	2238	74831	2915	5594
17:03	ZZZZZZ	2176	74891	2901	5410
17:08	ZZZZZZ	2204	74308	2917	5527
17:13	MA52164-CCV10	2229	74577	2887	5541
17:18	MA52164-CCB10	2258	76506	2908	5713
17:23	ZZZZZZ	2169	73152	2862	5467
17:28	ZZZZZZ	2102	72837	2850	5281
17:34	ZZZZZZ	2161	73195	2880	5409
17:39	ZZZZZZ	2285	76571	2927	5771
17:44	ZZZZZZ	2146	73425	2881	5381
17:49	ZZZZZZ	2307	76383	2883	5828
17:55	MA52164-CCV11	2254	75136	2905	5600
17:59	MA52164-CCB11	2322	76683	2877	5859
18:05	ZZZZZZ	2289	77139	2905	5783
18:10	ZZZZZZ	2277	76761	2889	5766
18:15	ZZZZZZ	2158	73794	2822	5352
18:20	ZZZZZZ	2297	77250	2930	5792
18:26	ZZZZZZ	2277	77107	2971	5670
18:31	ZZZZZZ	2281	76629	2974	5669
18:36	MA52164-CCV12	2256	75145	2905	5586
18:41	MA52164-CCB12	2304	77538	2895	5816

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time:			08:40		08:50		09:47		10:43	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2								
Antimony	6.0	2.8								
Arsenic	3.0	2.6	0.00	<3.0	0.00	<3.0	-0.100	<3.0	0.200	<3.0
Barium	200	.2								
Beryllium	1.0	.2								
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4								
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7								
Cobalt	50	.6								
Copper	10	.7								
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35								
Selenium	10	3.6								
Silicon	200	2.2								
Silver	10	.6								
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2								
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time:			08:40		08:50		09:47		10:43	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

Time:			11:36		12:32		
Sample ID:			CCB4		CCB5		
Metal	RL	IDL	raw	final	raw	final	
Aluminum	200	9.2					
Antimony	6.0	2.8					
Arsenic	3.0	2.6	0.400	<3.0	-0.900	<3.0	
Barium	200	.2					
Beryllium	1.0	.2					
Bismuth	20	2.5					
Boron	100	1.8					
Cadmium	3.0	.4					
Calcium	5000	13	anr				
Cerium	100						
Chromium	10	.7					
Cobalt	50	.6					
Copper	10	.7					
Iron	100	3.3	anr				
Lead	3.0	2	anr				
Lithium	50	1.5					
Magnesium	5000	25	anr				
Manganese	15	.1	anr				
Molybdenum	20	.6					
Nickel	10	.8	anr				
Phosphorus	50	7					
Potassium	10000	35					
Selenium	10	3.6					
Silicon	200	2.2					
Silver	10	.6					
Sodium	10000	14	anr				
Strontium	10	.1					
Sulfur	50	3.7					
Thallium	10	5.2					
Tin	10	1.4					
Titanium	10	.8					
Tungsten	50	1.3					
Vanadium	50	.5					

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52164 Units: ug/l

			Time:		11:36		12:32	
			Sample ID:		CCB4		CCB5	
Metal	RL	IDL			raw	final	raw	final
Zinc	20	.3			anr			
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		08:32			08:45			09:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	1970	98.5	2000	1950	97.5	2000	1960	98.0
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium	anr								
Cerium									
Chromium									
Cobalt									
Copper									
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		08:32			08:45			09:42	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		10:38			11:32			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	2010	100.5	2000	1990	99.5	2000	1990	99.5
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium	anr								
Cerium									
Chromium									
Cobalt									
Copper									
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52164 Units: ug/l

Time:		10:38			11:32			12:27	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52164 Units: ug/l

Time:		09:16			09:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	8000	7470	93.4			
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52164 Units: ug/l

Time:		09:16			09:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52164 Units: ug/l

Time: / Sample ID: / Metal	CRI True	CRIA True	CRID True	08:56 CRI1 Results	% Rec	09:52 CRID2 Results	% Rec	11:26 CRID3 Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	7.80	97.5	3.50	116.7	3.30	110.0
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0						
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52164 Units: ug/l

Time:				08:56		09:52		11:26	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52164 Units: ug/l

Time:			09:06		09:11		11:42		11:47	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	500000	100.0	507000	101.4	499000	99.8	507000	101.4
Antimony		1000	-0.100		1040	104.0	-2.20		1040	104.0
Arsenic		1000	-0.800		1060	106.0	-1.70		1060	106.0
Barium		500	4.60		512	102.4	4.30		514	102.8
Beryllium		500	0.300		497	99.4	0.300		493	98.6
Bismuth		500	0.500		541	108.2	0.100		552	110.4
Boron		500	1.60		516	103.2	1.30		517	103.4
Cadmium		1000	0.100		1050	105.0	0.400		1050	105.0
Calcium	400000	400000	379000	94.8	386000	96.5	373000	93.3	381000	95.3
Cerium			36.9		545*		29.4		538*	
Chromium		500	-1.00		493	98.6	-1.10		485	97.0
Cobalt		500	-0.100		478	95.6	0.500		475	95.0
Copper		500	-1.70		533	106.6	4.20		533	106.6
Iron	200000	200000	188000	94.0	191000	95.5	184000	92.0	188000	94.0
Lead		1000	-1.90		963	96.3	1.70		955	95.5
Lithium		500	-3.90		551	110.2	-3.10		542	108.4
Magnesium	500000	500000	492000	98.4	498000	99.6	480000	96.0	491000	98.2
Manganese		500	-1.00		521	104.2	-0.700		514	102.8
Molybdenum		500	1.50		480	96.0	1.50		480	96.0
Nickel		1000	1.60		973	97.3	0.900		972	97.2
Phosphorus		500	8.60		512	102.4	9.80		514	102.8
Potassium			39.4		51.1		-95.7		-42.9	
Selenium		1000	3.30		991	99.1	3.40		982	98.2
Silicon		500	-18.7		513	102.6	-18.7		515	103.0
Silver		1000	2.50		1100	110.0	2.80		1090	109.0
Sodium			38.7		13.1		37.6		22.4	
Strontium		500	-1.30		519	103.8	-1.20		524	104.8
Sulfur		500	15.6		528	105.6	12.5		526	105.2
Thallium		1000	-3.70		952	95.2	-3.00		951	95.1
Tin		500	-5.90		475	95.0	-5.20		472	94.4
Titanium		500	-1.70		488	97.6	-1.80		483	96.6
Tungsten		500	-4.90		487	97.4	-5.70		487	97.4
Vanadium		500	-1.30		489	97.8	-1.80		480	96.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040422M1.ICP Date Analyzed: 04/04/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52164 Units: ug/l

Time:			09:06		09:11		11:42		11:47	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	10.1		975	97.5	11.4		943	94.3
Zirconium		500	2.20		511	102.2	2.60		522	104.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:03	MA52201-STD1	1		STDA
06:08	MA52201-STD2	1		STDB
06:13	MA52201-ICV1	1		
06:21	MA52201-ICB1	1		
06:26	MA52201-CCV1	1		
06:31	MA52201-CCB1	1		
06:36	MA52201-CRI1	1		
06:42	MA52201-CRID1	1		
06:47	MA52201-ICSA1	1		
06:52	MA52201-ICSAB1	1		
06:57	MA52201-HSTD1	1		
07:02	MA52201-HSTD2	1		
07:07	ZZZZZZ	1		
07:12	ZZZZZZ	1		
07:18	ZZZZZZ	1		
07:23	MA52201-CCV2	1		
07:28	MA52201-CCB2	1		
07:33	MP32191-MB1	1		
07:38	MP32191-B1	1		
07:43	MP32191-S1	1		
07:48	MP32191-S2	1		
07:53	JD41762-18F	1		
07:58	MP32191-SD1	5		
08:03	JD41762-13F	1		high rsd
08:09	JD41762-19F	1		
08:14	JD41762-20F	1		high rsd
08:19	MA52201-CCV3	1		
08:24	MA52201-CCB3	1		
08:29	JD41762-21F	1		high rsd
08:35	JD41762-22F	1		
08:40	JD41762-24F	1		
08:45	JD41762-50F	1		
08:50	JD41762-53F	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:55	JD41762-55F	1		
09:01	JD41762-57F	1		
09:06	JD41762-58F	1		
09:11	JD41762-84F	1		
09:16	MA52201-CCV4	1		
09:21	MA52201-CCB4	1		
09:26	JD41762-84F	1		
09:31	JD41762-85F	1		
09:37	JD41762-86F	1		
09:42	MP32191-MB2	1		
09:47	MP32191-B2	1		
---------->	Last reportable sample/prep for job JD41762			
09:52	ZZZZZZ	1		
09:57	ZZZZZZ	1		
10:02	ZZZZZZ	1		
10:08	MA52201-CCV5	1		
10:13	MA52201-CCB5	1		
10:18	MA52201-CRID2	1		
10:23	MA52201-ICSA2	1		
10:28	MA52201-ICSAB2	1		
10:33	MA52201-CCV6	1		
10:38	MA52201-CCB6	1		
---------->	Last reportable CCB for job JD41762			
	Refer to raw data for calibration curve and standards.			

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Element: Dilution	As
06:13	MA52201-ICV1	1	X
06:21	MA52201-ICB1	1	X
06:26	MA52201-CCV1	1	X
06:31	MA52201-CCB1	1	X
06:36	MA52201-CRI1	1	X
06:42	MA52201-CRID1	1	X
06:47	MA52201-ICSA1	1	X
06:52	MA52201-ICSAB1	1	X
06:57	MA52201-HSTD1	1	X
07:02	MA52201-HSTD2	1	X
07:07	ZZZZZZ	1	
07:12	ZZZZZZ	1	
07:18	ZZZZZZ	1	
07:23	MA52201-CCV2	1	X
07:28	MA52201-CCB2	1	X
07:33	MP32191-MB1	1	X
07:38	MP32191-B1	1	X
07:43	MP32191-S1	1	X
07:48	MP32191-S2	1	X
07:53	JD41762-18F	1	X
07:58	MP32191-SD1	5	X
08:03	JD41762-13F	1	
08:09	JD41762-19F	1	X
08:14	JD41762-20F	1	
08:19	MA52201-CCV3	1	X
08:24	MA52201-CCB3	1	X
08:29	JD41762-21F	1	
08:35	JD41762-22F	1	X
08:40	JD41762-24F	1	X
08:45	JD41762-50F	1	X
08:50	JD41762-53F	1	X
08:55	JD41762-55F	1	X
09:01	JD41762-57F	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Element: Dilution	As
09:06	JD41762-58F	1	X
09:11	JD41762-84F	1	X
09:16	MA52201-CCV4	1	X
09:21	MA52201-CCB4	1	X
09:26	JD41762-84F	1	
09:31	JD41762-85F	1	X
09:37	JD41762-86F	1	X
09:42	MP32191-MB2	1	X
09:47	MP32191-B2	1	X
09:52	ZZZZZZ	1	
09:57	ZZZZZZ	1	
10:02	ZZZZZZ	1	
10:08	MA52201-CCV5	1	X
10:13	MA52201-CCB5	1	X
10:18	MA52201-CRID2	1	X
10:23	MA52201-ICSA2	1	X
10:28	MA52201-ICSAB2	1	X
10:33	MA52201-CCV6	1	X
10:38	MA52201-CCB6	1	X

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:03	MA52201-STD1	2257 R	77997 R	2718 R	5938 R
06:08	MA52201-STD2	2172	73938	2694	5632
06:13	MA52201-ICV1	2207	74675	2686	5684
06:21	MA52201-ICB1	2240	76941	2659	5897
06:26	MA52201-CCV1	2207	74954	2656	5700
06:31	MA52201-CCB1	2246	76370	2658	5924
06:36	MA52201-CRI1	2242	77660	2725	5883
06:42	MA52201-CRID1	2244	77573	2750	5905
06:47	MA52201-ICSA1	2062	71346	2713	5341
06:52	MA52201-ICSAB1	2070	70856	2717	5383
06:57	MA52201-HSTD1	2228	77558	2755	5994
07:02	MA52201-HSTD2	2096	72691	2708	5392
07:07	ZZZZZZ	2244	77523	2771	6079
07:12	ZZZZZZ	2228	78086	2793	5990
07:18	ZZZZZZ	2282	78599	2801	6022
07:23	MA52201-CCV2	2201	76339	2751	5687
07:28	MA52201-CCB2	2247	78299	2776	5926
07:33	MP32191-MB1	2235	78468	2784	5893
07:38	MP32191-B1	2228	76246	2794	5772
07:43	MP32191-S1	2193	76301	2797	5658
07:48	MP32191-S2	2185	76529	2794	5634
07:53	JD41762-18F	2202	77206	2816	5723
07:58	MP32191-SD1	2224	77621	2763	5849
08:03	JD41762-13F	2222	78093	2786	5833
08:09	JD41762-19F	2192	76717	2796	5701
08:14	JD41762-20F	2227	77747	2784	5836
08:19	MA52201-CCV3	2198	75790	2747	5687
08:24	MA52201-CCB3	2259	78800	2769	5964
08:29	JD41762-21F	2212	77354	2787	5747
08:35	JD41762-22F	2218	77461	2791	5757
08:40	JD41762-24F	2218	78174	2803	5802
08:45	JD41762-50F	2213	77100	2801	5750
08:50	JD41762-53F	2208	77305	2799	5761

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52201
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:55	JD41762-55F	2202	77044	2810	5723
09:01	JD41762-57F	2213	77132	2815	5749
09:06	JD41762-58F	2215	77390	2826	5761
09:11	JD41762-84F	2228	78225	2809	5823
09:16	MA52201-CCV4	2212	76634	2781	5718
09:21	MA52201-CCB4	2249	78751	2783	5937
09:26	JD41762-84F	2234	78291	2815	5832
09:31	JD41762-85F	2230	77459	2812	5848
09:37	JD41762-86F	2231	77810	2817	5844
09:42	MP32191-MB2	2249	78231	2841	5933
09:47	MP32191-B2	2220	76827	2839	5767
09:52	ZZZZZZ	2252	78742	2794	5946
09:57	ZZZZZZ	2257	78999	2795	5962
10:02	ZZZZZZ	2260	78623	2791	5955
10:08	MA52201-CCV5	2220	76527	2752	5739
10:13	MA52201-CCB5	2259	78617	2798	5973
10:18	MA52201-CRID2	2258	77993	2807	5947
10:23	MA52201-ICSA2	2075	71538	2732	5371
10:28	MA52201-ICSAB2	2073	71312	2759	5381
10:33	MA52201-CCV6	2225	76529	2797	5751
10:38	MA52201-CCB6	2266	78768	2794	5980

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time: / Sample ID:			06:21 ICB1		06:31 CCB1		07:28 CCB2		08:24 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2								
Antimony	6.0	2.8								
Arsenic	3.0	2.6	-0.600	<3.0	-0.900	<3.0	-0.700	<3.0	-0.800	<3.0
Barium	200	.2								
Beryllium	1.0	.2								
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4								
Calcium	5000	13								
Cerium	100									
Chromium	10	.7								
Cobalt	50	.6								
Copper	10	.7								
Iron	100	3.3								
Lead	3.0	2								
Lithium	50	1.5								
Magnesium	5000	25								
Manganese	15	.1								
Molybdenum	20	.6								
Nickel	10	.8								
Phosphorus	50	7								
Potassium	10000	35								
Selenium	10	3.6								
Silicon	200	2.2								
Silver	10	.6								
Sodium	10000	14								
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2								
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			06:21		06:31		07:28		08:24	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3								
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			09:21		10:13		10:38	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Aluminum	200	9.2						
Antimony	6.0	2.8						
Arsenic	3.0	2.6	-0.900	<3.0	-1.10	<3.0	-1.70	<3.0
Barium	200	.2						
Beryllium	1.0	.2						
Bismuth	20	2.5						
Boron	100	1.8						
Cadmium	3.0	.4						
Calcium	5000	13						
Cerium	100							
Chromium	10	.7						
Cobalt	50	.6						
Copper	10	.7						
Iron	100	3.3						
Lead	3.0	2						
Lithium	50	1.5						
Magnesium	5000	25						
Manganese	15	.1						
Molybdenum	20	.6						
Nickel	10	.8						
Phosphorus	50	7						
Potassium	10000	35						
Selenium	10	3.6						
Silicon	200	2.2						
Silver	10	.6						
Sodium	10000	14						
Strontium	10	.1						
Sulfur	50	3.7						
Thallium	10	5.2						
Tin	10	1.4						
Titanium	10	.8						
Tungsten	50	1.3						
Vanadium	50	.5						

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52201 Units: ug/l

Time:			09:21		10:13		10:38	
Sample ID:			CCB4		CCB5		CCB6	
Metal	RL	IDL	raw	final	raw	final	raw	final
Zinc	20	.3						
Zirconium	10	.5						

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:13			06:26			07:23	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	2060	103.0	2000	1970	98.5	2000	1980	99.0
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Cerium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:13			06:26			07:23	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc									
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		08:19			09:16			10:08	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	1980	99.0	2000	1980	99.0	2000	1990	99.5
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Cerium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		08:19			09:16			10:08	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc									
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		10:33	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	2000	1980	99.0
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Cerium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium			
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52201 Units: ug/l

Time:		10:33	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc			
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:57			07:02	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	8000	7700	96.3			
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52201 Units: ug/l

Time:		06:57			07:02	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc						
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52201 Units: ug/l

Time: / Sample ID: / Metal	CRI True	CRIA True	CRID True	06:36 CRI1 Results	% Rec	06:42 CRID1 Results	% Rec	10:18 CRID2 Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	7.20	90.0			3.00	100.0
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000						
Cerium									
Chromium	10		2.0						
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0						
Molybdenum	20								
Nickel	10		4.0						
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000						
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52201 Units: ug/l

Time:				06:36		06:42		10:18	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10						
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52201 Units: ug/l

Time:			06:47		06:52		10:23		10:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	511000	102.2	515000	103.0	513000	102.6	516000	103.2
Antimony		1000	4.70		1060	106.0	0.200		1060	106.0
Arsenic		1000	-0.900		1030	103.0	0.00		1030	103.0
Barium		500	4.90		493	98.6	4.90		495	99.0
Beryllium		500	0.100		486	97.2	0.300		485	97.0
Bismuth		500	-3.50		487	97.4	-3.80		490	98.0
Boron		500	0.800		497	99.4	1.40		500	100.0
Cadmium		1000	0.00		1030	103.0	-0.100		1030	103.0
Calcium	400000	400000	383000	95.8	392000	98.0	384000	96.0	391000	97.8
Cerium			39.3		536*		37.0		541*	
Chromium		500	-0.700		476	95.2	-1.10		475	95.0
Cobalt		500	0.400		472	94.4	0.400		473	94.6
Copper		500	1.50		518	103.6	2.10		522	104.4
Iron	200000	200000	191000	95.5	198000	99.0	190000	95.0	197000	98.5
Lead		1000	4.70*		942	94.2	6.70*		942	94.2
Lithium		500	-2.80		561	112.2	-6.00		561	112.2
Magnesium	500000	500000	504000	100.8	502000	100.4	504000	100.8	499000	99.8
Manganese		500	11.8		513	102.6	11.6		513	102.6
Molybdenum		500	1.50		490	98.0	0.700		490	98.0
Nickel		1000	1.80		935	93.5	2.30		937	93.7
Phosphorus		500	10.4		494	98.8	10.8		494	98.8
Potassium			13.1		80.4		44.6		40.8	
Selenium		1000	9.40		958	95.8	9.70		956	95.6
Silicon		500	-18.5		518	103.6	-18.4		520	104.0
Silver		1000	3.30		1060	106.0	3.10		1060	106.0
Sodium			24.6		21.5		24.6		17.3	
Strontium		500	-1.60		501	100.2	-1.30		503	100.6
Sulfur		500	16.4		519	103.8	15.3		522	104.4
Thallium		1000	3.70		923	92.3	1.90		931	93.1
Tin		500	-6.30		473	94.6	-6.30		470	94.0
Titanium		500	-2.30		495	99.0	-2.00		498	99.6
Tungsten		500	-5.90		501	100.2	-6.50		499	99.8
Vanadium		500	-0.600		475	95.0	-0.600		476	95.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF040922M1.ICP Date Analyzed: 04/09/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52201 Units: ug/l

Time:			06:47		06:52		10:23		10:28	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	8.00		944	94.4	8.30		941	94.1
Zirconium		500	0.900		471	94.2	1.10		474	94.8

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:22	MA52204-STD1	1		STDA
06:27	MA52204-STD2	1		STDB
06:32	MA52204-ICV1	1		
06:40	MA52204-ICB1	1		
06:51	MA52204-ICCV1	1		
07:00	MA52204-CCB1	1		
07:04	MA52204-CRI1	1		
07:10	MA52204-CRID1	1		
07:15	MA52204-ICSA1	1		
07:20	MA52204-ICSAB1	1		
07:25	MA52204-HSTD1	1		
07:30	MA52204-HSTD2	1		
07:35	ZZZZZZ	1		
07:40	ZZZZZZ	1		
07:46	ZZZZZZ	1		
07:51	MA52204-CCV1	1		
07:56	MA52204-CCB2	1		
08:01	MA52204-CRID2	1		
08:06	MA52204-CRI2	1		
08:11	ZZZZZZ	1		
08:17	JD41762-13F	1		
08:22	JD41762-20F	1		
08:27	JD41762-21F	1		
---------->	Last reportable sample/prep for job JD41762			
08:32	MA52204-CCV2	1		
08:37	MA52204-CCB3	1		
08:42	MP32200-MB1	1		
08:48	MP32200-B1	1		
08:52	MP32200-S1	1		
08:57	MP32200-S2	1		
09:02	JD42610-21	1		(sample used for QC only; not part of login JD41762)
09:07	MP32200-SD1	5		
09:12	ZZZZZZ	1		
09:17	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:23	ZZZZZZ	1		
09:28	MA52204-CCV3	1		
09:33	MA52204-CCB4	1		
09:38	ZZZZZZ	1		
09:43	ZZZZZZ	1		
09:49	ZZZZZZ	1		
09:54	MA52204-CRID3	1		
09:59	MA52204-CRI3	1		
10:04	ZZZZZZ	1		
10:10	ZZZZZZ	1		
10:15	ZZZZZZ	1		
10:20	ZZZZZZ	1		
10:25	MA52204-CCV4	1		
10:30	MA52204-CCB5	1		
10:35	ZZZZZZ	1		
10:40	ZZZZZZ	1		
10:45	ZZZZZZ	1		
10:50	ZZZZZZ	1		
10:56	ZZZZZZ	1		
11:01	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		
11:16	ZZZZZZ	1		
11:22	MA52204-CCV5	1		
11:27	MA52204-CCB6	1		
11:32	MA52204-ICSA2	1		
11:37	MA52204-ICSAB2	1		
11:42	ZZZZZZ	1		
11:47	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:57	MA52204-CCV6	1		
12:02	MA52204-CCB7	1		

----------> Last reportable CCB for job JD41762
Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Element: Dilution	As
06:32	MA52204-ICV1	1	X
06:40	MA52204-ICB1	1	X
06:51	MA52204-ICCV1	1	X
07:00	MA52204-CCB1	1	X
07:04	MA52204-CRI1	1	
07:10	MA52204-CRID1	1	
07:15	MA52204-ICSA1	1	X
07:20	MA52204-ICSAB1	1	X
07:25	MA52204-HSTD1	1	X
07:30	MA52204-HSTD2	1	X
07:35	ZZZZZZ	1	
07:40	ZZZZZZ	1	
07:46	ZZZZZZ	1	
07:51	MA52204-CCV1	1	X
07:56	MA52204-CCB2	1	X
08:01	MA52204-CRID2	1	X
08:06	MA52204-CRI2	1	X
08:11	ZZZZZZ	1	
08:17	JD41762-13F	1	X
08:22	JD41762-20F	1	X
08:27	JD41762-21F	1	X
08:32	MA52204-CCV2	1	X
08:37	MA52204-CCB3	1	X
08:42	MP32200-MB1	1	X
08:48	MP32200-B1	1	X
08:52	MP32200-S1	1	X
08:57	MP32200-S2	1	X
09:02	JD42610-21	1	(a)
09:07	MP32200-SD1	5	X
09:12	ZZZZZZ	1	
09:17	ZZZZZZ	1	
09:23	ZZZZZZ	1	
09:28	MA52204-CCV3	1	X
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Element: Dilution	As
09:33	MA52204-CCB4	1	X
09:38	ZZZZZZ	1	
09:43	ZZZZZZ	1	
09:49	ZZZZZZ	1	
09:54	MA52204-CRID3	1	X
09:59	MA52204-CRI3	1	X
10:04	ZZZZZZ	1	
10:10	ZZZZZZ	1	
10:15	ZZZZZZ	1	
10:20	ZZZZZZ	1	
10:25	MA52204-CCV4	1	X
10:30	MA52204-CCB5	1	X
10:35	ZZZZZZ	1	
10:40	ZZZZZZ	1	
10:45	ZZZZZZ	1	
10:50	ZZZZZZ	1	
10:56	ZZZZZZ	1	
11:01	ZZZZZZ	1	
11:06	ZZZZZZ	1	
11:11	ZZZZZZ	1	
11:16	ZZZZZZ	1	
11:22	MA52204-CCV5	1	X
11:27	MA52204-CCB6	1	X
11:32	MA52204-ICSA2	1	X
11:37	MA52204-ICSAB2	1	X
11:42	ZZZZZZ	1	
11:47	ZZZZZZ	1	
11:52	ZZZZZZ	1	
11:57	MA52204-CCV6	1	X
12:02	MA52204-CCB7	1	X

(a) Sample used for QC only; not part of login JD41762.

	Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:22	MA52204-STD1	2280 R	75390 R	2549 R	6084 R
06:27	MA52204-STD2	2257	73820	2565	5916
06:32	MA52204-ICV1	2275	75133	2589	5944
06:40	MA52204-ICB1	2319	76860	2574	6190
06:51	MA52204-ICCV1	2277	74637	2559	5986
07:00	MA52204-CCB1	2313	76338	2560	6197
07:04	MA52204-CRI1	No results reported for the elements associated with this internal standard.			
07:10	MA52204-CRID1	No results reported for the elements associated with this internal standard.			
07:15	MA52204-ICSA1	2147	71201	2595	5650
07:20	MA52204-ICSAB1	2125	70880	2589	5627
07:25	MA52204-HSTD1	2298	76706	2635	6283
07:30	MA52204-HSTD2	2171	73169	2601	5684
07:35	ZZZZZZ	2320	77961	2665	6398
07:40	ZZZZZZ	2310	79186	2703	6338
07:46	ZZZZZZ	2367	79918	2702	6378
07:51	MA52204-CCV1	2272	75842	2645	6008
07:56	MA52204-CCB2	2331	78402	2673	6276
08:01	MA52204-CRID2	2336	78421	2685	6297
08:06	MA52204-CRI2	2324	77660	2671	6245
08:11	ZZZZZZ	2362	78970	2695	6362
08:17	JD41762-13F	2373	79122	2728	6355
08:22	JD41762-20F	2358	79167	2710	6326
08:27	JD41762-21F	2318	77082	2698	6180
08:32	MA52204-CCV2	2325	75863	2679	6179
08:37	MA52204-CCB3	2367	78956	2684	6427
08:42	MP32200-MB1	2363	79494	2678	6414
08:48	MP32200-B1	2346	78209	2715	6261
08:52	MP32200-S1	2274	76346	2708	6049
08:57	MP32200-S2	2296	77003	2740	6114
09:02	JD42610-21	2304	77202	2715	6140
09:07	MP32200-SD1	2385	79558	2725	6408
09:12	ZZZZZZ	2342	78654	2757	6258
09:17	ZZZZZZ	2386	79289	2758	6479

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:23	ZZZZZZ	2385	79891	2734	6470
09:28	MA52204-CCV3	2340	77707	2706	6232
09:33	MA52204-CCB4	2393	79677	2744	6500
09:38	ZZZZZZ	2308	77674	2732	6178
09:43	ZZZZZZ	2384	79396	2768	6463
09:49	ZZZZZZ	2371	78856	2744	6418
09:54	MA52204-CRID3	2382	79656	2734	6476
09:59	MA52204-CRI3	2360	78758	2724	6380
10:04	ZZZZZZ	2315	78048	2737	6181
10:10	ZZZZZZ	2374	79035	2775	6429
10:15	ZZZZZZ	2342	77874	2758	6266
10:20	ZZZZZZ	2324	77940	2762	6165
10:25	MA52204-CCV4	2345	77916	2738	6234
10:30	MA52204-CCB5	2398	79771	2754	6522
10:35	ZZZZZZ	2366	79262	2798	6217
10:40	ZZZZZZ	2285	77121	2729	6117
10:45	ZZZZZZ	2251	76484	2703	5979
10:50	ZZZZZZ	2263	76751	2706	6028
10:56	ZZZZZZ	2164	73803	2670	5662
11:01	ZZZZZZ	2140	73229	2632	5561
11:06	ZZZZZZ	2245	77233	2725	5977
11:11	ZZZZZZ	2147	74152	2687	5605
11:16	ZZZZZZ	2126	73483	2675	5451
11:22	MA52204-CCV5	2313	77470	2737	6132
11:27	MA52204-CCB6	2373	80088	2777	6426
11:32	MA52204-ICSA2	2165	72636	2728	5745
11:37	MA52204-ICSAB2	2153	71032	2674	5734
11:42	ZZZZZZ	2238	76493	2732	5853
11:47	ZZZZZZ	2321	78188	2758	6166
11:52	ZZZZZZ	2302	78533	2763	6118
11:57	MA52204-CCV6	2323	77941	2761	6165
12:02	MA52204-CCB7	2358	79083	2742	6380

R = Reference for ISTD limits. ! = Outside limits.

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52204
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			06:40		07:00		07:56		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2	anr							
Antimony	6.0	2.8	anr							
Arsenic	3.0	2.6	-0.700	<3.0	0.900	<3.0	-0.600	<3.0	0.900	<3.0
Barium	200	.2	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4	anr							
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	.7	anr							
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35	anr							
Selenium	10	3.6	anr							
Silicon	200	2.2								
Silver	10	.6	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2	anr							
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			06:40		07:00		07:56		08:37	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time: / Sample ID:			09:33 CCB4		10:30 CCB5		11:27 CCB6		12:02 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2	anr							
Antimony	6.0	2.8	anr							
Arsenic	3.0	2.6	-0.600	<3.0	0.600	<3.0	1.40	<3.0	0.600	<3.0
Barium	200	.2	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4	anr							
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	.7	anr							
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35	anr							
Selenium	10	3.6	anr							
Silicon	200	2.2								
Silver	10	.6	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2	anr							
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52204 Units: ug/l

Time:			09:33		10:30		11:27		12:02	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52204 Units: ug/l

Time:		06:51	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1960	98.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52204 Units: ug/l

Time:		06:51	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		06:32			07:51			08:32	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2010	100.5	2000	1970	98.5	2000	1970	98.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		06:32			07:51			08:32	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		09:28			10:25			11:22	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1960	98.0	2000	1960	98.0	2000	1930	96.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		09:28			10:25			11:22	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		11:57	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1940	97.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52204 Units: ug/l

Time:		11:57	
Sample ID:	CCV	CCV6	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52204 Units: ug/l

Time:		07:25			07:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7490	93.6			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52204 Units: ug/l

Time:		07:25			07:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				08:01		08:06		09:54	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	3.30	110.0	8.20	102.5	2.60	86.7
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				08:01		08:06		09:54	
Sample ID:	CRI	CRIA	CRID	CRID2		CRI2		CRID3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				09:59	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	8.50	106.3
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52204 Units: ug/l

Time:				09:59	
Sample ID:	CRI	CRIA	CRID	CRI3	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52204 Units: ug/l

Time:			07:15		07:20		11:32		11:37	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	496000	99.2	503000	100.6	484000	96.8	492000	98.4
Antimony		1000	4.80		1050	105.0	4.60		1010	101.0
Arsenic		1000	-0.300		1020	102.0	1.40		999	99.9
Barium		500	4.40		473	94.6	3.70		461	92.2
Beryllium		500	0.300		474	94.8	0.200		453	90.6
Bismuth		500	-0.900		473	94.6	1.70		458	91.6
Boron		500	1.80		490	98.0	1.60		483	96.6
Cadmium		1000	0.200		1020	102.0	0.400		987	98.7
Calcium	400000	400000	373000	93.3	388000	97.0	358000	89.5	372000	93.0
Cerium			33.7		516*		24.5		503*	
Chromium		500	-0.800		465	93.0	-0.700		454	90.8
Cobalt		500	1.00		462	92.4	1.10		447	89.4
Copper		500	-1.70		514	102.8	-2.40		538	107.6
Iron	200000	200000	187000	93.5	197000	98.5	177000	88.5	188000	94.0
Lead		1000	-0.800		905	90.5	2.00		860	86.0
Lithium		500	-5.30		545	109.0	-7.40		519	103.8
Magnesium	500000	500000	489000	97.8	485000	97.0	464000	92.8	463000	92.6
Manganese		500	-0.400		489	97.8	-0.300		483	96.6
Molybdenum		500	1.10		482	96.4	0.900		460	92.0
Nickel		1000	1.30		905	90.5	1.40		864	86.4
Phosphorus		500	8.90		484	96.8	6.20		474	94.8
Potassium			52.0		120		80.5		33.4	
Selenium		1000	3.40		931	93.1	-7.90		883	88.3
Silicon		500	-18.9		515	103.0	-15.8		499	99.8
Silver		1000	1.90		1030	103.0	2.30		1010	101.0
Sodium			19.4		3.70		166		137	
Strontium		500	-1.20		482	96.4	-1.10		473	94.6
Sulfur		500	29.5		528	105.6	33.7		517	103.4
Thallium		1000	3.80		906	90.6	-0.200		864	86.4
Tin		500	-6.00		464	92.8	-6.50		449	89.8
Titanium		500	-2.50		480	96.0	-1.70		459	91.8
Tungsten		500	-5.40		495	99.0	-5.90		474	94.8
Vanadium		500	-1.60		463	92.6	-1.70		446	89.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041122M1.ICP Date Analyzed: 04/11/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52204 Units: ug/l

Time:			07:15		07:20		11:32		11:37	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	6.10		926	92.6	6.30		884	88.4
Zirconium		500	2.00		440	88.0	2.60		432	86.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
06:01	MA52222-STD1	1		STDA
06:06	MA52222-STD2	1		STDB
06:11	MA52222-ICV1	1		
06:16	MA52222-ICB1	1		
06:23	MA52222-ICCV1	1		
06:36	MA52222-CCB1	1		
06:42	MA52222-CRID1	1		
06:48	MA52222-CRI1	1		
06:52	MA52222-ICSA1	1		
06:58	MA52222-ICSAB1	1		
07:03	MA52222-HSTD1	1		
07:08	MA52222-HSTD2	1		
07:14	ZZZZZZ	1		
07:19	ZZZZZZ	1		
07:24	MA52222-CRID2	1		
07:29	ZZZZZZ	1		
07:34	MA52222-CCV1	1		
07:38	MA52222-CCB2	1		
07:43	MP32248-MB1	1		
07:48	MP32248-B1	1		
07:53	MP32248-S1	1		Ca, FE high
07:58	MP32248-S2	1		Ca, FE high
08:03	JD42748-1	1		(sample used for QC only; not part of login JD41762)
08:08	MP32248-SD1	5		Ca, FE high
08:13	MP32248-PS1	1		
08:17	ZZZZZZ	1		
08:22	MA52222-CCV2	1		
08:29	MA52222-CCB3	1		
08:34	ZZZZZZ	1		
08:39	ZZZZZZ	1		
08:44	ZZZZZZ	1		
08:49	ZZZZZZ	1		
08:54	MP32253-B1	1		

----------> Last reportable sample/prep for job JD41762

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:58	ZZZZZZ	2		
09:03	ZZZZZZ	1		
09:09	MA52222-CCV3	1		
09:14	MA52222-CCB4	1		
09:21	MA52222-CRI2	1		
09:27	MA52222-ICSA2	1		
09:32	MA52222-ICSAB2	1		
09:38	MA52222-CCV4	1		
09:42	MA52222-CCB5	1		

----------> Last reportable CCB for job JD41762
Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Element: Dilution	As	
06:11	MA52222-ICV1	1	X	
06:16	MA52222-ICB1	1	X	
06:23	MA52222-ICCV1	1	X	
06:36	MA52222-CCB1	1	X	
06:42	MA52222-CRID1	1		
06:48	MA52222-CRI1	1	X	
06:52	MA52222-ICSA1	1	X	
06:58	MA52222-ICSAB1	1	X	
07:03	MA52222-HSTD1	1	X	
07:08	MA52222-HSTD2	1	X	
07:14	ZZZZZZ	1		
07:19	ZZZZZZ	1		
07:24	MA52222-CRID2	1	X	
07:29	ZZZZZZ	1		
07:34	MA52222-CCV1	1	X	
07:38	MA52222-CCB2	1	X	
07:43	MP32248-MB1	1	X	
07:48	MP32248-B1	1	X	
07:53	MP32248-S1	1	X	
07:58	MP32248-S2	1	X	
08:03	JD42748-1	1		(a)
08:08	MP32248-SD1	5	X	
08:13	MP32248-PS1	1		
08:17	ZZZZZZ	1		
08:22	MA52222-CCV2	1	X	
08:29	MA52222-CCB3	1	X	
08:34	ZZZZZZ	1		
08:39	ZZZZZZ	1		
08:44	ZZZZZZ	1		
08:49	ZZZZZZ	1		
08:54	MP32253-B1	1	X	
08:58	ZZZZZZ	2		
09:03	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Element: Dilution	As
09:09	MA52222-CCV3	1	X
09:14	MA52222-CCB4	1	X
09:21	MA52222-CRI2	1	X
09:27	MA52222-ICSA2	1	X
09:32	MA52222-ICSAB2	1	X
09:38	MA52222-CCV4	1	X
09:42	MA52222-CCB5	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
06:01	MA52222-STD1	6491 R	202350 R	20972 R	11389 R
06:06	MA52222-STD2	6122	187720	20802	10066
06:11	MA52222-ICV1	6277	193110	21144	10395
06:16	MA52222-ICB1	6470	202410	21128	11326
06:23	MA52222-ICCV1	6340	193160	21117	10512
06:36	MA52222-CCB1	6517	201890	21390	11456
06:42	MA52222-CRID1	No results reported for the elements associated with this internal standard.			
06:48	MA52222-CRI1	6478	202790	21333	11297
06:52	MA52222-ICSA1	5938	178350	21186	9456
06:58	MA52222-ICSAB1	5952	179630	21226	9498
07:03	MA52222-HSTD1	6440	200690	21665	11288
07:08	MA52222-HSTD2	6049	184640	21371	9551
07:14	ZZZZZZ	6423	197690	21257	11440
07:19	ZZZZZZ	6398	201110	21165	11504
07:24	MA52222-CRID2	6640	207050	21686	11627
07:29	ZZZZZZ	6512	203450	21334	11549
07:34	MA52222-CCV1	6532	201570	22167	10806
07:38	MA52222-CCB2	6736	211370	21848	11789
07:43	MP32248-MB1	6802	212310	22420	11901
07:48	MP32248-B1	6643	208130	22699	11157
07:53	MP32248-S1	6881	210480	23917	10727
07:58	MP32248-S2	6770	210110	23625	10715
08:03	JD42748-1	6629	204370	23501	10364
08:08	MP32248-SD1	6780	211240	22758	11263
08:13	MP32248-PS1	6559	203140	23223	10223
08:17	ZZZZZZ	6884	211820	23562	11245
08:22	MA52222-CCV2	6739	207080	22764	11090
08:29	MA52222-CCB3	6929	217110	22345	12070
08:34	ZZZZZZ	6823	216040	22725	11916
08:39	ZZZZZZ	6805	217510	23014	11916
08:44	ZZZZZZ	6905	207950	23645	11200
08:49	ZZZZZZ	6879	211670	23532	11317
08:54	MP32253-B1	6915	213630	23005	11479

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52222
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:58	ZZZZZZ	6980	215350	23288	11612
09:03	ZZZZZZ	6855	209060	22920	11807
09:09	MA52222-CCV3	6830	208750	22909	11125
09:14	MA52222-CCB4	7059	220170	22764	12199
09:21	MA52222-CRI2	6992	217380	22957	12038
09:27	MA52222-ICSA2	6380	195050	22705	10055
09:32	MA52222-ICSAB2	6390	195140	22795	10092
09:38	MA52222-CCV4	6849	212330	23213	11310
09:42	MA52222-CCB5	7068	221910	23032	12341

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time:			06:16		06:36		07:38		08:29	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.00	<3.0	0.400	<3.0	-1.30	<3.0	-0.600	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3	anr							
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time:			06:16		06:36		07:38		08:29	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time: / Sample ID: / Metal	RL	IDL	09:14 CCB4 raw	final	09:42 CCB5 raw	final
Aluminum	200	17	anr			
Antimony	6.0	1.7	anr			
Arsenic	3.0	2.1	0.100	<3.0	-0.500	<3.0
Barium	200	.8	anr			
Beryllium	1.0	.3	anr			
Bismuth	20	2.3				
Boron	100	2.3				
Cadmium	3.0	.3	anr			
Calcium	5000	6.6	anr			
Cerium	100					
Chromium	10	.3	anr			
Cobalt	50	.4	anr			
Copper	10	.8	anr			
Iron	100	5.3	anr			
Lead	3.0	1.1	anr			
Lithium	50	4.8				
Magnesium	5000	32	anr			
Manganese	15	.1	anr			
Molybdenum	20	.6				
Nickel	10	.4	anr			
Phosphorus	50	1.2				
Potassium	10000	77	anr			
Selenium	10	3.2	anr			
Silicon	200	1.7				
Silver	10	1	anr			
Sodium	10000	34	anr			
Strontium	10	.3				
Sulfur	50	3	anr			
Thallium	10	1.8	anr			
Tin	10	.8				
Titanium	10	.5				
Tungsten	50	2.6				
Vanadium	50	.6	anr			

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52222 Units: ug/l

Time:			09:14		09:42	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.1	anr			
Zirconium	10	.3				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52222 Units: ug/l

Time:		06:23	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1970	98.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur	anr		
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52222 Units: ug/l

Time:		06:23	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		06:11			07:34			08:22	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2020	101.0	2000	1910	95.5	2000	1850	92.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur	anr								
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		06:11			07:34			08:22	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		09:09			09:38	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	1850	92.5	2000	1820	91.0
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur	anr					
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52222 Units: ug/l

Time:		09:09			09:38	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52222 Units: ug/l

Time:		07:03			07:08	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7630	95.4			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver						
Sodium						
Strontium						
Sulfur	anr					
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52222 Units: ug/l

Time:		07:03			07:08	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52222 Units: ug/l

Time:				06:48		07:24		09:21	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0	anr					
Arsenic	8.0	20	3.0	7.80	97.5	2.40	80.0	6.40	80.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0	anr					
Iron	100	500		anr					
Lead	3.0	20	2.5	anr					
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0	anr					
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50			anr					
Thallium	10		2.0	anr					
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52222 Units: ug/l

Time:				06:48		07:24		09:21	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52222 Units: ug/l

Time:			06:52		06:58		09:27		09:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	505000	101.0	504000	100.8	466000	93.2	467000	93.4
Antimony		1000	-1.60		960	96.0	-2.60		892	89.2
Arsenic		1000	0.500		960	96.0	0.500		889	88.9
Barium		500	6.10		462	92.4	5.40		430	86.0
Beryllium		500	0.100		453	90.6	0.00		419	83.8
Bismuth		500	-9.40		458	91.6	-6.90		424	84.8
Boron		500	-0.500		452	90.4	0.500		419	83.8
Cadmium		1000	0.600		963	96.3	0.400		889	88.9
Calcium	400000	400000	378000	94.5	393000	98.3	353000	88.3	358000	89.5
Cerium			13.4		471*		14.6		430*	
Chromium		500	-1.70		445	89.0	-1.10		406	81.2
Cobalt		500	0.700		455	91.0	0.700		426	85.2
Copper		500	2.90		487	97.4	3.40		440	88.0
Iron	200000	200000	191000	95.5	201000	100.5	177000	88.5	186000	93.0
Lead		1000	0.200		882	88.2	-1.80		823	82.3
Lithium		500	-7.60		525	105.0	-7.10		485	97.0
Magnesium	500000	500000	498000	99.6	488000	97.6	458000	91.6	449000	89.8
Manganese		500	0.800		479	95.8	0.800		436	87.2
Molybdenum		500	-2.00		455	91.0	-1.80		421	84.2
Nickel		1000	0.300		877	87.7	0.200		822	82.2
Phosphorus		500	-9.60		444	88.8	-9.50		416	83.2
Potassium			-601		-616		-578		-568	
Selenium		1000	2.60		877	87.7	3.30		810	81.0
Silicon		500	6.60		504	100.8	6.10		470	94.0
Silver		1000	4.90		1030	103.0	4.40		932	93.2
Sodium			65.2		80.3		59.4		71.4	
Strontium		500	-1.20		457	91.4	-1.30		424	84.8
Sulfur		500	-24.9		428	85.6	-15.4		405	81.0
Thallium		1000	-6.20		868	86.8	-4.40		809	80.9
Tin		500	-4.70		440	88.0	-4.80		408	81.6
Titanium		500	-2.10		463	92.6	-1.70		423	84.6
Tungsten		500	-0.300		468	93.6	0.00		435	87.0
Vanadium		500	-3.90		460	92.0	-2.60		420	84.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52222 Units: ug/l

Time:			06:52		06:58		09:27		09:32	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.50		879	87.9	2.40		811	81.1
Zirconium		500	1.60		426	85.2	1.30		389	77.8*

