NPDES Pretreatment Compliance Sampling Inspection Report

CROWN Cork & Seal – Nichols Site

650 Berry Road
Nichols, New York 13812

40 CFR Parts 403 & 465.45
Industrial Wastewater Discharge Permit

Inspection Dates: April 12-13, 2023

Report Prepared by:

THUAN TRAN Digitally signed by THUAN TRAN
Date: 2023.05.30 16:25:14 -04'00'

Thuan Tran, Physical Scientist

Report Approved by:

Cocuzza, Phil Digitally signed by Cocuzza, Phil
Date: 2023.05.31 06:27:50 -04'00'

Phil Cocuzza, Chief
Monitoring Operations Section

1.0 OBJECTIVE

On April 12-13, 2023, the United States Environmental Protection Agency (USEPA) conducted a Pretreatment Compliance Sampling Inspection (CSI) at CROWN Cork & Seal USA, Inc. – Nichols Site. The objective of the Pretreatment CSI was to gather information necessary to determine if the facility is in compliance with the requirements and limitations of the Federal Categorical Standard of 40 CFR Part 465.45 for Coil Coating Point Source Category- Subpart D – Canmaking Subcategory of the Pretreatment Standards for New Sources, the Federal General Pretreatment Regulations for Existing and New Sources of Pollution in 40 CFR Part 403, and the Industrial Wastewater Discharge Permit that was issued by the Town of Nichols, and other related Federal Regulations. The Industrial Wastewater Discharge Permit became effective February 01, 2023 and will expire on January 31, 2024.

2.0 KEY PARTICIPANTS

Listed below are key inspection participants and contact information, grouped by organization.

U.S. Environmental Protection Agency
Thuan Tran, Lead Inspector
732-321-4455, email: tran.thuan@epa.gov
Robert Morrell, Geologist

CROWN Cork & Seal USA, Inc. – Nichols Site
Duy Tran, Environmental Engineer
215-698-5227, email: duy.tran@crowncork.com
Chris Wagner, Plant Manager – Nichol's Site
James Quinn, EHS Specialist Wastewater Treatment
Marcelo Sanchez, EHS Coordinator
John Horton, Certified Process Operator (CPO) Lead

3.0 FACILITY DESCRIPTION

3.1 General Information:

CROWN Holding, Inc., formerly CROWN Cork & Seal Company, makes metal beverage and food cans, metal aerosol containers, metals closures and specialty packing. CROWN Holding, Inc. has locations world-wide with their headquarter locating in Yardley, Pennsylvania. CROWN Cork & Seal – Nichols Site is located at 650 Berry Road, Nichols, New York (NY). The facility was constructed in 2016 and the 2-Piece Canmaking Manufacturing Operation started in 2017 mainly producing beverage cans. The manufacturing operation consisted of four (4) high-speed manufacturing process lines from fabrication to coating operations with two (2) additional lines added in 2020. The facility encompasses 5,000 square feet (ft^2) of workspace; 3,000 ft^2 of manufacturing space and 2,000 ft^2 of warehouse space. The Nichols Site employs approximately 263 people, operating twenty-four (24) hours per day with 2, 12-hour shifts, producing on average between 12-13 million cans per day. The cans are mainly shipped within Eastern United States and Canada. CROWN Cork & Seal – Nichols Site is categorized under Standard

Industrial Classification (SIC) 3411 – Metal Cans and the North American Industry Classification System (NAICS) 332431 – Metal Can Manufacturing.

3.2 Process Information

CROWN Cork & Seal – Nichols Site uses water from the Town of Nichols for sanitary and manufacturing operation. The drinking water is further treated through a water purification system consisting of carbon filter, water softener, and a deionized (DI) water column before it is used in the 7-Stage Washing Process of the manufacturing operation.

Raw material is received in aluminum coils through trucks and are either stored in the warehouse or moved directly to the manufacturing operation. The aluminum coil is mounted onto a coil unwinder. The coil unwinder feeds the coil through a water-based lubricant to coat the aluminum sheet. Once lubricated, the sheet continues to the cupping press where cups are produced. The cups are conveyed to the wall ironing machine where the cups are extruded and ironed out into cans. The cans are trimmed to level the top. At this point, the cans are covered with water-soluble oil as well as lubricant and cooling oil used by the wall ironing machine. The cans are assembled onto the conveyor belt and proceed to the 7-Stage Washing Process.

The cans are pre-rinsed to remove water-soluble oil, lubricant, and cooling oil. The cans continue to the 1st Stage which is a hot water bath to remove any residual lubricants. After the hot water bath, the cans move to the 2nd Stage for etching with hot solutions of hydrofluoric (HF) and sulfuric acid (H_2SO_4), followed by two ambient water rinse cycles in the 3rd Stage. The cans move along to the 4th Stage for a hot water treatment followed by an ambient water rinse bath in the 5th Stage. After the rinse, the cans proceed to the DI rinse water bath in the 6th Stage. In the 7th Stage, a mobility enhancer is added to the cans before going into the drying oven.

After the drying oven, the cans are conveyed by vacuum to the bottom rim coater. A varnish is deposited on the bottom of the cans and is cured with ultraviolet (UV) lamps. The cans continue to the printer. Ink is applied on the outside surface of the cans as they rotate against the common rotating rubber printing blanket. Once the ink is applied, the cans are coated with a varnish to protect the printed image. After printing and varnish application, the cans are cured in the printer oven. As the cans exit the printer oven, the inside of the cans are coated with a water-based lacquer. The sprayed cans are cured by the inside bake oven to prevent any contact between the beverage and the can's metal. Once the sprayed cans are cured, they are moved to the necker-flanger process. The neck diameter of the can is decreased by forcing it through a series of dies resulting in a smaller opening than the cylinder and curved shoulder. The necker portion of the machine turns the neck back to create a mating surface for the top of the cans. The cans continue to the light tester where a sensor detects any light that may leak through a defective can. Cans with "pin-holes" or dented flanges are rejected. The non-defective cans move to the inspection camera. The camera system inspects the inside and outside of the cans as well as the inside and outside of

the neck area. The final product is organized and stacked onto pallets stacked 21 layers for storage and/or distributed to the vendors.

Scrap aluminum sheets and rejected aluminum cans from the manufacturing operation are collected and recycled. The aluminum scraps are melted and reconstituted into rolls of aluminum sheet.

Process waste streams from the pre-rinsed water, rinsed water baths and drag-outs from the 3rd and 5th Stages of the 7-Stage Washer, backwash from the water purification system, and condensates from the boiler blowdowns are directed to the Equalization (EQ) tank. From the EQ tank, the process wastewater is pumped into the oil/water separator. Oil is removed and hauled off for disposal. The wastewater continues to the pH adjustment chamber in the 1st Reaction Tank. Sodium hydroxide (NaOH) is added for pH adjustment before continuing to the flocculation chamber. A polymer is added, and a mixer assists to increase coagulation. After the flocculation chamber, the wastewater is conveyed to the 1st Lamella settling tank for physical separation.

The 1st Lamella settling tank effluent is pumped into the pH adjustment chamber in the 2nd Reaction Tank. The pH is adjusted between 9.5 - 10 Standard Units (SU) with hydrogen peroxide (H_2O_2). After pH adjustment, the wastewater continues to the flocculation chamber. A polymer is added at the surface and a submerged mixer aids in solid formation. The wastewater continues into the 2nd Lamella settling tank for phase separation.

The 2nd Lamella settling tank effluent flows into the Neutralization Tank. Either sulfuric acid (H_2SO_4) or sodium hydroxide (NaOH) is added to adjust the pH range between 7.3 – 7.5 SU. In addition, sodium bicarbonate ($NaHCO_3$) is added to boost alkalinity. Once the pH has been adjusted, the wastewater flows into the 3rd Lamella settling tank. The effluent is pumped into the final effluent sampling tank. The pretreated effluent overflows the rectangular weir into the effluent trough. From the trough, the pretreated effluent converges into the discharge pipe. As the pretreated effluent discharges, the flow is recorded by a magmeter before reaching the Town of Nichols sewer collection system.

Sludge removal from the Lamella settling tanks to the sludge holding tank is based on visual inspection. The thickened sludge is pumped into a Plate-n-Frame Press. The sludge cake is disposed of at a landfill. The supernatant from the sludge holding tank is pumped to the oil/water separator. The filtrate from the Plate-n-Frame Press is directed to the EQ tank.

3.3 Facility Self-Monitoring Information

Four (4) individual, 1-gallon, grab samples are collected and stored in the sample refrigerator every hour by the plant operator. The 4 grab samples are composited in a 5-gallon bucket and is considered compliance sample as described in the "*CROWN Cork & Seal SOP COP 201 for Monthly Wastewater Sampling*". The grab-composite sample is distributed between the provided Microbac Laboratories, Inc. sample containers for BOD_5, TSS, COD, TDS,

Phosphorus, Ammonia, Fluoride, Total Nitrogen, Metals, O&G, Alkalinity and TTO (VOAs & NVOAs). The samples are transported to Microbac Laboratories, Inc. located on 2369 Elmira Street in Sayre, Pennsylvania. Samples such as pH, Temperature, and Total Residual Chlorine (TRC) are collected and analyzed on-site for process control.

4.0 EPA SAMPLING/INSPECTION ACTIVITIES

4.1 Sampling Activities

An ISCO automatic composite sampler was programmed to take 96 sample aliquots during the 24-hour sampling event from the monitoring location immediately after the final effluent sampling tank. The 24-hour composite sample was collected and analyzed for 5-Day Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), Ammonia (NH_3), Total Kjeldahl Nitrogen (TKN), Chemical Oxygen Demand (COD), Phosphorus, Total Dissolved Solids (TDS), Nitrate (NO_3), Nitrite (NO_2), Fluoride, Alkalinity ($CaCO_3$), Metals (Cr, Cu, Mn & Zn) and Mercury.

Grab-composite sample was collected at various time intervals for Non-Volatile Organic Analytes (NVOAs).

Four (4) sets of grab samples for Volatile Organic Analytes (VOAs) were collected at similar time intervals as the NVOAs sample. The VOAs grab samples were composited in the laboratory. In addition, a grab sample for oil & grease (O&G) was collected.

Furthermore, on-site grab samples were collected and analyzed for pH, Temperature, and Total Residual Chlorine (TRC).

All sample containers, preservation techniques and holding times were in accordance with USEPA requirements specified in 40 CFR Part 136. All samples were transported on ice to the USEPA Laboratory in Edison, New Jersey for analysis.

Flow monitoring data were obtained directly from the facility instrumentation.

Split samples were collected and given to the facility representative.

4.2 Inspection Activities

A Pretreatment Compliance Sampling Inspection (CSI) at CROWN Cork & Seal – Nichols Site was conducted on April 12-13, 2023. The inspectors met with Duy Tran; Environmental Engineer, Chris Wagner; Plant Manager – Nichols Site, James Quinn; Environmental & Health Safety (EHS) Specialist - Wastewater Treatment, Marcelo Sanchez; (EHS) Coordinator, and John Horton; Certified Process Operator (CPO) Lead. Inspector's credential was presented, and business card was provided during the opening conference. The facility representatives were explained that the inspection purpose with supporting on-site activities was to determine if CROWN Cork & Seal – Nichols Site is in compliance with

the Federal requirements and conditions of 40 CFR Parts 465.45 & 403, the Industrial Wastewater Discharge Permit and related Federal Regulations.

Supporting on-site activities consist of collecting samples of the pretreated effluent at the monitoring location, observing and evaluating the monitoring location, observing and evaluating CROWN Cork & Seal – Nichols Site Sampling Protocol, observing and evaluating the On-Site Pretreatment System, observing and evaluating where process waste streams are generated during the Canmaking Manufacturing Operation tour, observing and evaluating the flow monitoring equipment, reviewing and evaluating the on-site analytical procedures, reviewing and evaluating the chain-of-custody, contractor's sample containers, and sample preservation, and interviewing the facility's representatives.

The facility's representatives were briefed on the inspection activities throughout the inspection and during the closing conference. On-site sample results and concerns discovered during the inspection were communicated to the facility's representatives so that they understood their responsibilities to comply with the conditions and limitations set forth in the Industrial Wastewater Discharge Permit and related Federal Regulations.

5.0 ANALYTICAL RESULTS

Table 1: 40 CFR Part 465.46 Subpart D – Canmaking Subcategory
Inspection Dates: April 12-13, 2023

Parameter	EPA Result (mg/l)	EPA Calculated Result*	Maximum for any 1 day	Maximum for monthly average
		grams (lbs.)/million cans manufactured		
Chromium, Total	U (RL:0.005)	0.191	27.98 (0.0617)	11.45 (0.025)
Copper, Total	0.0186	0.711	120.84 (0.267)	63.60 (0.140)
Zinc, Total	0.054	2.064	92.86 (0.205)	38.80 (0.086)
Manganese, Total	0.351	13.42	3784.20 (8.345)	1679.04 (3.702)
Fluoride	9.29	355	1062.12 (2.342)	434.39 (0.958)
Phosphorus	0.0533	2.038	43.25 (0.095)	18.44 (0.041)
Total Toxic Organics*	U J L RL: .005	0.191	20.35 (0.045)	9.54 (0.0210)
O & G (alt. monitoring)	8.50 L	325	1272.00 (2.804)	763.20 (1.683)
pH [40CFRP403.5(b)(2)]	7.19 SU	-----	>/= 5.0 SU	-----
Temp. [40CFRP403.5(b)(5)]	22°C	-----	</= 40°C (104°F)	-----
Flow (gallons)	118,073	-----	-----	-----
Production (million cans)	11,669,641	-----	-----	-----

Notes: EPA Calculated Result* (g/million cans) = $\frac{\text{EPA Result (mg/l)} * (1 \text{ liter}/0.264 \text{ gallons}) * (\text{daily total flow (gallons)}}{\text{Production (million cans)} * 1000 \text{ (mg/g)}}$

Total Toxic Organics*: [40 CFR Part 465.02(j)]: shall mean the sum of the mass of each of the following toxic organic compounds which are found at a concentration greater than 0.01 mg/l.

