NPDES Pretreatment Compliance Sampling Inspection Report

Thorlabs Finishing

280 Spring Street
Newton, New Jersey 07860

NPDES Permit: NJ 030 2821
40 CFR Part 433.17

Inspection Dates: August 15-16, 2023

Report Prepared by:

THUAN TRAN Digitally signed by THUAN TRAN
Date: 2023.10.11 13:58:31 -04'00'

Thuan Tran, Physical Scientist

Report Approved by:

PHILIP COCUZZA Digitally signed by PHILIP COCUZZA
Date: 2023.10.11 15:08:03 -04'00'

Phil Cocuzza, Chief
Monitoring Operations Section

1.0 OBJECTIVE

On August 15-16, 2023, at the request of the New Jersey Department of Environmental Protection (NJDEP), the United States Environmental Protection Agency (USEPA) conducted a National Pollutant Discharge Elimination System (NPDES) Pretreatment Compliance Sampling Inspection (CSI) at Thorlabs Finishing in Newton, New Jersey (NJ). The objective of the Pretreatment CSI was to gather information necessary to determine if the pretreated discharge effluent from Thorlabs Finishing is in compliance with the requirements and limitations set forth in their NPDES Permit; NJ0302821, as well as, the Federal Metal Finishing Category for Pretreatment Standards for New Sources (PSNS) under 40 CFR Part 433.17 and the Federal General Pretreatment Standards for Existing and New Sources of Pollution under 40 CFR Part 403. The NPDES Permit was issued on February 27, 2020 and will expire on February 28, 2025.

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

Thorlabs Finishing
Scott Shadis, Metal Finishing Manger
973-440-7400 (mobile), email: sshadis@thorlabs.com
Kyle Cook, Operator on Record
Markus McConnon, Anodizing Line Lead Operator

3.0 FACILITY DESCRIPTION

3.1 General Information

Thorlabs Finishing is located at 280 Spring Street in Newton, NJ. The facility specializes in anodizing and dyeing aluminum alloy parts for laser and fiber optic systems in the photonic industry. The facility operates two, 10-hour shifts; 6:00AM to 4:30PM and 3:45PM to 2:15AM and employs nineteen (19) workers. Thorlabs Finishing is categorized under Standard Industrial Classification (SIC) 3471– Electroplating, Plating. Polishing, Anodizing & Coloring and the North American Industry Classification System (NAICS) 332813 – Electroplating, Plating, Polishing, Anodizing & Coloring.

3.2 Process Information

City water is used for sanitary purposes and in the manufacturing operation. Sanitary wastewater is drained into the Town of Newton Sewer Collection System. In the manufacturing operation, city water is treated by passing through an Ion Exchange System. The De-Ionized (DI) water is used in the DI water rinse baths during the Anodizing Finishing process.

Raw aluminum is stamped and punched to produce bare parts of various shapes and sizes at the machine shop. Some of the bare parts are tumbled at the machine shop while others are tumbled at the facility to deburr and polish the surface. At the facility, the received bare parts are sorted, racked onto a cart, and then placed onto a flight bar. The flight bar moves the cart into a loading station. In the loading station, the overhead hoist lifts the flight bar moving the cart into the storage queue. While on stand-by, the operator computer programs the flight bar with the proper procedures to run the required component process. Once the program has been initiated, the automation system runs the operations for that specific rack. The operation process starts by dipping the bare parts in an Acid Soak Cleaner Bath to remove oil, grease, and dirt. After cleaning, the bare parts are rinsed with city water to remove any drag-out. Once rinsed, the bare parts are placed into an Alkaline Etch Bath to remove bare metal from the surface. The bare parts are rinsed through 2 heated counter-flow city water rinses to remove any caustic drag-out. If necessary, the bare parts can be manually rinsed in the ”Blind Hole” rinse station. After rinsing, the bare parts are dipped into a Deoxidizer Bath to desmut the surface. The bare parts are rinsed through a series of 2 counter-flow city water rinses. At this point, the bare parts are either dipped into a Type III Anodizing Bath (lower temperature and higher amperage) or Type II Anodizing Bath (higher temperature lower amperage). After the bare parts have been anodized, they are rinsed through a series of 2 counter-flow DI water rinses. If necessary, they can be manually rinsed in a second “Blind Hole” rinse station with DI water.

Depending on the computer program, the parts are either “Clear Anodized” or “Black Anodized.” If “Clear Anodized,” the parts will proceed to the Nickel Acetate Seal Bath. If “Black Anodized,” the parts continue to the Nitric Acid Activator Bath to prepare the surface for dyeing followed by a single counter-flow DI water rinse bath to remove any drag-out. After rinsing, the parts are dipped into the Black Organic Immersion Dye Bath. Then, they are rinsed in a series of 2 counter-flow DI water rinse baths. After rinsing, the parts continue to the Nickel Acetate Seal Bath. The parts are spray rinsed as they are removed from the Nickel Acetate Seal Bath and continued to the Drag-Out DI water rinse bath. The overflow from the Drag-Out DI water rinse bath is treated by a Mobile Ion Exchange Unit to remove any nickel residual. After the Drag-Out DI water rinse bath, the parts get another counter-flow DI water rinse, then finally a hot DI water rinse bath followed by air dry as the rack moves to the storage queue. From the storage queue, the parts are removed from the rack, inspected, and packed for transport.

Process wastewater generated during the manufacturing operation is collected and pretreated by the On-Site Pretreatment System. From the Anodizing Pretreatment line, the overflow from the city water rinse baths after the Acid Soak Cleaner and the Deoxidizer Baths is collected and pumped to the Master Lift Station.

From the Anodizing Finishing line, the overflow from the DI water rinse baths after either Type III or Type II Anodizing Baths, the Nitric Acid Activator Bath, the Black Organic Immersion Dye Bath, and the Nickel Acetate Seal Bath is pumped to the DI Lift Station as well as the overflow from the final hot DI water rinse bath. From the DI Lift Station, the

process wastewater is pumped to the Master Lift Station. Air flow from the treatment baths is directed to the air scrubber. Sprayed water from the air scrubber flows to the Master Lift Station.

As the Master Lift Station fills up, a level sensor is triggered to pump the process wastewater into 1 of 2 pH Neutralization Tanks. A pH probe in the pH Neutralization Tank monitors and communicates with the dosimeters for chemical treatment (acid or caustic) while the agitator homogenizes the wastewater to the desired pH range. As the level raises in the pH Neutralization Tank, the high-level sensor triggers the pump to discharge the pretreated wastewater through a PVC pipe. A fixed in-line pH probe provides continuous pH monitoring, followed by an in-line electromagnetic flow measuring device before the effluent discharges into the sewer collection system.

3.3 Facility Self-Monitoring Information

Thorlabs Finishing contracts with Enviro-Science of Delaware Inc. (ESI) to perform permit compliance sampling event such as setting up the 24-hour composite sampler, taking appropriate grab samples and perform on-site analysis for pH (Hydrogen Ion). Alpha Analytical Inc. is contracted by ESI to provide sample containers and analyzes the samples. Samples are analyzed for Metals (Cadmium, Chromium, Copper, Lead, Nickel, Silver & Zinc), Sulfates, Phosphorus, Cyanides and Total Toxic Organics (TTO). TTO consists of Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Pesticides and Polychlorinated Biphenyls (PCBs).

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 pretreated discharge monitoring location. A 24-hour composite sample was collected and analyzed for Metals (Cd, Cr, Cu, Ni, Ag & Zn), Total Phosphorus, and Total Sulfates (SO_4). Grab-composite samples were collected for Semi-Volatile Organic Compounds (SVOCs), Pesticides, and Polychlorinated Biphenyls (PCBs). Grab samples were collected for Volatile Organic Compounds (VOCs), Total Petroleum Hydrocarbons (TPH), and Cyanide. The four (4) sets of VOCs grab samples were collected and laboratory composited.

In addition, 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. Signed and dated custody seals were placed across the lids and along the sides of the sample containers. The custody sealed sample containers were placed inside plastic sample bags and sealed. All samples were transported on ice to the USEPA Laboratory in Edison, New Jersey for analysis.

Flow monitoring data were provided by the facility representative based on their monthly average.

Split samples were collected and given to the facility representative.

4.2 Inspection Activities

An NPDES Pretreatment CSI at Thorlabs Finishing was conducted on August 15-16, 2023. The inspectors met with Scott Shadis; Metal Finishing Manager, Kyle Cook; Operator on Record and Markus McConnon; Anodizing Line Lead Operator. Inspector's credentials were presented, and business cards were provided during the opening conference. The facility representatives were explained that the purpose of the inspection with supporting on-site activities was to determine if the facility is in compliance with their NPDES Permit, the Federal Metal Finishing Regulation in 40 CFR Part 433 as well as the Federal General Pretreatment Standards in 40 CFR Part 403.

The on-site supporting activities consist of collecting samples at the monitoring location, observing and evaluating the monitoring location, observing and evaluating the on-site pretreatment system, observing and evaluating the flow monitoring equipment, observing and evaluating the facility sampling equipment, review and evaluate the facility testing procedures, and interviewing the facility's representatives.

During the closing conference, the facility representatives were briefed on the inspection activities. On-site sample results and concerns observed during the inspection were communicated to the facility representatives.

4.3 Deviations and/or Environmental Conditions

EPA performed 24-hour composite sampling based on time interval. During the interview, it was revealed that the facility performs 24-hour composite sampling based on flow and that the discharge is not continuous, but intermittent throughout the 24-hour discharge period. According to the description in the "Comments" section of Part III in the NPDES Permit, it states, "*Composite samples shall be obtained over a period of 24-hours using either flow-proportional or time-composite sampling techniques*."