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:27	MA52223-STD1	1		STDA
10:33	MA52223-STD2	1		STDB
10:37	MA52223-ICV1	1		
10:45	MA52223-ICB1	1		
10:53	MA52223-ICCV1	1		
11:00	MA52223-CCB1	1		
11:05	MA52223-CRID1	1		
11:10	MA52223-CRI1	1		
11:15	MA52223-ICSA1	1		
11:20	MA52223-ICSAB1	1		
11:25	MA52223-HSTD1	1		
11:30	MA52223-HSTD2	1		
11:35	MP32253-B1	1		
11:40	MP32253-MB1	1		
11:45	MP32253-S1	1		Ca, MN, Na high
11:50	MA52223-CCV1	1		
11:55	MA52223-CCB2	1		
12:00	MP32253-S2	1		Ca, MN, Na high
12:05	JD42841-1	1		(sample used for QC only; not part of login JD41762)
12:11	MP32253-SD1	5		Ca, MN, Na high
12:16	JD41762-52F	1		
---------->	Last reportable sample/prep for job JD41762			
12:21	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:31	MA52223-CRI2	1		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	2		
12:47	MA52223-CCV2	1		
12:51	MA52223-CCB3	1		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52223-CRID2	1		
13:12	MA52223-ICSA2	1		
13:17	MA52223-ICSAB2	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:22	MP32249-S1	2		
13:27	MP32249-S2	2		
13:32	DA43674-3	2		(sample used for QC only; not part of login JD41762)
13:36	MP32249-SD1	10		
13:42	MA52223-CCV3	1		
13:46	MA52223-CCB4	1		
---------->	Last reportable CCB for job JD41762			
13:52	MP32284-B1	1		
13:56	MP32284-MB1	1		
14:01	MP32284-S1	1		
14:06	MP32284-S2	1		
14:11	JD42918-1	1		(sample used for QC only; not part of login JD41762)
14:16	MP32284-SD1	5		
14:22	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:32	MA52223-CCV4	1		
14:37	MA52223-CCB5	1		
14:42	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	MA52223-CCV5	1		
15:13	MA52223-CCB6	1		
15:18	ZZZZZZ	1		
15:22	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:37	MA52223-ICV1	1	X	
10:45	MA52223-ICB1	1	X	
10:53	MA52223-ICCV1	1	X	
11:00	MA52223-CCB1	1	X	
11:05	MA52223-CRID1	1	X	
11:10	MA52223-CRI1	1	X	
11:15	MA52223-ICSA1	1	X	
11:20	MA52223-ICSAB1	1	X	
11:25	MA52223-HSTD1	1	X	
11:30	MA52223-HSTD2	1	X	
11:35	MP32253-B1	1	X	
11:40	MP32253-MB1	1	X	
11:45	MP32253-S1	1		
11:50	MA52223-CCV1	1	X	
11:55	MA52223-CCB2	1	X	
12:00	MP32253-S2	1		
12:05	JD42841-1	1		(a)
12:11	MP32253-SD1	5		
12:16	JD41762-52F	1	X	
12:21	ZZZZZZ	1		
12:26	ZZZZZZ	1		
12:31	MA52223-CRI2	1	X	
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	2		
12:47	MA52223-CCV2	1	X	
12:51	MA52223-CCB3	1	X	
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52223-CRID2	1	X	
13:12	MA52223-ICSA2	1	X	
13:17	MA52223-ICSAB2	1	X	
13:22	MP32249-S1	2		
13:27	MP32249-S2	2		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:32	DA43674-3	2		(a)
13:36	MP32249-SD1	10		
13:42	MA52223-CCV3	1	X	
13:46	MA52223-CCB4	1	X	
13:52	MP32284-B1	1		
13:56	MP32284-MB1	1		
14:01	MP32284-S1	1		
14:06	MP32284-S2	1		
14:11	JD42918-1	1		(a)
14:16	MP32284-SD1	5		
14:22	ZZZZZZ	1		
14:27	ZZZZZZ	1		
14:32	MA52223-CCV4	1	X	
14:37	MA52223-CCB5	1	X	
14:42	ZZZZZZ	1		
14:47	ZZZZZZ	1		
14:52	ZZZZZZ	1		
14:58	ZZZZZZ	1		
15:03	ZZZZZZ	1		
15:08	MA52223-CCV5	1	X	
15:13	MA52223-CCB6	1	X	
15:18	ZZZZZZ	1		
15:22	ZZZZZZ	1		

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:27	MA52223-STD1	2369 R	67137 R	8780 R	6285 R
10:33	MA52223-STD2	2245	62614	8598	5582
10:37	MA52223-ICV1	2302	63909	8687	5756
10:45	MA52223-ICB1	2372	66513	8778	6261
10:53	MA52223-ICCV1	2301	63353	8746	5728
11:00	MA52223-CCB1	2376	66450	8867	6252
11:05	MA52223-CRID1	2377	66359	8908	6219
11:10	MA52223-CRI1	2362	65555	8857	6130
11:15	MA52223-ICSA1	2129	57681	8541	5108
11:20	MA52223-ICSAB1	2120	57149	8466	5097
11:25	MA52223-HSTD1	2334	65581	8819	6096
11:30	MA52223-HSTD2	2145	58715	8510	5120
11:35	MP32253-B1	2310	63943	8861	5803
11:40	MP32253-MB1	2353	66072	8876	6174
11:45	MP32253-S1	2169	59491	8605	5197
11:50	MA52223-CCV1	2299	62263	8729	5681
11:55	MA52223-CCB2	2367	65430	8797	6181
12:00	MP32253-S2	2174	59570	8730	5202
12:05	JD42841-1	2157	59744	8685	5296
12:11	MP32253-SD1	2289	63269	8809	5819
12:16	JD41762-52F	2305	63411	8850	5766
12:21	ZZZZZZ	2355	65608	8940	6162
12:26	ZZZZZZ	2364	65558	8861	6167
12:31	MA52223-CRI2	2334	64660	8837	6049
12:37	ZZZZZZ	2400	64909	9381	5803
12:42	ZZZZZZ	2349	64174	8985	5880
12:47	MA52223-CCV2	2291	62229	8777	5657
12:51	MA52223-CCB3	2359	65429	8850	6162
12:57	ZZZZZZ	2358	65986	8982	6173
13:02	ZZZZZZ	2358	65163	8869	6145
13:07	MA52223-CRID2	2349	65154	8858	6123
13:12	MA52223-ICSA2	2109	56308	8459	5033
13:17	MA52223-ICSAB2	2123	56127	8583	5043

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52223
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:22	MP32249-S1	2340	63187	9141	5677
13:27	MP32249-S2	2331	63207	9108	5692
13:32	DA43674-3	2325	63847	9186	5705
13:36	MP32249-SD1	2355	64630	8907	6044
13:42	MA52223-CCV3	2268	61752	8712	5603
13:46	MA52223-CCB4	2344	64950	8820	6117
13:52	MP32284-B1	2306	62920	8949	5777
13:56	MP32284-MB1	2344	65193	8963	6172
14:01	MP32284-S1	2163	59866	8783	5254
14:06	MP32284-S2	2157	59304	8729	5231
14:11	JD42918-1	2181	59416	8657	5334
14:16	MP32284-SD1	2285	62966	8893	5812
14:22	ZZZZZZ	2181	60144	8760	5374
14:27	ZZZZZZ	2193	60211	8765	5356
14:32	MA52223-CCV4	2272	62072	8830	5617
14:37	MA52223-CCB5	2338	63903	8783	6100
14:42	ZZZZZZ	2173	60320	8822	5362
14:47	ZZZZZZ	2168	60524	8922	5343
14:52	ZZZZZZ	2158	60245	8854	5313
14:58	ZZZZZZ	2156	59751	8819	5308
15:03	ZZZZZZ	2195	60303	8896	5337
15:08	MA52223-CCV5	2268	62116	8919	5605
15:13	MA52223-CCB6	2349	65197	8943	6135
15:18	ZZZZZZ	2310	63822	8949	6098
15:22	ZZZZZZ	2289	64665	8875	6093

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time: / Sample ID:			10:45 ICB1		11:00 CCB1		11:55 CCB2		12:51 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	16								
Antimony	6.0	2.5								
Arsenic	3.0	2	0.00	<3.0	-0.900	<3.0	1.10	<3.0	1.60	<3.0
Barium	200	.4								
Beryllium	1.0	.1								
Bismuth	20	3.6								
Boron	100	1.9								
Cadmium	3.0	.4								
Calcium	5000	5.6								
Cerium	100									
Chromium	10	.5								
Cobalt	50	.5								
Copper	10	1	anr							
Iron	100	11	anr							
Lead	3.0	1.2	anr							
Lithium	50	2.3								
Magnesium	5000	65								
Manganese	15	.2								
Molybdenum	20	.4								
Nickel	10	.3	anr							
Phosphorus	50	4.1								
Potassium	10000	55								
Selenium	10	3.5								
Silicon	200	1.6								
Silver	10	1.1								
Sodium	10000	11	anr							
Strontium	10	.1								
Sulfur	50	4.4								
Thallium	10	2.5								
Tin	10	1								
Titanium	10	.4								
Tungsten	50	2.8								
Vanadium	50	.6								

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			10:45		11:00		11:55		12:51	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.4								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			13:46	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Aluminum	200	16		
Antimony	6.0	2.5		
Arsenic	3.0	2	-0.400	<3.0
Barium	200	.4		
Beryllium	1.0	.1		
Bismuth	20	3.6		
Boron	100	1.9		
Cadmium	3.0	.4		
Calcium	5000	5.6		
Cerium	100			
Chromium	10	.5		
Cobalt	50	.5		
Copper	10	1	anr	
Iron	100	11	anr	
Lead	3.0	1.2	anr	
Lithium	50	2.3		
Magnesium	5000	65		
Manganese	15	.2		
Molybdenum	20	.4		
Nickel	10	.3	anr	
Phosphorus	50	4.1		
Potassium	10000	55		
Selenium	10	3.5		
Silicon	200	1.6		
Silver	10	1.1		
Sodium	10000	11	anr	
Strontium	10	.1		
Sulfur	50	4.4		
Thallium	10	2.5		
Tin	10	1		
Titanium	10	.4		
Tungsten	50	2.8		
Vanadium	50	.6		

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52223 Units: ug/l

Time:			13:46	
Sample ID:			CCB4	
Metal	RL	IDL	raw	final
Zinc	20	.1	anr	
Zirconium	10	.4		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52223 Units: ug/l

Time:		10:53	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	2000	2010	100.5
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Cerium			
Chromium			
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium	anr		
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52223 Units: ug/l

Time:		10:53	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		10:37			11:50			12:47	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum									
Antimony									
Arsenic	2000	1970	98.5	2000	2030	101.5	2000	2040	102.0
Barium									
Beryllium									
Bismuth									
Boron									
Cadmium									
Calcium									
Cerium									
Chromium									
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium									
Silicon									
Silver									
Sodium	anr								
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		10:37			11:50			12:47	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		13:42	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Aluminum			
Antimony			
Arsenic	2000	2030	101.5
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Cerium			
Chromium			
Cobalt			
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium	anr		
Strontium			
Sulfur			
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52223 Units: ug/l

Time:		13:42	
Sample ID:	CCV	CCV3	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52223 Units: ug/l

Time:		11:25			11:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony						
Arsenic	8000	7430	92.9			
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52223 Units: ug/l

Time:		11:25			11:30	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time: / Sample ID: / Metal	CRI True	CRIA True	CRID True	11:05 CRID1 Results	% Rec	11:10 CRI1 Results	% Rec	12:31 CRI2 Results	% Rec
Aluminum	200	500	100						
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	3.30	110.0	7.80	97.5	8.70	108.8
Barium	200		4.0						
Beryllium	2.0		1.0						
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0						
Calcium	5000	2000	1000						
Cerium									
Chromium	10		2.0						
Cobalt	50		3.0						
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100						
Manganese	15		3.0						
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000						
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0						

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				11:05		11:10		12:31	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				13:07	
Sample ID:	CRI	CRIA	CRID	CRID2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100		
Antimony	6.0	20	3.0		
Arsenic	8.0	20	3.0	2.80	93.3
Barium	200		4.0		
Beryllium	2.0		1.0		
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0		
Calcium	5000	2000	1000		
Cerium					
Chromium	10		2.0		
Cobalt	50		3.0		
Copper	10		2.0		
Iron	100	500			
Lead	3.0	20	2.5		
Lithium	50				
Magnesium	5000	2000	100		
Manganese	15		3.0		
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000		
Selenium	10	20	5.0		
Silicon	200				
Silver	5.0		2.0		
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0		
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0		

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52223 Units: ug/l

Time:				13:07	
Sample ID:	CRI	CRIA	CRID	CRID2	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52223 Units: ug/l

Time:			11:15		11:20		13:12		13:17	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	511000	102.2	520000	104.0	510000	102.0	513000	102.6
Antimony		1000	5.80		1020	102.0	5.50		1040	104.0
Arsenic		1000	1.60		1010	101.0	-0.300		1030	103.0
Barium		500	-46.6		429	85.8	-46.2		424	84.8
Beryllium		500	-0.400		464	92.8	-0.500		450	90.0
Bismuth		500	4.20		489	97.8	2.30		494	98.8
Boron		500	-2.70		475	95.0	-3.90		479	95.8
Cadmium		1000	-0.500		1030	103.0	-0.900		1010	101.0
Calcium	400000	400000	384000	96.0	398000	99.5	379000	94.8	388000	97.0
Cerium			147*		660*		151*		669*	
Chromium		500	-3.00		470	94.0	-2.40		482	96.4
Cobalt		500	-1.10		471	94.2	-1.50		482	96.4
Copper		500	-3.50		512	102.4	-2.60		520	104.0
Iron	200000	200000	190000	95.0	201000	100.5	192000	96.0	200000	100.0
Lead		1000	2.40		939	93.9	1.80		957	95.7
Lithium		500	5.20		568	113.6	4.50		567	113.4
Magnesium	500000	500000	499000	99.8	496000	99.2	495000	99.0	484000	96.8
Manganese		500	1.30		505	101.0	1.00		512	102.4
Molybdenum		500	-3.40		464	92.8	-3.70		467	93.4
Nickel		1000	-2.00		917	91.7	-1.50		917	91.7
Phosphorus		500	4.00		498	99.6	15.3		508	101.6
Potassium			147		172		159		165	
Selenium		1000	7.10		906	90.6	3.80		925	92.5
Silicon		500	-2.70		533	106.6	-4.80		537	107.4
Silver		1000	2.10		1040	104.0	-1.90		1050	105.0
Sodium			-32.2		-17.2		-25.6		-10.4	
Strontium		500	0.600		467	93.4	0.500		461	92.2
Sulfur		500	-6.40		465	93.0	-12.0		468	93.6
Thallium		1000	2.90		822	82.2	-0.700		930	93.0
Tin		500	-2.10		458	91.6	-3.00		464	92.8
Titanium		500	-0.700		495	99.0	-1.20		500	100.0
Tungsten		500	3.90		493	98.6	8.40		497	99.4
Vanadium		500	-0.700		500	100.0	0.00		508	101.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SE041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52223 Units: ug/l

Time:			11:15		11:20		13:12		13:17	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	4.90		917	91.7	4.70		920	92.0
Zirconium		500	-4.30		458	91.6	-3.60		466	93.2

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:07	MA52224-STD1	1		STDA
09:12	MA52224-STD2	1		STDB
09:17	MA52224-ICV1	1		
09:28	MA52224-ICB1	1		
09:34	MA52224-ICCV1	1		
09:41	MA52224-ICCV2	1		
09:49	MA52224-CCB1	1		
09:54	MA52224-CRI1	1		
09:59	MA52224-CRID1	1		
10:05	MA52224-ICSA1	1		
10:10	MA52224-ICSAB1	1		
10:15	MA52224-HSTD1	1		
10:21	MA52224-HSTD2	1		
10:26	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	ZZZZZZ	1		
10:41	MA52224-CCV1	1		
10:46	MA52224-CCB2	1		
10:51	MA52224-CRID2	1		
10:57	MP32251-MB1	1		
11:02	MP32251-B1	1		
11:06	MP32251-S1	1		
11:11	MP32251-S2	1		
11:16	JD42757-24	1		(sample used for QC only; not part of login JD41762)
11:21	MP32251-SD1	5		
11:26	MP32251-PS1	1		
11:31	ZZZZZZ	1		
11:37	MA52224-CCV2	1		
11:41	MA52224-CCB3	1		
11:47	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
12:07	ZZZZZZ	1		
12:12	ZZZZZZ	1		
12:17	ZZZZZZ	1		
12:22	ZZZZZZ	1		
12:27	ZZZZZZ	1		
12:32	MA52224-CCV3	1		
12:37	MA52224-CCB4	1		
12:42	ZZZZZZ	1		
12:47	ZZZZZZ	1		
12:52	ZZZZZZ	1		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:08	ZZZZZZ	1		
13:13	ZZZZZZ	1		
13:18	ZZZZZZ	1		
13:23	ZZZZZZ	1		
13:28	MA52224-CCV4	1		
13:33	MA52224-CCB5	1		
13:38	ZZZZZZ	1		
13:43	ZZZZZZ	5		
13:48	ZZZZZZ	1		
13:53	ZZZZZZ	10		
13:58	ZZZZZZ	5		
14:03	ZZZZZZ	5		
14:08	MP32254-PS1	1		
14:13	MP32255-PS1	1		
14:18	ZZZZZZ	1		
14:23	MA52224-CCV5	1		
14:28	MA52224-CCB6	1		
14:33	ZZZZZZ	1		
14:38	ZZZZZZ	1		
14:43	ZZZZZZ	1		
14:48	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:53	ZZZZZZ	5		
14:58	ZZZZZZ	5		
15:03	ZZZZZZ	2		
15:08	ZZZZZZ	2		
15:13	ZZZZZZ	2		
15:18	ZZZZZZ	2		
15:23	MA52224-CCV6	1		
15:28	MA52224-CCB7	1		
15:33	ZZZZZZ	5		
15:38	ZZZZZZ	25		
15:43	ZZZZZZ	5		
15:47	ZZZZZZ	25		
15:52	ZZZZZZ	5		
15:57	ZZZZZZ	25		
16:02	ZZZZZZ	5		
16:07	ZZZZZZ	25		
16:12	ZZZZZZ	5		
16:17	ZZZZZZ	25		
16:22	MA52224-CCV7	1		
16:27	MA52224-CCB8	1		
16:32	ZZZZZZ	5		
16:37	ZZZZZZ	25		
16:42	MP32234-B1	1		
16:47	MP32234-MB1	1		
16:52	MP32234-S1	1		
16:56	MP32234-S2	1		
17:01	JD42749-3F	1		(sample used for QC only; not part of login JD41762)
17:06	MP32234-SD1	5		
17:11	ZZZZZZ	1		
17:16	ZZZZZZ	1		
17:21	MA52224-CCV8	1		
17:26	MA52224-CCB9	1		
17:31	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:01	ZZZZZZ	1		
18:06	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:16	ZZZZZZ	1		
18:21	MA52224-CCV9	1		
18:26	MA52224-CCB10	1		
18:31	ZZZZZZ	1		
18:35	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:00	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:10	MP32250-S1	5		
19:15	MP32250-S2	5		
19:20	MA52224-CCV10	1		
19:25	MA52224-CCB11	1		
19:30	JD42757-3	5		(sample used for QC only; not part of login JD41762)
19:35	MP32250-SD1	25		
19:40	ZZZZZZ	5		
19:45	ZZZZZZ	5		
19:50	ZZZZZZ	5		
19:55	ZZZZZZ	5		
20:00	ZZZZZZ	5		
20:05	ZZZZZZ	5		
20:10	ZZZZZZ	5		
20:15	ZZZZZZ	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
20:20	MA52224-CCV11	1		
20:25	MA52224-CCB12	1		
20:30	ZZZZZZ	5		
20:35	ZZZZZZ	5		
20:40	ZZZZZZ	5		
20:45	ZZZZZZ	5		
20:50	ZZZZZZ	5		
20:55	ZZZZZZ	5		
21:00	ZZZZZZ	5		
21:05	ZZZZZZ	5		
21:10	ZZZZZZ	5		
21:15	ZZZZZZ	5		
21:20	MA52224-CCV12	1		
21:25	MA52224-CCB13	1		
21:31	ZZZZZZ	5		
21:36	MP32258-B1	1		
21:41	MP32258-MB1	1		
21:46	MP32258-S1	1		
21:51	MP32258-S2	1		
21:55	JD42458-9	1		(sample used for QC only; not part of login JD41762)
22:01	MP32258-SD1	5		
22:06	ZZZZZZ	1		
22:11	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:21	MA52224-CCV13	1		
22:26	MA52224-CCB14	1		
22:31	ZZZZZZ	1		
22:36	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:47	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:57	ZZZZZZ	1		
23:02	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
23:07	ZZZZZZ	1		
23:12	ZZZZZZ	1		
23:17	ZZZZZZ	1		
23:22	MA52224-CCV14	1		
23:27	MA52224-CCB15	1		
23:32	ZZZZZZ	1		
23:38	ZZZZZZ	1		
23:43	ZZZZZZ	1		
23:48	ZZZZZZ	1		
23:53	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:03	ZZZZZZ	1		
00:08	ZZZZZZ	1		
00:14	MA52224-CCV15	1		
00:19	MA52224-CCB16	1		
00:24	MP32277-MB1	1		
00:29	MP32277-MB2	1		
00:34	MP32277-B1	1		
00:39	MP32277-B2	1		
00:44	MP32277-S1	1		
00:49	MP32277-S2	1		
00:54	JD42730-2FA	1		(sample used for QC only; not part of login JD41762)
00:59	MP32277-SD1	5		
01:04	ZZZZZZ	1		
01:09	ZZZZZZ	1		
01:14	MA52224-CCV16	1		
01:19	MA52224-CCB17	1		
01:24	ZZZZZZ	1		
01:29	ZZZZZZ	1		
01:34	ZZZZZZ	1		
01:39	ZZZZZZ	1		
01:44	ZZZZZZ	1		
01:50	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
01:55	ZZZZZZ	1		
02:00	ZZZZZZ	1		
02:05	ZZZZZZ	1		
02:10	ZZZZZZ	1		
02:15	MA52224-CCV17	1		
02:20	MA52224-CCB18	1		
02:25	ZZZZZZ	1		
02:31	ZZZZZZ	1		
02:36	ZZZZZZ	1		
02:41	ZZZZZZ	1		
02:46	ZZZZZZ	1		
02:51	MP32278-MB1	1		
02:56	MP32278-B1	1		
03:01	MP32278-S1	1		
03:06	MP32278-S2	1		
03:11	JD42840-5	1		(sample used for QC only; not part of login JD41762)
03:16	MA52224-CCV18	1		
03:21	MA52224-CCB19	1		
03:26	MP32278-SD1	5		
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:52	ZZZZZZ	1		
03:57	MP32279A-MB1	1		
04:02	MP32279A-B1	1		
04:07	MP32279A-S1	1		
04:12	MP32279A-S2	1		
04:17	MA52224-CCV19	1		
04:22	MA52224-CCB20	1		
04:28	JD42817-1	1		(sample used for QC only; not part of login JD41762)
04:33	MP32279A-SD1	5		
04:38	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
04:43	MP32285-MB1	1		
04:48	MP32285-LB1	1		
04:54	MP32285-B1	1		
04:58	MP32285-LS1	1		
05:03	MP32285-S1	1		
05:08	MP32285-S2	1		
05:13	JD42787-3A	1		(sample used for QC only; not part of login JD41762)
05:18	MA52224-CCV20	1		
05:23	MA52224-CCB21	1		
05:28	MP32285-SD1	5		
05:34	ZZZZZZ	1		
05:39	ZZZZZZ	1		
05:44	ZZZZZZ	1		
05:49	ZZZZZZ	1		
05:54	ZZZZZZ	1		
06:00	ZZZZZZ	1		
06:05	ZZZZZZ	1		
06:10	ZZZZZZ	1		
06:16	MA52224-CCV21	1		
06:21	MA52224-CCB22	1		
06:26	MP32282-MB1	1		
06:31	MP32282-LB1	1		
06:36	MP32282-B1	1		
06:41	MP32282-LS1	1		
06:46	ZZZZZZ	1		
06:51	ZZZZZZ	1		
06:56	ZZZZZZ	1		
07:01	ZZZZZZ	1		
07:22	MP32280-B1	1		CCV out
---------->	Last reportable sample/prep for job JD41762			
07:26	MA52224-CCV22	1		
07:32	MA52224-CCB23	1		
---------->	Last reportable CCB for job JD41762			
07:36	MP32282-S1	25		
07:41	MP32282-S2	25		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
07:46	ZZZZZZ	25		
07:50	JD42826-2	25		(sample used for QC only; not part of login JD41762)
07:55	MP32282-SD1	125		
08:00	ZZZZZZ	25		
08:05	ZZZZZZ	100		
08:10	ZZZZZZ	100		
08:14	MA52224-CCV23	1		
08:19	MA52224-CCB24	1		
08:24	MP32282-S2	100		
08:29	JD42826-2	100		(sample used for QC only; not part of login JD41762)
08:33	MP32282-SD1	500		
08:39	ZZZZZZ	100		
08:43	MP32282-S1	100		
08:47	MA52224-CCV24	1		
08:53	MA52224-CCB25	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
09:17	MA52224-ICV1	1	X	
09:28	MA52224-ICB1	1	X	
09:34	MA52224-ICCV1	1		
09:41	MA52224-ICCV2	1	X	
09:49	MA52224-CCB1	1	X	
09:54	MA52224-CRI1	1	X	
09:59	MA52224-CRID1	1		
10:05	MA52224-ICSA1	1	X	
10:10	MA52224-ICSAB1	1	X	
10:15	MA52224-HSTD1	1	X	
10:21	MA52224-HSTD2	1	X	
10:26	ZZZZZZ	1		
10:31	ZZZZZZ	1		
10:36	ZZZZZZ	1		
10:41	MA52224-CCV1	1	X	
10:46	MA52224-CCB2	1	X	
10:51	MA52224-CRID2	1	X	
10:57	MP32251-MB1	1	X	
11:02	MP32251-B1	1	X	
11:06	MP32251-S1	1	X	
11:11	MP32251-S2	1	X	
11:16	JD42757-24	1	X	(a)
11:21	MP32251-SD1	5	X	
11:26	MP32251-PS1	1		
11:31	ZZZZZZ	1		
11:37	MA52224-CCV2	1	X	
11:41	MA52224-CCB3	1	X	
11:47	ZZZZZZ	1		
11:52	ZZZZZZ	1		
11:57	ZZZZZZ	1		
12:02	ZZZZZZ	1		
12:07	ZZZZZZ	1		
12:12	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As
12:17	ZZZZZZ	1	
12:22	ZZZZZZ	1	
12:27	ZZZZZZ	1	
12:32	MA52224-CCV3	1	X
12:37	MA52224-CCB4	1	X
12:42	ZZZZZZ	1	
12:47	ZZZZZZ	1	
12:52	ZZZZZZ	1	
12:57	ZZZZZZ	1	
13:02	ZZZZZZ	1	
13:08	ZZZZZZ	1	
13:13	ZZZZZZ	1	
13:18	ZZZZZZ	1	
13:23	ZZZZZZ	1	
13:28	MA52224-CCV4	1	X
13:33	MA52224-CCB5	1	X
13:38	ZZZZZZ	1	
13:43	ZZZZZZ	5	
13:48	ZZZZZZ	1	
13:53	ZZZZZZ	10	
13:58	ZZZZZZ	5	
14:03	ZZZZZZ	5	
14:08	MP32254-PS1	1	
14:13	MP32255-PS1	1	
14:18	ZZZZZZ	1	
14:23	MA52224-CCV5	1	X
14:28	MA52224-CCB6	1	X
14:33	ZZZZZZ	1	
14:38	ZZZZZZ	1	
14:43	ZZZZZZ	1	
14:48	ZZZZZZ	5	
14:53	ZZZZZZ	5	
14:58	ZZZZZZ	5	
		Element:	As