U- The analyte was not detected at or above the Reporting Limit (RL).

L- The identification of the analyte is acceptable; the reported value may be biased low.

J- The identification of the analyte is acceptable; the reported value is an estimate.

Table 2: Industrial Wastewater Discharge Permit
Inspection Dates: April 12-13, 2023

Parameters	Units	IU Permit Limitations	EPA Results
BOD_5	mg/l	250	76.9
COD	mg/l	350	231
TSS	mg/l	150	U
TDS	mg/l	10,000	2130
Total Nitrogen*	mg/l	50	10.24
Ammonia	mg/l	20	1.38
TRC	mg/l	2.0	0.00
Mercury	mg/l	0.25	U
Chromium, Total	mg/l	0.21	U
Copper, Total	mg/l	1.19	0.0186
Zinc, Total	mg/l	0.73	0.054
Manganese, Total	mg/l	0.35	0.351
Fluoride	mg/l	15.0	9.29
Phosphorus	mg/l	8.17	0.0533
Total Toxic Organics	mg/l	0.10	U J L
: VOAs	------	------	RL: 5.00 ug/l
: NVOAs	-----	-----	RL: 5.21 ug/l
Oil & Grease	mg/l	14.36	8.50 L
pH	SU	7.0 – 8.0	7.19
Alkalinity ($CaCO_3$)	mg/l	200 (minimum)	U
Flow	GPD	<130,000 (daily); 223,000 (max.)	118,073

Notes: Total Nitrogen*: is the sum of TKN+NO_3+NO_2. TKN is made up of organic N_2 & NH_3
U- The analyte was not detected at or above the Reporting Limit.
L- The identification of the analyte is acceptable; the reported value may be biased low.
J- The identification of the analyte is acceptable; the reported value is an estimate.

6.0 FINDINGS

6.1 Sampling Result Findings

The EPA analytical results obtained during this inspection are within the acceptable limits.

6.2 Inspection Findings

In addition to the analytical data, an inspection of the facility operations was conducted as discussed in Section 4.2 above. During the inspection, the following observations were noted which may contravene the requirements of the applicable Federal Regulations and Industrial User Permit:

6.2.1 The On-Site Pretreatment System receives, treats, and discharges pretreated process wastewater to the Town of Nichols sewer collection system continuously throughout the calendar day or 24 hours. The composite sample collected is based on four (4) hours as described in the CROWN Cork & Seal – Nichols Site *SOP COP 201 for Monthly Wastewater Sampling*. As a result, the composite sample is not

indicative or representative of the discharged effluent. According to Part 2(D)(1) - Representative Sampling of the Industrial User Permit, it states, "*Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge*." In addition, 40 CFR Part 403.12(b)(5)(ii), it states, " *……the User shall submit the results of sampling and analysis identifying the nature and concentration (or mass, where required by the Standard or Control Authority) of regulated pollutants in the Discharge from each regulated process. Both daily maximum and average concentration (or mass, where required) shall be reported. The sample shall be representative of the daily operations*."

6.2.2 The pretreated effluent is being monitored by the magnetic flow meter. No calibration sticker/tag was observed on the flow meter to indicate the date of last calibration or the next calibration date of the flow meter. According to Part 2(D)(2)- Flow Measurement of the Industrial User Permit, it states, "*Flow measurement is required by this Permit. The appropriate flow measurement devices and methods consistent with approved scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of the type of device*."

6.2.3 Oil & Grease (O&G) sample is collected as a 4-hour grab-composite sample as discussed in Section 6.2.1. This is incorrect. According to Section 8.3 for Sample Collection, Preservation & Storage of the EPA Method 1664A: N-Hexane Extractable Materials (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar Material) by Extraction and Gravimetry, it states, "*The high probability that extractable matter may adhere to sampling equipment and result in measurements that are biased low precludes the collection of composite samples for determination of oil and grease. Therefore, samples must be collected as grab samples. If a composite measurement is required, individual grab samples collected at prescribed time intervals must be analyzed separately and the concentrations averaged. Alternatively, samples can be collected in the field and composited in the laboratory*."

7.0 ATTACHMENTS

Attachment #1. Drinking water from the Town of Nichols is treated through the DI Water Purification System.

Attachment #2. Aluminum coils are used in the Canmaking Manufacturing Operation.

Attachment #3. Process wastewater is generated from the 7-Stage Washer in the Canmaking Manufacturing Operation.

Attachment #4. Besides the 7-Stage Washer, other process waste streams are directed to the EQ tank.

Attachment #5. Process wastewater is treated by the On-Site Physical/Chemical Pretreatment Plant.

Attachment #6. USEPA Chain of Custody for Samples was submitted to the USEPA Lab.

Attachment #7. USEPA Analytical Data Package was received on 05/02/2023.

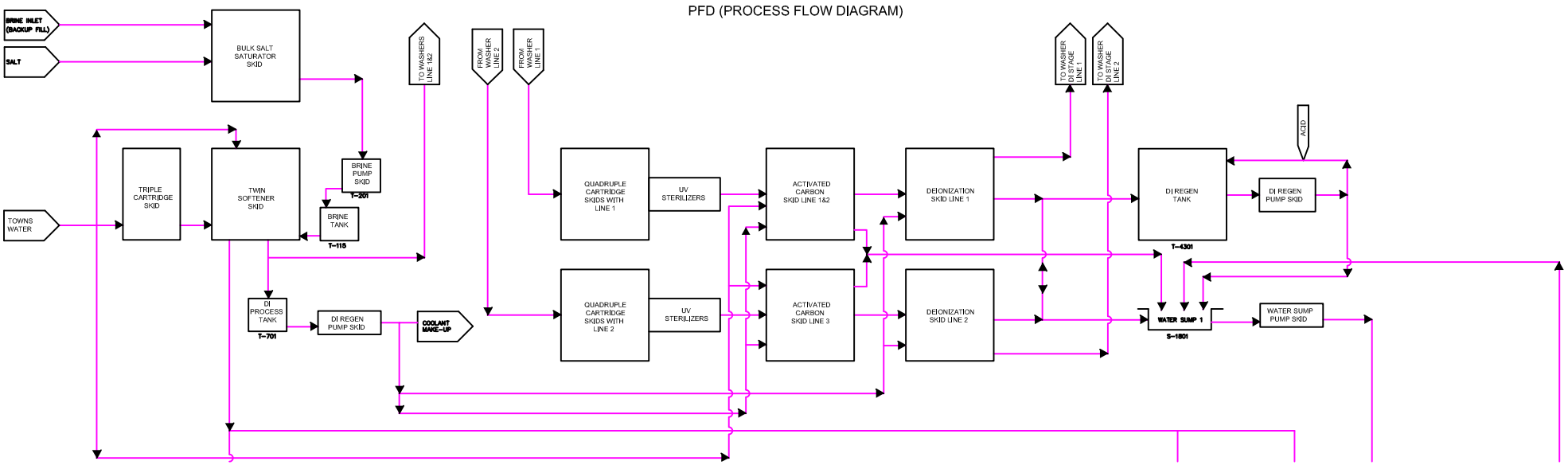
8.0 PHOTOGRAPHS

Photo #1. An automatic composite sampler was set-up after the effluent tank.

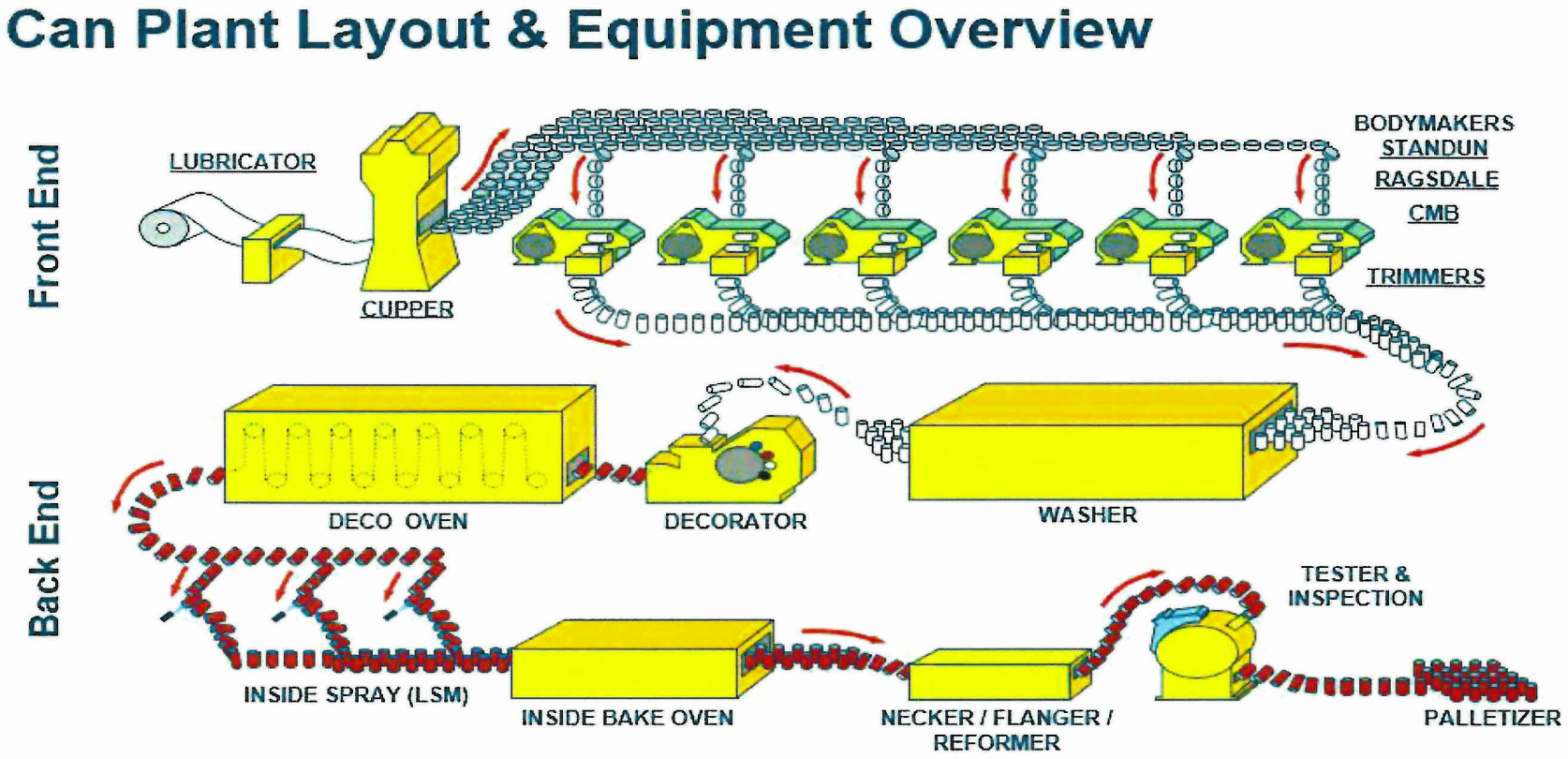
Photo #2. No calibration sticker/tag on the magmeter recording the discharged flow.

7.0 Attachments

Attachment #1. Drinking water from the Town of Nichols is treated through the DI Water Purification System.

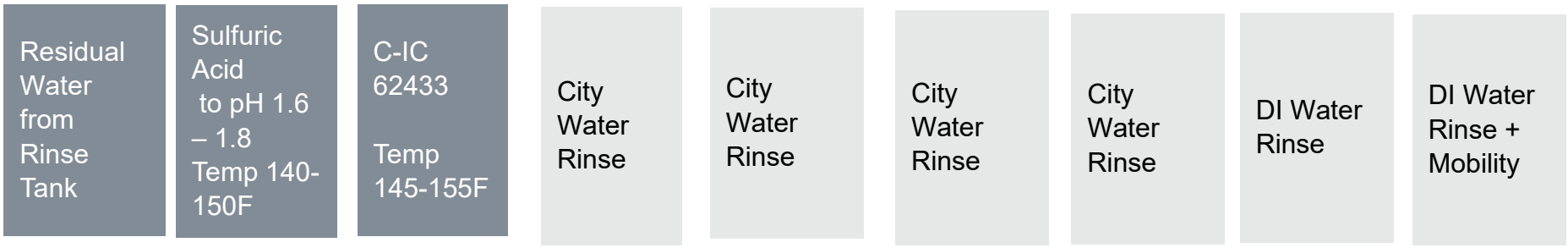


Attachment #2. Aluminum coil starts the Canmaking Manufacturing Operation from fabrication to coating.