Furthermore, the sampling tap was the only access point to collecting compliance samples. Based on professional judgement, grab and grab-composite samples from the monitoring location had to be coordinated between the automatic composite sampler programming, the discharge flow duration and time of collection. To collect the grab and grab-composite samples, the sample tubing had to be disconnected from the sampling tap. Two (2) 1-liter amber glass bottles were used to collect the pretreated effluent at a reduced flow. After one bottle was filled, a second bottle was switched to continue collecting the water sample. The water sample was distributed between the glass sample containers. Once the sample containers are filled to the required volume, the sample tubing was reconnected to the sampling tap and the flow returned to normal to resume composite sampling. This sampling procedure was repeated 3 more times.

5.0 ANALYTICAL RESULTS

Thorlabs Finishing – Pretreated Discharge to Newton (T) WWTP
Inspection Dates: August 15-16, 2023

Parameters	Units	Permit Limitations	EPA Results
Flow	GPD	Monitor	7,008
pH	SU	5.5 – 9.0	7.77
Petroleum Hydrocarbon	MG/L	100 – 150	U
Phosphorus, T	MG/L	Monitor	0.349
Sulfate (SO4), T	MG/L	Monitor	192
Cyanide, T	MG/L	0.65 – 1.20	U
Metals: Cadmium, T	MG/L	0.07 – 0.11	U
Chromium, T	MG/L	1.71 – 2.77	0.0554
Copper, T	MG/L	2.07 – 3.38	0.0473
Lead, T	MG/L	0.43 – 0.69	U
Nickel, T	MG/L	2.38 – 3.98	0.036
Silver, T	MG/L	0.24 – 0.43	U
Zinc, T	MG/L	1.48 – 2.61	0.132
TTO:	MG/L	2.13	0.01
VOAs	----	0.0095 (chloroform)	---
NVOAs	----	ND----------	---
Pesticides	----	ND----------	---
PCBs	----	ND----------	---
Temperature	°C	Monitor	23
Total Residual Chlorine	MG/L	Per Sample Collection	Zero

Notes: U- The analyte was not detected at or above the Reporting Limit.
pH- >/= 5.0 SU [40 CFR Part 403.5(b)(2)]
Temperature: </= 40°C (104°F) at the POTW intake [40 CFR Part 403.5(b)(5)]
Petroleum Hydrocarbon: Total Petroleum Hydrocarbon (TPH) shall not be in amount to cause interference or pass through. [40 CFR Part 403.5(b)(6)]
TTO: Shall mean Total Toxic Organics, which is the summation of all quantifiable values greater than 0.01 mg/L for the following toxic organics: [40 CFR Part 433.11(e)]

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 operation was conducted as discussed in Section 4.2 above. During the inspection, the following observations were noted which may contravene the requirements of the permit or the applicable regulations:

6.2.1 The in-line electromagnetic flow measuring device could not be determined when it was last calibrated. According to Part IV(E)(1)(b) of the Significant Indirect

User under Facility Requirements – Treatment Works of the NPDES Permit (page 7 of 10), it states, "*The permittee shall operate and maintain treatment works and facilities which are installed or used by the permittee to achieve compliance with the terms and conditions of the permit as specified in the Operation & Maintenance Manual*."

6.2.2 The sample tubing was observed to be dirty and/or with algal growth. The dirty and/or algal growth attached to the inner wall of the sample tubing could become dislodged during the purging cycle and bias the analytical results. The sample tubing should be cleaned or replaced. According to Part IV(A)(2(a) of the Significant Indirect User under Monitoring - Sampling Methods of the NPDES Permit (page 5 of 10), it states, "*Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity."*

7.0 ATTACHMENTS

Attachment #1. Aluminum parts are racked in the "Open Area" in preparation for anodizing.

Attachment #2. Base material is treated through Type II or Type III Anodizing line.

Attachment #3. Process waste streams (in red) are conveyed to the master lift station.

Attachment #4. Overall flow diagram illustrates the anodizing and wastewater processes at Thorlabs Finishing.

Attachment #5. Samples were submitted to the USEPA-R2 Laboratory on August 16, 2023.

Attachment #6. The USEPA Analytical Data Package was received on September 06, 2023.

8.0 PHOTOGRAPHS

Photo #1. Compliance samples were collected from the sampling tap.

Photo #2. No calibration information was observed on the flow meter/recorder.

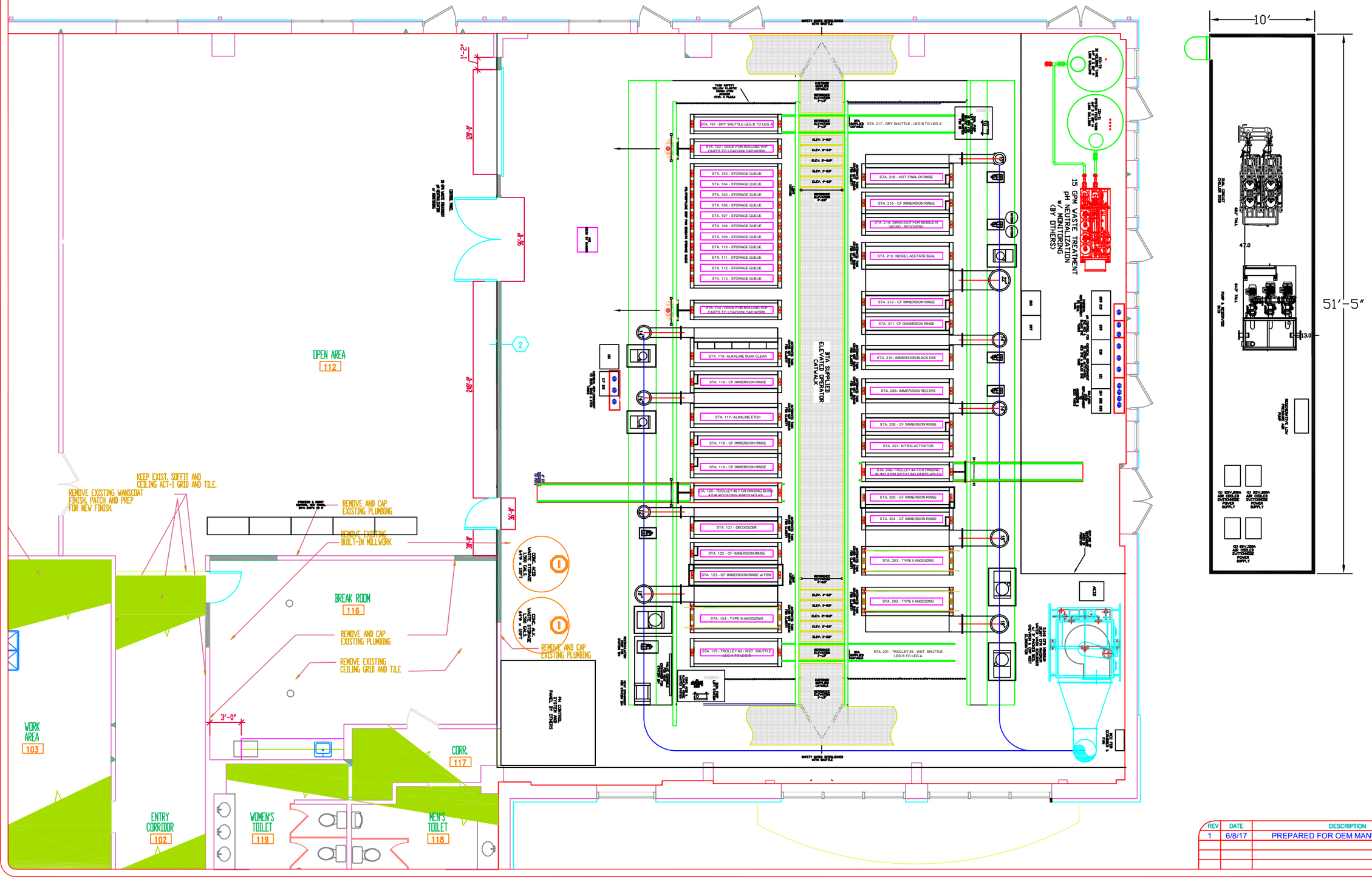
Photo #3. The facility's sample tubing was observed to be dirty and/or with algal growth.

Photo #4. Process waste streams from the rinse baths are directed to the master lift station.

Photo #5. Chemical treatment is provided in the pH Neutralization Tank 1.

7.0 Attachments

Attachment #1. Aluminum parts are racked and hold in the "Open Area" before moving into the storage queue to start the anodizing process.