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
15:03	ZZZZZZ	2		
15:08	ZZZZZZ	2		
15:13	ZZZZZZ	2		
15:18	ZZZZZZ	2		
15:23	MA52224-CCV6	1	X	
15:28	MA52224-CCB7	1	X	
15:33	ZZZZZZ	5		
15:38	ZZZZZZ	25		
15:43	ZZZZZZ	5		
15:47	ZZZZZZ	25		
15:52	ZZZZZZ	5		
15:57	ZZZZZZ	25		
16:02	ZZZZZZ	5		
16:07	ZZZZZZ	25		
16:12	ZZZZZZ	5		
16:17	ZZZZZZ	25		
16:22	MA52224-CCV7	1	X	
16:27	MA52224-CCB8	1	X	
16:32	ZZZZZZ	5		
16:37	ZZZZZZ	25		
16:42	MP32234-B1	1		
16:47	MP32234-MB1	1		
16:52	MP32234-S1	1		
16:56	MP32234-S2	1		
17:01	JD42749-3F	1		(a)
17:06	MP32234-SD1	5		
17:11	ZZZZZZ	1		
17:16	ZZZZZZ	1		
17:21	MA52224-CCV8	1	X	
17:26	MA52224-CCB9	1	X	
17:31	ZZZZZZ	1		
17:36	ZZZZZZ	1		
17:41	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
17:46	ZZZZZZ	1		
17:51	ZZZZZZ	1		
17:56	ZZZZZZ	1		
18:01	ZZZZZZ	1		
18:06	ZZZZZZ	1		
18:11	ZZZZZZ	1		
18:16	ZZZZZZ	1		
18:21	MA52224-CCV9	1	X	
18:26	MA52224-CCB10	1	X	
18:31	ZZZZZZ	1		
18:35	ZZZZZZ	1		
18:41	ZZZZZZ	1		
18:46	ZZZZZZ	1		
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:00	ZZZZZZ	1		
19:05	ZZZZZZ	1		
19:10	MP32250-S1	5		
19:15	MP32250-S2	5		
19:20	MA52224-CCV10	1	X	
19:25	MA52224-CCB11	1	X	
19:30	JD42757-3	5		(a)
19:35	MP32250-SD1	25		
19:40	ZZZZZZ	5		
19:45	ZZZZZZ	5		
19:50	ZZZZZZ	5		
19:55	ZZZZZZ	5		
20:00	ZZZZZZ	5		
20:05	ZZZZZZ	5		
20:10	ZZZZZZ	5		
20:15	ZZZZZZ	5		
20:20	MA52224-CCV11	1	X	
20:25	MA52224-CCB12	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
20:30	ZZZZZZ	5		
20:35	ZZZZZZ	5		
20:40	ZZZZZZ	5		
20:45	ZZZZZZ	5		
20:50	ZZZZZZ	5		
20:55	ZZZZZZ	5		
21:00	ZZZZZZ	5		
21:05	ZZZZZZ	5		
21:10	ZZZZZZ	5		
21:15	ZZZZZZ	5		
21:20	MA52224-CCV12	1	X	
21:25	MA52224-CCB13	1	X	
21:31	ZZZZZZ	5		
21:36	MP32258-B1	1		
21:41	MP32258-MB1	1		
21:46	MP32258-S1	1		
21:51	MP32258-S2	1		
21:55	JD42458-9	1		(a)
22:01	MP32258-SD1	5		
22:06	ZZZZZZ	1		
22:11	ZZZZZZ	1		
22:16	ZZZZZZ	1		
22:21	MA52224-CCV13	1	X	
22:26	MA52224-CCB14	1	X	
22:31	ZZZZZZ	1		
22:36	ZZZZZZ	1		
22:42	ZZZZZZ	1		
22:47	ZZZZZZ	1		
22:52	ZZZZZZ	1		
22:57	ZZZZZZ	1		
23:02	ZZZZZZ	1		
23:07	ZZZZZZ	1		
23:12	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
23:17	ZZZZZZ	1		
23:22	MA52224-CCV14	1	X	
23:27	MA52224-CCB15	1	X	
23:32	ZZZZZZ	1		
23:38	ZZZZZZ	1		
23:43	ZZZZZZ	1		
23:48	ZZZZZZ	1		
23:53	ZZZZZZ	1		
23:58	ZZZZZZ	1		
00:03	ZZZZZZ	1		
00:08	ZZZZZZ	1		
00:14	MA52224-CCV15	1	X	
00:19	MA52224-CCB16	1	X	
00:24	MP32277-MB1	1	X	
00:29	MP32277-MB2	1	X	
00:34	MP32277-B1	1	X	
00:39	MP32277-B2	1	X	
00:44	MP32277-S1	1	X	
00:49	MP32277-S2	1	X	
00:54	JD42730-2FA	1		(a)
00:59	MP32277-SD1	5	X	
01:04	ZZZZZZ	1		
01:09	ZZZZZZ	1		
01:14	MA52224-CCV16	1	X	
01:19	MA52224-CCB17	1	X	
01:24	ZZZZZZ	1		
01:29	ZZZZZZ	1		
01:34	ZZZZZZ	1		
01:39	ZZZZZZ	1		
01:44	ZZZZZZ	1		
01:50	ZZZZZZ	1		
01:55	ZZZZZZ	1		
02:00	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
02:05	ZZZZZZ	1		
02:10	ZZZZZZ	1		
02:15	MA52224-CCV17	1	X	
02:20	MA52224-CCB18	1	X	
02:25	ZZZZZZ	1		
02:31	ZZZZZZ	1		
02:36	ZZZZZZ	1		
02:41	ZZZZZZ	1		
02:46	ZZZZZZ	1		
02:51	MP32278-MB1	1	X	
02:56	MP32278-B1	1	X	
03:01	MP32278-S1	1	X	
03:06	MP32278-S2	1	X	
03:11	JD42840-5	1	X	(a)
03:16	MA52224-CCV18	1	X	
03:21	MA52224-CCB19	1	X	
03:26	MP32278-SD1	5	X	
03:32	ZZZZZZ	1		
03:37	ZZZZZZ	1		
03:42	ZZZZZZ	1		
03:47	ZZZZZZ	1		
03:52	ZZZZZZ	1		
03:57	MP32279A-MB1	1	X	
04:02	MP32279A-B1	1	X	
04:07	MP32279A-S1	1	X	
04:12	MP32279A-S2	1	X	
04:17	MA52224-CCV19	1	X	
04:22	MA52224-CCB20	1	X	
04:28	JD42817-1	1	X	(a)
04:33	MP32279A-SD1	5	X	
04:38	ZZZZZZ	1		
04:43	MP32285-MB1	1	X	
04:48	MP32285-LB1	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As	
04:54	MP32285-B1	1	X	
04:58	MP32285-LS1	1	X	
05:03	MP32285-S1	1	X	
05:08	MP32285-S2	1	X	
05:13	JD42787-3A	1	X	(a)
05:18	MA52224-CCV20	1	X	
05:23	MA52224-CCB21	1	X	
05:28	MP32285-SD1	5	X	
05:34	ZZZZZZ	1		
05:39	ZZZZZZ	1		
05:44	ZZZZZZ	1		
05:49	ZZZZZZ	1		
05:54	ZZZZZZ	1		
06:00	ZZZZZZ	1		
06:05	ZZZZZZ	1		
06:10	ZZZZZZ	1		
06:16	MA52224-CCV21	1	X	
06:21	MA52224-CCB22	1	X	
06:26	MP32282-MB1	1	X	
06:31	MP32282-LB1	1		
06:36	MP32282-B1	1	X	
06:41	MP32282-LS1	1	X	
06:46	ZZZZZZ	1		
06:51	ZZZZZZ	1		
06:56	ZZZZZZ	1		
07:01	ZZZZZZ	1		
07:22	MP32280-B1	1	X	
07:26	MA52224-CCV22	1	X	
07:32	MA52224-CCB23	1	X	
07:36	MP32282-S1	25	X	
07:41	MP32282-S2	25	X	
07:46	ZZZZZZ	25		
07:50	JD42826-2	25	X	(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Element: Dilution	As
07:55	MP32282-SD1	125	X
08:00	ZZZZZZ	25	
08:05	ZZZZZZ	100	
08:10	ZZZZZZ	100	
08:14	MA52224-CCV23	1	X
08:19	MA52224-CCB24	1	X
08:24	MP32282-S2	100	
08:29	JD42826-2	100	(a)
08:33	MP32282-SD1	500	
08:39	ZZZZZZ	100	
08:43	MP32282-S1	100	
08:47	MA52224-CCV24	1	X
08:53	MA52224-CCB25	1	X

(a) Sample used for QC only; not part of login JD41762.

Element:	As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:07	MA52224-STD1	4166 R	247630 R	22149 R	10645 R
09:12	MA52224-STD2	3987	235520	22027	9539
09:17	MA52224-ICV1	4080	238560	22207	9845
09:28	MA52224-ICB1	4198	247160	22349	10691
09:34	MA52224-ICCV1	No results reported for the elements associated with this internal standard.			
09:41	MA52224-ICCV2	4101	239620	22413	9848
09:49	MA52224-CCB1	4219	247750	22503	10700
09:54	MA52224-CRI1	4177	246510	22544	10504
09:59	MA52224-CRID1	No results reported for the elements associated with this internal standard.			
10:05	MA52224-ICSA1	3844	223810	22202	8831
10:10	MA52224-ICSAB1	3845	223580	22060	8840
10:15	MA52224-HSTD1	4111	246730	22838	10406
10:21	MA52224-HSTD2	3829	223730	21680	8805
10:26	ZZZZZZ	4155	244580	22420	10663
10:31	ZZZZZZ	4112	246820	22294	10612
10:36	ZZZZZZ	4177	247440	22293	10667
10:41	MA52224-CCV1	4019	236830	21756	9694
10:46	MA52224-CCB2	4116	245330	21767	10500
10:51	MA52224-CRID2	4112	244780	21803	10477
10:57	MP32251-MB1	4118	245490	22022	10546
11:02	MP32251-B1	4021	240070	21809	9910
11:06	MP32251-S1	4121	241910	22715	9742
11:11	MP32251-S2	4107	242400	22684	9684
11:16	JD42757-24	4242	248940	23163	10113
11:21	MP32251-SD1	4145	247380	22095	10382
11:26	MP32251-PS1	4141	245500	23007	9798
11:31	ZZZZZZ	3979	233990	22344	9161
11:37	MA52224-CCV2	3999	238870	21832	9765
11:41	MA52224-CCB3	4095	245950	21713	10595
11:47	ZZZZZZ	3909	231540	22061	8940
11:52	ZZZZZZ	3966	235520	22450	9122
11:57	ZZZZZZ	4117	243290	22846	9808
12:02	ZZZZZZ	3959	233830	22403	9097

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
12:07	ZZZZZZ	4058	240120	22769	9539
12:12	ZZZZZZ	3995	237440	22512	9355
12:17	ZZZZZZ	3926	232390	22073	9013
12:22	ZZZZZZ	3988	238640	22259	9488
12:27	ZZZZZZ	4078	245270	22623	9840
12:32	MA52224-CCV3	3985	239150	21584	9859
12:37	MA52224-CCB4	4075	247060	21568	10663
12:42	ZZZZZZ	3947	234080	22175	9269
12:47	ZZZZZZ	3936	234010	22159	9209
12:52	ZZZZZZ	3949	235220	22181	9281
12:57	ZZZZZZ	3859	231910	22063	9126
13:02	ZZZZZZ	3716	227070	22085	8862
13:08	ZZZZZZ	3786	228440	22499	8611
13:13	ZZZZZZ	3623	222870	21371	8779
13:18	ZZZZZZ	3779	227190	21586	8975
13:23	ZZZZZZ	4166	247300	23090	10098
13:28	MA52224-CCV4	3949	238590	21473	9808
13:33	MA52224-CCB5	4069	246950	21635	10677
13:38	ZZZZZZ	4036	246010	21649	10627
13:43	ZZZZZZ	3882	233770	21298	9716
13:48	ZZZZZZ	4143	249800	22051	10956
13:53	ZZZZZZ	3914	234810	21509	9745
13:58	ZZZZZZ	3859	232310	21296	9629
14:03	ZZZZZZ	3705	219610	20836	8947
14:08	MP32254-PS1	3928	238290	21441	9882
14:13	MP32255-PS1	3880	235740	21509	9634
14:18	ZZZZZZ	4075	249420	21953	10804
14:23	MA52224-CCV5	3938	238290	21520	9832
14:28	MA52224-CCB6	4039	247090	21512	10660
14:33	ZZZZZZ	4096	248330	21788	10882
14:38	ZZZZZZ	4080	247460	21795	10875
14:43	ZZZZZZ	4078	248440	22007	10853
14:48	ZZZZZZ	4022	243880	21716	10235

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:53	ZZZZZZ	3951	240820	21629	9919
14:58	ZZZZZZ	3935	238190	21303	9927
15:03	ZZZZZZ	4018	243170	22032	10024
15:08	ZZZZZZ	3886	234930	21697	9607
15:13	ZZZZZZ	4036	243310	22321	9925
15:18	ZZZZZZ	3862	233400	21878	9303
15:23	MA52224-CCV6	3893	235590	21270	9782
15:28	MA52224-CCB7	4019	245920	21294	10636
15:33	ZZZZZZ	3924	237360	21863	9504
15:38	ZZZZZZ	4005	244210	21684	10153
15:43	ZZZZZZ	3910	237500	21714	9565
15:47	ZZZZZZ	3980	243290	21493	10190
15:52	ZZZZZZ	3902	236420	21624	9598
15:57	ZZZZZZ	3984	243710	21637	10216
16:02	ZZZZZZ	3855	234200	21581	9645
16:07	ZZZZZZ	3985	243860	21622	10197
16:12	ZZZZZZ	3821	233070	21344	9580
16:17	ZZZZZZ	3961	241840	21309	10209
16:22	MA52224-CCV7	3893	237430	21231	9786
16:27	MA52224-CCB8	3976	244480	21258	10612
16:32	ZZZZZZ	3860	235320	21537	9587
16:37	ZZZZZZ	3984	243090	21559	10275
16:42	MP32234-B1	3899	239230	21337	10018
16:47	MP32234-MB1	3957	244170	21273	10668
16:52	MP32234-S1	3838	234610	21153	9770
16:56	MP32234-S2	3867	236620	21222	9815
17:01	JD42749-3F	3898	239870	21515	10229
17:06	MP32234-SD1	3972	244500	21393	10604
17:11	ZZZZZZ	3826	233780	21187	9861
17:16	ZZZZZZ	3781	234170	20852	9873
17:21	MA52224-CCV8	3870	236690	21133	9878
17:26	MA52224-CCB9	3960	244450	20866	10656
17:31	ZZZZZZ	3739	232180	20905	9728

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
17:36	ZZZZZZ	3756	232580	21029	9696
17:41	ZZZZZZ	3734	229920	21111	9531
17:46	ZZZZZZ	3912	244180	21466	10426
17:51	ZZZZZZ	3941	243820	21726	10205
17:56	ZZZZZZ	3899	240990	21490	10229
18:01	ZZZZZZ	3956	246460	21544	10666
18:06	ZZZZZZ	3909	242910	21365	10408
18:11	ZZZZZZ	3897	241080	21345	10188
18:16	ZZZZZZ	3985	248640	21703	10727
18:21	MA52224-CCV9	3899	238430	21538	9881
18:26	MA52224-CCB10	3988	247380	21188	10689
18:31	ZZZZZZ	3871	237500	21482	10019
18:35	ZZZZZZ	3860	239100	21658	10000
18:41	ZZZZZZ	3989	247650	21990	10476
18:46	ZZZZZZ	3984	246820	22028	10451
18:51	ZZZZZZ	3686	218500	21312	8973
18:56	ZZZZZZ	3880	238830	21667	9984
19:00	ZZZZZZ	4043	251510	22052	10813
19:05	ZZZZZZ	3943	242760	21762	10119
19:10	MP32250-S1	3987	244090	22146	10035
19:15	MP32250-S2	4029	247510	22706	10090
19:20	MA52224-CCV10	3954	242420	22165	9965
19:25	MA52224-CCB11	4045	252010	22209	10803
19:30	JD42757-3	4041	247680	22428	10256
19:35	MP32250-SD1	4082	246860	22332	10655
19:40	ZZZZZZ	4045	247590	22644	9980
19:45	ZZZZZZ	4062	242940	22720	10165
19:50	ZZZZZZ	4081	246230	22996	10133
19:55	ZZZZZZ	4073	246530	22747	10160
20:00	ZZZZZZ	4078	246040	22825	10112
20:05	ZZZZZZ	4051	240280	22782	10075
20:10	ZZZZZZ	4067	246240	22766	10135
20:15	ZZZZZZ	4090	243720	22847	10258

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
20:20	MA52224-CCV11	4009	239940	22617	9952
20:25	MA52224-CCB12	4100	248600	22658	10808
20:30	ZZZZZZ	4062	245950	22932	10235
20:35	ZZZZZZ	4037	245950	22679	10200
20:40	ZZZZZZ	4026	243590	22767	10063
20:45	ZZZZZZ	4026	242850	22710	10121
20:50	ZZZZZZ	4008	243300	22619	10098
20:55	ZZZZZZ	4020	240270	22712	9902
21:00	ZZZZZZ	4015	241990	22585	9887
21:05	ZZZZZZ	4033	244110	22637	10086
21:10	ZZZZZZ	4044	245850	22924	10083
21:15	ZZZZZZ	4053	246660	22855	10100
21:20	MA52224-CCV12	3979	241140	22419	9904
21:25	MA52224-CCB13	4078	248850	22335	10753
21:31	ZZZZZZ	3984	239660	22484	9877
21:36	MP32258-B1	4067	245810	23001	10273
21:41	MP32258-MB1	4096	249460	22809	10772
21:46	MP32258-S1	3934	237790	22840	9698
21:51	MP32258-S2	3925	238500	23005	9669
21:55	JD42458-9	3925	238620	22799	9908
22:01	MP32258-SD1	4025	244530	22609	10448
22:06	ZZZZZZ	4048	246920	22974	10433
22:11	ZZZZZZ	3989	241970	23004	9905
22:16	ZZZZZZ	3745	226310	22272	9193
22:21	MA52224-CCV13	3966	240420	22784	9877
22:26	MA52224-CCB14	4077	248840	22763	10749
22:31	ZZZZZZ	4053	247950	23137	10455
22:36	ZZZZZZ	3628	219180	22093	8812
22:42	ZZZZZZ	3711	230990	23294	9006
22:47	ZZZZZZ	3943	238270	22445	9921
22:52	ZZZZZZ	4055	246400	22715	10370
22:57	ZZZZZZ	3895	238310	22281	10001
23:02	ZZZZZZ	4019	248060	22327	10634