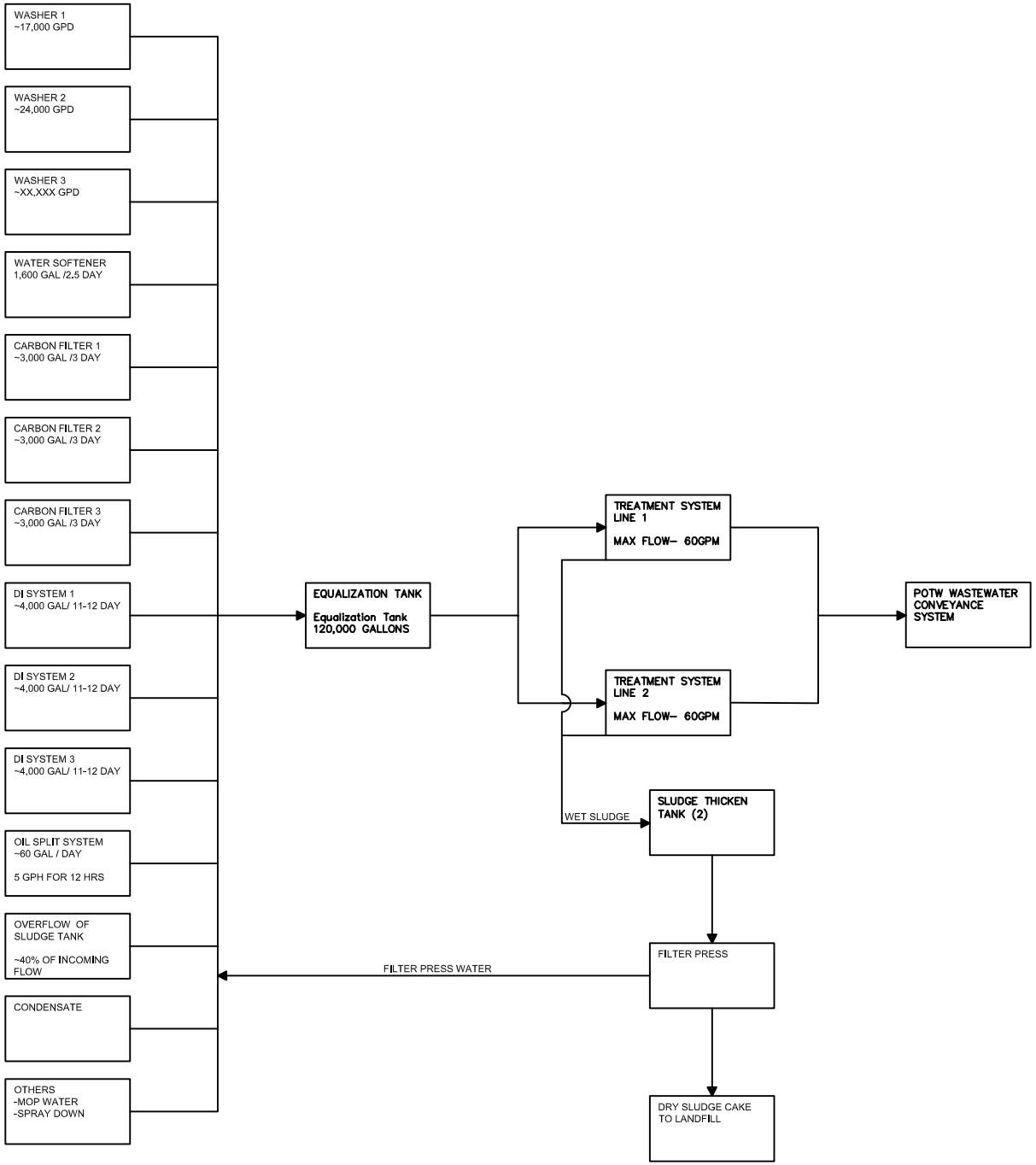
Attachment #3. Cans are cleaned and etched through the 7-Stage Washing Process.

Simplified Stages of the Can Washer (7-Stage Washer + Drag Out)



Stage 0	**Stage 1**	**Stage 2**	**Drag Out**	**Stage 3**	**Stage 4**	**Stage 5**	**Stage 5**	**Stage 7**
Pre-Rinse	Pre-Rinse Pre-Wash	Cleaner	City Water Rinse	City Water Rinse	City Water Rinse or Treatment	City Water Rinse	Recirculating Deionized Water	Mobility Enhancer + DI Water Rinse

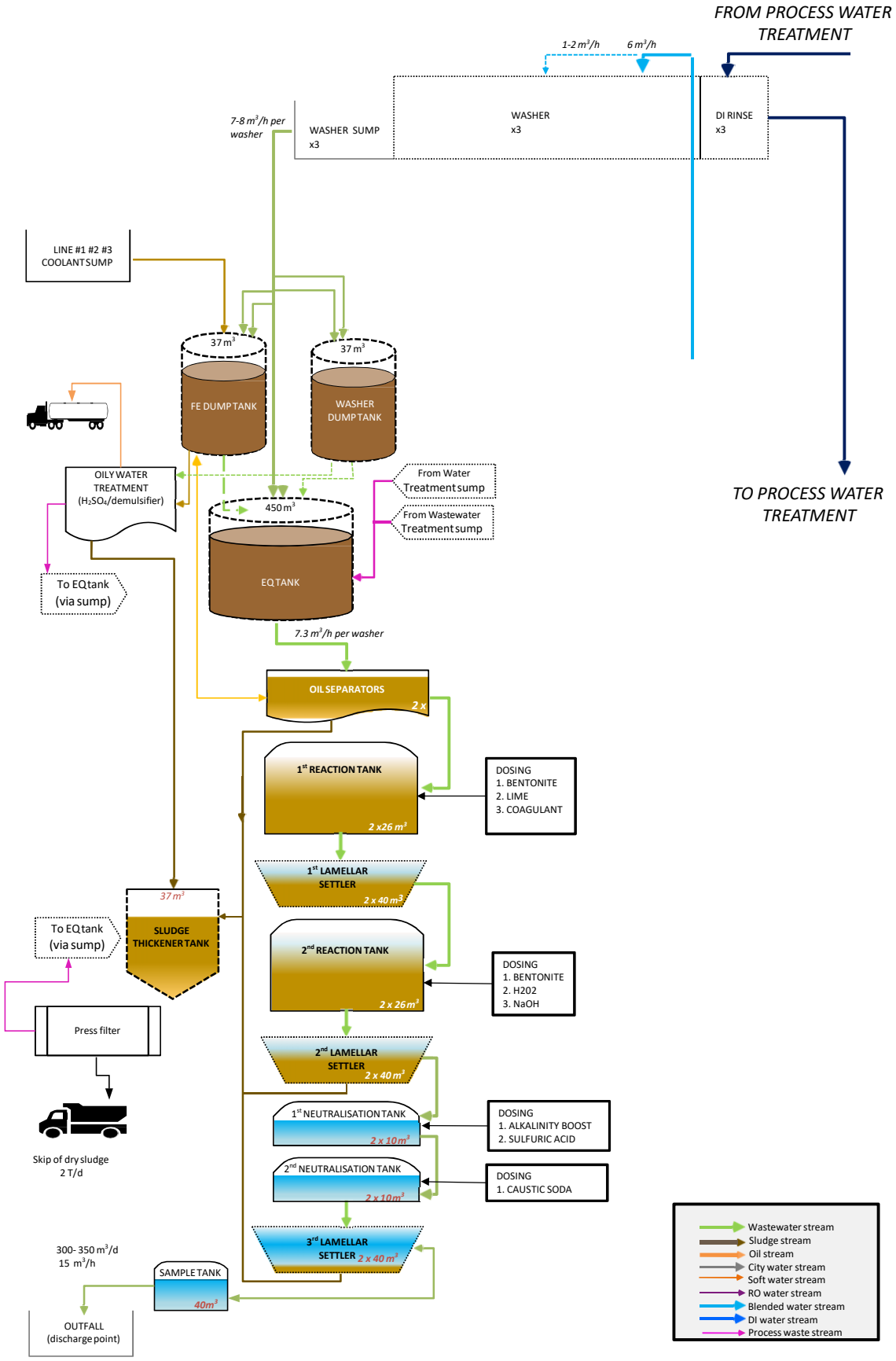
Attachment #4. Generated process waste streams from the Canmaking Manufacturing Operation are directed to the On-Site Pretreatment System.



Attachment #5. Process wastewater is treated by the On-Site Physical/Chemical Pretreatment System.

CROWN

Nichols Current Waste Water Treatment



Attachment #6. Samples were submitted to the USEPA Laboratory on Thursday, April 13, 2023.

US EPA REGION 2 LABORATORY

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CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY Crown Cork & Seal

PROJECT LEADER Thuan Tran

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROGRAM RESULTS CODE _____

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☒	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code Y206	D210	D307	B304	C215	B224	A305	L306	B253		

Permit #: 40CFR 403 & 465.45, & IU_

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS, SPECIAL TEST REQUIREMENTS & ALIQUOTING	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall #1 - Comp.	11	A	☒	2, 1-L plastic bottles: BOD5 2304016-01	☐	0	9:55A	9:40A	4/12-13/23
		A	☒	1, 500-ml plastic bottle: TSS	☐	0	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: NH3	☐	0 1	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: TKN	☐	0 1	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: Phosphorus	☐	0 1	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: COD	☐	0 1	9:55A	9:40A	4/12-13/23
		A	☒	1, 500-ml plastic bottle: TDS	☐	0	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: Nitrate (NO3)	☐	0	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: Nitrite (NO2)	☐	0	9:55A	9:40A	4/12-13/23
		A	☒	1, 125-ml plastic bottle: Fluoride	☐	0	9:55A	9:40A	4/12-13/23

COMMENTS & SPECIAL REQUIREMENTS:

Note: No Chlorine present

AF 4/13/23

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☒ N ☐

		Time	Date
Person Assuming Responsibility for Sample(s): Thuan Tran		5:45PM	4/12/2023
Relinquished By: Thuan Tran	Received By:	15:35	4/13/23
Relinquished By:	Received By:		
Relinquished By:	Received By:		

Direct from sampling, chain initiated. AF 4/13/23

revised 10/25/2004

US EPA REGION 2 LABORATORY

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CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ____ Crown Cork & Seal

PROJECT LEADER _____ Thuan Tran

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROGRAM RESULTS CODE _____

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☐ X	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code Y206	D210	D307	B304	C215	B224	A305	L306	B253		

Permit #: 40CFR 403 & 465.45, & IU_

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS, SPECIAL TEST REQUIREMENTS & ALIQUOTING	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall #1 - Comp.	3	A	X	1, 250-ml plastic bottle: Alkalinity (CaCO3) - No Air Space	☐	2304016-01 0	9:55A	9:40A	4/12-13/23
		A	X	1, 250-ml plastic bottle: Metals (Cr, Cu, Mn & Zn)	☐	02	9:55A	9:40A	4/12-13/23
		A	X	1, 250-ml plastic bottle: Mercury (Hg)	☐	02	9:55A	9:40A	4/12-13/23
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
TRIP BLANK	3	A	☐	3, 40-ml clear glass vials: VOAs	☐	-02 04		9:40A	4/11/2023
Outfall #1 - Grab	15	A	X	3, 40-ml clear glass vials: VOAs : Grab #1	☐	-03 0		10:42A	4/12/2023
		A	X	3, 40-ml clear glass vials: VOAs : Grab #2	☐	-04 0		4:15P	4/12/2023
		A	X	3, 40-ml clear glass vials: VOAs : Grab #3	☐	-05 0		10:13P	4/12/2023
		A	X	3, 40-ml clear glass vials: VOAs : Grab #4	☐	-06 0		9:42A	4/13/2023
		A	X	3, 1-Liter clear WM glasses: O&G	☐	-08 03		9:43A	4/13/2023

COMMENTS & SPECIAL REQUIREMENTS:

Note: Lab. to composite VOAs Grab #1 thru Grab #4 samples = 2304016-07 ED 4/13/23

No Chlorine present

ED 4/13/23

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

		Time	Date
	Person Assuming Responsibility for Sample(s): Thuan Tran	5:45PM	4/12/2023
Relinquished By: Thuan Tran	Received By:	15:35	4/13/23
Relinquished By:	Received By:		
Relinquished By:	Received By:		

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☑ N ☐

revised 10/25/2004

US EPA REGION 2 LABORATORY

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY Crown Cork & Seal
PROJECT LEADER Thuan Tran
PROGRAM: SF ☐ : SITE ID ______ OPERABLE UNIT ________ PROGRAM RESULTS CODE ________

Decision Unit Code Y206	RCRA ☐ D210	RCRA ENF ☐ D307	NPDES ☒ B304	SDWA ☐ C215	AM ☐ B224	CAA ☐ A305	TSCA ☐ L306	OD ☐ B253	FIFRA ☐	CRIMINAL ENF ☐

Permit #: 40CFR 403 & 465.45, & IU

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS, SPECIAL TEST REQUIREMENTS & ALIQUOTING	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	End	Collection Date mm/dd/yy
Outfall #1 - G-C	3	A	X	3, 1-L amber WM jars: NOVAs : 4Xs Grab-Comp	☐	2304016-09 4/13/23 0	10:42A	9:42A	4/12-13/23
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			

COMMENTS & SPECIAL REQUIREMENTS:

Note: No Chlorine in NVOAs samples

Preservative Added & Checked
0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

Matrix:
A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☒ N ☐

	Person Assuming Responsibility for Sample(s):	Time	Date
Relinquished By: [signature]	Received By: [signature]	5:45pm	4/12/23
Relinquished By:	Received By:	15:35	4/13/23
Relinquished By:	Received By:		

revised 10/25/2004

Attachment #7. Analytical Data Package was received from the USEPA Laboratory on Tuesday, May 2, 2023.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory
2890 Woodbridge Avenue
Edison , New Jersey 08837
732-906-6886 Phone
732-906-6165 Fax

May 02, 2023

Philip Cocuzza
Monitoring & Assessment Branch
LSASD/MAB
Edison, NJ 08837

RE: Crown Cork & Seal - 2304016

Enclosed are the results of analyses for samples received by the laboratory on 04/13/2023. The signature below reflects the laboratory's approval of the reported results. If you have any questions concerning this report, please refer to Project Number 2304016 and contact the laboratory.