BAKER TECHNOLOGY ASSOCIATES, INC.
1507 7TH STREET, NO. 446
SANTA MONICA, CALIFORNIA 90401
PH - (310) 458-1752

TYPE II & TYPE III ANODIZING LINE

DWG. TITLE: SYSTEM CONCEPT LAYOUT

DWG. TITLE: JC-A4047-1

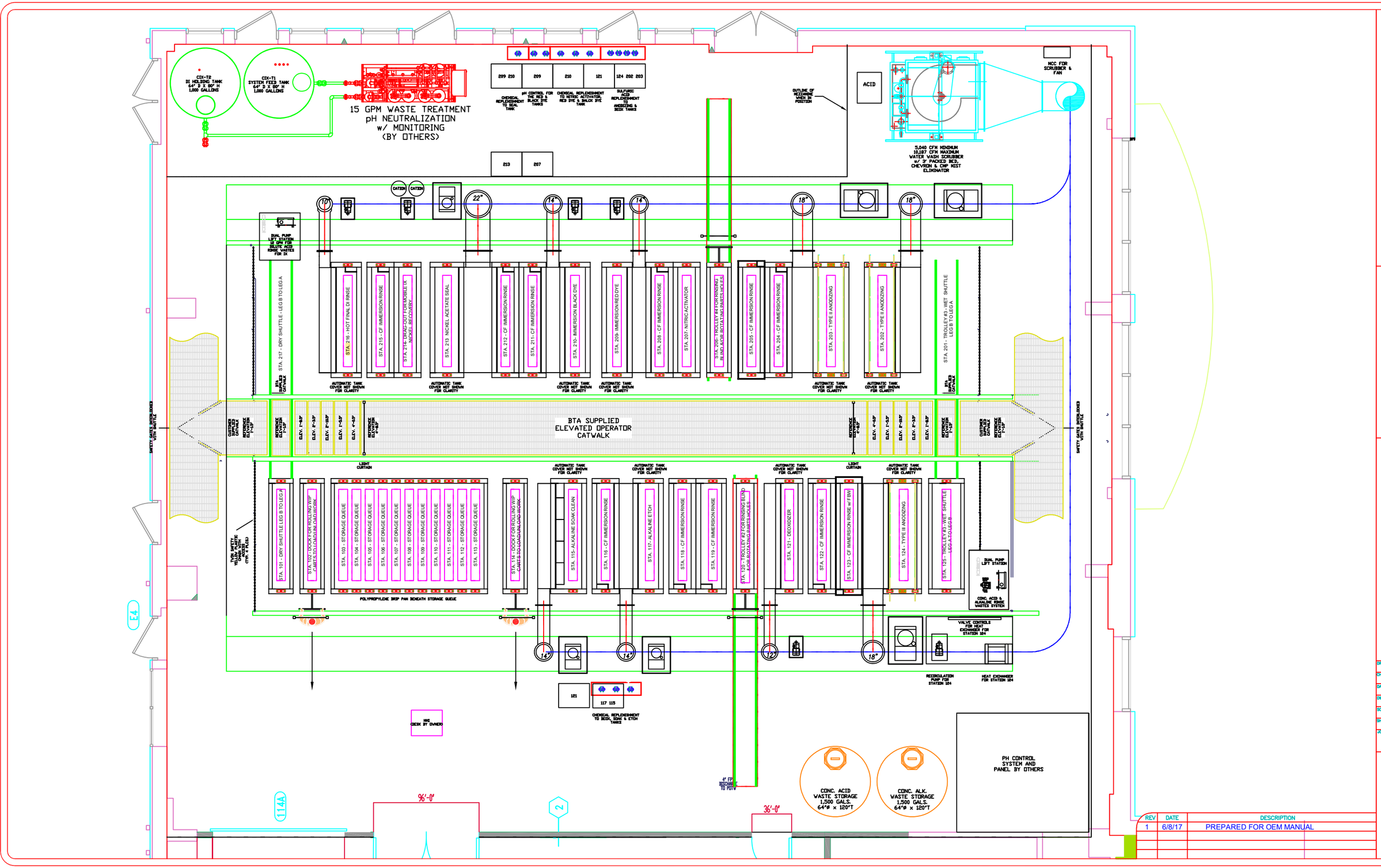
Thorlabs
Newton, New Jersey

DRAWN:	J.COOMBES
CHECKED:	
DATE:	06/07/20
DWG. SIZE:	TABLOID
SCALE:	NOT TO SCALE
SHEET:	1 OF: 1
JOB NUMBER:	A7047

NOTICE
PROPRIETARY INFORMATION

REV	DATE	DESCRIPTION
1	6/8/17	PREPARED FOR OEM MANUAL

Attachment #2. Base material is treated through either Type II (higher temperature lower amperage) or Type III (lower temperature and higher amperage) Anodizing line.



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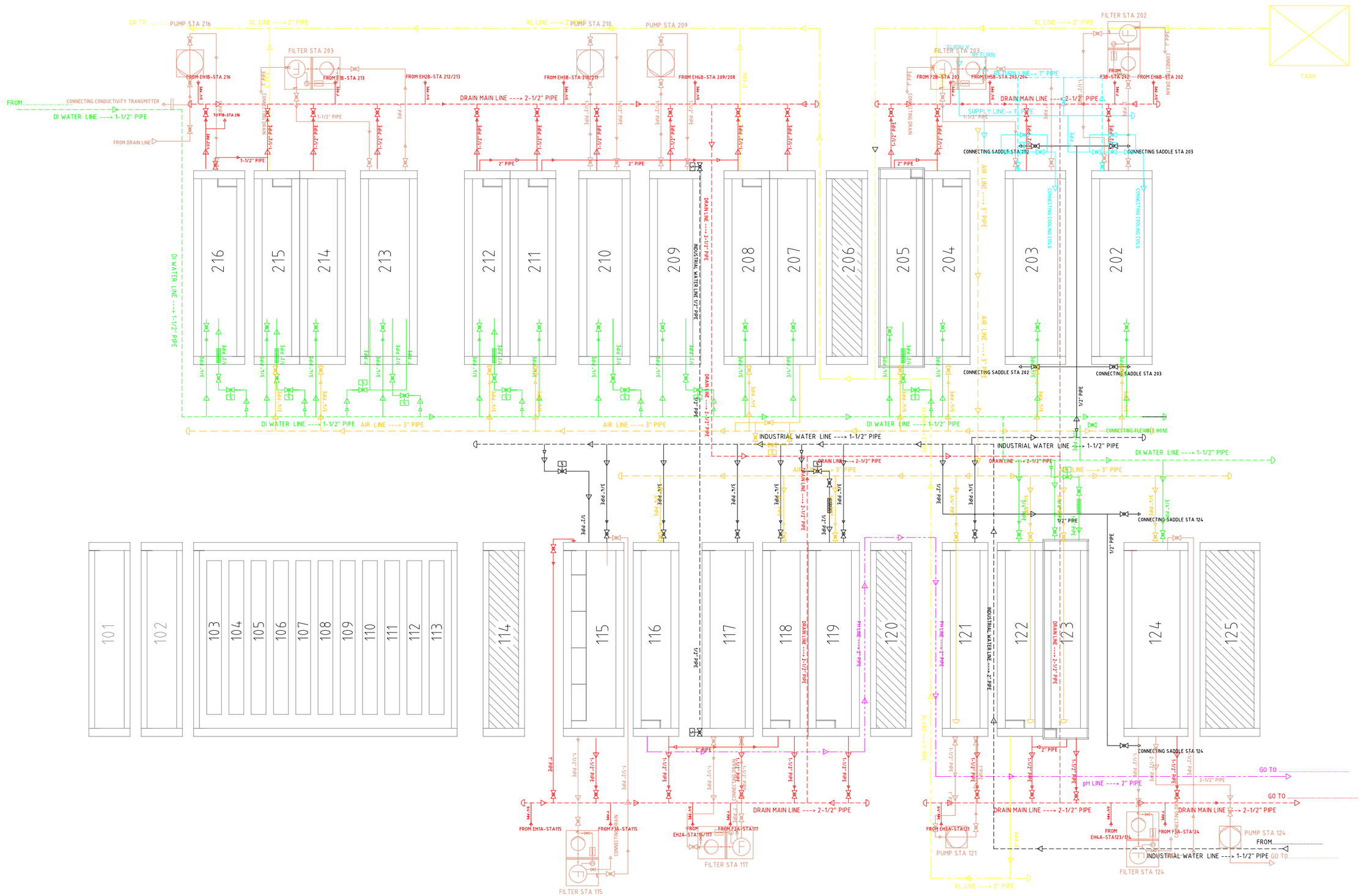
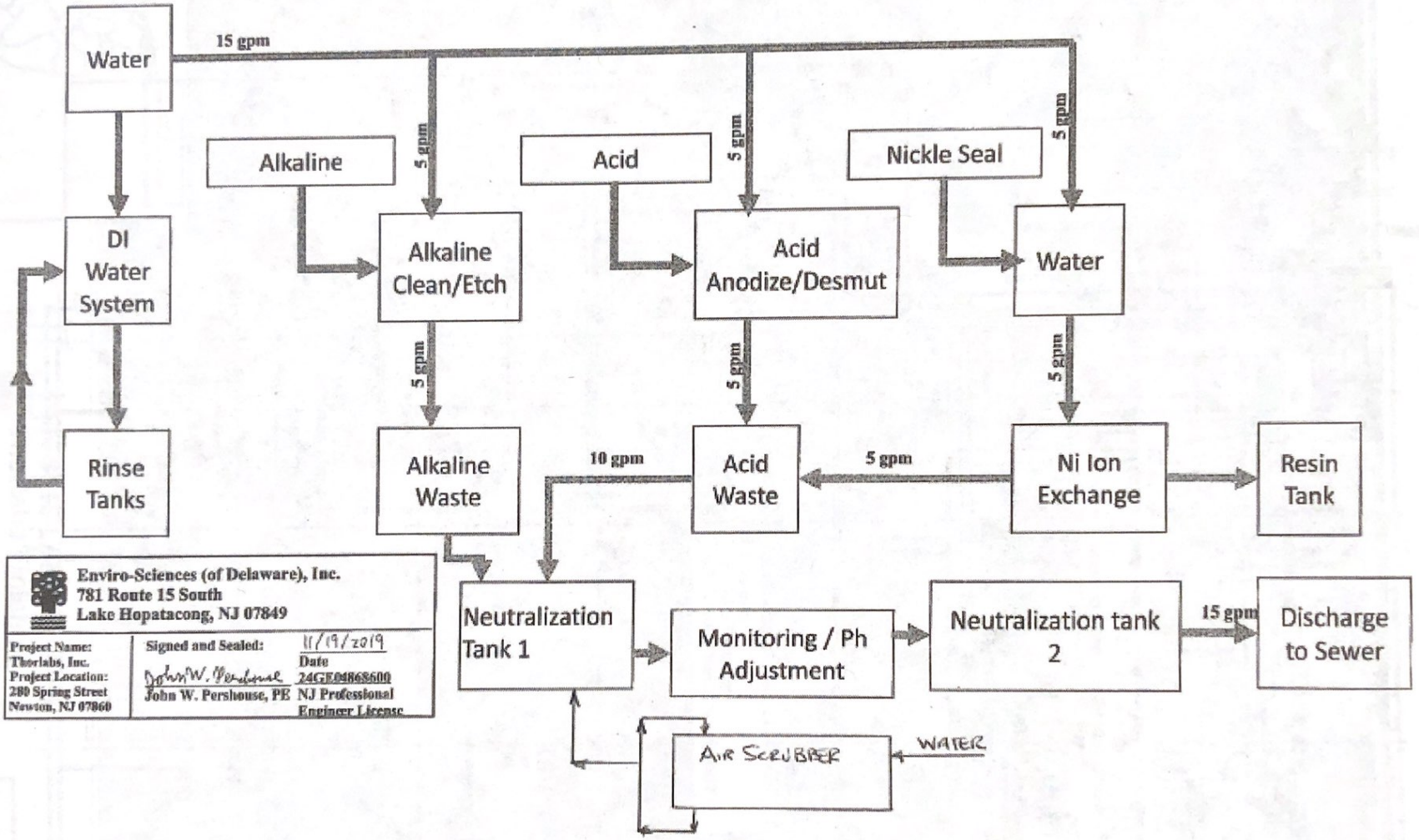
DATE:	06/07/20
DWG. SIZE:	TABLOID
SCALE:	NOT TO SCALE
SHEET:	1 OF 1
JOB NUMBER:	A7047