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
23:07	ZZZZZZ	3957	241040	22308	10112
23:12	ZZZZZZ	3904	238860	22234	9969
23:17	ZZZZZZ	3973	242270	22126	10362
23:22	MA52224-CCV14	3908	239060	21822	9797
23:27	MA52224-CCB15	3999	246730	21790	10577
23:32	ZZZZZZ	3981	246210	22136	10491
23:38	ZZZZZZ	3949	242330	21971	10353
23:43	ZZZZZZ	3984	245050	22093	10372
23:48	ZZZZZZ	3997	244450	22195	10506
23:53	ZZZZZZ	3930	240220	22215	10014
23:58	ZZZZZZ	4019	245980	22175	10651
00:03	ZZZZZZ	4035	246760	22036	10653
00:08	ZZZZZZ	4100	247340	22350	10847
00:14	MA52224-CCV15	3921	237750	21954	9783
00:19	MA52224-CCB16	4024	245200	22074	10607
00:24	MP32277-MB1	4053	248830	22400	10719
00:29	MP32277-MB2	4053	248770	22560	10680
00:34	MP32277-B1	3979	242830	22487	10006
00:39	MP32277-B2	3972	243120	22667	10033
00:44	MP32277-S1	3903	237960	22261	9666
00:49	MP32277-S2	3910	238820	22262	9684
00:54	JD42730-2FA	3952	241390	22328	9994
00:59	MP32277-SD1	4012	246120	22368	10457
01:04	ZZZZZZ	4035	248160	22456	10647
01:09	ZZZZZZ	4028	247020	22513	10648
01:14	MA52224-CCV16	3926	240720	22196	9812
01:19	MA52224-CCB17	4032	247930	22399	10641
01:24	ZZZZZZ	3921	239750	22363	9947
01:29	ZZZZZZ	3943	240730	22291	10132
01:34	ZZZZZZ	3937	242240	22397	10120
01:39	ZZZZZZ	3908	240240	22269	10002
01:44	ZZZZZZ	3471	206960	21256	8162
01:50	ZZZZZZ	3837	234900	22461	9478

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
01:55	ZZZZZZ	3961	246110	22987	10280
02:00	ZZZZZZ	3909	239980	22687	9837
02:05	ZZZZZZ	3940	243090	22844	10111
02:10	ZZZZZZ	3873	239520	22683	9839
02:15	MA52224-CCV17	3952	244610	22895	9898
02:20	MA52224-CCB18	4042	249450	22794	10725
02:25	ZZZZZZ	3940	243470	23047	10182
02:31	ZZZZZZ	4019	249880	23267	10518
02:36	ZZZZZZ	4011	248620	23238	10525
02:41	ZZZZZZ	4016	250180	23360	10545
02:46	ZZZZZZ	4106	251890	24236	9617
02:51	MP32278-MB1	4046	250340	23214	10790
02:56	MP32278-B1	3988	247080	23383	10172
03:01	MP32278-S1	3870	240780	23126	9584
03:06	MP32278-S2	3858	240220	23123	9575
03:11	JD42840-5	3883	240440	23052	9775
03:16	MA52224-CCV18	3934	242680	22865	9871
03:21	MA52224-CCB19	4039	250410	22669	10727
03:26	MP32278-SD1	3972	247380	22788	10347
03:32	ZZZZZZ	3997	246070	22992	10225
03:37	ZZZZZZ	3960	248100	22866	10373
03:42	ZZZZZZ	3976	246710	22777	10414
03:47	ZZZZZZ	3877	239760	22657	9762
03:52	ZZZZZZ	4017	250220	22862	10710
03:57	MP32279A-MB1	4019	249560	22792	10698
04:02	MP32279A-B1	3949	242990	22889	10067
04:07	MP32279A-S1	4138	251130	24656	9168
04:12	MP32279A-S2	4119	250120	24397	9158
04:17	MA52224-CCV19	3907	241590	22282	9834
04:22	MA52224-CCB20	4009	247010	22287	10658
04:28	JD42817-1	4145	251990	24260	9257
04:33	MP32279A-SD1	4006	245880	22781	10091
04:38	ZZZZZZ	4165	247860	24394	9084

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
04:43	MP32285-MB1	4010	248970	22690	10675
04:48	MP32285-LB1	3624	214920	21937	8667
04:54	MP32285-B1	3928	242540	22427	10025
04:58	MP32285-LS1	3698	220850	21836	8639
05:03	MP32285-S1	3642	218280	21659	8416
05:08	MP32285-S2	3623	217170	21530	8383
05:13	JD42787-3A	3568	210490	21443	8409
05:18	MA52224-CCV20	3911	240960	22180	9823
05:23	MA52224-CCB21	4001	247020	22072	10639
05:28	MP32285-SD1	3810	230790	22005	9403
05:34	ZZZZZZ	3560	210800	21576	8447
05:39	ZZZZZZ	3577	211590	21558	8486
05:44	ZZZZZZ	3573	211500	21554	8473
05:49	ZZZZZZ	3590	211410	21507	8513
05:54	ZZZZZZ	3499	209040	21562	8250
06:00	ZZZZZZ	3423	206590	21226	8082
06:05	ZZZZZZ	3484	209200	21338	8190
06:10	ZZZZZZ	3460	208320	21286	8132
06:16	MA52224-CCV21	3940	242380	22147	9865
06:21	MA52224-CCB22	4043	247750	22271	10692
06:26	MP32282-MB1	4059	250540	22654	10743
06:31	MP32282-LB1	4047	249270	22468	10708
06:36	MP32282-B1	3944	241410	22331	10025
06:41	MP32282-LS1	3951	243690	22397	10038
06:46	ZZZZZZ	1082 !a	228690	21954	9641
06:51	ZZZZZZ	4004	246790	22122	10592
06:56	ZZZZZZ	4022	248190	22455	10560
07:01	ZZZZZZ	4011	248260	22103	10601
07:22	MP32280-B1	3996	244360	22673	10134
07:26	MA52224-CCV22	3928	239420	22070	9840
07:32	MA52224-CCB23	4034	246290	22118	10694
07:36	MP32282-S1	3918	243760	22174	10547
07:41	MP32282-S2	3921	243380	22190	10556

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52224
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
07:46	ZZZZZZ	10246 !	568380 !	37560 !	26315 !
07:50	JD42826-2	3850	241360	21493	10462
07:55	MP32282-SD1	3952	242920	21653	10560
08:00	ZZZZZZ	3838	241470	21515	10478
08:05	ZZZZZZ	9435 !	536640 !	35651 !	24699 !
08:10	ZZZZZZ	3878	240970	20992	10473
08:14	MA52224-CCV23	3824	235740	21112	9726
08:19	MA52224-CCB24	3925	245340	21288	10578
08:24	MP32282-S2	3877	243250	21247	10564
08:29	JD42826-2	3899	244650	21157	10595
08:33	MP32282-SD1	3928	245330	21303	10617
08:39	ZZZZZZ	3910	245390	21276	10618
08:43	MP32282-S1	3898	245160	21215	10590
08:47	MA52224-CCV24	3839	236810	21195	9781
08:53	MA52224-CCB25	3927	244980	21114	10629

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

(a) No samples reported for the elements associated with this internal standard.

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			09:28 ICB1		09:49 CCB1		10:46 CCB2		11:41 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.200	<3.0	1.70	<3.0	1.40	<3.0	2.10	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

Not bracketing samples, no qual

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			09:28		09:49		10:46		11:41	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			12:37 CCB4		13:33 CCB5		14:28 CCB6		15:28 CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.200	<3.0	0.600	<3.0	0.600	<3.0	0.700	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			12:37		13:33		14:28		15:28	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			16:27 CCB8		17:26 CCB9		18:26 CCB10		19:25 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.400	<3.0	0.500	<3.0	1.30	<3.0	0.400	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

Not bracketing samples, no qual

6.12.3
6

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			16:27 CCB8		17:26 CCB9		18:26 CCB10		19:25 CCB11	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			20:25 CCB12		21:25 CCB13		22:26 CCB14		23:27 CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	1.10	<3.0	0.100	<3.0	-0.400	<3.0	2.70	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

Not bracketing samples, no qual

6.12.3
6

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			20:25		21:25		22:26		23:27	
Sample ID:			CCB12		CCB13		CCB14		CCB15	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			00:19 CCB16		01:19 CCB17		02:20 CCB18		03:21 CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.400	<3.0	1.60	<3.0	0.800	<3.0	0.200	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

Not bracketing samples, no qual

6.12.3
6

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			00:19		01:19		02:20		03:21	
Sample ID:			CCB16		CCB17		CCB18		CCB19	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time: / Sample ID:			04:22 CCB20		05:23 CCB21		06:21 CCB22		07:32 CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	-0.900	<3.0	1.40	<3.0	0.600	<3.0	1.10	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1	anr							
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7	anr							
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5	anr							
Nickel	10	.3	anr							
Phosphorus	50	1.8	anr							
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4	anr							
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9	anr							
Titanium	10	.9	anr							
Tungsten	50	2								
Vanadium	50	.8	anr							

Not bracketing samples, no qual

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52224 Units: ug/l

Time:			04:22		05:23		06:21		07:32	
Sample ID:			CCB20		CCB21		CCB22		CCB23	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52224 Units: ug/l

Time:		09:41	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1970	98.5
Barium	anr		
Beryllium	anr		
Bismuth			
Boron	anr		
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium	anr		
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus	anr		
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium	anr		
Sulfur			
Thallium	anr		
Tin	anr		
Titanium	anr		
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52224 Units: ug/l

Time:		09:41	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		09:17			10:41			11:37	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2000	100.0	2000	1940	97.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		09:17			10:41			11:37	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		12:32			13:28			14:23	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1980	99.0	2000	1980	99.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		12:32			13:28			14:23	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		15:23			16:22			17:21	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1970	98.5	2000	1970	98.5	2000	1980	99.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		15:23			16:22			17:21	
Sample ID:	CCV	CCV6		CCV	CCV7		CCV	CCV8	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		18:21			19:20			20:20	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1980	99.0	2000	2000	100.0	2000	1990	99.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		18:21			19:20			20:20	
Sample ID:	CCV	CCV9		CCV	CCV10		CCV	CCV11	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		21:20			22:21			23:22	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1980	99.0	2000	2000	100.0	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		21:20			22:21			23:22	
Sample ID:	CCV	CCV12		CCV	CCV13		CCV	CCV14	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		00:14			01:14			02:15	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2010	100.5	2000	2000	100.0	2000	2010	100.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		00:14			01:14			02:15	
Sample ID:	CCV	CCV15		CCV	CCV16		CCV	CCV17	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		03:16			04:17			05:18	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2010	100.5	2000	2010	100.5	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron	anr								
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium	anr								
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus	anr								
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium	anr								
Sulfur									
Thallium	anr								
Tin	anr								
Titanium	anr								
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		03:16			04:17			05:18	
Sample ID:	CCV	CCV18		CCV	CCV19		CCV	CCV20	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		06:16			07:26	
Sample ID:	CCV	CCV21		CCV	CCV22	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	2010	100.5	2000	2010	100.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium	anr					
Magnesium	anr					
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium	anr					
Sulfur						
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52224 Units: ug/l

Time:		06:16			07:26	
Sample ID:	CCV	CCV21		CCV	CCV22	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52224 Units: ug/l

Time:		10:15			10:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7470	93.4			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron	anr					
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium	anr					
Sulfur						
Thallium	anr					
Tin	anr					
Titanium	anr					
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52224 Units: ug/l

Time:		10:15			10:21	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52224 Units: ug/l

Time:				09:54		10:51	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr			
Antimony	6.0	20	3.0	anr			
Arsenic	8.0	20	3.0	8.30	103.8	2.70	90.0
Barium	200		4.0	anr			
Beryllium	2.0		1.0	anr			
Bismuth	20						
Boron	100		10	anr			
Cadmium	3.0		1.0	anr			
Calcium	5000	2000	1000	anr			
Cerium							
Chromium	10		2.0	anr			
Cobalt	50		3.0	anr			
Copper	10		2.0	anr			
Iron	100	500		anr			
Lead	3.0	20	2.5	anr			
Lithium	50			anr			
Magnesium	5000	2000	100	anr			
Manganese	15		3.0	anr			
Molybdenum	20			anr			
Nickel	10		4.0	anr			
Phosphorus	50			anr			
Potassium	5000		2000	anr			
Selenium	10	20	5.0	anr			
Silicon	200						
Silver	5.0		2.0	anr			
Sodium	5000		1000	anr			
Strontium	10			anr			
Sulfur	50						
Thallium	10		2.0	anr			
Tin	10			anr			
Titanium	10			anr			
Tungsten	50						
Vanadium	50		2.0	anr			

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52224 Units: ug/l

Time:				09:54		10:51	
Sample ID:	CRI	CRIA	CRID	CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Zinc	20		10	anr			
Zirconium	10						

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52224 Units: ug/l

Time:			10:05		10:10	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	496000	99.2	506000	101.2
Antimony		1000	0.700		1020	102.0
Arsenic		1000	1.00		1010	101.0
Barium		500	-45.4		440	88.0
Beryllium		500	0.100		469	93.8
Bismuth		500	-10.6		478	95.6
Boron		500	-5.10		475	95.0
Cadmium		1000	1.20		1000	100.0
Calcium	400000	400000	382000	95.5	402000	100.5
Cerium			40.4		511*	
Chromium		500	2.00		466	93.2
Cobalt		500	2.30		468	93.6
Copper		500	1.90		496	99.2
Iron	200000	200000	194000	97.0	203000	101.5
Lead		1000	0.900		946	94.6
Lithium		500	-6.50		532	106.4
Magnesium	500000	500000	501000	100.2	502000	100.4
Manganese		500	-8.10		492	98.4
Molybdenum		500	-2.70		466	93.2
Nickel		1000	3.60		938	93.8
Phosphorus		500	12.9		481	96.2
Potassium			-47.3		-11.3	
Selenium		1000	4.00		941	94.1
Silicon		500	-26.2		496	99.2
Silver		1000	4.10		1090	109.0
Sodium			-102		-113	
Strontium		500	1.20		491	98.2
Sulfur		500	-24.3		457	91.4
Thallium		1000	-6.10		960	96.0
Tin		500	-6.00		459	91.8
Titanium		500	-1.10		478	95.6
Tungsten		500	-0.200		485	97.0
Vanadium		500	-4.70		462	92.4

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041322M1.ICP Date Analyzed: 04/13/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52224 Units: ug/l

Time:			10:05		10:10	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	1.00		909	90.9
Zirconium		500	3.30		472	94.4

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
08:28	MA52233-STD1	1		STDA
08:33	MA52233-STD2	1		STDB
08:38	MA52233-ICV1	1		
08:44	MA52233-ICB1	1		
08:49	MA52233-CCV1	1		
08:54	MA52233-CCB1	1		
08:59	MA52233-CRID1	1		
09:05	MA52233-CRI1	1		
09:10	MA52233-ICSA1	1		
09:15	MA52233-ICSAB1	1		
09:20	ZZZZZZ	1		
09:25	ZZZZZZ	1		
09:30	MA52233-HSTD1	1		
09:36	MA52233-HSTD2	1		
09:41	MP32280-B1	1		
09:46	ZZZZZZ	1		
09:51	MA52233-CCV2	1		
09:56	MA52233-CCB2	1		
10:01	ZZZZZZ	1		
10:06	ZZZZZZ	1		
10:11	MP32280-MB1	1		
10:16	MP32280-S1	1		
10:21	MP32280-S2	1		
10:26	JD42834-2	1		(sample used for QC only; not part of login JD41762)
10:31	MP32280-SD1	5		
10:36	MP32280-PS1	1		
10:41	MA52233-CCV3	1		
10:46	MA52233-CCB3	1		
10:51	JD41762-33	1		
10:56	JD41762-46	1		
11:01	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
11:16	MA52233-CCV4	1		
11:21	MA52233-CCB4	1		
11:26	MA52233-CRID2	1		
11:31	MP32253-S1	5		
11:36	MP32253-S2	5		
11:41	JD42841-1	5		(sample used for QC only; not part of login JD41762)
11:46	MP32253-SD1	25		
---------->	Last reportable sample/prep for job JD41762			
11:51	ZZZZZZ	5		
11:56	ZZZZZZ	5		
12:01	ZZZZZZ	5		
12:06	ZZZZZZ	5		
12:11	MA52233-CCV5	1		
12:16	MA52233-CCB5	1		
12:21	ZZZZZZ	1		
12:26	MA52233-CRI2	1		
12:32	ZZZZZZ	2		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	5		
12:47	ZZZZZZ	5		
12:52	ZZZZZZ	5		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52233-CCV6	1		
13:12	MA52233-CCB6	1		
13:17	MA52233-ICSA2	1		
13:22	MA52233-ICSAB2	1		
13:27	ZZZZZZ	5		
13:33	ZZZZZZ	25		
13:38	ZZZZZZ	1		
13:43	MA52233-CCV7	1		
13:48	MA52233-CCB7	1		
---------->	Last reportable CCB for job JD41762			
13:53	ZZZZZZ	1		
13:58	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
14:03	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Element: Dilution	As	
08:38	MA52233-ICV1	1	X	
08:44	MA52233-ICB1	1	X	
08:49	MA52233-CCV1	1	X	
08:54	MA52233-CCB1	1	X	
08:59	MA52233-CRID1	1	X	
09:05	MA52233-CRI1	1	X	
09:10	MA52233-ICSA1	1	X	
09:15	MA52233-ICSAB1	1	X	
09:20	ZZZZZZ	1		
09:25	ZZZZZZ	1		
09:30	MA52233-HSTD1	1	X	
09:36	MA52233-HSTD2	1	X	
09:41	MP32280-B1	1		
09:46	ZZZZZZ	1		
09:51	MA52233-CCV2	1	X	
09:56	MA52233-CCB2	1	X	
10:01	ZZZZZZ	1		
10:06	ZZZZZZ	1		
10:11	MP32280-MB1	1	X	
10:16	MP32280-S1	1		
10:21	MP32280-S2	1		
10:26	JD42834-2	1		(a)
10:31	MP32280-SD1	5		
10:36	MP32280-PS1	1		
10:41	MA52233-CCV3	1	X	
10:46	MA52233-CCB3	1	X	
10:51	JD41762-33	1	X	
10:56	JD41762-46	1	X	
11:01	ZZZZZZ	1		
11:06	ZZZZZZ	1		
11:11	ZZZZZZ	1		
11:16	MA52233-CCV4	1	X	
11:21	MA52233-CCB4	1	X	
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Element: Dilution	As	
11:26	MA52233-CRID2	1	X	
11:31	MP32253-S1	5	X	
11:36	MP32253-S2	5	X	
11:41	JD42841-1	5		(a)
11:46	MP32253-SD1	25	X	
11:51	ZZZZZZ	5		
11:56	ZZZZZZ	5		
12:01	ZZZZZZ	5		
12:06	ZZZZZZ	5		
12:11	MA52233-CCV5	1	X	
12:16	MA52233-CCB5	1	X	
12:21	ZZZZZZ	1		
12:26	MA52233-CRI2	1	X	
12:32	ZZZZZZ	2		
12:37	ZZZZZZ	1		
12:42	ZZZZZZ	5		
12:47	ZZZZZZ	5		
12:52	ZZZZZZ	5		
12:57	ZZZZZZ	1		
13:02	ZZZZZZ	1		
13:07	MA52233-CCV6	1	X	
13:12	MA52233-CCB6	1	X	
13:17	MA52233-ICSA2	1	X	
13:22	MA52233-ICSAB2	1	X	
13:27	ZZZZZZ	5		
13:33	ZZZZZZ	25		
13:38	ZZZZZZ	1		
13:43	MA52233-CCV7	1	X	
13:48	MA52233-CCB7	1	X	
13:53	ZZZZZZ	1		
13:58	ZZZZZZ	1		
14:03	ZZZZZZ	1		

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
08:28	MA52233-STD1	8063 R	231460 R	22667 R	13474 R
08:33	MA52233-STD2	7736	218280	22621	12069
08:38	MA52233-ICV1	7903	235960	22584	12471
08:44	MA52233-ICB1	8057	231380	22743	13449
08:49	MA52233-CCV1	7898	222130	22630	12468
08:54	MA52233-CCB1	8015	230160	22321	13398
08:59	MA52233-CRID1	8073	228290	22327	13447
09:05	MA52233-CRI1	8050	228170	22490	13289
09:10	MA52233-ICSA1	7419	207590	22174	11208
09:15	MA52233-ICSAB1	7418	208150	22206	11203
09:20	ZZZZZZ	22022 !	585660 !	48634 !	34607 !
09:25	ZZZZZZ	22110 !	594320 !	48681 !	34802 !
09:30	MA52233-HSTD1	8027	225790	22542	13290
09:36	MA52233-HSTD2	7492	210400	22139	11223
09:41	MP32280-B1	8076	227630	22890	12935
09:46	ZZZZZZ	7826	222470	21660	13247
09:51	MA52233-CCV2	7856	221780	22303	12446
09:56	MA52233-CCB2	8151	229450	22435	13640
10:01	ZZZZZZ	7795	222420	21661	13263
10:06	ZZZZZZ	7765	221070	21590	13243
10:11	MP32280-MB1	8146	233520	22932	13671
10:16	MP32280-S1	7869	221100	23221	11931
10:21	MP32280-S2	7811	219340	22778	11965
10:26	JD42834-2	7923	222610	23067	12221
10:31	MP32280-SD1	8074	228120	22633	13058
10:36	MP32280-PS1	7858	222400	23142	12065
10:41	MA52233-CCV3	7967	224300	22520	12634
10:46	MA52233-CCB3	8018	216580	21268	13370
10:51	JD41762-33	8026	222580	21537	12737
10:56	JD41762-46	8136	226350	21846	12816
11:01	ZZZZZZ	8026	224820	22219	11948
11:06	ZZZZZZ	No results reported for the elements associated with this internal standard.			
11:11	ZZZZZZ	8047	219080	21524	12785

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
11:16	MA52233-CCV4	7877	219090	21250	12410
11:21	MA52233-CCB4	8005	224240	20823	13315
11:26	MA52233-CRID2	8033	223950	20893	13328
11:31	MP32253-S1	7919	220930	21072	12652
11:36	MP32253-S2	7909	220250	21120	12637
11:41	JD42841-1	7918	221130	20965	12767
11:46	MP32253-SD1	8034	225480	20808	13224
11:51	ZZZZZZ	7836	220010	21057	12509
11:56	ZZZZZZ	7830	215720	20820	12318
12:01	ZZZZZZ	7814	217470	20751	12295
12:06	ZZZZZZ	7911	220610	21037	12190
12:11	MA52233-CCV5	7873	218360	20982	12401
12:16	MA52233-CCB5	8090	224650	20839	13424
12:21	ZZZZZZ	8242	231090	21552	13658
12:26	MA52233-CRI2	7999	223580	20826	13175
12:32	ZZZZZZ	8055	221360	21491	12412
12:37	ZZZZZZ	8312	231850	21689	13756
12:42	ZZZZZZ	7756	210630	21013	11929
12:47	ZZZZZZ	8077	222320	21215	13037
12:52	ZZZZZZ	8211	225470	21534	13073
12:57	ZZZZZZ	8139	222490	21689	12588
13:02	ZZZZZZ	7620	212050	21165	11306
13:07	MA52233-CCV6	8053	222270	21004	12568
13:12	MA52233-CCB6	8231	229560	21318	13541
13:17	MA52233-ICSA2	7570	208600	21182	11361
13:22	MA52233-ICSAB2	7638	207570	21343	11442
13:27	ZZZZZZ	8199	227810	21430	12879
13:33	ZZZZZZ	8106	223850	21276	12874
13:38	ZZZZZZ	8223	226290	21495	12844
13:43	MA52233-CCV7	8050	221870	21318	12533
13:48	MA52233-CCB7	8209	228650	21047	13486
13:53	ZZZZZZ	7876	220470	20545	13241
13:58	ZZZZZZ	7925	219230	20418	13126