Sincerely,

John R. Bourbon
Chief, LSASD/LB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Project Narrative:

The National Environmental Laboratory Accreditation Conference Institute (TNI) is a voluntary environmental laboratory accreditation association of State and Federal agencies. TNI established and promoted a National Environmental Laboratory Accreditation Program (NELAP) that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAP accredited. The Laboratory tests that are accredited have met all the requirements established under the TNI Standards.

Condition Comments

None

Comment(s):

The "Sample Analysis Date and Time" is included in the results section for any analyte with a prescribed holding time of 72 hours or less.

Results for the laboratory Blank Spike and Blank Spike Duplicate were less than the minimum requirement of 78% and the associated sample analyses were qualified with an "L" to indicate a potential low bias in the reported result.

Data Qualifier(s):

U- The analyte was not detected at or above the Reporting Limit.
J- The identification of the analyte is acceptable; the reported value is an estimate.
K- The identification of the analyte is acceptable; the reported value may be biased high.
L- The identification of the analyte is acceptable; the reported value may be biased low.
NJ- There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Reporting Limit(s):

The Laboratory was able to achieve the standard laboratory reporting limits, where applicable, for each analyte requested except for the following analyte(s):

NVOA GCMS

The reporting level of 5.00 ug/L was raised to 30 ug/L for the following analyte(s):
2,4-Dinitrophenol
for the following samples:
2304016-09

SUMMARY REPORT FOR SAMPLES

Field ID	Laboratory ID	Matrix	Date Sampled	Date Received
Outfall #1 - Comp.	2304016-01	Aqueous	04/13/2023 09:40	04/13/2023 13:35
TRIP BLANK	2304016-02	Aqueous	04/11/2023 09:40	04/13/2023 13:35
Outfall #1 - Grab#1-thru-Grab#4-Lab C	2304016-07	Aqueous	04/13/2023 00:00	04/13/2023 13:35
Outfall #1 - Grab	2304016-08	Aqueous	04/13/2023 09:43	04/13/2023 13:35
Outfall #1 - G-C	2304016-09	Aqueous	04/13/2023 09:42	04/13/2023 13:35

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

SUMMARY REPORT FOR METHODS

Analysis	Method	Certification	Matrix
624.1 VOA EPA-NPDES	EPA 624.1 SOP C-89 Rev 3.7	NELAP	Aqueous
625.1 SVOA NPDES	EPA 625.1 SOP C-90 Rev 3.9	NELAP	Aqueous
Alkalinity Carbonate	SM 2320B SOP C-18 Rev 3.8		Aqueous
Ammonia [As N]	EPA 350.1 SOP C-80 Rev 2.8	NELAP	Aqueous
Biochemical Oxygen Demand	SM 5210B SOP C-21 Rev 2.8	NELAP	Aqueous
Chemical Oxygen Demand	EPA 410.4 SOP C-53 Rev 2.8	NELAP	Aqueous
Fluoride	EPA 300.0 SOP C-94 Rev 2.8	NELAP	Aqueous
Mercury	EPA 245.1 SOP C-110 Rev 2.8	NELAP	Aqueous
Metals ICP TAL NPDES/DW	EPA 200.7 SOP C-109 Rev 3.7	NELAP	Aqueous
Nitrate [As N]	EPA 353.2 SOP C-79 Rev 3.7	NELAP	Aqueous
Nitrite [As N]	EPA 353.2 SOP C-79 Rev 3.7	NELAP	Aqueous
Nitrogen, Total Kjeldahl	EPA 351.2 SOP C-40 Rev2.8	NELAP	Aqueous
Oil & Grease	EPA 1664A SOP C-126 Rev 1.7	NELAP	Aqueous
Phosphorus	EPA 365.1 SOP C-68 Rev 2.8	NELAP	Aqueous
Residue, Filterable	SM 2540C SOP C-37 Rev 2.8	NELAP	Aqueous
Residue, Non-Filterable	SM 2540D SOP C-33 Rev 3.8	NELAP	Aqueous

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Outfall #1 - Comp.			**Sample ID: 2304016-01**			
Metals ICP						
Chromium	---	U	5.00	ug/L	B304068	
Copper	18.6		10.0	ug/L	B304068	
Manganese	351		5.00	ug/L	B304068	
Zinc	54.0		20.0	ug/L	B304068	
Mercury CVAA						
Mercury	---	U	0.050	ug/L	B304079	
Sanitary						
Alkalinity Carbonate	---	U	1.00	mg/L	B304081	
Ammonia [As N]	1.38		0.100	mg/L	B304119	
Biochemical Oxygen Demand	76.9		2.00	mg/L	B304063	04/19/2023 06:53
Chemical Oxygen Demand	231		40.0	mg/L	B304116	
Fluoride	9.29		0.500	mg/L	B304071	
Nitrate [As N]	0.277		0.0500	mg/L	B304064	04/14/2023 08:18
Nitrite [As N]	0.0527		0.0500	mg/L	B304064	04/14/2023 08:18
Nitrogen, Total Kjeldahl	9.91		1.00	mg/L	B304095	
Phosphorus	0.0533		0.0500	mg/L	B304067	
Total Dissolved Solids	2130		10.0	mg/L	B304072	
Total Suspended Solids	---	U	10.0	mg/L	B304069	
Field ID: TRIP BLANK			**Sample ID: 2304016-02**			
VOA GCMS						
Chloromethane	---	U	5.00	ug/L	B304075	
Vinyl Chloride	---	U J	5.00	ug/L	B304075	
Bromomethane	---	U	5.00	ug/L	B304075	
Chloroethane	---	U	5.00	ug/L	B304075	
Trichlorofluoromethane	---	U	5.00	ug/L	B304075	
1,1-Dichloroethene	---	U	5.00	ug/L	B304075	
Methylene Chloride	---	U	5.00	ug/L	B304075	
Acrylonitrile	---	U	5.00	ug/L	B304075	
trans-1,2-Dichloroethene	---	U	5.00	ug/L	B304075	

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: TRIP BLANK			**Sample ID: 2304016-02**			
VOA GCMS						
1,1-Dichloroethane	---	U	5.00	ug/L	B304075	
Chloroform	---	U	5.00	ug/L	B304075	
1,1,1-Trichloroethane	---	U	5.00	ug/L	B304075	
Carbon Tetrachloride	---	U	5.00	ug/L	B304075	
1,2-Dichloroethane	---	U	5.00	ug/L	B304075	
Benzene	---	U	5.00	ug/L	B304075	
Trichloroethene	---	U	5.00	ug/L	B304075	
1,2-Dichloropropane	---	U	5.00	ug/L	B304075	
Bromodichloromethane	---	U	5.00	ug/L	B304075	
cis-1,3-Dichloropropene	---	U	5.00	ug/L	B304075	
Toluene	---	U	5.00	ug/L	B304075	
trans-1,3-Dichloropropene	---	U	5.00	ug/L	B304075	
1,1,2-Trichloroethane	---	U	5.00	ug/L	B304075	
Tetrachloroethene	---	U	5.00	ug/L	B304075	
Dibromochloromethane	---	U	5.00	ug/L	B304075	
Chlorobenzene	---	U	5.00	ug/L	B304075	
Ethylbenzene	---	U	5.00	ug/L	B304075	
Bromoform	---	U	5.00	ug/L	B304075	
1,1,2,2-Tetrachloroethane	---	U	5.00	ug/L	B304075	
1,3-Dichlorobenzene	---	U	5.00	ug/L	B304075	
1,4-Dichlorobenzene	---	U	5.00	ug/L	B304075	
1,2-Dichlorobenzene	---	U	5.00	ug/L	B304075	
Field ID: Outfall #1 - Grab#1-thru-Grab#4-Lab Composi			**Sample ID: 2304016-07**			
VOA GCMS						
Chloromethane	---	U	5.00	ug/L	B304075	
Vinyl Chloride	---	U J	5.00	ug/L	B304075	
Bromomethane	---	U	5.00	ug/L	B304075	
Chloroethane	---	U	5.00	ug/L	B304075	
Trichlorofluoromethane	---	U	5.00	ug/L	B304075	

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Outfall #1 - Grab#1-thru-Grab#4-Lab Composi				**Sample ID: 2304016-07**		
VOA GCMS						
1,1-Dichloroethene	---	U	5.00	ug/L	B304075	
Methylene Chloride	---	U	5.00	ug/L	B304075	
Acrylonitrile	---	U	5.00	ug/L	B304075	
trans-1,2-Dichloroethene	---	U	5.00	ug/L	B304075	
1,1-Dichloroethane	---	U	5.00	ug/L	B304075	
Chloroform	---	U	5.00	ug/L	B304075	
1,1,1-Trichloroethane	---	U	5.00	ug/L	B304075	
Carbon Tetrachloride	---	U	5.00	ug/L	B304075	
1,2-Dichloroethane	---	U	5.00	ug/L	B304075	
Benzene	---	U	5.00	ug/L	B304075	
Trichloroethene	---	U	5.00	ug/L	B304075	
1,2-Dichloropropane	---	U	5.00	ug/L	B304075	
Bromodichloromethane	---	U	5.00	ug/L	B304075	
cis-1,3-Dichloropropene	---	U	5.00	ug/L	B304075	
Toluene	---	U	5.00	ug/L	B304075	
trans-1,3-Dichloropropene	---	U	5.00	ug/L	B304075	
1,1,2-Trichloroethane	---	U	5.00	ug/L	B304075	
Tetrachloroethene	---	U	5.00	ug/L	B304075	
Dibromochloromethane	---	U	5.00	ug/L	B304075	
Chlorobenzene	---	U	5.00	ug/L	B304075	
Ethylbenzene	---	U	5.00	ug/L	B304075	
Bromoform	---	U	5.00	ug/L	B304075	
1,1,2,2-Tetrachloroethane	---	U	5.00	ug/L	B304075	
1,3-Dichlorobenzene	---	U	5.00	ug/L	B304075	
1,4-Dichlorobenzene	---	U	5.00	ug/L	B304075	
1,2-Dichlorobenzene	---	U	5.00	ug/L	B304075	
Field ID: Outfall #1 - Grab				**Sample ID: 2304016-08**		
GC - Sanitary						
Oil & Grease	8.50	L	6.30	mg/L	B304139	

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Outfall #1 - G-C				**Sample ID: 2304016-09**		
NVOA GCMS						
Acenaphthene	---	U	5.21	ug/L	B304084	
Acenaphthylene	---	U	5.21	ug/L	B304084	
Anthracene	---	U	5.21	ug/L	B304084	
Benzo(A)Anthracene	---	U	5.21	ug/L	B304084	
Benzo(A)Pyrene	---	U	5.21	ug/L	B304084	
Benzo(B)Fluoranthene	---	U	5.21	ug/L	B304084	
Benzo(G,H,I)Perylene	---	U J	5.21	ug/L	B304084	
Benzo(K)Fluoranthene	---	U	5.21	ug/L	B304084	
Chrysene	---	U	5.21	ug/L	B304084	
Dibenzo(A,H)Anthracene	---	U J	5.21	ug/L	B304084	
Fluoranthene	---	U	5.21	ug/L	B304084	
Fluorene	---	U	5.21	ug/L	B304084	
Indeno(1,2,3-Cd)Pyrene	---	U J	5.21	ug/L	B304084	
Naphthalene	---	U	5.21	ug/L	B304084	
Phenanthrene	---	U	5.21	ug/L	B304084	
1,2,4-Trichlorobenzene	---	U	5.21	ug/L	B304084	
2,4,6-Trichlorophenol	---	U L	5.21	ug/L	B304084	
2,4-Dichlorophenol	---	U L	5.21	ug/L	B304084	
2,4-Dimethylphenol	---	U L	5.21	ug/L	B304084	
2,4-Dinitrotoluene	---	U J	5.21	ug/L	B304084	
2,6-Dinitrotoluene	---	U	5.21	ug/L	B304084	
2,4-Dinitrophenol	---	U	31.2	ug/L	B304084	
2-Chloronaphthalene	---	U	5.21	ug/L	B304084	
2-Chlorophenol	---	U L	5.21	ug/L	B304084	
2-Nitrophenol	---	U L	5.21	ug/L	B304084	
3,3'- Dichlorobenzidine	---	U L	5.21	ug/L	B304084	
4,6-Dinitro-2-Methylphenol	---	U J	5.21	ug/L	B304084	
4-Bromophenyl-Phenylether	---	U	5.21	ug/L	B304084	
4-Chloro-3-Methylphenol	---	U L	5.21	ug/L	B304084	

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Outfall #1 - G-C			**Sample ID: 2304016-09**			
NVOA GCMS						
4-Chlorophenyl-Phenylether	---	U	5.21	ug/L	B304084	
4-Nitrophenol	---	U	5.21	ug/L	B304084	
Bis(-2-Chloroethoxy)Methane	---	U	5.21	ug/L	B304084	
Bis(2-Chloroethyl)Ether	---	U	5.21	ug/L	B304084	
Bis(2-Chloroisopropyl)Ether	---	U	5.21	ug/L	B304084	
Bis(2-Ethylhexyl)Phthalate	---	U	5.21	ug/L	B304084	
Butylbenzylphthalate	---	U	5.21	ug/L	B304084	
Azobenzene	---	U	5.21	ug/L	B304084	
Diethylphthalate	---	U	5.21	ug/L	B304084	
Dimethyl Phthalate	---	U	5.21	ug/L	B304084	
Di-N-Butyl Phthalate	---	U	5.21	ug/L	B304084	
Di-N-Octyl Phthalate	---	U	5.21	ug/L	B304084	
Hexachlorobenzene	---	U	5.21	ug/L	B304084	
Hexachlorobutadiene	---	U	5.21	ug/L	B304084	
Hexachlorocyclopentadiene	---	U J	5.21	ug/L	B304084	
Hexachloroethane	---	U	5.21	ug/L	B304084	
Isophorone	---	U	5.21	ug/L	B304084	
Nitrobenzene	---	U	5.21	ug/L	B304084	
N-Nitrosodimethylamine	---	U J	5.21	ug/L	B304084	
N-Nitroso-Di-N-Propylamine	---	U	5.21	ug/L	B304084	
N-Nitrosodiphenylamine	---	U J	5.21	ug/L	B304084	
Pentachlorophenol	---	U	5.21	ug/L	B304084	
Phenol	8.67	L	5.21	ug/L	B304084	
Pyrene	---	U	5.21	ug/L	B304084	