REV	DATE	DESCRIPTION
1	6/8/17	PREPARED FOR OEM MANUAL

Attachment #3. The waste streams (in red) from the manufacturing operation are collected and pumped to the master lift station.



Attachment #4. Overall flow diagram illustrates the anodizing and wastewater processes at Thorlabs Finishing.



Attachment #5. Samples were submitted to the USEPA Region 2 Laboratory on Wednesday, August 16, 2023.

US EPA REGION 2 LABORATORY

Page 1 of 2 pages

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ___ Thorlabs Finishing

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 #: NJ 0302821

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Pretreated Discharge - Comp	3	A	☐	1, 250-ml plastic bottle: Phosphorus, T: 24-Hr Comp	☑	2308016-01 01	11:10A	10:55A	8/15-16/23
		A	☐	1, 125-ml plastic bottle: Sulfate, (SO4): 24-Hr Comp	☑	-01 0	11:10A	10:55A	8/15-16/23
		A	☐	1, 250-ml plastic bottle: Metals*: 24-Hr Comp	☑	-01 02	11:10A	10:55A	8/15-16/23
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
Pretreated Discharge - G-C	9	A	☐	3, 1-Liter WM amber jars: NVOAs: Grab-Comp	☑	-02 0	11:40A	10:30A	8/15-16/23
		A	☐	3, 1-Liter WM amber jars: PCBs: Grab-Comp	☑	-02 0	↓	↓	8/15-16/23
		A	☐	3, 1-Liter WM amber jars: Pesticides: Grab-Comp	☑	-02 0			8/15-16/23
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
TRIP BLANK	3	A	☐	3, 40-ml glass vials: VOAs: Trip Blank	☐	-03 0		7:32A	8/15/2023
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			

8/14/23

COMMENTS & SPECIAL REQUIREMENTS:

NOTE: Metals*: Cd, Cr, Cu, Pb, Ni, Ag & Zn.

No Chlorine

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	2:18 pm	8/16/2023
Relinquished By: Thuan Tran / Received By: DPH	2:24 pm	8/16/2023
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 ☐

Direct from sampling, chilling initiated. 8/16/23

revised 10/25/2004

US EPA REGION 2 LABORATORY

Page 2 of 2 pages

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ___ Thorlabs Finishing

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 #: NJ 0302821

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Pretreated Discharge - Grab	16	A	☒	3, 40-ml clear glass vials: VOAs: Grab #1 *	☑	2308016-040		11:40A	8/15/2023
		A	☒	3, 40-ml clear glass vials: VOAs: Grab #2 *	☑	-05 0		1:40P	8/15/2023
		A	☒	3, 40-ml clear glass vials: VOAs: Grab #3 *	☑	-06 0		4:10P	8/15/2023
		A	☒	3, 40-ml clear glass vials: VOAs: Grab #4 *	☑	-07 0		10:30AM	8/16/2023
		A	☒	3, 1-Liter WM clear glasses: ~~O&G~~ TPH: Grab	☑	-09 03		10:30AM	8/16/2023
		A	☒	1, 125-ml plastic bottle: Cyanide: Grab	☑	-09 05		10:30AM	8/16/2023
			☐		☐	0 1 2 3 4 5 6 7 8 9 10 A 8/16/23			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
* 2308016-08 = * Lab Composite = Grab #1 +2 +3+4 A 8/16/23			☐		☐	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:

NOTES: VOAs Grab #1 thru Grab #4 are to be laboratory composite.

No chlorine

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	2:15PM	8/16/2023
Relinquished By: Thuan Tran / Received By: DPatel	2:24 PM	8/16/2023
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

Attachment #6. The USEPA Analytical Data Package was received on Wednesday, September 06, 2023.

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

September 05, 2023

Thuan Tran
Monitoring & Assessment Branch
LSASD/MAB
Edison, NJ 08837

RE: Thorlabs Finishing - 2308016

Enclosed are the results of analyses for samples received by the laboratory on 08/16/2023. 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 2308016 and contact the laboratory.

Sincerely,

John R. Bourbon
Chief, LSASD/LB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

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.
All SVOA results are non-detect. "J"and "L"qualification due to internal quality control outliers.

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: Thorlabs Finishing - 2308016

Project Number: 2308016

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 2.00 ug/L was raised to 5 ug/L for the following analyte(s):
Phenol
for the following samples:
2308016-02

The reporting level of 5.00 ug/L was raised to 30 ug/L for the following analyte(s):
4,6-Dinitro-2-Methylphenol, Pentachlorophenol
for the following samples:
2308016-02

The reporting level of 5.00 ug/L was raised to 50 ug/L for the following analyte(s):
2,4-Dinitrophenol
for the following samples:
2308016-02

SUMMARY REPORT FOR SAMPLES

Field ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pretreated Discharge - Comp	2308016-01	Aqueous	08/16/2023 10:55	08/16/2023 14:24
Pretreated Discharge - G-C	2308016-02	Aqueous	08/16/2023 10:30	08/16/2023 14:24
TRIP BLANK	2308016-03	Aqueous	08/15/2023 07:32	08/16/2023 14:24
Pretreated Discharge - Grab#1to Grab#	2308016-08	Aqueous	08/16/2023 00:00	08/16/2023 14:24
Pretreated Discharge - Grab	2308016-09	Aqueous	08/16/2023 10:30	08/16/2023 14:24

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

SUMMARY REPORT FOR METHODS

Analysis	Method	Certification	Matrix
608.3 Pesticides/PCBs-NPDES	EPA 608.3 SOP C-91 Rev 4.4	NELAP	Aqueous
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
Cyanide, Total	EPA 335.4 SOP C-28 Rev 2.8	NELAP	Aqueous
Metals ICP TAL NPDES/DW	EPA 200.7 SOP C-109 Rev 3.7	NELAP	Aqueous
Petroleum Hydrocarbons, Tot.	EPA 1664A SOP C-126 Rev 1.7	NELAP	Aqueous
Phosphorus	EPA 365.1 SOP C-68 Rev 2.8	NELAP	Aqueous
Sulfate	EPA 300.0 SOP C-94 Rev 2.8	NELAP	Aqueous

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Pretreated Discharge - Comp				**Sample ID: 2308016-01**		
Metals ICP						
Cadmium	---	U	3.00	ug/L	B308070	
Chromium	55.4		5.00	ug/L	B308070	
Copper	47.3		10.0	ug/L	B308070	
Lead	---	U	8.00	ug/L	B308070	
Nickel	36.0		20.0	ug/L	B308070	
Silver	---	U	5.00	ug/L	B308070	
Zinc	132		20.0	ug/L	B308070	
Sanitary						
Phosphorus	0.349		0.0500	mg/L	B308107	
Sulfate	192		10.0	mg/L	B308074	
Field ID: Pretreated Discharge - G-C				**Sample ID: 2308016-02**		
NVOA GCMS						
Acenaphthene	---	U J	5.49	ug/L	B308073	
Acenaphthylene	---	U J	5.49	ug/L	B308073	
Anthracene	---	U J	5.49	ug/L	B308073	
Benzo(A)Anthracene	---	U L	5.49	ug/L	B308073	
Benzo(A)Pyrene	---	U J	5.49	ug/L	B308073	
Benzo(B)Fluoranthene	---	U J	5.49	ug/L	B308073	
Benzo(G,H,I)Perylene	---	U J	5.49	ug/L	B308073	
Benzo(K)Fluoranthene	---	U J	5.49	ug/L	B308073	
Chrysene	---	U L	5.49	ug/L	B308073	
Dibenzo(A,H)Anthracene	---	U J	5.49	ug/L	B308073	
Fluoranthene	---	U J	5.49	ug/L	B308073	
Fluorene	---	U J	5.49	ug/L	B308073	
Indeno(1,2,3-Cd)Pyrene	---	U J	5.49	ug/L	B308073	
Naphthalene	---	U J	5.49	ug/L	B308073	
Phenanthrene	---	U J	5.49	ug/L	B308073	
1,2,4-Trichlorobenzene	---	U J	5.49	ug/L	B308073	
2,4,6-Trichlorophenol	---	U J	5.49	ug/L	B308073	