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52233
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
14:03	ZZZZZZ	8291	230240	21556	13568

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time: / Sample ID:			08:44 ICB1		08:54 CCB1		09:56 CCB2		10:46 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.00	<3.0	-0.800	<3.0	-0.100	<3.0	0.500	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time:			08:44		08:54		09:56		10:46	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time:			11:21		12:16		13:12		13:48	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	17	anr							
Antimony	6.0	1.7	anr							
Arsenic	3.0	2.1	0.100	<3.0	0.100	<3.0	0.200	<3.0	0.00	<3.0
Barium	200	.8	anr							
Beryllium	1.0	.3	anr							
Bismuth	20	2.3								
Boron	100	2.3								
Cadmium	3.0	.3	anr							
Calcium	5000	6.6	anr							
Cerium	100									
Chromium	10	.3	anr							
Cobalt	50	.4	anr							
Copper	10	.8	anr							
Iron	100	5.3	anr							
Lead	3.0	1.1	anr							
Lithium	50	4.8								
Magnesium	5000	32	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6								
Nickel	10	.4	anr							
Phosphorus	50	1.2								
Potassium	10000	77	anr							
Selenium	10	3.2	anr							
Silicon	200	1.7								
Silver	10	1	anr							
Sodium	10000	34	anr							
Strontium	10	.3								
Sulfur	50	3								
Thallium	10	1.8	anr							
Tin	10	.8								
Titanium	10	.5								
Tungsten	50	2.6								
Vanadium	50	.6	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52233 Units: ug/l

Time:			11:21		12:16		13:12		13:48	
Sample ID:			CCB4		CCB5		CCB6		CCB7	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.1	anr							
Zirconium	10	.3								

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		08:38			08:49			09:51	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2000	100.0	2000	2040	102.0	2000	2040	102.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		08:38			08:49			09:51	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		10:41			11:16			12:11	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	2020	101.0	2000	1980	99.0	2000	1950	97.5
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		10:41			11:16			12:11	
Sample ID:	CCV	CCV3		CCV	CCV4		CCV	CCV5	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		13:07			13:43	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	1920	96.0	2000	1970	98.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52233 Units: ug/l

Time:		13:07			13:43	
Sample ID:	CCV	CCV6		CCV	CCV7	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52233 Units: ug/l

Time:		09:30			09:36	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7570	94.6			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52233 Units: ug/l

Time:		09:30			09:36	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				08:59		09:05		11:26	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0			7.70	96.3	2.50	83.3
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0						
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				08:59		09:05		11:26	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI1		CRID2	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				12:26	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Aluminum	200	500	100	anr	
Antimony	6.0	20	3.0	anr	
Arsenic	8.0	20	3.0	9.50	118.8
Barium	200		4.0	anr	
Beryllium	2.0		1.0	anr	
Bismuth	20				
Boron	100		10		
Cadmium	3.0		1.0	anr	
Calcium	5000	2000	1000	anr	
Cerium					
Chromium	10		2.0	anr	
Cobalt	50		3.0	anr	
Copper	10		2.0	anr	
Iron	100	500		anr	
Lead	3.0	20	2.5	anr	
Lithium	50				
Magnesium	5000	2000	100	anr	
Manganese	15		3.0	anr	
Molybdenum	20				
Nickel	10		4.0	anr	
Phosphorus	50				
Potassium	5000		2000	anr	
Selenium	10	20	5.0	anr	
Silicon	200				
Silver	5.0		2.0	anr	
Sodium	5000		1000	anr	
Strontium	10				
Sulfur	50				
Thallium	10		2.0	anr	
Tin	10				
Titanium	10				
Tungsten	50				
Vanadium	50		2.0	anr	

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52233 Units: ug/l

Time:				12:26	
Sample ID:	CRI	CRIA	CRID	CRI2	
Metal	True	True	True	Results	% Rec
Zinc	20		10	anr	
Zirconium	10				

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52233 Units: ug/l

Time:			09:10		09:15		13:17		13:22	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	521000	104.2	522000	104.4	507000	101.4	507000	101.4
Antimony		1000	1.60		983	98.3	3.00		911	91.1
Arsenic		1000	-0.500		973	97.3	-0.400		927	92.7
Barium		500	6.30		469	93.8	6.00		455	91.0
Beryllium		500	0.100		466	93.2	0.100		441	88.2
Bismuth		500	8.60		482	96.4	11.6		445	89.0
Boron		500	-0.500		462	92.4	0.00		430	86.0
Cadmium		1000	0.300		977	97.7	0.00		908	90.8
Calcium	400000	400000	392000	98.0	406000	101.5	388000	97.0	388000	97.0
Cerium			27.9		492*		27.0		476*	
Chromium		500	-0.900		454	90.8	-0.900		452	90.4
Cobalt		500	0.600		467	93.4	0.800		450	90.0
Copper		500	2.40		485	97.0	1.10		449	89.8
Iron	200000	200000	199000	99.5	210000	105.0	194000	97.0	204000	102.0
Lead		1000	0.900		913	91.3	0.00		889	88.9
Lithium		500	-7.00		537	107.4	-7.50		511	102.2
Magnesium	500000	500000	513000	102.6	503000	100.6	501000	100.2	491000	98.2
Manganese		500	0.200		485	97.0	-0.100		476	95.2
Molybdenum		500	-1.90		463	92.6	-2.30		440	88.0
Nickel		1000	-1.00		902	90.2	-1.30		876	87.6
Phosphorus		500	-21.0		435	87.0	-29.3		411	82.2
Potassium			-384		-400		-383		-418	
Selenium		1000	5.70		890	89.0	8.00		845	84.5
Silicon		500	8.30		510	102.0	4.80		479	95.8
Silver		1000	4.50		1020	102.0	4.10		972	97.2
Sodium			92.4		118		78.9		97.4	
Strontium		500	-1.40		464	92.8	-1.60		444	88.8
Sulfur		500	-11.2		454	90.8	-18.6		422	84.4
Thallium		1000	-0.500		906	90.6	1.10		870	87.0
Tin		500	-6.10		453	90.6	-6.70		435	87.0
Titanium		500	-1.80		473	94.6	-1.90		462	92.4
Tungsten		500	-3.40		476	95.2	-3.20		464	92.8
Vanadium		500	2.20		472	94.4	3.10		463	92.6

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SC041422M1.ICP Date Analyzed: 04/14/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52233 Units: ug/l

Time:			09:10		09:15		13:17		13:22	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	2.60		906	90.6	2.80		897	89.7
Zirconium		500	-1.80		423	84.6	-1.70		410	82.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
09:56	MA52240-STD1	1		STDA
10:01	MA52240-STD2	1		STDB
10:06	MA52240-ICV1	1		
10:14	MA52240-ICB1	1		
10:26	MA52240-ICB2	1		
10:30	MA52240-ICCV1	1		
10:36	MA52240-ICCV2	1		
10:47	MA52240-CCB1	1		
10:53	MA52240-CRI1	1		
10:58	MA52240-CRID1	1		
11:03	MA52240-ICSA1	1		
11:08	MA52240-ICSAB1	1		
11:13	MA52240-HSTD1	1		
11:18	MA52240-HSTD2	1		
11:23	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:34	ZZZZZZ	1		
11:39	MA52240-CCV1	1		
11:44	MA52240-CCB2	1		
11:49	MA52240-CRI2	1		
11:55	ZZZZZZ	1		
12:00	MP32331-B1	1		
12:05	ZZZZZZ	1		
12:10	ZZZZZZ	5		
12:15	MP32331-MB1	1		
---------->	Last reportable sample/prep for job JD41762			
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	5		
12:30	ZZZZZZ	5		
12:36	MA52240-CCV2	1		
12:40	MA52240-CCB3	1		
---------->	Last reportable CCB for job JD41762			
12:46	MP32300-MB1	1		
12:51	MP32300-B1	1		
12:56	MP32300-S1	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:01	MP32300-S2	1		
13:06	JD42974-1	1		(sample used for QC only; not part of login JD41762)
13:11	MP32300-SD1	5		
13:16	ZZZZZZ	1		
13:21	ZZZZZZ	1		
13:27	ZZZZZZ	1		
13:32	MA52240-CCV3	1		
13:37	MA52240-CCB4	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:06	MA52240-ICV1	1	X	
10:14	MA52240-ICB1	1	X	
10:26	MA52240-ICB2	1	X	
10:30	MA52240-ICCV1	1		
10:36	MA52240-ICCV2	1	X	
10:47	MA52240-CCB1	1	X	
10:53	MA52240-CRI1	1		
10:58	MA52240-CRID1	1	X	
11:03	MA52240-ICSA1	1	X	
11:08	MA52240-ICSAB1	1	X	
11:13	MA52240-HSTD1	1	X	
11:18	MA52240-HSTD2	1	X	
11:23	ZZZZZZ	1		
11:29	ZZZZZZ	1		
11:34	ZZZZZZ	1		
11:39	MA52240-CCV1	1	X	
11:44	MA52240-CCB2	1	X	
11:49	MA52240-CRI2	1	X	
11:55	ZZZZZZ	1		
12:00	MP32331-B1	1	X	
12:05	ZZZZZZ	1		
12:10	ZZZZZZ	5		
12:15	MP32331-MB1	1	X	
12:20	ZZZZZZ	1		
12:25	ZZZZZZ	5		
12:30	ZZZZZZ	5		
12:36	MA52240-CCV2	1	X	
12:40	MA52240-CCB3	1	X	
12:46	MP32300-MB1	1		
12:51	MP32300-B1	1		
12:56	MP32300-S1	1		
13:01	MP32300-S2	1		
13:06	JD42974-1	1		(a)
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Element: Dilution	As
13:11	MP32300-SD1	5	
13:16	ZZZZZZ	1	
13:21	ZZZZZZ	1	
13:27	ZZZZZZ	1	
13:32	MA52240-CCV3	1	X
13:37	MA52240-CCB4	1	X

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
09:56	MA52240-STD1	2282 R	75527 R	3187 R	6045 R
10:01	MA52240-STD2	2217	74158	3195	5785
10:06	MA52240-ICV1	2264	75821	3375	5880
10:14	MA52240-ICB1	2309	77592	3361	6115
10:26	MA52240-ICB2	2310	77578	3345	6119
10:30	MA52240-ICCV1	No results reported for the elements associated with this internal standard.			
10:36	MA52240-ICCV2	2274	75680	3377	5893
10:47	MA52240-CCB1	2307	77639	3361	6115
10:53	MA52240-CRI1	No results reported for the elements associated with this internal standard.			
10:58	MA52240-CRID1	2317	77734	3368	6125
11:03	MA52240-ICSA1	2122	71141	3302	5520
11:08	MA52240-ICSAB1	2128	70643	3293	5559
11:13	MA52240-HSTD1	2278	77231	3327	6167
11:18	MA52240-HSTD2	2155	71923	3268	5566
11:23	ZZZZZZ	2324	77978	3383	6323
11:29	ZZZZZZ	2294	78679	3381	6217
11:34	ZZZZZZ	2339	78776	3366	6209
11:39	MA52240-CCV1	2278	76507	3318	5917
11:44	MA52240-CCB2	2321	78651	3334	6163
11:49	MA52240-CRI2	2321	78419	3357	6128
11:55	ZZZZZZ	2330	79358	3390	6176
12:00	MP32331-B1	2297	76463	3382	5993
12:05	ZZZZZZ	2289	76471	3475	5715
12:10	ZZZZZZ	2326	77392	3400	5975
12:15	MP32331-MB1	2341	79559	3420	6215
12:20	ZZZZZZ	2316	77898	3500	5811
12:25	ZZZZZZ	2328	77191	3397	6013
12:30	ZZZZZZ	2308	77292	3369	5978
12:36	MA52240-CCV2	2298	76842	3355	5979
12:40	MA52240-CCB3	2348	78468	3340	6242
12:46	MP32300-MB1	2373	79788	3429	6323
12:51	MP32300-B1	2331	78062	3372	6093
12:56	MP32300-S1	2113	72532	3292	5411

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52240
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:01	MP32300-S2	2104	72784	3287	5398
13:06	JD42974-1	2113	72784	3252	5430
13:11	MP32300-SD1	2269	76777	3309	5910
13:16	ZZZZZZ	2068	71259	3225	5196
13:21	ZZZZZZ	2282	77307	3359	5873
13:27	ZZZZZZ	2347	79490	3378	6252
13:32	MA52240-CCV3	2306	76771	3347	6009
13:37	MA52240-CCB4	2364	79306	3362	6297

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time: / Sample ID:			10:14 ICB1		10:26 ICB2		10:47 CCB1		11:44 CCB2	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	9.2	anr							
Antimony	6.0	2.8	anr							
Arsenic	3.0	2.6	-1.40	<3.0	0.700	<3.0	-0.900	<3.0	0.400	<3.0
Barium	200	.2	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.5								
Boron	100	1.8								
Cadmium	3.0	.4	anr							
Calcium	5000	13	anr							
Cerium	100									
Chromium	10	.7	anr							
Cobalt	50	.6	anr							
Copper	10	.7	anr							
Iron	100	3.3	anr							
Lead	3.0	2	anr							
Lithium	50	1.5								
Magnesium	5000	25	anr							
Manganese	15	.1	anr							
Molybdenum	20	.6	anr							
Nickel	10	.8	anr							
Phosphorus	50	7								
Potassium	10000	35	anr							
Selenium	10	3.6	anr							
Silicon	200	2.2								
Silver	10	.6	anr							
Sodium	10000	14	anr							
Strontium	10	.1								
Sulfur	50	3.7								
Thallium	10	5.2	anr							
Tin	10	1.4								
Titanium	10	.8								
Tungsten	50	1.3								
Vanadium	50	.5	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time:			10:14		10:26		10:47		11:44	
Sample ID:			ICB1		ICB2		CCB1		CCB2	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.3	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time:			12:40	
Sample ID:			CCB3	
Metal	RL	IDL	raw	final
Aluminum	200	9.2	anr	
Antimony	6.0	2.8	anr	
Arsenic	3.0	2.6	-0.100	<3.0
Barium	200	.2	anr	
Beryllium	1.0	.2	anr	
Bismuth	20	2.5		
Boron	100	1.8		
Cadmium	3.0	.4	anr	
Calcium	5000	13	anr	
Cerium	100			
Chromium	10	.7	anr	
Cobalt	50	.6	anr	
Copper	10	.7	anr	
Iron	100	3.3	anr	
Lead	3.0	2	anr	
Lithium	50	1.5		
Magnesium	5000	25	anr	
Manganese	15	.1	anr	
Molybdenum	20	.6	anr	
Nickel	10	.8	anr	
Phosphorus	50	7		
Potassium	10000	35	anr	
Selenium	10	3.6	anr	
Silicon	200	2.2		
Silver	10	.6	anr	
Sodium	10000	14	anr	
Strontium	10	.1		
Sulfur	50	3.7		
Thallium	10	5.2	anr	
Tin	10	1.4		
Titanium	10	.8		
Tungsten	50	1.3		
Vanadium	50	.5	anr	

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52240 Units: ug/l

Time:			12:40	
Sample ID:			CCB3	
Metal	RL	IDL	raw	final
Zinc	20	.3	anr	
Zirconium	10	.5		

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52240 Units: ug/l

Time:		10:36	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1940	97.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum	anr		
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52240 Units: ug/l

Time:		10:36	
Sample ID:	ICCV	ICCV2	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52240 Units: ug/l

Time:		10:06			11:39			12:36	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1960	98.0	2000	1960	98.0	2000	1960	98.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum	anr								
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52240 Units: ug/l

Time:		10:06			11:39			12:36	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52240 Units: ug/l

Time:		11:13			11:18	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7530	94.1			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52240 Units: ug/l

Time:		11:13			11:18	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52240 Units: ug/l

Time:				10:58		11:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr			
Antimony	6.0	20	3.0				
Arsenic	8.0	20	3.0	3.00	100.0	7.80	97.5
Barium	200		4.0	anr			
Beryllium	2.0		1.0	anr			
Bismuth	20						
Boron	100		10				
Cadmium	3.0		1.0	anr			
Calcium	5000	2000	1000	anr			
Cerium							
Chromium	10		2.0				
Cobalt	50		3.0	anr			
Copper	10		2.0				
Iron	100	500					
Lead	3.0	20	2.5				
Lithium	50						
Magnesium	5000	2000	100	anr			
Manganese	15		3.0	anr			
Molybdenum	20						
Nickel	10		4.0	anr			
Phosphorus	50						
Potassium	5000		2000	anr			
Selenium	10	20	5.0	anr			
Silicon	200						
Silver	5.0		2.0				
Sodium	5000		1000	anr			
Strontium	10						
Sulfur	50						
Thallium	10		2.0				
Tin	10						
Titanium	10						
Tungsten	50						
Vanadium	50		2.0	anr			

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52240 Units: ug/l

Time:				10:58		11:49	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2	
Metal	True	True	True	Results	% Rec	Results	% Rec
Zinc	20		10	anr			
Zirconium	10						

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52240 Units: ug/l

Time:			11:03		11:08	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Aluminum	500000	500000	506000	101.2	509000	101.8
Antimony		1000	-1.90		1030	103.0
Arsenic		1000	-1.20		1030	103.0
Barium		500	4.30		479	95.8
Beryllium		500	0.200		479	95.8
Bismuth		500	-2.10		473	94.6
Boron		500	-1.10		487	97.4
Cadmium		1000	0.300		1020	102.0
Calcium	400000	400000	377000	94.3	387000	96.8
Cerium			82.6		581*	
Chromium		500	-1.30		475	95.0
Cobalt		500	1.00		467	93.4
Copper		500	4.60		536	107.2
Iron	200000	200000	189000	94.5	198000	99.0
Lead		1000	0.700		923	92.3
Lithium		500	-2.60		563	112.6
Magnesium	500000	500000	492000	98.4	481000	96.2
Manganese		500	-0.100		502	100.4
Molybdenum		500	0.300		477	95.4
Nickel		1000	2.30		908	90.8
Phosphorus		500	9.30		483	96.6
Potassium			112		60.3	
Selenium		1000	4.70		923	92.3
Silicon		500	-14.6		510	102.0
Silver		1000	-0.300		1030	103.0
Sodium			17.8		28.3	
Strontium		500	-1.30		492	98.4
Sulfur		500	33.9		525	105.0
Thallium		1000	-1.80		896	89.6
Tin		500	-5.40		463	92.6
Titanium		500	-2.20		482	96.4
Tungsten		500	-4.60		486	97.2
Vanadium		500	7.20		486	97.2

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SF041522M1.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52240 Units: ug/l

Time:			11:03		11:08	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1	
Metal	True	True	Results	% Rec	Results	% Rec
Zinc		1000	7.40		928	92.8
Zirconium		500	2.60		445	89.0

(*) Outside of QC limits
(anr) Analyte not requested

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
10:40	MA52241-STD1	1		STDA
10:45	MA52241-STD2	1		STDB
10:50	MA52241-ICV1	1		
10:59	MA52241-ICB1	1		
11:08	MA52241-ICCV1	1		
11:20	MA52241-CCB1	1		
11:25	MA52241-CRI1	1		
11:30	MA52241-CRID1	1		
11:35	MA52241-ICSA1	1		
11:40	MA52241-ICSAB1	1		
11:45	MA52241-HSTD1	1		
11:51	MA52241-HSTD2	1		
11:56	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:11	MA52241-CCV1	1		
12:16	MA52241-CCB2	1		
12:21	MA52241-CRI2	1		
12:26	MP32331-MB1	1		
12:31	MP32331-B1	1		
12:36	MP32331-S1	1		
12:41	MP32331-S2	1		
12:46	JD42270-3	1		(sample used for QC only; not part of login JD41762)
12:51	MP32331-SD1	5		
12:56	MP32331-PS1	1		
13:01	JD41762-5	1		
13:06	MA52241-CCV2	1		
13:10	MA52241-CCB3	1		
13:16	MP32331-S1	5		
13:21	MP32331-S2	5		
13:25	JD42270-3	5		(sample used for QC only; not part of login JD41762)
13:31	MP32331-SD1	25		
13:36	MP32331-PS1	5		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
13:41	JD41762-5	2		
13:46	ZZZZZZ	1		
13:51	MA52241-CRI3	1		
13:56	MA52241-CCV3	1		
14:01	MA52241-CCB4	1		
14:09	MA52241-ICSA2	1		
14:15	MA52241-ICSAB2	1		
14:20	ZZZZZZ	1		
14:25	MP32280-S1	2		MN still high
14:30	MP32280-S2	2		MN still high
14:35	JD42834-2	2		(sample used for QC only; not part of login JD41762)
14:40	MP32280-SD1	10		MN still high
---------->	Last reportable sample/prep for job JD41762			
14:45	ZZZZZZ	2		
14:50	ZZZZZZ	1		
14:55	ZZZZZZ	1		
15:00	MA52241-CCV4	1		
15:05	MA52241-CCB5	1		
---------->	Last reportable CCB for job JD41762			
15:10	ZZZZZZ	2		
15:15	ZZZZZZ	5		
15:20	ZZZZZZ	2		
15:25	ZZZZZZ	2		
15:30	ZZZZZZ	5		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	5		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	2		
15:55	ZZZZZZ	5		
16:00	MA52241-CCV5	1		
16:05	MA52241-CCB6	1		
16:10	ZZZZZZ	5		
16:15	ZZZZZZ	5		
16:20	ZZZZZZ	1		
16:25	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
16:30	ZZZZZZ	1		
16:35	ZZZZZZ	1		
16:40	ZZZZZZ	1		
16:44	ZZZZZZ	1		
16:49	MA52241-CCV6	1		
16:54	MA52241-CCB7	1		
16:59	MP32289-MB1	1		
17:04	MP32289-B1	1		
17:09	MP32289-S1	1		
17:14	MP32289-S2	1		
17:19	JD42970-6	1		(sample used for QC only; not part of login JD41762)
17:23	MP32289-SD1	5		
17:28	MP32289-S3	1		
17:33	MP32289-S4	1		
17:38	JD42970-6F	1		(sample used for QC only; not part of login JD41762)
17:43	MP32289-SD2	5		
17:48	MA52241-CCV7	1		
17:53	MA52241-CCB8	1		
17:58	ZZZZZZ	1		
18:03	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:13	ZZZZZZ	5		
18:18	ZZZZZZ	10		
18:23	ZZZZZZ	5		
18:28	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	MA52241-CCV8	1		
18:43	MA52241-CCB9	1		
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:02	ZZZZZZ	1		
19:07	ZZZZZZ	1		
19:12	ZZZZZZ	1		

SGS Instrument Runlog
Inorganics Analyses

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Dilution Factor	PS Recov	Comments
19:17	ZZZZZZ	1		
19:22	ZZZZZZ	1		

Refer to raw data for calibration curve and standards.