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304075									
Blank (B304075-BLK1)									
Chloromethane	--- U	5.00	ug/L						
Vinyl Chloride	--- U	5.00	ug/L						
Bromomethane	--- U	5.00	ug/L						
Chloroethane	--- U	5.00	ug/L						
Trichlorofluoromethane	--- U	5.00	ug/L						
1,1-Dichloroethene	--- U	5.00	ug/L						
Methylene Chloride	--- U	5.00	ug/L						
Acrylonitrile	--- U	5.00	ug/L						
trans-1,2-Dichloroethene	--- U	5.00	ug/L						
1,1-Dichloroethane	--- U	5.00	ug/L						
Chloroform	--- U	5.00	ug/L						
1,1,1-Trichloroethane	--- U	5.00	ug/L						
Carbon Tetrachloride	--- U	5.00	ug/L						
1,2-Dichloroethane	--- U	5.00	ug/L						
Benzene	--- U	5.00	ug/L						
Trichloroethene	--- U	5.00	ug/L						
1,2-Dichloropropane	--- U	5.00	ug/L						
Bromodichloromethane	--- U	5.00	ug/L						
cis-1,3-Dichloropropene	--- U	5.00	ug/L						
Toluene	--- U	5.00	ug/L						
trans-1,3-Dichloropropene	--- U	5.00	ug/L						
1,1,2-Trichloroethane	--- U	5.00	ug/L						
Tetrachloroethene	--- U	5.00	ug/L						
Dibromochloromethane	--- U	5.00	ug/L						
Chlorobenzene	--- U	5.00	ug/L						
Ethylbenzene	--- U	5.00	ug/L						
Bromoform	--- U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	--- U	5.00	ug/L						
1,3-Dichlorobenzene	--- U	5.00	ug/L						
1,4-Dichlorobenzene	--- U	5.00	ug/L						
1,2-Dichlorobenzene	--- U	5.00	ug/L						
Surrogate: 1,4-Difluorobenzene	*100*		ug/L	*100.0*		*100*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*101*		ug/L	*100.0*		*101*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*ND*		ug/L	*100.0*		*99.6*	*60-140*		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304075									
LCS (B304075-BS1)									
Chloromethane	56.8		ug/L	50.00		114	19-205		
Vinyl Chloride	51.1		ug/L	50.00		102	5-195		
Bromomethane	53.9		ug/L	50.00		108	15-185		
Chloroethane	54.1		ug/L	50.00		108	40-160		
Trichlorofluoromethane	55.5		ug/L	50.00		111	50-150		
1,1-Dichloroethene	52.4		ug/L	50.00		105	50-150		
Methylene Chloride	53.8		ug/L	50.00		108	60-140		
Acrylonitrile	51.6		ug/L	50.00		103	60-140		
trans-1,2-Dichloroethene	55.9		ug/L	50.00		112	70-130		
1,1-Dichloroethane	54.2		ug/L	50.00		108	70-130		
Chloroform	54.6		ug/L	50.00		109	70-135		
1,1,1-Trichloroethane	54.6		ug/L	50.00		109	70-130		
Carbon Tetrachloride	52.8		ug/L	50.00		106	70-130		
1,2-Dichloroethane	54.0		ug/L	50.00		108	70-130		
Benzene	53.4		ug/L	50.00		107	65-135		
Trichloroethene	52.8		ug/L	50.00		106	65-135		
1,2-Dichloropropane	54.5		ug/L	50.00		109	35-165		
Bromodichloromethane	53.9		ug/L	50.00		108	65-135		
cis-1,3-Dichloropropene	54.4		ug/L	50.00		109	25-175		
Toluene	53.4		ug/L	50.00		107	70-130		
trans-1,3-Dichloropropene	57.6		ug/L	50.00		115	50-150		
1,1,2-Trichloroethane	52.9		ug/L	50.00		106	70-130		
Tetrachloroethene	53.6		ug/L	50.00		107	70-130		
Dibromochloromethane	55.1		ug/L	50.00		110	70-135		
Chlorobenzene	53.6		ug/L	50.00		107	65-135		
Ethylbenzene	55.6		ug/L	50.00		111	60-140		
Bromoform	52.3		ug/L	50.00		105	70-130		
1,1,2,2-Tetrachloroethane	50.7		ug/L	50.00		101	60-140		
1,3-Dichlorobenzene	53.9		ug/L	50.00		108	70-130		
1,4-Dichlorobenzene	53.7		ug/L	50.00		107	65-135		
1,2-Dichlorobenzene	53.1		ug/L	50.00		106	65-135		
Surrogate: 1,4-Difluorobenzene	*98.7*		ug/L	*100.0*		*98.7*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*100*		ug/L	*100.0*		*100*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*99.9*		ug/L	*100.0*		*99.9*	*60-140*		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304075									
LCS Dup (B304075-BSD1)									
Chloromethane	48.4		ug/L	50.00		96.7	19-205	16.1	20
Vinyl Chloride	39.6		ug/L	50.00		79.2	5-195	25.4	20
Bromomethane	45.8		ug/L	50.00		91.6	15-185	16.2	20
Chloroethane	45.6		ug/L	50.00		91.1	40-160	17.1	20
Trichlorofluoromethane	45.8		ug/L	50.00		91.6	50-150	19.2	20
1,1-Dichloroethene	44.4		ug/L	50.00		88.9	50-150	16.5	20
Methylene Chloride	46.1		ug/L	50.00		92.3	60-140	15.4	20
Acrylonitrile	45.6		ug/L	50.00		91.2	60-140	12.2	20
trans-1,2-Dichloroethene	47.9		ug/L	50.00		95.9	70-130	15.4	20
1,1-Dichloroethane	47.0		ug/L	50.00		93.9	70-130	14.3	20
Chloroform	46.8		ug/L	50.00		93.5	70-135	15.4	20
1,1,1-Trichloroethane	45.8		ug/L	50.00		91.5	70-130	17.6	20
Carbon Tetrachloride	44.8		ug/L	50.00		89.6	70-130	16.4	20
1,2-Dichloroethane	47.4		ug/L	50.00		94.8	70-130	13.0	20
Benzene	45.8		ug/L	50.00		91.6	65-135	15.3	20
Trichloroethene	46.4		ug/L	50.00		92.8	65-135	12.8	20
1,2-Dichloropropane	47.4		ug/L	50.00		94.8	35-165	14.0	20
Bromodichloromethane	47.2		ug/L	50.00		94.4	65-135	13.2	20
cis-1,3-Dichloropropene	47.5		ug/L	50.00		95.0	25-175	13.6	20
Toluene	46.4		ug/L	50.00		92.8	70-130	14.1	20
trans-1,3-Dichloropropene	50.3		ug/L	50.00		101	50-150	13.5	20
1,1,2-Trichloroethane	46.1		ug/L	50.00		92.3	70-130	13.6	20
Tetrachloroethene	45.4		ug/L	50.00		90.8	70-130	16.6	20
Dibromochloromethane	48.3		ug/L	50.00		96.5	70-135	13.3	20
Chlorobenzene	46.5		ug/L	50.00		93.1	65-135	14.2	20
Ethylbenzene	47.8		ug/L	50.00		95.7	60-140	15.1	20
Bromoform	46.6		ug/L	50.00		93.2	70-130	11.6	20
1,1,2,2-Tetrachloroethane	45.2		ug/L	50.00		90.5	60-140	11.4	20
1,3-Dichlorobenzene	47.0		ug/L	50.00		94.1	70-130	13.6	20
1,4-Dichlorobenzene	46.8		ug/L	50.00		93.7	65-135	13.6	20
1,2-Dichlorobenzene	46.8		ug/L	50.00		93.6	65-135	12.6	20
Surrogate: 1,4-Difluorobenzene	*99.8*		ug/L	*100.0*		*99.8*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*101*		ug/L	*100.0*		*101*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*100*		ug/L	*100.0*		*100*	*60-140*		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304075									
Matrix Spike (B304075-MS1)	**Source: 2304016-07**								
Chloromethane	45.4		ug/L	50.00	0.00	90.8	19-273		
Vinyl Chloride	42.6		ug/L	50.00	0.00	85.2	49-251		
Bromomethane	48.4		ug/L	50.00	0.00	96.8	21-242		
Chloroethane	46.0		ug/L	50.00	0.00	92.0	14-230		
Trichlorofluoromethane	47.6		ug/L	50.00	0.00	95.2	17-181		
1,1-Dichloroethene	48.0		ug/L	50.00	0.00	95.9	52-234		
Methylene Chloride	48.5		ug/L	50.00	0.00	97.0	69-221		
Acrylonitrile	47.5		ug/L	50.00	0.00	95.1	40-160		
trans-1,2-Dichloroethene	47.5		ug/L	50.00	0.00	95.0	54-156		
1,1-Dichloroethane	48.5		ug/L	50.00	0.00	97.1	59-155		
Chloroform	49.4		ug/L	50.00	0.00	98.8	51-138		
1,1,1-Trichloroethane	48.2		ug/L	50.00	0.00	96.4	52-162		
Carbon Tetrachloride	47.6		ug/L	50.00	0.00	95.2	70-140		
1,2-Dichloroethane	47.7		ug/L	50.00	0.00	95.4	49-155		
Benzene	47.6		ug/L	50.00	0.00	95.2	37-151		
Trichloroethene	46.8		ug/L	50.00	0.00	93.7	70-157		
1,2-Dichloropropane	47.8		ug/L	50.00	0.00	95.7	74-210		
Bromodichloromethane	47.2		ug/L	50.00	0.00	94.3	35-155		
cis-1,3-Dichloropropene	48.8		ug/L	50.00	0.00	97.5	80-227		
Toluene	47.4		ug/L	50.00	0.00	94.9	47-150		
trans-1,3-Dichloropropene	48.6		ug/L	50.00	0.00	97.1	17-183		
1,1,2-Trichloroethane	46.4		ug/L	50.00	0.00	92.7	52-150		
Tetrachloroethene	47.5		ug/L	50.00	0.00	95.0	64-148		
Dibromochloromethane	46.7		ug/L	50.00	0.00	93.4	53-149		
Chlorobenzene	46.9		ug/L	50.00	0.00	93.7	37-160		
Ethylbenzene	48.3		ug/L	50.00	0.00	96.6	37-162		
Bromoform	46.0		ug/L	50.00	0.00	92.1	45-169		
1,1,2,2-Tetrachloroethane	46.8		ug/L	50.00	0.00	93.7	46-157		
1,3-Dichlorobenzene	48.3		ug/L	50.00	0.00	96.6	59-156		
1,4-Dichlorobenzene	48.5		ug/L	50.00	0.00	97.0	18-190		
1,2-Dichlorobenzene	48.3		ug/L	50.00	0.00	96.6	18-190		
Surrogate: 1,4-Difluorobenzene	*99.7*		ug/L	*100.0*		*99.7*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*102*		ug/L	*100.0*		*102*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*104*		ug/L	*100.0*		*104*	*60-140*		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304075									
Matrix Spike Dup (B304075-MSD1)	**Source: 2304016-07**								
Chloromethane	50.5		ug/L	50.00	0.00	101	19-273	10.6	28
Vinyl Chloride	46.5		ug/L	50.00	0.00	93.0	49-251	8.80	28
Bromomethane	54.5		ug/L	50.00	0.00	109	21-242	11.8	28
Chloroethane	51.5		ug/L	50.00	0.00	103	14-230	11.2	28
Trichlorofluoromethane	52.0		ug/L	50.00	0.00	104	17-181	8.76	28
1,1-Dichloroethene	52.9		ug/L	50.00	0.00	106	52-234	9.85	28
Methylene Chloride	52.6		ug/L	50.00	0.00	105	69-221	8.04	28
Acrylonitrile	51.7		ug/L	50.00	0.00	103	40-160	8.31	28
trans-1,2-Dichloroethene	52.8		ug/L	50.00	0.00	106	54-156	10.6	28
1,1-Dichloroethane	53.5		ug/L	50.00	0.00	107	59-155	9.80	28
Chloroform	54.1		ug/L	50.00	0.00	108	51-138	9.12	28
1,1,1-Trichloroethane	52.4		ug/L	50.00	0.00	105	52-162	8.23	28
Carbon Tetrachloride	52.5		ug/L	50.00	0.00	105	70-140	9.83	28
1,2-Dichloroethane	52.5		ug/L	50.00	0.00	105	49-155	9.60	28
Benzene	53.5		ug/L	50.00	0.00	107	37-151	11.7	28
Trichloroethene	52.8		ug/L	50.00	0.00	106	70-157	12.0	28
1,2-Dichloropropane	53.5		ug/L	50.00	0.00	107	74-210	11.1	28
Bromodichloromethane	53.2		ug/L	50.00	0.00	106	35-155	12.0	28
cis-1,3-Dichloropropene	54.1		ug/L	50.00	0.00	108	80-227	10.3	28
Toluene	53.4		ug/L	50.00	0.00	107	47-150	11.9	28
trans-1,3-Dichloropropene	54.4		ug/L	50.00	0.00	109	17-183	11.4	28
1,1,2-Trichloroethane	52.8		ug/L	50.00	0.00	106	52-150	12.9	28
Tetrachloroethene	53.4		ug/L	50.00	0.00	107	64-148	11.6	28
Dibromochloromethane	53.1		ug/L	50.00	0.00	106	53-149	12.8	28
Chlorobenzene	52.8		ug/L	50.00	0.00	106	37-160	12.0	28
Ethylbenzene	54.6		ug/L	50.00	0.00	109	37-162	12.4	28
Bromoform	53.2		ug/L	50.00	0.00	106	45-169	14.5	28
1,1,2,2-Tetrachloroethane	53.5		ug/L	50.00	0.00	107	46-157	13.3	28
1,3-Dichlorobenzene	54.2		ug/L	50.00	0.00	108	59-156	11.5	28
1,4-Dichlorobenzene	54.8		ug/L	50.00	0.00	110	18-190	12.1	28
1,2-Dichlorobenzene	54.7		ug/L	50.00	0.00	109	18-190	12.4	28
Surrogate: 1,4-Difluorobenzene	*99.8*		ug/L	*100.0*		*99.8*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*103*		ug/L	*100.0*		*103*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*105*		ug/L	*100.0*		*105*	*60-140*		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
Blank (B304084-BLK1)									
Acenaphthene	--- U	5.00	ug/L						
Acenaphthylene	--- U	5.00	ug/L						
Anthracene	--- U	5.00	ug/L						
Benzo(A)Anthracene	--- U	5.00	ug/L						
Benzo(A)Pyrene	--- U	5.00	ug/L						
Benzo(B)Fluoranthene	--- U	5.00	ug/L						
Benzo(G,H,I)Perylene	--- U	5.00	ug/L						
Benzo(K)Fluoranthene	--- U	5.00	ug/L						
Chrysene	--- U	5.00	ug/L						
Dibenzo(A,H)Anthracene	--- U	5.00	ug/L						
Fluoranthene	--- U	5.00	ug/L						
Fluorene	--- U	5.00	ug/L						
Indeno(1,2,3-Cd)Pyrene	--- U	5.00	ug/L						
Naphthalene	--- U	5.00	ug/L						
Phenanthrene	--- U	5.00	ug/L						
1,2,4-Trichlorobenzene	--- U	5.00	ug/L						
2,4,6-Trichlorophenol	--- U	5.00	ug/L						
2,4-Dichlorophenol	--- U	5.00	ug/L						
2,4-Dimethylphenol	--- U	5.00	ug/L						
2,4-Dinitrotoluene	--- U	5.00	ug/L						
2,6-Dinitrotoluene	--- U	5.00	ug/L						
2,4-Dinitrophenol	--- U	5.00	ug/L						
2-Chloronaphthalene	--- U	5.00	ug/L						
2-Chlorophenol	--- U	5.00	ug/L						
2-Nitrophenol	--- U	5.00	ug/L						
3,3'- Dichlorobenzidine	--- U	5.00	ug/L						
4,6-Dinitro-2-Methylphenol	--- U	5.00	ug/L						
4-Bromophenyl-Phenylether	--- U	5.00	ug/L						
4-Chloro-3-Methylphenol	--- U	5.00	ug/L						
4-Chlorophenyl-Phenylether	--- U	5.00	ug/L						
4-Nitrophenol	--- U	5.00	ug/L						
Bis(-2-Chloroethoxy)Methane	--- U	5.00	ug/L						
Bis(2-Chloroethyl)Ether	--- U	5.00	ug/L						
Bis(2-Chloroisopropyl)Ether	--- U	5.00	ug/L						
Bis(2-Ethylhexyl)Phthalate	--- U	5.00	ug/L						