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Pretreated Discharge - G-C				**Sample ID: 2308016-02**		
NVOA GCMS						
2,4-Dichlorophenol	---	U J	5.49	ug/L	B308073	
2,4-Dimethylphenol	---	U J	5.49	ug/L	B308073	
2,4-Dinitrotoluene	---	U J	5.49	ug/L	B308073	
2,6-Dinitrotoluene	---	U J	5.49	ug/L	B308073	
2,4-Dinitrophenol	---	U J	54.9	ug/L	B308073	
2-Chloronaphthalene	---	U J	5.49	ug/L	B308073	
2-Chlorophenol	---	U L	5.49	ug/L	B308073	
2-Nitrophenol	---	U J	5.49	ug/L	B308073	
3,3'- Dichlorobenzidine	---	U L	5.49	ug/L	B308073	
4,6-Dinitro-2-Methylphenol	---	U J	33.0	ug/L	B308073	
4-Bromophenyl-Phenylether	---	U J	5.49	ug/L	B308073	
4-Chloro-3-Methylphenol	---	U J	5.49	ug/L	B308073	
4-Chlorophenyl-Phenylether	---	U L	5.49	ug/L	B308073	
4-Nitrophenol	---	U J	5.49	ug/L	B308073	
Bis(-2-Chloroethoxy)Methane	---	U J	5.49	ug/L	B308073	
Bis(2-Chloroethyl)Ether	---	U J	5.49	ug/L	B308073	
Bis(2-Chloroisopropyl)Ether	---	U J	5.49	ug/L	B308073	
Bis(2-Ethylhexyl)Phthalate	---	U L	5.49	ug/L	B308073	
Butylbenzylphthalate	---	U J	5.49	ug/L	B308073	
Azobenzene	---	U J	5.49	ug/L	B308073	
Diethylphthalate	---	U J	5.49	ug/L	B308073	
Dimethyl Phthalate	---	U J	5.49	ug/L	B308073	
Di-N-Butyl Phthalate	---	U J	5.49	ug/L	B308073	
Di-N-Octyl Phthalate	---	U L	5.49	ug/L	B308073	
Hexachlorobenzene	---	U J	5.49	ug/L	B308073	
Hexachlorobutadiene	---	U J	2.20	ug/L	B308073	
Hexachlorocyclopentadiene	---	U J	5.49	ug/L	B308073	
Hexachloroethane	---	U J	5.49	ug/L	B308073	
Isophorone	---	U J	5.49	ug/L	B308073	

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Pretreated Discharge - G-C			**Sample ID: 2308016-02**			
NVOA GCMS						
Nitrobenzene	---	U J	5.49	ug/L	B308073	
N-Nitrosodimethylamine	---	U L	5.49	ug/L	B308073	
N-Nitroso-Di-N-Propylamine	---	U J	5.49	ug/L	B308073	
N-Nitrosodiphenylamine	---	U J	5.49	ug/L	B308073	
Pentachlorophenol	---	U J	33.0	ug/L	B308073	
Phenol	---	U J	5.49	ug/L	B308073	
Pyrene	---	U J	5.49	ug/L	B308073	
Pest/PCBs GC						
alpha-BHC	---	U	0.003	ug/L	B308068	
gamma-BHC (Lindane)	---	U	0.003	ug/L	B308068	
beta-BHC	---	U	0.003	ug/L	B308068	
delta-BHC	---	U	0.003	ug/L	B308068	
Heptachlor	---	U	0.003	ug/L	B308068	
Aldrin	---	U	0.003	ug/L	B308068	
Heptachlor epoxide	---	U	0.003	ug/L	B308068	
Endosulfan I	---	U	0.003	ug/L	B308068	
4,4'-DDE	---	U	0.006	ug/L	B308068	
Dieldrin	---	U	0.006	ug/L	B308068	
Endrin	---	U	0.006	ug/L	B308068	
4,4'-DDD	---	U	0.006	ug/L	B308068	
Endosulfan II	---	U	0.006	ug/L	B308068	
4,4'-DDT	---	U	0.006	ug/L	B308068	
Endrin aldehyde	---	U	0.006	ug/L	B308068	
Endosulfan sulfate	---	U	0.006	ug/L	B308068	
Toxaphene	---	U	0.208	ug/L	B308068	
Chlordane	---	U	0.069	ug/L	B308068	
Aroclor 1016	---	U J	0.035	ug/L	B308068	
Aroclor 1221	---	U	0.069	ug/L	B308068	
Aroclor 1232	---	U	0.035	ug/L	B308068	

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Pretreated Discharge - G-C				**Sample ID: 2308016-02**		
Pest/PCBs GC						
Aroclor 1242	---	U	0.035	ug/L	B308068	
Aroclor 1248	---	U	0.035	ug/L	B308068	
Aroclor 1254	---	U	0.035	ug/L	B308068	
Aroclor 1260	---	U J	0.035	ug/L	B308068	
Field ID: TRIP BLANK				**Sample ID: 2308016-03**		
VOA GCMS						
Chloromethane	---	U	5.00	ug/L	B308079	
Vinyl Chloride	---	U	5.00	ug/L	B308079	
Bromomethane	---	U	5.00	ug/L	B308079	
Chloroethane	---	U	5.00	ug/L	B308079	
Trichlorofluoromethane	---	U	5.00	ug/L	B308079	
1,1-Dichloroethene	---	U	5.00	ug/L	B308079	
Methylene Chloride	---	U	5.00	ug/L	B308079	
Acrylonitrile	---	U	5.00	ug/L	B308079	
trans-1,2-Dichloroethene	---	U	5.00	ug/L	B308079	
1,1-Dichloroethane	---	U	5.00	ug/L	B308079	
Chloroform	---	U	5.00	ug/L	B308079	
1,1,1-Trichloroethane	---	U	5.00	ug/L	B308079	
Carbon Tetrachloride	---	U	5.00	ug/L	B308079	
1,2-Dichloroethane	---	U	5.00	ug/L	B308079	
Benzene	---	U	5.00	ug/L	B308079	
Trichloroethene	---	U	5.00	ug/L	B308079	
1,2-Dichloropropane	---	U	5.00	ug/L	B308079	
Bromodichloromethane	---	U	5.00	ug/L	B308079	
cis-1,3-Dichloropropene	---	U	5.00	ug/L	B308079	
Toluene	---	U	5.00	ug/L	B308079	
trans-1,3-Dichloropropene	---	U	5.00	ug/L	B308079	
1,1,2-Trichloroethane	---	U	5.00	ug/L	B308079	
Tetrachloroethene	---	U	5.00	ug/L	B308079	

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: TRIP BLANK				**Sample ID: 2308016-03**		
VOA GCMS						
Dibromochloromethane	---	U	5.00	ug/L	B308079	
Chlorobenzene	---	U	5.00	ug/L	B308079	
Ethylbenzene	---	U	5.00	ug/L	B308079	
Bromoform	---	U	5.00	ug/L	B308079	
1,1,2,2-Tetrachloroethane	---	U	5.00	ug/L	B308079	
1,3-Dichlorobenzene	---	U	5.00	ug/L	B308079	
1,4-Dichlorobenzene	---	U	5.00	ug/L	B308079	
1,2-Dichlorobenzene	---	U	5.00	ug/L	B308079	
Field ID: Pretreated Discharge - Grab#1to Grab#4				**Sample ID: 2308016-08**		
VOA GCMS						
Chloromethane	---	U	5.00	ug/L	B308079	
Vinyl Chloride	---	U	5.00	ug/L	B308079	
Bromomethane	---	U	5.00	ug/L	B308079	
Chloroethane	---	U	5.00	ug/L	B308079	
Trichlorofluoromethane	---	U	5.00	ug/L	B308079	
1,1-Dichloroethene	---	U	5.00	ug/L	B308079	
Methylene Chloride	---	U	5.00	ug/L	B308079	
Acrylonitrile	---	U	5.00	ug/L	B308079	
trans-1,2-Dichloroethene	---	U	5.00	ug/L	B308079	
1,1-Dichloroethane	---	U	5.00	ug/L	B308079	
Chloroform	9.53		5.00	ug/L	B308079	
1,1,1-Trichloroethane	---	U	5.00	ug/L	B308079	
Carbon Tetrachloride	---	U	5.00	ug/L	B308079	
1,2-Dichloroethane	---	U	5.00	ug/L	B308079	
Benzene	---	U	5.00	ug/L	B308079	
Trichloroethene	---	U	5.00	ug/L	B308079	
1,2-Dichloropropane	---	U	5.00	ug/L	B308079	
Bromodichloromethane	---	U	5.00	ug/L	B308079	
cis-1,3-Dichloropropene	---	U	5.00	ug/L	B308079	

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Pretreated Discharge - Grab#1to Grab#4				**Sample ID: 2308016-08**		
VOA GCMS						
Toluene	---	U	5.00	ug/L	B308079	
trans-1,3-Dichloropropene	---	U	5.00	ug/L	B308079	
1,1,2-Trichloroethane	---	U	5.00	ug/L	B308079	
Tetrachloroethene	---	U	5.00	ug/L	B308079	
Dibromochloromethane	---	U	5.00	ug/L	B308079	
Chlorobenzene	---	U	5.00	ug/L	B308079	
Ethylbenzene	---	U	5.00	ug/L	B308079	
Bromoform	---	U	5.00	ug/L	B308079	
1,1,2,2-Tetrachloroethane	---	U	5.00	ug/L	B308079	
1,3-Dichlorobenzene	---	U	5.00	ug/L	B308079	
1,4-Dichlorobenzene	---	U	5.00	ug/L	B308079	
1,2-Dichlorobenzene	---	U	5.00	ug/L	B308079	
Field ID: Pretreated Discharge - Grab				**Sample ID: 2308016-09**		
GC						
Petroleum Hydrocarbons, Tot.	---	U	6.58	mg/L	B309003	
Sanitary						
Cyanide, Total	---	U	10.0	ug/L	B308090	