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As	
10:50	MA52241-ICV1	1	X	
10:59	MA52241-ICB1	1	X	
11:08	MA52241-ICCV1	1	X	
11:20	MA52241-CCB1	1	X	
11:25	MA52241-CRI1	1		
11:30	MA52241-CRID1	1	X	
11:35	MA52241-ICSA1	1	X	
11:40	MA52241-ICSAB1	1	X	
11:45	MA52241-HSTD1	1	X	
11:51	MA52241-HSTD2	1	X	
11:56	ZZZZZZ	1		
12:01	ZZZZZZ	1		
12:06	ZZZZZZ	1		
12:11	MA52241-CCV1	1	X	
12:16	MA52241-CCB2	1	X	
12:21	MA52241-CRI2	1	X	
12:26	MP32331-MB1	1	X	
12:31	MP32331-B1	1	X	
12:36	MP32331-S1	1		
12:41	MP32331-S2	1		
12:46	JD42270-3	1		(a)
12:51	MP32331-SD1	5		
12:56	MP32331-PS1	1		
13:01	JD41762-5	1		
13:06	MA52241-CCV2	1	X	
13:10	MA52241-CCB3	1	X	
13:16	MP32331-S1	5	X	
13:21	MP32331-S2	5	X	
13:25	JD42270-3	5	X	(a)
13:31	MP32331-SD1	25	X	
13:36	MP32331-PS1	5	X	
13:41	JD41762-5	2	X	
13:46	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As	
13:51	MA52241-CRI3	1	X	
13:56	MA52241-CCV3	1	X	
14:01	MA52241-CCB4	1	X	
14:09	MA52241-ICSA2	1	X	
14:15	MA52241-ICSAB2	1	X	
14:20	ZZZZZZ	1		
14:25	MP32280-S1	2	X	
14:30	MP32280-S2	2	X	
14:35	JD42834-2	2	X	(a)
14:40	MP32280-SD1	10	X	
14:45	ZZZZZZ	2		
14:50	ZZZZZZ	1		
14:55	ZZZZZZ	1		
15:00	MA52241-CCV4	1	X	
15:05	MA52241-CCB5	1	X	
15:10	ZZZZZZ	2		
15:15	ZZZZZZ	5		
15:20	ZZZZZZ	2		
15:25	ZZZZZZ	2		
15:30	ZZZZZZ	5		
15:35	ZZZZZZ	1		
15:40	ZZZZZZ	5		
15:45	ZZZZZZ	1		
15:50	ZZZZZZ	2		
15:55	ZZZZZZ	5		
16:00	MA52241-CCV5	1	X	
16:05	MA52241-CCB6	1	X	
16:10	ZZZZZZ	5		
16:15	ZZZZZZ	5		
16:20	ZZZZZZ	1		
16:25	ZZZZZZ	1		
16:30	ZZZZZZ	1		
16:35	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As	
16:40	ZZZZZZ	1		
16:44	ZZZZZZ	1		
16:49	MA52241-CCV6	1	X	
16:54	MA52241-CCB7	1	X	
16:59	MP32289-MB1	1		
17:04	MP32289-B1	1		
17:09	MP32289-S1	1		
17:14	MP32289-S2	1		
17:19	JD42970-6	1		(a)
17:23	MP32289-SD1	5		
17:28	MP32289-S3	1		
17:33	MP32289-S4	1		
17:38	JD42970-6F	1		(a)
17:43	MP32289-SD2	5		
17:48	MA52241-CCV7	1	X	
17:53	MA52241-CCB8	1	X	
17:58	ZZZZZZ	1		
18:03	ZZZZZZ	1		
18:08	ZZZZZZ	1		
18:13	ZZZZZZ	5		
18:18	ZZZZZZ	10		
18:23	ZZZZZZ	5		
18:28	ZZZZZZ	1		
18:33	ZZZZZZ	1		
18:38	MA52241-CCV8	1	X	
18:43	MA52241-CCB9	1	X	
18:51	ZZZZZZ	1		
18:56	ZZZZZZ	1		
19:02	ZZZZZZ	1		
19:07	ZZZZZZ	1		
19:12	ZZZZZZ	1		
19:17	ZZZZZZ	1		
19:22	ZZZZZZ	1		
		Element:	As	

REPORTED ELEMENTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Element: Dilution	As

(a) Sample used for QC only; not part of login JD41762.

Element: As

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
10:40	MA52241-STD1	3978 R	234560 R	19546 R	9940 R
10:45	MA52241-STD2	3775	221050	19465	8922
10:50	MA52241-ICV1	3866	225720	19549	9193
10:59	MA52241-ICB1	4002	234380	19632	9966
11:08	MA52241-ICCV1	3893	227910	19863	9231
11:20	MA52241-CCB1	3999	236840	20094	9941
11:25	MA52241-CRI1	No results reported for the elements associated with this internal standard.			
11:30	MA52241-CRID1	4030	237590	20229	9963
11:35	MA52241-ICSA1	3650	209430	19623	8352
11:40	MA52241-ICSAB1	3638	208180	19542	8351
11:45	MA52241-HSTD1	3931	232250	20007	9804
11:51	MA52241-HSTD2	3703	213400	19609	8411
11:56	ZZZZZZ	4020	235890	20345	10144
12:01	ZZZZZZ	4016	237560	20421	10141
12:06	ZZZZZZ	4084	238810	20494	10140
12:11	MA52241-CCV1	3913	228920	20137	9238
12:16	MA52241-CCB2	4026	234660	20197	9993
12:21	MA52241-CRI2	3995	234130	20159	9840
12:26	MP32331-MB1	4039	238770	20421	10024
12:31	MP32331-B1	3953	231590	20439	9450
12:36	MP32331-S1	4020	230440	21315	9358
12:41	MP32331-S2	4048	233960	21196	9417
12:46	JD42270-3	4119	236550	21308	9745
12:51	MP32331-SD1	4074	236770	20678	9818
12:56	MP32331-PS1	4017	230880	21029	9502
13:01	JD41762-5	4178	240830	22116	9501
13:06	MA52241-CCV2	3943	229190	20313	9271
13:10	MA52241-CCB3	4057	238050	20526	10020
13:16	MP32331-S1	4063	233990	20856	9673
13:21	MP32331-S2	4064	231670	20862	9729
13:25	JD42270-3	4103	238580	20873	9868
13:31	MP32331-SD1	4056	236480	20448	9945
13:36	MP32331-PS1	4065	234450	20630	9741

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
13:41	JD41762-5	4097	235160	21252	9574
13:46	ZZZZZZ	4041	238700	20540	10000
13:51	MA52241-CRI3	4012	235310	20447	9844
13:56	MA52241-CCV3	3944	231490	20472	9271
14:01	MA52241-CCB4	4036	236200	20314	10003
14:09	MA52241-ICSA2	3669	211330	19891	8349
14:15	MA52241-ICSAB2	3652	210540	19931	8344
14:20	ZZZZZZ	4053	238920	20575	10052
14:25	MP32280-S1	3963	228920	20836	9090
14:30	MP32280-S2	3990	230750	20868	9240
14:35	JD42834-2	3979	232410	20706	9321
14:40	MP32280-SD1	3970	235960	20128	9678
14:45	ZZZZZZ	4084	234890	20634	9693
14:50	ZZZZZZ	4170	241830	22057	9348
14:55	ZZZZZZ	4182	242100	22129	9266
15:00	MA52241-CCV4	3899	229000	20087	9265
15:05	MA52241-CCB5	3971	236440	20060	9935
15:10	ZZZZZZ	3980	236450	20398	9525
15:15	ZZZZZZ	3972	233280	20051	9629
15:20	ZZZZZZ	3990	233630	20373	9519
15:25	ZZZZZZ	4001	234410	20613	9528
15:30	ZZZZZZ	3956	233600	20103	9636
15:35	ZZZZZZ	3961	236190	19978	9969
15:40	ZZZZZZ	3949	234210	19897	9683
15:45	ZZZZZZ	3955	237080	19992	10000
15:50	ZZZZZZ	3829	224260	20187	8746
15:55	ZZZZZZ	3840	226320	19853	9006
16:00	MA52241-CCV5	3849	227280	19530	9248
16:05	MA52241-CCB6	3959	235420	19575	9971
16:10	ZZZZZZ	3926	232920	19631	9553
16:15	ZZZZZZ	3855	227650	19487	9378
16:20	ZZZZZZ	3834	226560	19492	9241
16:25	ZZZZZZ	3816	225500	19558	9194

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
16:30	ZZZZZZ	3788	225660	19534	9264
16:35	ZZZZZZ	3766	222920	19354	9037
16:40	ZZZZZZ	3957	237600	19626	10029
16:44	ZZZZZZ	3786	225140	19393	9229
16:49	MA52241-CCV6	3858	227260	19582	9295
16:54	MA52241-CCB7	3953	233730	19484	10002
16:59	MP32289-MB1	3953	237560	19802	10039
17:04	MP32289-B1	3879	230080	19870	9494
17:09	MP32289-S1	3806	224230	19477	9077
17:14	MP32289-S2	3794	223600	19627	9063
17:19	JD42970-6	3799	224130	19414	9233
17:23	MP32289-SD1	3883	230240	19420	9723
17:28	MP32289-S3	3790	223390	19437	9077
17:33	MP32289-S4	3785	224210	19562	9050
17:38	JD42970-6F	3807	224750	19410	9278
17:43	MP32289-SD2	3870	230570	19493	9749
17:48	MA52241-CCV7	3820	227560	19357	9342
17:53	MA52241-CCB8	3914	234860	19271	10017
17:58	ZZZZZZ	3794	225390	19856	8853
18:03	ZZZZZZ	3681	213840	19434	8457
18:08	ZZZZZZ	3665	215120	19255	8710
18:13	ZZZZZZ	3912	232960	19812	9620
18:18	ZZZZZZ	3894	230500	19717	9515
18:23	ZZZZZZ	3902	229330	19534	9569
18:28	ZZZZZZ	3978	237880	19693	10100
18:33	ZZZZZZ	3989	237970	19743	10109
18:38	MA52241-CCV8	3892	228900	19781	9359
18:43	MA52241-CCB9	3992	235560	19776	10072
18:51	ZZZZZZ	3972	236730	19718	10013
18:56	ZZZZZZ	3990	234410	19838	10029
19:02	ZZZZZZ	3718	219650	19379	8942
19:07	ZZZZZZ	3996	236630	19837	10092
19:12	ZZZZZZ	3743	219210	19307	8911

INTERNAL STANDARD SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
Analyst: ND Run ID: MA52241
Parameters: As

Time	Sample Description	Istd#1	Istd#2	Istd#3	Istd#4
19:17	ZZZZZZ	4017	237400	19860	10064
19:22	ZZZZZZ	3991	236010	19981	10062

R = Reference for ISTD limits. ! = Outside limits.

LEGEND:

Istd#	Parameter	Limits
Istd#1	Yttrium (2243)	70-130 %
Istd#2	Yttrium (3600)	70-130 %
Istd#3	Yttrium (3710)	70-130 %
Istd#4	Indium	70-130 %

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time: / Sample ID:			10:59 ICB1		11:20 CCB1		12:16 CCB2		13:10 CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Aluminum	200	27	anr							
Antimony	6.0	2.2	anr							
Arsenic	3.0	1.3	0.600	<3.0	0.600	<3.0	-0.400	<3.0	0.900	<3.0
Barium	200	1	anr							
Beryllium	1.0	.2	anr							
Bismuth	20	2.1								
Boron	100	1								
Cadmium	3.0	.2	anr							
Calcium	5000	7.7	anr							
Cerium	100									
Chromium	10	.5	anr							
Cobalt	50	.4	anr							
Copper	10	6.8	anr							
Iron	100	15	anr							
Lead	3.0	1.6	anr							
Lithium	50	3.7								
Magnesium	5000	54	anr							
Manganese	15	.1	anr							
Molybdenum	20	.5								
Nickel	10	.3	anr							
Phosphorus	50	1.8								
Potassium	10000	77	anr							
Selenium	10	2	anr							
Silicon	200	1.3								
Silver	10	.9	anr							
Sodium	10000	23	anr							
Strontium	10	.4								
Sulfur	50	4.1								
Thallium	10	1.6	anr							
Tin	10	.9								
Titanium	10	.9								
Tungsten	50	2								
Vanadium	50	.8	anr							

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time:			10:59		11:20		12:16		13:10	
Sample ID:			ICB1		CCB1		CCB2		CCB3	
Metal	RL	IDL	raw	final	raw	final	raw	final	raw	final
Zinc	20	.2	anr							
Zirconium	10	.5								

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time:			14:01		15:05		
Sample ID:			CCB4		CCB5		
Metal	RL	IDL	raw	final	raw	final	
Aluminum	200	27	anr				
Antimony	6.0	2.2	anr				
Arsenic	3.0	1.3	-0.100	<3.0	-0.400	<3.0	
Barium	200	1	anr				
Beryllium	1.0	.2	anr				
Bismuth	20	2.1					
Boron	100	1					
Cadmium	3.0	.2	anr				
Calcium	5000	7.7	anr				
Cerium	100						
Chromium	10	.5	anr				
Cobalt	50	.4	anr				
Copper	10	6.8	anr				
Iron	100	15	anr				
Lead	3.0	1.6	anr				
Lithium	50	3.7					
Magnesium	5000	54	anr				
Manganese	15	.1	anr				
Molybdenum	20	.5					
Nickel	10	.3	anr				
Phosphorus	50	1.8					
Potassium	10000	77	anr				
Selenium	10	2	anr				
Silicon	200	1.3					
Silver	10	.9	anr				
Sodium	10000	23	anr				
Strontium	10	.4					
Sulfur	50	4.1					
Thallium	10	1.6	anr				
Tin	10	.9					
Titanium	10	.9					
Tungsten	50	2					
Vanadium	50	.8	anr				

BLANK RESULTS SUMMARY
Part 1 - Initial and Continuing Calibration Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: result < RL Run ID: MA52241 Units: ug/l

Time:			14:01		15:05	
Sample ID:			CCB4		CCB5	
Metal	RL	IDL	raw	final	raw	final
Zinc	20	.2	anr			
Zirconium	10	.5				

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52241 Units: ug/l

Time:		11:08	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Aluminum	anr		
Antimony	anr		
Arsenic	2000	1940	97.0
Barium	anr		
Beryllium	anr		
Bismuth			
Boron			
Cadmium	anr		
Calcium	anr		
Cerium			
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Lithium			
Magnesium	anr		
Manganese	anr		
Molybdenum			
Nickel	anr		
Phosphorus			
Potassium	anr		
Selenium	anr		
Silicon			
Silver	anr		
Sodium	anr		
Strontium			
Sulfur			
Thallium	anr		
Tin			
Titanium			
Tungsten			
Vanadium	anr		

CALIBRATION CHECK STANDARDS SUMMARY
Initial Continuing Calibration Check

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: to % Recovery Run ID: MA52241 Units: ug/l

Time:		11:08	
Sample ID:	ICCV	ICCV1	
Metal	True	Results	% Rec
Zinc	anr		
Zirconium			

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		10:50			12:11			13:06	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Aluminum	anr								
Antimony	anr								
Arsenic	2000	1940	97.0	2000	2000	100.0	2000	2000	100.0
Barium	anr								
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	anr								
Cerium									
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	anr								
Manganese	anr								
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium	anr								
Selenium	anr								
Silicon									
Silver	anr								
Sodium	anr								
Strontium									
Sulfur									
Thallium	anr								
Tin									
Titanium									
Tungsten									
Vanadium	anr								

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		10:50			12:11			13:06	
Sample ID:	ICV	ICV1		CCV	CCV1		CCV	CCV2	
Metal	True	Results	% Rec	True	Results	% Rec	True	Results	% Rec
Zinc	anr								
Zirconium									

(*) Outside of QC limits
(anr) Analyte not requested

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		13:56			15:00	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum	anr					
Antimony	anr					
Arsenic	2000	2000	100.0	2000	2010	100.5
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

CALIBRATION CHECK STANDARDS SUMMARY
Initial and Continuing Calibration Checks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 95 to 105 % Recovery Run ID: MA52241 Units: ug/l

Time:		13:56			15:00	
Sample ID:	CCV	CCV3		CCV	CCV4	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52241 Units: ug/l

Time:		11:45			11:51	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Aluminum						
Antimony	anr					
Arsenic	8000	7480	93.5			
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

HIGH STANDARD CHECK SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 90 to 110 % Recovery Run ID: MA52241 Units: ug/l

Time:		11:45			11:51	
Sample ID:	HSTD	HSTD1		HSTD	HSTD2	
Metal	True	Results	% Rec	True	Results	% Rec
Zinc	anr					
Zirconium						

(*) Outside of QC limits
(anr) Analyte not requested

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52241 Units: ug/l

Time:				11:30		12:21		13:51	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRI3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	200	500	100	anr					
Antimony	6.0	20	3.0						
Arsenic	8.0	20	3.0	2.90	96.7	9.10	113.8	8.00	100.0
Barium	200		4.0	anr					
Beryllium	2.0		1.0	anr					
Bismuth	20								
Boron	100		10						
Cadmium	3.0		1.0	anr					
Calcium	5000	2000	1000	anr					
Cerium									
Chromium	10		2.0	anr					
Cobalt	50		3.0	anr					
Copper	10		2.0						
Iron	100	500							
Lead	3.0	20	2.5						
Lithium	50								
Magnesium	5000	2000	100	anr					
Manganese	15		3.0	anr					
Molybdenum	20								
Nickel	10		4.0	anr					
Phosphorus	50								
Potassium	5000		2000	anr					
Selenium	10	20	5.0	anr					
Silicon	200								
Silver	5.0		2.0						
Sodium	5000		1000	anr					
Strontium	10								
Sulfur	50								
Thallium	10		2.0						
Tin	10								
Titanium	10								
Tungsten	50								
Vanadium	50		2.0	anr					

LOW CALIBRATION CHECK STANDARDS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: CRI 80-120% CRIA 80-120% Run ID: MA52241 Units: ug/l

Time:				11:30		12:21		13:51	
Sample ID:	CRI	CRIA	CRID	CRID1		CRI2		CRI3	
Metal	True	True	True	Results	% Rec	Results	% Rec	Results	% Rec
Zinc	20		10	anr					
Zirconium	10								

(*) Outside of QC limits
(anr) Analyte not requested

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52241 Units: ug/l

Time:			11:35		11:40		14:09		14:15	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Aluminum	500000	500000	491000	98.2	505000	101.0	492000	98.4	493000	98.6
Antimony		1000	-3.90		1010	101.0	-4.50		994	99.4
Arsenic		1000	1.00		1010	101.0	1.30		990	99.0
Barium		500	-44.6		446	89.2	-45.0		429	85.8
Beryllium		500	0.200		476	95.2	0.300		463	92.6
Bismuth		500	0.00		483	96.6	2.40		468	93.6
Boron		500	-4.40		475	95.0	-5.10		466	93.2
Cadmium		1000	1.70		996	99.6	1.80		978	97.8
Calcium	400000	400000	377000	94.3	386000	96.5	368000	92.0	376000	94.0
Cerium			40.2		528*		39.5		515*	
Chromium		500	2.00		474	94.8	2.10		462	92.4
Cobalt		500	2.00		468	93.6	2.30		461	92.2
Copper		500	0.900		500	100.0	1.30		492	98.4
Iron	200000	200000	193000	96.5	200000	100.0	189000	94.5	199000	99.5
Lead		1000	0.400		939	93.9	-0.100		920	92.0
Lithium		500	-5.70		538	107.6	-5.70		529	105.8
Magnesium	500000	500000	496000	99.2	495000	99.0	485000	97.0	477000	95.4
Manganese		500	1.60		502	100.4	1.60		490	98.0
Molybdenum		500	-2.10		467	93.4	-1.70		459	91.8
Nickel		1000	4.40		930	93.0	4.40		911	91.1
Phosphorus		500	11.0		479	95.8	13.0		471	94.2
Potassium			-36.4		-9.50		-177		-156	
Selenium		1000	3.90		929	92.9	6.00		912	91.2
Silicon		500	-16.8		505	101.0	-16.8		499	99.8
Silver		1000	3.10		1100	110.0	4.10		1070	107.0
Sodium			-92.0		-101		-112		-98.9	
Strontium		500	1.30		491	98.2	1.40		477	95.4
Sulfur		500	-27.9		457	91.4	-28.8		446	89.2
Thallium		1000	-5.40		932	93.2	-4.40		915	91.5
Tin		500	-5.30		457	91.4	-4.10		449	89.8
Titanium		500	-0.900		484	96.8	-1.00		473	94.6
Tungsten		500	1.10		485	97.0	6.30		484	96.8
Vanadium		500	-4.60		469	93.8	-4.70		465	93.0

INTERFERING ELEMENT CHECK STANDARDS SUMMARY
Part 1 - ICSA and ICSAB Standards

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

File ID: SD041522M2.ICP Date Analyzed: 04/15/22 Methods: EPA 200.7, SW846 6010D
QC Limits: 80 to 120 % Recovery Run ID: MA52241 Units: ug/l

Time:			11:35		11:40		14:09		14:15	
Sample ID:	ICSA	ICSAB	ICSA1		ICSAB1		ICSA2		ICSAB2	
Metal	True	True	Results	% Rec	Results	% Rec	Results	% Rec	Results	% Rec
Zinc		1000	1.90		920	92.0	2.20		891	89.1
Zirconium		500	3.00		478	95.6	3.20		451	90.2

(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.6	8		
Antimony	2.0	.25	.41		
Arsenic	2.0	.2	.28	0.030	<2.0
Barium	20	.04	1.9		
Beryllium	0.20	.0099	.079		
Bismuth	2.0	.36	.51		
Boron	9.9	.19	3.7		
Cadmium	0.50	.04	.069		
Calcium	500	.55	21		
Chromium	0.99	.05	.37		
Cobalt	5.0	.05	.28		
Copper	2.5	.099	.83		
Iron	50	1.1	19		
Lead	2.0	.12	.41		
Lithium	5.0	.23	.91		
Magnesium	500	6.4	14		
Manganese	1.5	.02	.41		
Molybdenum	2.0	.04	.32		
Nickel	4.0	.03	.35		
Phosphorus	20	.41	3.2		
Potassium	990	5.5	31		
Selenium	2.0	.35	.64		
Silicon	20	.16	11		
Silver	0.50	.11	.17		
Sodium	990	1.1	77		
Strontium	5.0	.0099	.18		
Sulfur	9.9	.44	3.8		
Thallium	0.99	.25	.57		
Tin	20	.099	3.8		
Titanium	0.99	.04	.34		
Tungsten	5.0	.28	1.7		
Vanadium	5.0	.059	.19		
Zinc	5.0	.0099	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.04	.53		

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	JD41762-4 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	92.3	471	398	95.2	75-125
Barium	anr				
Beryllium					
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper					
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	anr				
Silicon					
Silver	anr				
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					
Zirconium					