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
Blank (B304084-BLK1)									
Butylbenzylphthalate	--- U	5.00	ug/L						
Azobenzene	--- U	5.00	ug/L						
Diethylphthalate	--- U	5.00	ug/L						
Dimethyl Phthalate	--- U	5.00	ug/L						
Di-N-Butyl Phthalate	--- U	5.00	ug/L						
Di-N-Octyl Phthalate	--- U	5.00	ug/L						
Hexachlorobenzene	--- U	5.00	ug/L						
Hexachlorobutadiene	--- U	5.00	ug/L						
Hexachlorocyclopentadiene	--- U	5.00	ug/L						
Hexachloroethane	--- U	5.00	ug/L						
Isophorone	--- U	5.00	ug/L						
Nitrobenzene	--- U	5.00	ug/L						
N-Nitrosodimethylamine	--- U	5.00	ug/L						
N-Nitroso-Di-N-Propylamine	--- U	5.00	ug/L						
N-Nitrosodiphenylamine	--- U	5.00	ug/L						
Pentachlorophenol	--- U	5.00	ug/L						
Phenol	--- U	5.00	ug/L						
Pyrene	--- U	5.00	ug/L						
Surrogate: 2-Fluoroaniline	*36.1*		ug/L	*50.00*		*72.1*	*60-140*		
Surrogate: Phenol-D6	*ND*		ug/L	*50.00*		*35.0*	*60-140*		
Surrogate: Naphthalene-D8	*36.0*		ug/L	*50.00*		*71.9*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*35.0*		ug/L	*50.00*		*70.0*	*60-140*		
Surrogate: 2,4-Dibromophenol	*ND*		ug/L	*50.00*		*57.2*	*60-140*		
Surrogate: Anthracene-D10	*33.9*		ug/L	*50.00*		*67.8*	*60-140*		
Surrogate: Chrysene-D12	*39.5*		ug/L	*50.00*		*79.0*	*60-140*		
LCS (B304084-BS1)									
Acenaphthene	40.1	5.00	ug/L	50.00		80.2	47-145		
Acenaphthylene	38.9	5.00	ug/L	50.00		77.8	33-145		
Anthracene	47.2	5.00	ug/L	50.00		94.4	27-133		
Benzo(A)Anthracene	48.2	5.00	ug/L	50.00		96.5	33-143		
Benzo(A)Pyrene	47.1	5.00	ug/L	50.00		94.1	17-163		
Benzo(B)Fluoranthene	49.0	5.00	ug/L	50.00		97.9	24-159		
Benzo(G,H,I)Perylene	59.4	5.00	ug/L	50.00		119	35-219		
Benzo(K)Fluoranthene	48.6	5.00	ug/L	50.00		97.1	11-162		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
LCS (B304084-BS1)									
Chrysene	47.9	5.00	ug/L	50.00		95.7	17-168		
Dibenzo(A,H)Anthracene	57.0	5.00	ug/L	50.00		114	33-227		
Fluoranthene	45.4	5.00	ug/L	50.00		90.8	26-137		
Fluorene	46.8	5.00	ug/L	50.00		93.6	59-121		
Indeno(1,2,3-Cd)Pyrene	56.3	5.00	ug/L	50.00		113	39-171		
Naphthalene	33.9	5.00	ug/L	50.00		67.8	21-133		
Phenanthrene	47.7	5.00	ug/L	50.00		95.4	54-120		
1,2,4-Trichlorobenzene	33.5	5.00	ug/L	50.00		67.0	44-142		
2,4,6-Trichlorophenol	38.4	5.00	ug/L	50.00		76.9	37-144		
2,4-Dichlorophenol	39.0	5.00	ug/L	50.00		78.0	39-135		
2,4-Dimethylphenol	31.9	5.00	ug/L	50.00		63.8	32-120		
2,4-Dinitrotoluene	50.9	5.00	ug/L	50.00		102	39-139		
2,6-Dinitrotoluene	44.2	5.00	ug/L	50.00		88.4	50-158		
2,4-Dinitrophenol	23.6	5.00	ug/L	50.00		47.2	21-191		
2-Chloronaphthalene	38.0	5.00	ug/L	50.00		76.0	60-120		
2-Chlorophenol	40.3	5.00	ug/L	50.00		80.6	23-134		
2-Nitrophenol	30.5	5.00	ug/L	50.00		61.0	29-182		
3,3'- Dichlorobenzidine	49.1	5.00	ug/L	50.00		98.3	38-262		
4,6-Dinitro-2-Methylphenol	53.0	5.00	ug/L	50.00		106	17-181		
4-Bromophenyl-Phenylether	49.2	5.00	ug/L	50.00		98.5	53-127		
4-Chloro-3-Methylphenol	41.0	5.00	ug/L	50.00		82.1	22-147		
4-Chlorophenyl-Phenylether	47.9	5.00	ug/L	50.00		95.9	25-158		
4-Nitrophenol	18.6	5.00	ug/L	50.00		37.1	9-132		
Bis(-2-Chloroethoxy)Methane	37.5	5.00	ug/L	50.00		75.0	33-184		
Bis(2-Chloroethyl)Ether	38.7	5.00	ug/L	50.00		77.4	12-158		
Bis(2-Chloroisopropyl)Ether	34.1	5.00	ug/L	50.00		68.2	36-166		
Bis(2-Ethylhexyl)Phthalate	55.5	5.00	ug/L	50.00		111	8-158		
Butylbenzylphthalate	43.5	5.00	ug/L	50.00		87.0	38-152		
Azobenzene	47.1	5.00	ug/L	50.00		94.3	60-115		
Diethylphthalate	45.6	5.00	ug/L	50.00		91.2	31-114		
Dimethyl Phthalate	32.9	5.00	ug/L	50.00		65.9	28-120		
Di-N-Butyl Phthalate	48.7	5.00	ug/L	50.00		97.3	1-120		
Di-N-Octyl Phthalate	51.0	5.00	ug/L	50.00		102	4-146		
Hexachlorobenzene	47.7	5.00	ug/L	50.00		95.4	35-152		
Hexachlorobutadiene	31.6	5.00	ug/L	50.00		63.2	24-120		

NOTE: The results recorded in this report relate only to the samples as received on the date and at the time noted

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
LCS (B304084-BS1)									
Hexachlorocyclopentadiene	33.2	5.00	ug/L	50.00		66.4	15-76		
Hexachloroethane	32.8	5.00	ug/L	50.00		65.7	40-120		
Isophorone	43.7	5.00	ug/L	50.00		87.4	21-196		
Nitrobenzene	38.5	5.00	ug/L	50.00		77.0	35-180		
N-Nitrosodimethylamine	28.5	5.00	ug/L	50.00		57.0	17-127		
N-Nitroso-Di-N-Propylamine	38.2	5.00	ug/L	50.00		76.4	43-230		
N-Nitrosodiphenylamine	54.9	5.00	ug/L	50.00		110	79-139		
Pentachlorophenol	31.6	5.00	ug/L	50.00		63.2	14-176		
Phenol	18.6	5.00	ug/L	50.00		37.2	5-120		
Pyrene	44.5	5.00	ug/L	50.00		89.1	52-120		
Surrogate: 2-Fluoroaniline	*38.1*		ug/L	*50.00*		*76.1*	*60-140*		
Surrogate: Phenol-D6	*18.4*		ug/L	*50.00*		*36.8*	*60-140*		
Surrogate: Naphthalene-D8	*36.9*		ug/L	*50.00*		*73.8*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*36.6*		ug/L	*50.00*		*73.2*	*60-140*		
Surrogate: 2,4-Dibromophenol	*41.0*		ug/L	*50.00*		*81.9*	*60-140*		
Surrogate: Anthracene-D10	*41.5*		ug/L	*50.00*		*83.0*	*60-140*		
Surrogate: Chrysene-D12	*47.8*		ug/L	*50.00*		*95.6*	*60-140*		
LCS Dup (B304084-BSD1)									
Acenaphthene	40.4	5.00	ug/L	50.00		80.9	47-145	0.869	30
Acenaphthylene	39.5	5.00	ug/L	50.00		79.0	33-145	1.53	30
Anthracene	44.2	5.00	ug/L	50.00		88.4	27-133	6.52	30
Benzo(A)Anthracene	40.9	5.00	ug/L	50.00		81.8	33-143	16.5	30
Benzo(A)Pyrene	46.4	5.00	ug/L	50.00		92.8	17-163	1.41	30
Benzo(B)Fluoranthene	46.5	5.00	ug/L	50.00		93.1	24-159	5.05	30
Benzo(G,H,I)Perylene	54.8	5.00	ug/L	50.00		110	35-219	7.99	30
Benzo(K)Fluoranthene	47.3	5.00	ug/L	50.00		94.6	11-162	2.61	30
Chrysene	41.2	5.00	ug/L	50.00		82.4	17-168	14.9	30
Dibenzo(A,H)Anthracene	52.9	5.00	ug/L	50.00		106	33-227	7.44	30
Fluoranthene	46.3	5.00	ug/L	50.00		92.5	26-137	1.92	30
Fluorene	42.8	5.00	ug/L	50.00		85.6	59-121	8.89	30
Indeno(1,2,3-Cd)Pyrene	54.6	5.00	ug/L	50.00		109	39-171	3.05	30
Naphthalene	34.0	5.00	ug/L	50.00		68.0	21-133	0.324	30
Phenanthrene	45.0	5.00	ug/L	50.00		90.1	54-120	5.74	30
1,2,4-Trichlorobenzene	33.1	5.00	ug/L	50.00		66.3	44-142	1.05	30