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308079									
Blank (B308079-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	*102*		ug/L	*100.0*		*102*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*101*		ug/L	*100.0*		*101*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*105*		ug/L	*100.0*		*105*	*60-140*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308079									
LCS (B308079-BS1)									
Chloromethane	53.3		ug/L	50.00		107	19-205		
Vinyl Chloride	49.0		ug/L	50.00		98.0	5-195		
Bromomethane	48.8		ug/L	50.00		97.6	15-185		
Chloroethane	54.2		ug/L	50.00		108	40-160		
Trichlorofluoromethane	56.7		ug/L	50.00		113	50-150		
1,1-Dichloroethene	59.1		ug/L	50.00		118	50-150		
Methylene Chloride	58.3		ug/L	50.00		117	60-140		
Acrylonitrile	67.8		ug/L	50.00		136	60-140		
trans-1,2-Dichloroethene	61.6		ug/L	50.00		123	70-130		
1,1-Dichloroethane	59.0		ug/L	50.00		118	70-130		
Chloroform	58.6		ug/L	50.00		117	70-135		
1,1,1-Trichloroethane	60.2		ug/L	50.00		120	70-130		
Carbon Tetrachloride	59.4		ug/L	50.00		119	70-130		
1,2-Dichloroethane	59.4		ug/L	50.00		119	70-130		
Benzene	60.3		ug/L	50.00		121	65-135		
Trichloroethene	59.6		ug/L	50.00		119	65-135		
1,2-Dichloropropane	60.0		ug/L	50.00		120	35-165		
Bromodichloromethane	60.0		ug/L	50.00		120	65-135		
cis-1,3-Dichloropropene	59.6		ug/L	50.00		119	25-175		
Toluene	60.4		ug/L	50.00		121	70-130		
trans-1,3-Dichloropropene	64.2		ug/L	50.00		128	50-150		
1,1,2-Trichloroethane	59.3		ug/L	50.00		119	70-130		
Tetrachloroethene	59.3		ug/L	50.00		119	70-130		
Dibromochloromethane	60.4		ug/L	50.00		121	70-135		
Chlorobenzene	58.8		ug/L	50.00		118	65-135		
Ethylbenzene	63.1		ug/L	50.00		126	60-140		
Bromoform	61.0		ug/L	50.00		122	70-130		
1,1,2,2-Tetrachloroethane	62.2		ug/L	50.00		124	60-140		
1,3-Dichlorobenzene	58.9		ug/L	50.00		118	70-130		
1,4-Dichlorobenzene	59.0		ug/L	50.00		118	65-135		
1,2-Dichlorobenzene	58.9		ug/L	50.00		118	65-135		
Surrogate: 1,4-Difluorobenzene	*101*		ug/L	*100.0*		*101*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*104*		ug/L	*100.0*		*104*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*109*		ug/L	*100.0*		*109*	*60-140*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308079									
LCS Dup (B308079-BSD1)									
Chloromethane	49.4		ug/L	50.00		98.9	19-205	7.53	20
Vinyl Chloride	45.0		ug/L	50.00		90.0	5-195	8.47	20
Bromomethane	46.6		ug/L	50.00		93.2	15-185	4.53	20
Chloroethane	50.8		ug/L	50.00		102	40-160	6.42	20
Trichlorofluoromethane	51.9		ug/L	50.00		104	50-150	8.84	20
1,1-Dichloroethene	55.1		ug/L	50.00		110	50-150	7.13	20
Methylene Chloride	55.5		ug/L	50.00		111	60-140	4.92	20
Acrylonitrile	63.8		ug/L	50.00		128	60-140	5.97	20
trans-1,2-Dichloroethene	58.2		ug/L	50.00		116	70-130	5.74	20
1,1-Dichloroethane	54.6		ug/L	50.00		109	70-130	7.80	20
Chloroform	55.3		ug/L	50.00		111	70-135	5.95	20
1,1,1-Trichloroethane	56.4		ug/L	50.00		113	70-130	6.57	20
Carbon Tetrachloride	55.2		ug/L	50.00		110	70-130	7.17	20
1,2-Dichloroethane	56.5		ug/L	50.00		113	70-130	5.00	20
Benzene	55.9		ug/L	50.00		112	65-135	7.59	20
Trichloroethene	56.0		ug/L	50.00		112	65-135	6.16	20
1,2-Dichloropropane	56.0		ug/L	50.00		112	35-165	6.97	20
Bromodichloromethane	55.6		ug/L	50.00		111	65-135	7.60	20
cis-1,3-Dichloropropene	56.4		ug/L	50.00		113	25-175	5.55	20
Toluene	56.1		ug/L	50.00		112	70-130	7.45	20
trans-1,3-Dichloropropene	60.3		ug/L	50.00		121	50-150	6.25	20
1,1,2-Trichloroethane	55.7		ug/L	50.00		111	70-130	6.35	20
Tetrachloroethene	54.4		ug/L	50.00		109	70-130	8.49	20
Dibromochloromethane	56.8		ug/L	50.00		114	70-135	6.12	20
Chlorobenzene	55.4		ug/L	50.00		111	65-135	6.04	20
Ethylbenzene	58.2		ug/L	50.00		116	60-140	8.18	20
Bromoform	57.8		ug/L	50.00		116	70-130	5.49	20
1,1,2,2-Tetrachloroethane	58.9		ug/L	50.00		118	60-140	5.43	20
1,3-Dichlorobenzene	55.4		ug/L	50.00		111	70-130	6.14	20
1,4-Dichlorobenzene	55.6		ug/L	50.00		111	65-135	5.83	20
1,2-Dichlorobenzene	55.3		ug/L	50.00		111	65-135	6.38	20
Surrogate: 1,4-Difluorobenzene	*100*		ug/L	*100.0*		*100*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*103*		ug/L	*100.0*		*103*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*108*		ug/L	*100.0*		*108*	*60-140*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308079									
Matrix Spike (B308079-MS1)	**Source: 2308016-08**								
Chloromethane	41.5		ug/L	50.00	0.00	83.0	19-273		
Vinyl Chloride	40.8		ug/L	50.00	0.00	81.7	49-251		
Bromomethane	43.7		ug/L	50.00	0.00	87.5	21-242		
Chloroethane	44.7		ug/L	50.00	0.00	89.4	14-230		
Trichlorofluoromethane	47.1		ug/L	50.00	0.00	94.3	17-181		
1,1-Dichloroethene	46.3		ug/L	50.00	0.00	92.6	52-234		
Methylene Chloride	47.3		ug/L	50.00	0.00	94.7	69-221		
Acrylonitrile	49.3		ug/L	50.00	0.00	98.6	40-160		
trans-1,2-Dichloroethene	45.7		ug/L	50.00	0.00	91.4	54-156		
1,1-Dichloroethane	48.1		ug/L	50.00	0.00	96.2	59-155		
Chloroform	56.5		ug/L	50.00	9.53	94.0	51-138		
1,1,1-Trichloroethane	47.4		ug/L	50.00	0.00	94.8	52-162		
Carbon Tetrachloride	47.2		ug/L	50.00	0.00	94.4	70-140		
1,2-Dichloroethane	46.2		ug/L	50.00	0.00	92.4	49-155		
Benzene	46.2		ug/L	50.00	0.00	92.3	37-151		
Trichloroethene	45.6		ug/L	50.00	0.00	91.3	70-157		
1,2-Dichloropropane	47.1		ug/L	50.00	0.00	94.1	74-210		
Bromodichloromethane	47.4		ug/L	50.00	0.00	94.9	35-155		
cis-1,3-Dichloropropene	46.7		ug/L	50.00	0.00	93.4	80-227		
Toluene	46.6		ug/L	50.00	0.00	93.2	47-150		
trans-1,3-Dichloropropene	47.0		ug/L	50.00	0.00	94.0	17-183		
1,1,2-Trichloroethane	46.8		ug/L	50.00	0.00	93.5	52-150		
Tetrachloroethene	46.0		ug/L	50.00	0.00	92.0	64-148		
Dibromochloromethane	46.2		ug/L	50.00	0.00	92.4	53-149		
Chlorobenzene	46.8		ug/L	50.00	0.00	93.7	37-160		
Ethylbenzene	48.2		ug/L	50.00	0.00	96.3	37-162		
Bromoform	47.0		ug/L	50.00	0.00	93.9	45-169		
1,1,2,2-Tetrachloroethane	49.2		ug/L	50.00	0.00	98.3	46-157		
1,3-Dichlorobenzene	47.9		ug/L	50.00	0.00	95.7	59-156		
1,4-Dichlorobenzene	49.1		ug/L	50.00	0.00	98.2	18-190		
1,2-Dichlorobenzene	48.5		ug/L	50.00	0.00	97.1	18-190		
Surrogate: 1,4-Difluorobenzene	*100*		ug/L	*100.0*		*100*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*103*		ug/L	*100.0*		*103*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*106*		ug/L	*100.0*		*106*	*60-140*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

VOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308079									
Matrix Spike Dup (B308079-MSD1)	**Source: 2308016-08**								
Chloromethane	42.4		ug/L	50.00	0.00	84.8	19-273	2.17	28
Vinyl Chloride	40.8		ug/L	50.00	0.00	81.6	49-251	0.0490	28
Bromomethane	44.4		ug/L	50.00	0.00	88.8	21-242	1.52	28
Chloroethane	44.7		ug/L	50.00	0.00	89.4	14-230	0.0224	28
Trichlorofluoromethane	47.1		ug/L	50.00	0.00	94.3	17-181	0.00	28
1,1-Dichloroethene	46.5		ug/L	50.00	0.00	93.0	52-234	0.474	28
Methylene Chloride	48.2		ug/L	50.00	0.00	96.4	69-221	1.82	28
Acrylonitrile	53.1		ug/L	50.00	0.00	106	40-160	7.52	28
trans-1,2-Dichloroethene	47.3		ug/L	50.00	0.00	94.6	54-156	3.44	28
1,1-Dichloroethane	49.2		ug/L	50.00	0.00	98.4	59-155	2.26	28
Chloroform	58.0		ug/L	50.00	9.53	97.0	51-138	3.16	28
1,1,1-Trichloroethane	48.9		ug/L	50.00	0.00	97.8	52-162	3.09	28
Carbon Tetrachloride	48.4		ug/L	50.00	0.00	96.7	70-140	2.41	28
1,2-Dichloroethane	48.1		ug/L	50.00	0.00	96.3	49-155	4.14	28
Benzene	48.2		ug/L	50.00	0.00	96.3	37-151	4.22	28
Trichloroethene	47.8		ug/L	50.00	0.00	95.6	70-157	4.69	28
1,2-Dichloropropane	48.7		ug/L	50.00	0.00	97.4	74-210	3.47	28
Bromodichloromethane	50.2		ug/L	50.00	0.00	100	35-155	5.71	28
cis-1,3-Dichloropropene	49.8		ug/L	50.00	0.00	99.6	80-227	6.44	28
Toluene	48.6		ug/L	50.00	0.00	97.1	47-150	4.16	28
trans-1,3-Dichloropropene	50.2		ug/L	50.00	0.00	100	17-183	6.62	28
1,1,2-Trichloroethane	50.2		ug/L	50.00	0.00	100	52-150	7.14	28
Tetrachloroethene	48.2		ug/L	50.00	0.00	96.4	64-148	4.71	28
Dibromochloromethane	50.2		ug/L	50.00	0.00	100	53-149	8.30	28
Chlorobenzene	48.5		ug/L	50.00	0.00	97.0	37-160	3.50	28
Ethylbenzene	50.5		ug/L	50.00	0.00	101	37-162	4.69	28
Bromoform	50.8		ug/L	50.00	0.00	102	45-169	7.88	28
1,1,2,2-Tetrachloroethane	53.8		ug/L	50.00	0.00	108	46-157	8.94	28
1,3-Dichlorobenzene	51.0		ug/L	50.00	0.00	102	59-156	6.41	28
1,4-Dichlorobenzene	50.9		ug/L	50.00	0.00	102	18-190	3.54	28
1,2-Dichlorobenzene	51.0		ug/L	50.00	0.00	102	18-190	4.86	28
Surrogate: 1,4-Difluorobenzene	*99.6*		ug/L	*100.0*		*99.6*	*60-140*		
Surrogate: 2-Bromo-1-Chloropropane	*102*		ug/L	*100.0*		*102*	*60-140*		
Surrogate: 1,4-Dichlorobutane	*108*		ug/L	*100.0*		*108*	*60-140*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
Blank (B308073-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: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
Blank (B308073-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	*17.4*		ug/L	*50.00*		*34.9*	*60-140*		
Surrogate: Phenol-D6	*8.13*		ug/L	*50.00*		*16.3*	*60-140*		
Surrogate: Naphthalene-D8	*16.9*		ug/L	*50.00*		*33.9*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*16.2*		ug/L	*50.00*		*32.5*	*60-140*		
Surrogate: 2,4-Dibromophenol	*17.9*		ug/L	*50.00*		*35.8*	*60-140*		
Surrogate: Anthracene-D10	*18.9*		ug/L	*50.00*		*37.7*	*60-140*		
Surrogate: Chrysene-D12	*24.0*		ug/L	*50.00*		*47.9*	*60-140*		
LCS (B308073-BS1)									
Acenaphthene	41.6	5.00	ug/L	50.00		83.1	47-145		
Acenaphthylene	37.6	5.00	ug/L	50.00		75.2	33-145		
Anthracene	36.1	5.00	ug/L	50.00		72.2	27-133		
Benzo(A)Anthracene	39.0	5.00	ug/L	50.00		77.9	33-143		
Benzo(A)Pyrene	38.2	5.00	ug/L	50.00		76.4	17-163		
Benzo(B)Fluoranthene	41.9	5.00	ug/L	50.00		83.8	24-159		
Benzo(G,H,I)Perylene	44.5	5.00	ug/L	50.00		89.0	35-219		
Benzo(K)Fluoranthene	39.8	5.00	ug/L	50.00		79.7	11-162		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
LCS (B308073-BS1)									
Chrysene	39.8	5.00	ug/L	50.00		79.7	17-168		
Dibenzo(A,H)Anthracene	41.8	5.00	ug/L	50.00		83.7	33-227		
Fluoranthene	37.5	5.00	ug/L	50.00		75.1	26-137		
Fluorene	33.5	5.00	ug/L	50.00		67.1	59-121		
Indeno(1,2,3-Cd)Pyrene	43.0	5.00	ug/L	50.00		86.0	39-171		
Naphthalene	29.7	5.00	ug/L	50.00		59.4	21-133		
Phenanthrene	36.3	5.00	ug/L	50.00		72.7	54-120		
1,2,4-Trichlorobenzene	27.1	5.00	ug/L	50.00		54.2	44-142		
2,4,6-Trichlorophenol	42.5	5.00	ug/L	50.00		85.0	37-144		
2,4-Dichlorophenol	34.7	5.00	ug/L	50.00		69.5	39-135		
2,4-Dimethylphenol	31.6	5.00	ug/L	50.00		63.3	32-120		
2,4-Dinitrotoluene	37.4	5.00	ug/L	50.00		74.9	39-139		
2,6-Dinitrotoluene	45.1	5.00	ug/L	50.00		90.2	50-158		
2,4-Dinitrophenol	37.6	5.00	ug/L	50.00		75.3	21-191		
2-Chloronaphthalene	37.9	5.00	ug/L	50.00		75.8	60-120		
2-Chlorophenol	26.0	5.00	ug/L	50.00		52.0	23-134		
2-Nitrophenol	36.4	5.00	ug/L	50.00		72.8	29-182		
3,3'- Dichlorobenzidine	45.4	5.00	ug/L	50.00		90.9	38-262		
4,6-Dinitro-2-Methylphenol	40.0	5.00	ug/L	50.00		80.0	17-181		
4-Bromophenyl-Phenylether	36.1	5.00	ug/L	50.00		72.3	53-127		
4-Chloro-3-Methylphenol	39.3	5.00	ug/L	50.00		78.5	22-147		
4-Chlorophenyl-Phenylether	34.2	5.00	ug/L	50.00		68.4	25-158		
4-Nitrophenol	22.7	5.00	ug/L	50.00		45.4	9-132		
Bis(-2-Chloroethoxy)Methane	31.9	5.00	ug/L	50.00		63.9	33-184		
Bis(2-Chloroethyl)Ether	24.8	5.00	ug/L	50.00		49.5	12-158		
Bis(2-Chloroisopropyl)Ether	21.8	5.00	ug/L	50.00		43.7	36-166		
Bis(2-Ethylhexyl)Phthalate	48.6	5.00	ug/L	50.00		97.1	8-158		
Butylbenzylphthalate	39.6	5.00	ug/L	50.00		79.3	38-152		
Azobenzene	33.7	5.00	ug/L	50.00		67.5	60-115		
Diethylphthalate	31.6	5.00	ug/L	50.00		63.3	31-114		
Dimethyl Phthalate	30.0	5.00	ug/L	50.00		60.1	28-120		
Di-N-Butyl Phthalate	38.6	5.00	ug/L	50.00		77.2	1-120		
Di-N-Octyl Phthalate	48.1	5.00	ug/L	50.00		96.2	4-146		
Hexachlorobenzene	37.0	5.00	ug/L	50.00		73.9	35-152		
Hexachlorobutadiene	28.2	5.00	ug/L	50.00		56.3	24-120		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
LCS (B308073-BS1)									
Hexachlorocyclopentadiene	37.2	5.00	ug/L	50.00		74.3	15-76		
Hexachloroethane	25.2	5.00	ug/L	50.00		50.4	40-120		
Isophorone	36.4	5.00	ug/L	50.00		72.8	21-196		
Nitrobenzene	31.5	5.00	ug/L	50.00		63.0	35-180		
N-Nitrosodimethylamine	15.3	5.00	ug/L	50.00		30.6	17-127		
N-Nitroso-Di-N-Propylamine	29.9	5.00	ug/L	50.00		59.8	43-230		
N-Nitrosodiphenylamine	39.1	5.00	ug/L	50.00		78.1	79-139		
Pentachlorophenol	30.4	5.00	ug/L	50.00		60.9	14-176		
Phenol	11.5	5.00	ug/L	50.00		22.9	5-120		
Pyrene	37.4	5.00	ug/L	50.00		74.9	52-120		
Surrogate: 2-Fluoroaniline	*20.2*		ug/L	*50.00*		*40.4*	*60-140*		
Surrogate: Phenol-D6	*9.69*		ug/L	*50.00*		*19.4*	*60-140*		
Surrogate: Naphthalene-D8	*26.1*		ug/L	*50.00*		*52.2*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*25.3*		ug/L	*50.00*		*50.6*	*60-140*		
Surrogate: 2,4-Dibromophenol	*36.9*		ug/L	*50.00*		*73.9*	*60-140*		
Surrogate: Anthracene-D10	*29.4*		ug/L	*50.00*		*58.7*	*60-140*		
Surrogate: Chrysene-D12	*35.0*		ug/L	*50.00*		*70.0*	*60-140*		
LCS Dup (B308073-BSD1)									
Acenaphthene	26.9	5.00	ug/L	50.00		53.8	47-145	42.7	30
Acenaphthylene	24.4	5.00	ug/L	50.00		48.9	33-145	42.4	30
Anthracene	33.2	5.00	ug/L	50.00		66.3	27-133	8.40	30
Benzo(A)Anthracene	31.0	5.00	ug/L	50.00		62.0	33-143	22.8	30
Benzo(A)Pyrene	33.5	5.00	ug/L	50.00		67.1	17-163	13.0	30
Benzo(B)Fluoranthene	35.5	5.00	ug/L	50.00		70.9	24-159	16.7	30
Benzo(G,H,I)Perylene	42.0	5.00	ug/L	50.00		84.0	35-219	5.78	30
Benzo(K)Fluoranthene	33.9	5.00	ug/L	50.00		67.9	11-162	16.0	30
Chrysene	32.0	5.00	ug/L	50.00		63.9	17-168	21.9	30
Dibenzo(A,H)Anthracene	39.2	5.00	ug/L	50.00		78.4	33-227	6.52	30
Fluoranthene	33.0	5.00	ug/L	50.00		65.9	26-137	12.9	30
Fluorene	31.7	5.00	ug/L	50.00		63.3	59-121	5.74	30
Indeno(1,2,3-Cd)Pyrene	40.7	5.00	ug/L	50.00		81.3	39-171	5.62	30
Naphthalene	19.8	5.00	ug/L	50.00		39.5	21-133	40.3	30
Phenanthrene	33.7	5.00	ug/L	50.00		67.3	54-120	7.66	30
1,2,4-Trichlorobenzene	17.6	5.00	ug/L	50.00		35.2	44-142	42.6	30