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	JD41762-4 Original MS	Spikelot MPSPK2	% Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	JD41762-4 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	92.3	459	398	92.2	2.6	20
Barium	anr					
Beryllium						
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	anr					
Silicon						
Silver	anr					
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						
Zirconium						

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 03/24/22

	JD41762-4	Spikelot		MSD	QC
Metal	Original MSD	MPSPK2	% Rec	RPD	Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	188	202	93.1	80-120
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				
Zirconium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/24/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/24/22

Metal	JD41762-4 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	473	488	3.1	0-10
Barium	anr			
Beryllium				
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31902
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/24/22

Metal	JD41762-4 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP31902: JD41762-1, JD41762-3, JD41762-4, JD41762-6, JD41762-7, JD41762-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:				03/26/22		03/26/22		
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	
Aluminum	200	17	150					
Antimony	6.0	1.7	4.7					
Arsenic	3.0	2.1	2.8	0.90	<3.0	0.30	<3.0	
Barium	200	.8	13					
Beryllium	1.0	.3	.5					
Bismuth	20	2.3	8.6					
Boron	100	2.3	10					
Cadmium	3.0	.3	1					
Calcium	5000	6.6	99					
Cerium	100							
Chromium	10	.3	2					
Cobalt	50	.4	2.6					
Copper	10	.8	5.9					
Iron	100	5.3	32					
Lead	3.0	1.1	1.8					
Lithium	50	4.8	7.3					
Magnesium	5000	32	140					
Manganese	15	.1	1.4					
Molybdenum	20	.6	3.6					
Nickel	10	.4	1.7					
Phosphorus	50	1.2	18					
Potassium	10000	77	200					
Selenium	10	3.2	4.9					
Silicon	200	1.7	32					
Silver	10	1	6.1					
Sodium	10000	34	570					
Strontium	10	.3	2.7					
Sulfur	50	3	45					
Thallium	10	1.8	1.8					
Tin	10	.8	3.7					
Titanium	10	.5	2.5					
Tungsten	50	2.6	40					
Vanadium	50	.6	1.8					

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:				03/26/22		03/26/22	
Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Zinc	20	.1	6.9				
Zirconium	10	.3	4.1				

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	7.7	1790	2000	89.1	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Cerium					
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	7.7	1830	2000	91.1	2.2	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:			03/26/22				03/26/22	
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr							
Antimony	anr							
Arsenic	1800	2000	90.0	80-120	1750	2000	87.5	80-120
Barium	anr							
Beryllium	anr							
Bismuth								
Boron								
Cadmium	anr							
Calcium	anr							
Cerium								
Chromium	anr							
Cobalt	anr							
Copper	anr							
Iron	anr							
Lead	anr							
Lithium								
Magnesium	anr							
Manganese	anr							
Molybdenum								
Nickel	anr							
Phosphorus								
Potassium	anr							
Selenium	anr							
Silicon								
Silver	anr							
Sodium	anr							
Strontium								
Sulfur								
Thallium	anr							
Tin								
Titanium								
Tungsten								
Vanadium	anr							

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:		03/26/22				03/26/22		
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr							
Zirconium								

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	7.70	0.00	100.0(a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Cerium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31934
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/26/22

Metal	JD41762-16F Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP31934: JD41762-14F, JD41762-15F, JD41762-16F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.7	8.1		
Antimony	2.0	.17	.41		
Arsenic	2.0	.21	.28	0.050	<2.0
Barium	20	.08	1.9		
Beryllium	0.20	.03	.08		
Bismuth	2.0	.23	.52		
Boron	10	.23	3.7		
Cadmium	0.50	.03	.07		
Calcium	500	.66	21		
Chromium	1.0	.03	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.08	.84		
Iron	50	.53	19		
Lead	2.0	.11	.41		
Lithium	5.0	.48	.92		
Magnesium	500	3.2	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.04	.35		
Phosphorus	20	.12	3.3		
Potassium	1000	7.7	32		
Selenium	2.0	.32	.65		
Silicon	20	.17	11		
Silver	0.50	.1	.17		
Sodium	1000	3.4	78		
Strontium	5.0	.03	.18		
Sulfur	10	.3	3.9		
Thallium	1.0	.18	.58		
Tin	20	.08	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.26	1.8		
Vanadium	5.0	.06	.19		
Zinc	5.0	.01	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.03	.54		

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	1.8	195	217	88.9	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	1.8	197	217	89.8	1.0	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	JD41893-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	189	204	92.6	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 03/28/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	JD41893-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	16.5	20.1	21.8 (a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

Not SDGs of interest, no eval

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	JD41893-1 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	Sample ml	Final ml	JD41893-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31947
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/28/22

Metal	Sample ml	Final ml	JD41893-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP31947: JD41762-26, JD41762-27, JD41762-28, JD41762-30, JD41762-32, JD41762-39

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	150		
Antimony	6.0	2.2	4.7		
Arsenic	3.0	1.3	2.8	-1.4	<3.0
Barium	200	.4	13		
Beryllium	1.0	.1	.5		
Bismuth	20	2.1	8.6		
Boron	100	1	10		
Cadmium	3.0	.2	1		
Calcium	5000	5.6	99		
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.4	2.6		
Copper	10	1	5.9		
Iron	100	11	32		
Lead	3.0	1.2	1.8		
Lithium	50	2.3	7.3		
Magnesium	5000	54	140		
Manganese	15	.1	1.4		
Molybdenum	20	.4	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.8	18		
Potassium	10000	55	200		
Selenium	10	2	4.9		
Silicon	200	1.3	32		
Silver	10	.9	6.1		
Sodium	10000	11	570		
Strontium	10	.1	2.7		
Sulfur	50	4.1	45		
Thallium	10	1.6	1.8		
Tin	10	.9	3.7		
Titanium	10	.4	2.5		
Tungsten	50	2	40		
Vanadium	50	.6	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9		
Zirconium	10	.4	4.1		

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	276	2140	2000	93.2	75-125
Barium					
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium					
Cerium					
Chromium	anr				
Cobalt					
Copper					
Iron					
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	276	2140	2000	93.2	0.0	20
Barium						
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium						
Cerium						
Chromium	anr					
Cobalt						
Copper						
Iron						
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	2030	2000	101.5	80-120
Barium				
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Cerium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	276	277	0.4	0-10
Barium				
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium				
Cerium				
Chromium	anr			
Cobalt				
Copper				
Iron				
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP31989
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/30/22

Metal	JD41762-48F Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP31989: JD41762-48F, JD41762-51F, JD41762-56F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	9.2	150		
Antimony	6.0	2.2	4.7		
Arsenic	3.0	1.3	2.8	-0.60	<3.0
Barium	200	.2	13		
Beryllium	1.0	.2	.5		
Bismuth	20	2.1	8.6		
Boron	100	1	10		
Cadmium	3.0	.2	1		
Calcium	5000	7.7	99		
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.4	2.6		
Copper	10	.7	5.9		
Iron	100	3.3	32		
Lead	3.0	2	1.8		
Lithium	50	1.5	7.3		
Magnesium	5000	25	140		
Manganese	15	.1	1.4		
Molybdenum	20	.5	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.8	18		
Potassium	10000	35	200		
Selenium	10	2	4.9		
Silicon	200	1.3	32		
Silver	10	.6	6.1		
Sodium	10000	14	570		
Strontium	10	.1	2.7		
Sulfur	50	3.7	45		
Thallium	10	1.6	1.8		
Tin	10	.9	3.7		
Titanium	10	.8	2.5		
Tungsten	50	1.3	40		
Vanadium	50	.5	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.2	6.9		
Zirconium	10	.5	4.1		

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	0.0	1900	2000	94.9	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Cerium					
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	0.0	1830	2000	91.4	3.8	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Cerium						
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc	anr				
Zirconium					

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	1910	2000	95.5	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Cerium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc	anr			
Zirconium				

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	2.10	0.00	100.0(a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Cerium				
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32014
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 03/31/22

Metal	JD41762-17F Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP32014: JD41762-81, JD41762-17F, JD41762-23F, JD41762-25F, JD41762-47F, JD41762-49F, JD41762-59F, JD41762-87F, JD41762-88F, JD41762-89F, JD41762-90F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:				04/08/22		04/08/22		
Metal	RL	IDL	MDL	MB raw	final	MB raw	final	
Aluminum	200	9.2	150					
Antimony	6.0	2.8	4.7					
Arsenic	3.0	2.6	2.8	-0.70	<3.0	-0.70	<3.0	
Barium	200	.2	13					
Beryllium	1.0	.2	.5					
Bismuth	20	2.5	8.6					
Boron	100	1.8	10					
Cadmium	3.0	.4	1					
Calcium	5000	13	99					
Cerium	100							
Chromium	10	.7	2					
Cobalt	50	.6	2.6					
Copper	10	.7	5.9					
Iron	100	3.3	32					
Lead	3.0	2	1.8					
Lithium	50	1.5	7.3					
Magnesium	5000	25	140					
Manganese	15	.1	1.4					
Molybdenum	20	.6	3.6					
Nickel	10	.8	1.7					
Phosphorus	50	7	18					
Potassium	10000	35	200					
Selenium	10	3.6	4.9					
Silicon	200	2.2	32					
Silver	10	.6	6.1					
Sodium	10000	14	570					
Strontium	10	.1	2.7					
Sulfur	50	3.7	45					
Thallium	10	5.2	1.8					
Tin	10	1.4	3.7					
Titanium	10	.8	2.5					
Tungsten	50	1.3	40					
Vanadium	50	.5	1.8					

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22 04/08/22

Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Zinc	20	.3	6.9				
Zirconium	10	.5	4.1				

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	19.6	2020	2000	100.0	75-125
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Cerium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium					
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					
Zinc					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	19.6	2070	2000	102.5	2.4	20
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium						
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:			04/08/22				04/08/22	
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic	2010	2000	100.5	80-120	1960	2000	98.0	80-120
Barium								
Beryllium								
Bismuth								
Boron								
Cadmium								
Calcium								
Cerium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Molybdenum								
Nickel								
Phosphorus								
Potassium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Thallium								
Tin								
Titanium								
Tungsten								
Vanadium								

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date:		04/08/22				04/08/22		
Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc								
Zirconium								

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	19.6	21.6	10.2 (a)	0-10
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Cerium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32191
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/08/22

Metal	JD41762-18F Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP32191: JD41762-13F, JD41762-18F, JD41762-19F, JD41762-20F, JD41762-21F, JD41762-22F, JD41762-24F, JD41762-50F, JD41762-53F, JD41762-55F, JD41762-57F, JD41762-58F, JD41762-84F, JD41762-85F, JD41762-86F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	16	150		
Antimony	6.0	2.5	4.7		
Arsenic	3.0	2	2.8	0.10	<3.0
Barium	200	.4	13		
Beryllium	1.0	.1	.5		
Bismuth	20	3.6	8.6		
Boron	100	1.9	10		
Cadmium	3.0	.4	1		
Calcium	5000	5.6	99		
Cerium	100				
Chromium	10	.5	2		
Cobalt	50	.5	2.6		
Copper	10	1	5.9		
Iron	100	11	32		
Lead	3.0	1.2	1.8		
Lithium	50	2.3	7.3		
Magnesium	5000	65	140		
Manganese	15	.2	1.4		
Molybdenum	20	.4	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	4.1	18		
Potassium	10000	55	200		
Selenium	10	3.5	4.9		
Silicon	200	1.6	32		
Silver	10	1.1	6.1		
Sodium	10000	11	570		
Strontium	10	.1	2.7		
Sulfur	50	4.4	45		
Thallium	10	2.5	1.8		
Tin	10	1	3.7		
Titanium	10	.4	2.5		
Tungsten	50	2.8	40		
Vanadium	50	.6	1.8		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	6.9		
Zirconium	10	.4	4.1		

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	Not SDGs of interest, no eval				
Antimony					
Arsenic	0.0	1920	2000	95.4	75-125
Barium					
Beryllium					
Bismuth					
Boron					
Cadmium					
Calcium					
Cerium					
Chromium					
Cobalt					
Copper					
Iron	anr				
Lead	anr				
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium					
Silicon					
Silver					
Sodium	anr				
Strontium					
Sulfur					
Thallium					
Tin					
Titanium					
Tungsten					
Vanadium					

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0	1900	2000	95.0	1.0	20
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Cerium						
Chromium						
Cobalt						
Copper						
Iron	anr					
Lead	anr					
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Sodium	anr					
Strontium						
Sulfur						
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						

Not SDGs of interest, no eval

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253 Methods: SW846 6010D
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zinc					
Zirconium					

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1920	2000	96.0	80-120
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Cerium				
Chromium				
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zinc				
Zirconium				

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Cerium				
Chromium				
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium	anr			
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

Not SDGs of interest, no eval

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32253
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/12/22

Metal	JD42841-1 Original SDL 1:5	%DIF	QC Limits
Zinc			
Zirconium			

Associated samples MP32253: JD41762-52F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.7	8.1		
Antimony	2.0	.17	.41		
Arsenic	2.0	.21	.28	-0.010	<2.0
Barium	20	.08	1.9		
Beryllium	0.20	.03	.08		
Bismuth	2.0	.23	.52		
Boron	10	.23	3.7		
Cadmium	0.50	.03	.07		
Calcium	500	.66	21		
Chromium	1.0	.03	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.08	.84		
Iron	50	.53	19		
Lead	2.0	.11	.41		
Lithium	5.0	.48	.92		
Magnesium	500	3.2	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.06	.32		
Nickel	4.0	.04	.35		
Phosphorus	20	.12	3.3		
Potassium	1000	7.7	32		
Selenium	2.0	.32	.65		
Silicon	20	.17	11		
Silver	0.50	.1	.17		
Sodium	1000	3.4	78		
Strontium	5.0	.03	.18		
Sulfur	10	.3	3.9		
Thallium	1.0	.18	.58		
Tin	20	.08	3.8		
Titanium	1.0	.05	.34		
Tungsten	5.0	.26	1.8		
Vanadium	5.0	.06	.19		
Zinc	5.0	.01	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.03	.54		

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	7.3	236	249	91.5	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

Not SDGs of interest, no eval

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	7.3	218	252	83.5	7.9	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

Not SDGs of interest, no eval

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/13/22

Metal	JD42834-2 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	170	200	85.0	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/13/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	JD42834-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	60.8	54.8	17.8 (a)	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

Not SDGs of interest, no eval

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	JD42834-2 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	Sample ml	Final ml	JD42834-2 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32280
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/13/22

Metal	Sample ml	Final ml	JD42834-2 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP32280: JD41762-33, JD41762-46

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.92	8.1		
Antimony	2.0	.22	.41		
Arsenic	2.0	.13	.28	0.080	<2.0
Barium	20	.02	1.9		
Beryllium	0.20	.02	.08		
Bismuth	2.0	.21	.52		
Boron	10	.1	3.7		
Cadmium	0.50	.02	.07		
Calcium	500	.77	21		
Chromium	1.0	.05	.37		
Cobalt	5.0	.04	.28		
Copper	2.5	.07	.84		
Iron	50	.33	19		
Lead	2.0	.16	.41		
Lithium	5.0	.15	.92		
Magnesium	500	2.5	14		
Manganese	1.5	.01	.41		
Molybdenum	2.0	.05	.32		
Nickel	4.0	.03	.35		
Phosphorus	20	.18	3.3		
Potassium	1000	3.5	32		
Selenium	2.0	.2	.65		
Silicon	20	.13	11		
Silver	0.50	.06	.17		
Sodium	1000	1.4	78		
Strontium	5.0	.01	.18		
Sulfur	10	.37	3.9		
Thallium	1.0	.16	.58		
Tin	20	.09	3.8		
Titanium	1.0	.08	.34		
Tungsten	5.0	.13	1.8		
Vanadium	5.0	.05	.19		
Zinc	5.0	.02	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	RL	IDL	MDL	MB raw	final
Zirconium	2.0	.05	.54		

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original	MS	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	17.3	282	260	102.0	75-125
Barium	anr				
Beryllium	anr				
Bismuth					
Boron					
Cadmium	anr				
Calcium	anr				
Chromium	anr				
Cobalt	anr				
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	anr				
Manganese	anr				
Molybdenum					
Nickel	anr				
Phosphorus					
Potassium	anr				
Selenium	anr				
Silicon					
Silver	anr				
Sodium	anr				
Strontium					
Sulfur					
Thallium	anr				
Tin					
Titanium					
Tungsten					
Vanadium	anr				
Zinc	anr				

Not SDGs of interest, no eval

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original MS	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original	MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	17.3	208	260	73.5N(a)	30.2 (b)	20
Barium	anr					
Beryllium	anr					
Bismuth						
Boron						
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	anr					
Manganese	anr					
Molybdenum						
Nickel	anr					
Phosphorus						
Potassium	anr					
Selenium	anr					
Silicon						
Silver	anr					
Sodium	anr					
Strontium						
Sulfur						
Thallium	anr					
Tin						
Titanium						
Tungsten						
Vanadium	anr					
Zinc	anr					

Not SDGs of interest, no eval

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331 Methods: SW846 6010D
Matrix Type: SOLID Units: mg/kg

Prep Date: 04/14/22

Metal	JD42270-3 Original MSD	Spikelot MPSPK2	% Rec	MSD RPD	QC Limit
Zirconium					

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
(b) High rpd due to possible sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	193	200	96.5	80-120
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: mg/kg

Prep Date: 04/14/22

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Zirconium				

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	JD42270-3 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	135	135	0.1	0-10
Barium	anr			
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	anr			
Manganese	anr			
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium	anr			
Selenium	anr			
Silicon				
Silver	anr			
Sodium	anr			
Strontium				
Sulfur				
Thallium	anr			
Tin				
Titanium				
Tungsten				
Vanadium	anr			
Zinc	anr			

Not SDGs of interest, no eval

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	JD42270-3 Original SDL 1:5	%DIF	QC Limits
Zirconium			

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	Sample ml	Final ml	JD42270-3 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum	Not SDGs of interest, no eval									
Antimony										
Arsenic	19.25	20	134.7	129.6488	2280	0.2	200	2000	107.5	80-120
Barium										
Beryllium										
Bismuth										
Boron										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Phosphorus										
Potassium										
Selenium										
Silicon										
Silver										
Sodium										
Strontium										
Sulfur										
Thallium										
Tin										
Titanium										
Tungsten										
Vanadium										
Zinc										

POST DIGESTATE SPIKE SUMMARY

Login Number: JD41762
Account: SUNOCOSS - Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

QC Batch ID: MP32331
Matrix Type: SOLID

Methods: SW846 6010D
Units: ug/l

Prep Date: 04/14/22

Metal	Sample ml	Final ml	JD42270-3 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Zirconium										

Associated samples MP32331: JD41762-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Sample: JD41762-1 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-25_20220322

Wet Weight (Total)	30.5	g
Tare Weight	24.4	g
Dry Weight (Total)	27.04	g
Solids, Percent	43.3	%

Sample: JD41762-3 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-10_20220322

Wet Weight (Total)	27.24	g
Tare Weight	21.57	g
Dry Weight (Total)	24.58	g
Solids, Percent	53.1	%

Sample: JD41762-4 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-07_20220322

Wet Weight (Total)	32.98	g
Tare Weight	26.63	g
Dry Weight (Total)	29.89	g
Solids, Percent	51.3	%

Sample: JD41762-5 **Analyzed:** 12-APR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-05_20220322

Wet Weight (Total)	24.43	g
Tare Weight	18.04	g
Dry Weight (Total)	21.07	g
Solids, Percent	47.4	%

Sample: JD41762-6 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-07_FD_20220322

Wet Weight (Total)	25.66	g
Tare Weight	19.79	g
Dry Weight (Total)	22.93	g
Solids, Percent	53.5	%

Sample: JD41762-7 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-04_20220322

Wet Weight (Total)	27.32	g
Tare Weight	21.8	g
Dry Weight (Total)	24.6	g
Solids, Percent	50.7	%

Percent Solids Raw Data Summary

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Sample: JD41762-8 **Analyzed:** 24-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-01_20220322

Wet Weight (Total)	28.94	g
Tare Weight	22.94	g
Dry Weight (Total)	25.85	g
Solids, Percent	48.5	%

Sample: JD41762-26 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-13_20220323

Wet Weight (Total)	30.23	g
Tare Weight	22.09	g
Dry Weight (Total)	25.75	g
Solids, Percent	45	%

Sample: JD41762-27 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-16_20220323

Wet Weight (Total)	34.35	g
Tare Weight	26.04	g
Dry Weight (Total)	30.78	g
Solids, Percent	57	%

Sample: JD41762-28 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-28_20220322

Wet Weight (Total)	36.5	g
Tare Weight	29.24	g
Dry Weight (Total)	32.59	g
Solids, Percent	46.1	%

Sample: JD41762-29 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-12_20220323

Wet Weight (Total)	29.46	g
Tare Weight	23.18	g
Dry Weight (Total)	26.52	g
Solids, Percent	53.2	%

Sample: JD41762-30 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-03_20220323

Wet Weight (Total)	26.25	g
Tare Weight	18.07	g
Dry Weight (Total)	23.06	g
Solids, Percent	61	%

Percent Solids Raw Data Summary

Job Number: JD41762
Account: SUNOCOSS Sunoco/Evergreen
Project: SANHPAFW: Marcus Hook, PA

Sample: JD41762-31 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-11_20220323

Wet Weight (Total)	30.59	g
Tare Weight	23.02	g
Dry Weight (Total)	27.24	g
Solids, Percent	55.7	%

Sample: JD41762-32 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-19_20220323

Wet Weight (Total)	28.14	g
Tare Weight	20.12	g
Dry Weight (Total)	23.37	g
Solids, Percent	40.5	%

Sample: JD41762-33 **Analyzed:** 12-APR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-14_20220323

Wet Weight (Total)	27.38	g
Tare Weight	20.49	g
Dry Weight (Total)	24.23	g
Solids, Percent	54.3	%

Sample: JD41762-39 **Analyzed:** 27-MAR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-22_20220323

Wet Weight (Total)	30.4	g
Tare Weight	23.47	g
Dry Weight (Total)	26.93	g
Solids, Percent	49.9	%

Sample: JD41762-46 **Analyzed:** 12-APR-22 by BG **Method:** SM2540 G 18TH ED MOD
ClientID: AOI7-SED-17_20220324

Wet Weight (Total)	25.14	g
Tare Weight	17.97	g
Dry Weight (Total)	22.04	g
Solids, Percent	56.8	%

ATTACHMENT G

USACE 2018 WATER QUALITY PARAMETERS TABLE

Appendix B

Water Quality Data

Location	Conductivity (uS)	ORP (mV)	pH (s.u.)	Temperature (°C)
1	No Sample Collected at this location.			
2	1940	-120	7.2	17.8
River	238	218	5.34	17
3	1560	-120	7.11	16.5
River	300	110	6.1	18.3
4	1310	-165	7.01	15.6
River	265	210	6.25	16.2
5	1001	-227	6.21	19.7
River	217	68	7.02	19.3
6	683	-215	6.72	21
River	215	68	7.17	19.7
7	1366	-190	6.7	22.4
River	227	48	7.3	20.1
8	1555	-136	7.06	23
River	241	-7	7.41	20.4
9	3480	-260	6.8	20.3
River	281	3	7.3	19.9