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
LCS Dup (B304084-BSD1)									
2,4,6-Trichlorophenol	38.3	5.00	ug/L	50.00		76.7	37-144	0.313	30
2,4-Dichlorophenol	39.2	5.00	ug/L	50.00		78.3	39-135	0.435	30
2,4-Dimethylphenol	31.5	5.00	ug/L	50.00		62.9	32-120	1.42	30
2,4-Dinitrotoluene	48.3	5.00	ug/L	50.00		96.5	39-139	5.26	30
2,6-Dinitrotoluene	46.1	5.00	ug/L	50.00		92.2	50-158	4.23	30
2,4-Dinitrophenol	27.7	5.00	ug/L	50.00		55.3	21-191	15.9	30
2-Chloronaphthalene	38.0	5.00	ug/L	50.00		76.0	60-120	0.0526	30
2-Chlorophenol	38.7	5.00	ug/L	50.00		77.4	23-134	4.03	30
2-Nitrophenol	28.5	5.00	ug/L	50.00		56.9	29-182	6.85	30
3,3'- Dichlorobenzidine	45.2	5.00	ug/L	50.00		90.3	38-262	8.40	30
4,6-Dinitro-2-Methylphenol	53.0	5.00	ug/L	50.00		106	17-181	0.0189	30
4-Bromophenyl-Phenylether	44.2	5.00	ug/L	50.00		88.4	53-127	10.8	30
4-Chloro-3-Methylphenol	42.0	5.00	ug/L	50.00		83.9	22-147	2.24	30
4-Chlorophenyl-Phenylether	42.9	5.00	ug/L	50.00		85.9	25-158	11.0	30
4-Nitrophenol	20.4	5.00	ug/L	50.00		40.7	9-132	9.35	30
Bis(-2-Chloroethoxy)Methane	37.4	5.00	ug/L	50.00		74.8	33-184	0.374	30
Bis(2-Chloroethyl)Ether	37.7	5.00	ug/L	50.00		75.4	12-158	2.54	30
Bis(2-Chloroisopropyl)Ether	32.5	5.00	ug/L	50.00		64.9	36-166	4.99	30
Bis(2-Ethylhexyl)Phthalate	44.9	5.00	ug/L	50.00		89.7	8-158	21.2	30
Butylbenzylphthalate	47.8	5.00	ug/L	50.00		95.6	38-152	9.42	30
Azobenzene	42.2	5.00	ug/L	50.00		84.5	60-115	10.9	30
Diethylphthalate	40.6	5.00	ug/L	50.00		81.3	31-114	11.5	30
Dimethyl Phthalate	32.6	5.00	ug/L	50.00		65.1	28-120	1.16	30
Di-N-Butyl Phthalate	46.2	5.00	ug/L	50.00		92.3	1-120	5.27	30
Di-N-Octyl Phthalate	46.5	5.00	ug/L	50.00		93.0	4-146	9.17	30
Hexachlorobenzene	44.0	5.00	ug/L	50.00		88.1	35-152	7.91	30
Hexachlorobutadiene	31.2	5.00	ug/L	50.00		62.4	24-120	1.40	30
Hexachlorocyclopentadiene	33.0	5.00	ug/L	50.00		65.9	15-76	0.786	30
Hexachloroethane	31.3	5.00	ug/L	50.00		62.6	40-120	4.80	30
Isophorone	43.9	5.00	ug/L	50.00		87.9	21-196	0.502	30
Nitrobenzene	37.9	5.00	ug/L	50.00		75.9	35-180	1.54	30
N-Nitrosodimethylamine	27.3	5.00	ug/L	50.00		54.6	17-127	4.26	30
N-Nitroso-Di-N-Propylamine	38.0	5.00	ug/L	50.00		76.1	43-230	0.367	30
N-Nitrosodiphenylamine	50.5	5.00	ug/L	50.00		101	79-139	8.35	30
Pentachlorophenol	30.0	5.00	ug/L	50.00		60.0	14-176	5.20	30

NOTE: The results recorded in this report relate only to the samples as received on the date and at the time noted

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
LCS Dup (B304084-BSD1)									
Phenol	18.3	5.00	ug/L	50.00		36.5	5-120	1.74	30
Pyrene	46.6	5.00	ug/L	50.00		93.3	52-120	4.61	30
Surrogate: 2-Fluoroaniline	*37.6*		ug/L	*50.00*		*75.2*	*60-140*		
Surrogate: Phenol-D6	*18.1*		ug/L	*50.00*		*36.2*	*60-140*		
Surrogate: Naphthalene-D8	*36.7*		ug/L	*50.00*		*73.5*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*36.4*		ug/L	*50.00*		*72.7*	*60-140*		
Surrogate: 2,4-Dibromophenol	*41.4*		ug/L	*50.00*		*82.8*	*60-140*		
Surrogate: Anthracene-D10	*39.1*		ug/L	*50.00*		*78.1*	*60-140*		
Surrogate: Chrysene-D12	*41.0*		ug/L	*50.00*		*82.0*	*60-140*		
Matrix Spike (B304084-MS1)	**Source: 2304016-09**								
Acenaphthene	39.8	5.05	ug/L	50.51	ND	78.8	47-145		
Acenaphthylene	41.2	5.05	ug/L	50.51	ND	81.6	33-145		
Anthracene	57.4	5.05	ug/L	50.51	ND	114	27-133		
Benzo(A)Anthracene	46.6	5.05	ug/L	50.51	ND	92.3	33-143		
Benzo(A)Pyrene	56.6	5.05	ug/L	50.51	ND	112	17-163		
Benzo(B)Fluoranthene	51.4	5.05	ug/L	50.51	ND	102	24-159		
Benzo(G,H,I)Perylene	66.6	5.05	ug/L	50.51	ND	132	35-219		
Benzo(K)Fluoranthene	53.0	5.05	ug/L	50.51	ND	105	11-162		
Chrysene	47.6	5.05	ug/L	50.51	ND	94.2	17-168		
Dibenzo(A,H)Anthracene	68.6	5.05	ug/L	50.51	ND	136	33-227		
Fluoranthene	53.2	5.05	ug/L	50.51	ND	105	26-137		
Fluorene	61.6	5.05	ug/L	50.51	ND	122	59-121		
Indeno(1,2,3-Cd)Pyrene	70.6	5.05	ug/L	50.51	ND	140	39-171		
Naphthalene	40.3	5.05	ug/L	50.51	ND	79.7	21-133		
Phenanthrene	57.7	5.05	ug/L	50.51	ND	114	54-120		
1,2,4-Trichlorobenzene	40.2	5.05	ug/L	50.51	ND	79.6	44-142		
2,4,6-Trichlorophenol	30.8	5.05	ug/L	50.51	ND	61.1	37-144		
2,4-Dichlorophenol	43.6	5.05	ug/L	50.51	ND	86.3	39-135		
2,4-Dimethylphenol	38.6	5.05	ug/L	50.51	ND	76.5	32-120		
2,4-Dinitrotoluene	63.7	5.05	ug/L	50.51	ND	126	39-139		
2,6-Dinitrotoluene	40.9	5.05	ug/L	50.51	ND	81.0	50-158		
2,4-Dinitrophenol	32.5	5.05	ug/L	50.51	ND	64.3	21-191		
2-Chloronaphthalene	40.8	5.05	ug/L	50.51	ND	80.8	60-120		
2-Chlorophenol	46.4	5.05	ug/L	50.51	ND	92.0	23-134		

NOTE: The results recorded in this report relate only to the samples as received on the date and at the time noted

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
Matrix Spike (B304084-MS1)	**Source: 2304016-09**								
2-Nitrophenol	43.2	5.05	ug/L	50.51	ND	85.6	29-182		
3,3'- Dichlorobenzidine	9.01	5.05	ug/L	50.51	ND	17.8	38-262		
4,6-Dinitro-2-Methylphenol	64.9	5.05	ug/L	50.51	ND	129	17-181		
4-Bromophenyl-Phenylether	60.8	5.05	ug/L	50.51	ND	120	53-127		
4-Chloro-3-Methylphenol	20.6	5.05	ug/L	50.51	ND	40.8	22-147		
4-Chlorophenyl-Phenylether	62.5	5.05	ug/L	50.51	ND	124	25-158		
4-Nitrophenol	19.5	5.05	ug/L	50.51	ND	38.6	9-132		
Bis(-2-Chloroethoxy)Methane	37.9	5.05	ug/L	50.51	ND	75.0	33-184		
Bis(2-Chloroethyl)Ether	42.9	5.05	ug/L	50.51	ND	84.9	12-158		
Bis(2-Chloroisopropyl)Ether	37.6	5.05	ug/L	50.51	ND	74.5	36-166		
Bis(2-Ethylhexyl)Phthalate	52.9	5.05	ug/L	50.51	ND	105	8-158		
Butylbenzylphthalate	55.4	5.05	ug/L	50.51	ND	110	38-152		
Azobenzene	60.0	5.05	ug/L	50.51	ND	119	61-106		
Diethylphthalate	58.2	5.05	ug/L	50.51	ND	115	31-114		
Dimethyl Phthalate	38.2	5.05	ug/L	50.51	ND	75.7	28-120		
Di-N-Butyl Phthalate	58.5	5.05	ug/L	50.51	ND	116	1-120		
Di-N-Octyl Phthalate	56.0	5.05	ug/L	50.51	ND	111	4-146		
Hexachlorobenzene	59.0	5.05	ug/L	50.51	ND	117	35-152		
Hexachlorobutadiene	42.9	5.05	ug/L	50.51	ND	84.9	24-120		
Hexachlorocyclopentadiene	27.0	5.05	ug/L	50.51	ND	53.5	15-76		
Hexachloroethane	41.7	5.05	ug/L	50.51	ND	82.6	40-120		
Isophorone	40.1	5.05	ug/L	50.51	ND	79.5	21-196		
Nitrobenzene	41.0	5.05	ug/L	50.51	ND	81.2	35-180		
N-Nitrosodimethylamine	24.6	5.05	ug/L	50.51	ND	48.7	17-127		
N-Nitroso-Di-N-Propylamine	45.8	5.05	ug/L	50.51	ND	90.7	43-230		
N-Nitrosodiphenylamine	62.8	5.05	ug/L	50.51	ND	124	79-139		
Pentachlorophenol	51.3	5.05	ug/L	50.51	ND	102	14-176		
Phenol	28.4	5.05	ug/L	50.51	8.67	39.0	5-120		
Pyrene	52.4	5.05	ug/L	50.51	ND	104	52-120		
Surrogate: 2-Fluoroaniline	*43.6*		ug/L	*50.51*		*86.4*	*60-140*		
Surrogate: Phenol-D6	*21.9*		ug/L	*50.51*		*43.3*	*60-140*		
Surrogate: Naphthalene-D8	*43.9*		ug/L	*50.51*		*86.9*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*44.6*		ug/L	*50.51*		*88.2*	*60-140*		
Surrogate: 2,4-Dibromophenol	*27.6*		ug/L	*50.51*		*54.6*	*60-140*		
Surrogate: Anthracene-D10	*52.9*		ug/L	*50.51*		*105*	*60-140*		

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
Matrix Spike (B304084-MS1)		**Source: 2304016-09**							
Surrogate: Chrysene-D12	*47.9*		ug/L	*50.51*		*94.9*	*60-140*		
Matrix Spike Dup (B304084-MSD1)		**Source: 2304016-09**							
Acenaphthene	38.1	5.00	ug/L	50.00	ND	76.2	47-145	4.36	24
Acenaphthylene	39.2	5.00	ug/L	50.00	ND	78.5	33-145	4.98	24
Anthracene	55.1	5.00	ug/L	50.00	ND	110	27-133	3.99	24
Benzo(A)Anthracene	46.0	5.00	ug/L	50.00	ND	91.9	33-143	1.40	24
Benzo(A)Pyrene	55.5	5.00	ug/L	50.00	ND	111	17-163	1.87	24
Benzo(B)Fluoranthene	50.6	5.00	ug/L	50.00	ND	101	24-159	1.40	24
Benzo(G,H,I)Perylene	65.6	5.00	ug/L	50.00	ND	131	35-219	1.52	24
Benzo(K)Fluoranthene	51.6	5.00	ug/L	50.00	ND	103	11-162	2.68	24
Chrysene	46.8	5.00	ug/L	50.00	ND	93.6	17-168	1.60	24
Dibenzo(A,H)Anthracene	67.7	5.00	ug/L	50.00	ND	135	33-227	1.31	24
Fluoranthene	51.1	5.00	ug/L	50.00	ND	102	26-137	3.88	24
Fluorene	59.9	5.00	ug/L	50.00	ND	120	59-121	2.81	24
Indeno(1,2,3-Cd)Pyrene	67.9	5.00	ug/L	50.00	ND	136	39-171	3.97	24
Naphthalene	35.1	5.00	ug/L	50.00	ND	70.3	21-133	13.6	24
Phenanthrene	55.6	5.00	ug/L	50.00	ND	111	54-120	3.70	24
1,2,4-Trichlorobenzene	34.7	5.00	ug/L	50.00	ND	69.4	44-142	14.7	24
2,4,6-Trichlorophenol	31.5	5.00	ug/L	50.00	ND	63.0	37-144	2.06	24
2,4-Dichlorophenol	42.5	5.00	ug/L	50.00	ND	85.0	39-135	2.45	24
2,4-Dimethylphenol	37.0	5.00	ug/L	50.00	ND	74.0	32-120	4.27	24
2,4-Dinitrotoluene	61.4	5.00	ug/L	50.00	ND	123	39-139	3.58	24
2,6-Dinitrotoluene	38.9	5.00	ug/L	50.00	ND	77.7	50-158	5.16	24
2,4-Dinitrophenol	29.0	5.00	ug/L	50.00	ND	57.9	21-191	11.5	24
2-Chloronaphthalene	38.2	5.00	ug/L	50.00	ND	76.3	60-120	6.66	24
2-Chlorophenol	41.2	5.00	ug/L	50.00	ND	82.3	23-134	12.0	24
2-Nitrophenol	37.3	5.00	ug/L	50.00	ND	74.7	29-182	14.6	24
3,3'- Dichlorobenzidine	9.66	5.00	ug/L	50.00	ND	19.3	38-262	6.96	24
4,6-Dinitro-2-Methylphenol	60.9	5.00	ug/L	50.00	ND	122	17-181	6.44	24
4-Bromophenyl-Phenylether	58.9	5.00	ug/L	50.00	ND	118	53-127	3.22	24
4-Chloro-3-Methylphenol	20.2	5.00	ug/L	50.00	ND	40.4	22-147	2.14	24
4-Chlorophenyl-Phenylether	60.5	5.00	ug/L	50.00	ND	121	25-158	3.18	24
4-Nitrophenol	17.5	5.00	ug/L	50.00	ND	35.0	9-132	10.9	24
Bis(-2-Chloroethoxy)Methane	33.7	5.00	ug/L	50.00	ND	67.5	33-184	11.5	24

Final Report

Project: Crown Cork & Seal - 2304016

Project Number: 2304016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304084									
Matrix Spike Dup (B304084-MSD1)	**Source: 2304016-09**								
Bis(2-Chloroethyl)Ether	35.2	5.00	ug/L	50.00	ND	70.4	12-158	19.7	24
Bis(2-Chloroisopropyl)Ether	31.2	5.00	ug/L	50.00	ND	62.5	36-166	18.6	24
Bis(2-Ethylhexyl)Phthalate	52.4	5.00	ug/L	50.00	ND	105	8-158	0.986	24
Butylbenzylphthalate	53.5	5.00	ug/L	50.00	ND	107	38-152	3.42	24
Azobenzene	57.8	5.00	ug/L	50.00	ND	116	61-106	3.72	24
Diethylphthalate	56.7	5.00	ug/L	50.00	ND	113	31-114	2.63	24
Dimethyl Phthalate	37.0	5.00	ug/L	50.00	ND	74.1	28-120	3.14	24
Di-N-Butyl Phthalate	56.4	5.00	ug/L	50.00	ND	113	1-120	3.67	24
Di-N-Octyl Phthalate	55.1	5.00	ug/L	50.00	ND	110	4-146	1.66	24
Hexachlorobenzene	56.5	5.00	ug/L	50.00	ND	113	35-152	4.33	24
Hexachlorobutadiene	35.8	5.00	ug/L	50.00	ND	71.7	24-120	17.9	24
Hexachlorocyclopentadiene	22.0	5.00	ug/L	50.00	ND	44.1	15-76	20.4	24
Hexachloroethane	33.3	5.00	ug/L	50.00	ND	66.7	40-120	22.3	24
Isophorone	36.2	5.00	ug/L	50.00	ND	72.4	21-196	10.3	24
Nitrobenzene	35.3	5.00	ug/L	50.00	ND	70.5	35-180	15.0	24
N-Nitrosodimethylamine	19.0	5.00	ug/L	50.00	ND	38.1	17-127	25.5	24
N-Nitroso-Di-N-Propylamine	40.0	5.00	ug/L	50.00	ND	80.0	43-230	13.5	24
N-Nitrosodiphenylamine	60.6	5.00	ug/L	50.00	ND	121	79-139	3.64	24
Pentachlorophenol	46.2	5.00	ug/L	50.00	ND	92.5	14-176	10.3	24
Phenol	25.7	5.00	ug/L	50.00	8.67	34.1	5-120	9.82	24
Pyrene	50.6	5.00	ug/L	50.00	ND	101	52-120	3.62	24
Surrogate: 2-Fluoroaniline	*39.8*		ug/L	*50.00*		*79.7*	*60-140*		
Surrogate: Phenol-D6	*19.4*		ug/L	*50.00*		*38.8*	*60-140*		
Surrogate: Naphthalene-D8	*37.9*		ug/L	*50.00*		*75.8*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*38.2*		ug/L	*50.00*		*76.3*	*60-140*		
Surrogate: 2,4-Dibromophenol	*27.2*		ug/L	*50.00*		*54.3*	*60-140*		
Surrogate: Anthracene-D10	*50.6*		ug/L	*50.00*		*101*	*60-140*		
Surrogate: Chrysene-D12	*46.5*		ug/L	*50.00*		*93.0*	*60-140*		

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Project: Crown Cork & Seal - 2304016

Project Number: 2304016

GC - Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304139									
Blank (B304139-BLK1)									
Oil & Grease	--- U	5.00	mg/L						
LCS (B304139-BS1)									
Oil & Grease	26.8	5.00	mg/L	40.00		67	78-114		
LCS Dup (B304139-BSD1)									
Oil & Grease	29.7	5.00	mg/L	40.00		74	78-114	10	20
Matrix Spike (B304139-MS1)	**Source: 2304016-08**								
Oil & Grease	34.9	5.00	mg/L	50.00	8.50	53	78-114		
Matrix Spike (B304139-MS2)	**Source: 2304014-01**								
Oil & Grease	75.9	5.00	mg/L	81.63	ND	93	78-114		

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Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304068									
Blank (B304068-BLK1)									
Chromium	--- U	5.00	ug/L						
Copper	--- U	10.0	ug/L						
Manganese	--- U	5.00	ug/L						
Zinc	--- U	20.0	ug/L						
LCS (B304068-BS1)									
Chromium	205	5.00	ug/L	200.0		103	85-115		
Copper	205	10.0	ug/L	200.0		102	85-115		
Manganese	205	5.00	ug/L	200.0		102	85-115		
Zinc	201	20.0	ug/L	200.0		101	85-115		
LCS Dup (B304068-BSD1)									
Chromium	206	5.00	ug/L	200.0		103	85-115	0.316	20
Copper	207	10.0	ug/L	200.0		103	85-115	0.875	20
Manganese	206	5.00	ug/L	200.0		103	85-115	0.341	20
Zinc	203	20.0	ug/L	200.0		101	85-115	0.703	20
Matrix Spike (B304068-MS1)	**Source: 2304016-01**								
Chromium	203	5.00	ug/L	200.0	ND	102	80-120		
Copper	246	10.0	ug/L	200.0	18.6	114	80-120		
Manganese	550	5.00	ug/L	200.0	351	99.7	80-120		
Zinc	249	20.0	ug/L	200.0	54.0	97.7	80-120		
Matrix Spike Dup (B304068-MSD1)	**Source: 2304016-01**								
Chromium	200	25.0	ug/L	200.0	ND	100	80-120	1.48	10
Copper	232	50.0	ug/L	200.0	18.6	107	80-120	5.82	10
Manganese	548	25.0	ug/L	200.0	351	98.7	80-120	0.366	10
Zinc	253	100	ug/L	200.0	54.0	99.7	80-120	1.55	10

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Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Mercury CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304079									
Blank (B304079-BLK1)									
Mercury	--- U	0.050	ug/L						
LCS (B304079-BS1)									
Mercury	0.974	0.050	ug/L	1.000		97.4	85-115		
LCS Dup (B304079-BSD1)									
Mercury	1.01	0.050	ug/L	1.000		101	85-115	3.63	20
Matrix Spike (B304079-MS1)	**Source: 2304016-01**								
Mercury	1.00	0.050	ug/L	1.000	ND	100	80-120		

NOTE: The results recorded in this report relate only to the samples as received on the date and at the time noted

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Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304063									
Blank (B304063-BLK1)									
Biochemical Oxygen Demand	--- U	2.00	mg/L						
LCS (B304063-BS1)									
Biochemical Oxygen Demand	196		mg/L	198.0		98.7	84.6-115.4		
LCS (B304063-BS2)									
Biochemical Oxygen Demand	183		mg/L	198.0		92.4	84.6-115.4		
LCS Dup (B304063-BSD1)									
Biochemical Oxygen Demand	178		mg/L	198.0		89.9	84.6-115.4	9.37	200
Matrix Spike (B304063-MS1)	**Source: 2304016-01**								
Biochemical Oxygen Demand	371	2.00	mg/L	264.0	76.9	111	75-125		
Matrix Spike Dup (B304063-MSD1)	**Source: 2304016-01**								
Biochemical Oxygen Demand	297	2.00	mg/L	237.6	76.9	92.6	75-125	22.2	200
Batch B304064									
LCS (B304064-BS1)									
Nitrite [As N]	0.463	0.0500	mg/L	0.4560		102	90-110		
Nitrate [As N]	17.0	0.500	mg/L	16.50		103	90-110		
LCS Dup (B304064-BSD1)									
Nitrite [As N]	0.463	0.0500	mg/L	0.4560		102	90-110	0	20
Nitrate [As N]	16.9	0.500	mg/L	16.50		102	90-110	0.6	20

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Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304064									
Matrix Spike (B304064-MS1)		**Source: 2304016-01**							
Nitrate [As N]	0.470	0.0500	mg/L	0.2000	0.277	96	90-110		
Nitrite [As N]	0.255	0.0500	mg/L	0.2000	0.0527	101	90-110		
Batch B304067									
Blank (B304067-BLK1)									
Phosphorus	--- U	0.0500	mg/L						
Blank (B304067-BLK2)									
Phosphorus	--- U	0.0500	mg/L						
LCS (B304067-BS1)									
Phosphorus	8.92	0.250	mg/L	8.450		106	90-110		
LCS (B304067-BS2)									
Phosphorus	9.03	0.250	mg/L	8.450		107	90-110		
LCS Dup (B304067-BSD1)									
Phosphorus	9.30	0.250	mg/L	8.450		110	90-110	4	20
LCS Dup (B304067-BSD2)									
Phosphorus	9.17	0.250	mg/L	8.450		109	90-110	2	20
Matrix Spike (B304067-MS1)		**Source: 2304016-01**							
Phosphorus	1.08	0.0500	mg/L	1.000	0.0533	103	90-110		
Matrix Spike (B304067-MS2)		**Source: 2304024-05**							
Phosphorus	1.05	0.0500	mg/L	1.000	ND	105	90-110		

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Project Number: 2304016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304069									
Blank (B304069-BLK1)									
Residue, Non-Filterable	--- U	10.0	mg/L						
Blank (B304069-BLK2)									
Residue, Non-Filterable	--- U	10.0	mg/L						
LCS (B304069-BS1)									
Residue, Non-Filterable	55.0	10.0	mg/L	55.10		99.8	85-115		
LCS Dup (B304069-BSD1)									
Residue, Non-Filterable	55.0	10.0	mg/L	55.10		99.8	85-115	0.00	20
Duplicate (B304069-DUP1)	**Source: 2304016-01**								
Residue, Non-Filterable	9.00	10.0	mg/L		9.00			0.00	20
Batch B304071									
LCS (B304071-BS1)									
Fluoride	4.51	0.0500	mg/L	4.860		93	90-110		
LCS Dup (B304071-BSD1)									
Fluoride	4.54	0.0500	mg/L	4.860		93	90-110	0.7	20
Matrix Spike (B304071-MS1)	**Source: 2304016-01**								
Fluoride	11.2	0.500	mg/L	2.000	9.29	95	90-110		
Batch B304072									
Blank (B304072-BLK1)									
Residue, Filterable	--- U	10.0	mg/L						

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Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304072									
Blank (B304072-BLK2)									
Residue, Filterable	--- U	10.0	mg/L						
LCS (B304072-BS1)									
Residue, Filterable	444	10.0	mg/L	452.0		98.2	85-115		
LCS Dup (B304072-BSD1)									
Residue, Filterable	446	10.0	mg/L	452.0		98.7	85-115	0.449	20
Duplicate (B304072-DUP1)	**Source: 2304016-01**								
Residue, Filterable	2120	10.0	mg/L		2130			0.282	20
Batch B304081									
Blank (B304081-BLK1)									
Alkalinity Carbonate	--- U	1.00	mg/L						
Batch B304095									
LCS (B304095-BS1)									
Nitrogen, Total Kjeldahl	13.2	0.200	mg/L	12.40		106	90-110		
LCS Dup (B304095-BSD1)									
Nitrogen, Total Kjeldahl	13.5	0.200	mg/L	12.40		109	90-110	2	20
Matrix Spike (B304095-MS1)	**Source: 2304016-01**								
Nitrogen, Total Kjeldahl	17.3	1.00	mg/L	4.000	9.91	185	90-110		

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Project: Crown Cork & Seal - 2304016

Project Number: 2304016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B304116									
LCS (B304116-BS1)									
Chemical Oxygen Demand	185	40.0	mg/L	194.0		96	90-110		
LCS Dup (B304116-BSD1)									
Chemical Oxygen Demand	208	40.0	mg/L	194.0		107	90-110	11	20
Matrix Spike (B304116-MS1)	**Source: 2304016-01**								
Chemical Oxygen Demand	318	80.0	mg/L	50.00	231	174	90-110		
Batch B304119									
Blank (B304119-BLK1)									
Ammonia [As N]	--- U	0.100	mg/L						
Blank (B304119-BLK2)									
Ammonia [As N]	--- U	0.100	mg/L						
LCS (B304119-BS1)									
Ammonia [As N]	7.67	0.100	mg/L	8.340		92	90-110		
LCS Dup (B304119-BSD1)									
Ammonia [As N]	7.71	0.100	mg/L	8.340		92	90-110	0.5	20
Matrix Spike (B304119-MS1)	**Source: 2304016-01**								
Ammonia [As N]	6.06	0.100	mg/L	5.000	1.38	94	90-110		

8.0 Photographs

Photo #1. A 24-hr composite sample was collected of the pretreated discharged effluent.

Photo #2. The magmeter monitors the effluent flow before reaching the sewer collection system.