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
LCS Dup (B308073-BSD1)									
2,4,6-Trichlorophenol	29.9	5.00	ug/L	50.00		59.8	37-144	34.8	30
2,4-Dichlorophenol	25.0	5.00	ug/L	50.00		50.0	39-135	32.7	30
2,4-Dimethylphenol	23.4	5.00	ug/L	50.00		46.7	32-120	30.2	30
2,4-Dinitrotoluene	37.1	5.00	ug/L	50.00		74.3	39-139	0.858	30
2,6-Dinitrotoluene	33.1	5.00	ug/L	50.00		66.2	50-158	30.7	30
2,4-Dinitrophenol	22.6	5.00	ug/L	50.00		45.1	21-191	50.1	30
2-Chloronaphthalene	23.6	5.00	ug/L	50.00		47.1	60-120	46.7	30
2-Chlorophenol	23.0	5.00	ug/L	50.00		45.9	23-134	12.4	30
2-Nitrophenol	26.8	5.00	ug/L	50.00		53.6	29-182	30.3	30
3,3'- Dichlorobenzidine	39.5	5.00	ug/L	50.00		78.9	38-262	14.1	30
4,6-Dinitro-2-Methylphenol	37.0	5.00	ug/L	50.00		74.0	17-181	7.87	30
4-Bromophenyl-Phenylether	34.2	5.00	ug/L	50.00		68.3	53-127	5.63	30
4-Chloro-3-Methylphenol	29.2	5.00	ug/L	50.00		58.3	22-147	29.5	30
4-Chlorophenyl-Phenylether	32.1	5.00	ug/L	50.00		64.1	25-158	6.49	30
4-Nitrophenol	14.9	5.00	ug/L	50.00		29.8	9-132	41.4	30
Bis(-2-Chloroethoxy)Methane	22.5	5.00	ug/L	50.00		44.9	33-184	34.9	30
Bis(2-Chloroethyl)Ether	22.1	5.00	ug/L	50.00		44.2	12-158	11.3	30
Bis(2-Chloroisopropyl)Ether	18.5	5.00	ug/L	50.00		37.1	36-166	16.4	30
Bis(2-Ethylhexyl)Phthalate	36.1	5.00	ug/L	50.00		72.2	8-158	29.4	30
Butylbenzylphthalate	27.7	5.00	ug/L	50.00		55.3	38-152	35.6	30
Azobenzene	32.2	5.00	ug/L	50.00		64.4	60-115	4.61	30
Diethylphthalate	25.4	5.00	ug/L	50.00		50.8	31-114	21.8	30
Dimethyl Phthalate	11.4	5.00	ug/L	50.00		22.9	28-120	89.7	30
Di-N-Butyl Phthalate	33.2	5.00	ug/L	50.00		66.4	1-120	15.1	30
Di-N-Octyl Phthalate	35.6	5.00	ug/L	50.00		71.3	4-146	29.8	30
Hexachlorobenzene	34.2	5.00	ug/L	50.00		68.4	35-152	7.67	30
Hexachlorobutadiene	16.5	5.00	ug/L	50.00		33.0	24-120	52.1	30
Hexachlorocyclopentadiene	18.7	5.00	ug/L	50.00		37.4	15-76	66.1	30
Hexachloroethane	16.4	5.00	ug/L	50.00		32.8	40-120	42.3	30
Isophorone	26.3	5.00	ug/L	50.00		52.5	21-196	32.4	30
Nitrobenzene	23.2	5.00	ug/L	50.00		46.4	35-180	30.2	30
N-Nitrosodimethylamine	14.7	5.00	ug/L	50.00		29.3	17-127	4.14	30
N-Nitroso-Di-N-Propylamine	22.2	5.00	ug/L	50.00		44.4	43-230	29.5	30
N-Nitrosodiphenylamine	37.8	5.00	ug/L	50.00		75.6	79-139	3.33	30
Pentachlorophenol	27.2	5.00	ug/L	50.00		54.5	14-176	11.1	30

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
LCS Dup (B308073-BSD1)									
Phenol	10.1	5.00	ug/L	50.00		20.2	5-120	12.6	30
Pyrene	31.8	5.00	ug/L	50.00		63.5	52-120	16.4	30
Surrogate: 2-Fluoroaniline	*18.9*		ug/L	*50.00*		*37.7*	*60-140*		
Surrogate: Phenol-D6	*8.79*		ug/L	*50.00*		*17.6*	*60-140*		
Surrogate: Naphthalene-D8	*18.3*		ug/L	*50.00*		*36.6*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*17.8*		ug/L	*50.00*		*35.6*	*60-140*		
Surrogate: 2,4-Dibromophenol	*25.8*		ug/L	*50.00*		*51.5*	*60-140*		
Surrogate: Anthracene-D10	*27.5*		ug/L	*50.00*		*55.0*	*60-140*		
Surrogate: Chrysene-D12	*28.8*		ug/L	*50.00*		*57.6*	*60-140*		
Matrix Spike (B308073-MS1)	**Source: 2308016-02**								
Acenaphthene	31.5	5.43	ug/L	54.35	ND	58.0	47-145		
Acenaphthylene	30.9	5.43	ug/L	54.35	ND	56.9	33-145		
Anthracene	32.0	5.43	ug/L	54.35	ND	58.8	27-133		
Benzo(A)Anthracene	32.1	5.43	ug/L	54.35	ND	59.0	33-143		
Benzo(A)Pyrene	34.6	5.43	ug/L	54.35	ND	63.6	17-163		
Benzo(B)Fluoranthene	34.0	5.43	ug/L	54.35	ND	62.6	24-159		
Benzo(G,H,I)Perylene	39.2	5.43	ug/L	54.35	ND	72.1	35-219		
Benzo(K)Fluoranthene	32.4	5.43	ug/L	54.35	ND	59.6	11-162		
Chrysene	33.5	5.43	ug/L	54.35	ND	61.7	17-168		
Dibenzo(A,H)Anthracene	37.2	5.43	ug/L	54.35	ND	68.5	33-227		
Fluoranthene	32.6	5.43	ug/L	54.35	ND	60.1	26-137		
Fluorene	30.5	5.43	ug/L	54.35	ND	56.1	59-121		
Indeno(1,2,3-Cd)Pyrene	37.2	5.43	ug/L	54.35	ND	68.4	39-171		
Naphthalene	23.9	5.43	ug/L	54.35	ND	43.9	21-133		
Phenanthrene	31.9	5.43	ug/L	54.35	ND	58.7	54-120		
1,2,4-Trichlorobenzene	22.3	5.43	ug/L	54.35	ND	41.0	44-142		
2,4,6-Trichlorophenol	36.8	5.43	ug/L	54.35	ND	67.7	37-144		
2,4-Dichlorophenol	38.7	5.43	ug/L	54.35	ND	71.2	39-135		
2,4-Dimethylphenol	27.5	5.43	ug/L	54.35	ND	50.6	32-120		
2,4-Dinitrotoluene	33.7	5.43	ug/L	54.35	ND	62.0	39-139		
2,6-Dinitrotoluene	35.3	5.43	ug/L	54.35	ND	64.9	50-158		
2,4-Dinitrophenol	44.6	5.43	ug/L	54.35	ND	82.0	21-191		
2-Chloronaphthalene	29.2	5.43	ug/L	54.35	ND	53.8	60-120		
2-Chlorophenol	27.4	5.43	ug/L	54.35	ND	50.4	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: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
Matrix Spike (B308073-MS1)	**Source: 2308016-02**								
2-Nitrophenol	34.0	5.43	ug/L	54.35	ND	62.6	29-182		
3,3'- Dichlorobenzidine	29.4	5.43	ug/L	54.35	ND	54.2	38-262		
4,6-Dinitro-2-Methylphenol	40.5	5.43	ug/L	54.35	ND	74.5	17-181		
4-Bromophenyl-Phenylether	31.8	5.43	ug/L	54.35	ND	58.6	53-127		
4-Chloro-3-Methylphenol	35.2	5.43	ug/L	54.35	ND	64.7	22-147		
4-Chlorophenyl-Phenylether	30.5	5.43	ug/L	54.35	ND	56.1	25-158		
4-Nitrophenol	20.8	5.43	ug/L	54.35	ND	38.3	9-132		
Bis(-2-Chloroethoxy)Methane	25.4	5.43	ug/L	54.35	ND	46.8	33-184		
Bis(2-Chloroethyl)Ether	22.0	5.43	ug/L	54.35	ND	40.6	12-158		
Bis(2-Chloroisopropyl)Ether	21.2	5.43	ug/L	54.35	ND	39.0	36-166		
Bis(2-Ethylhexyl)Phthalate	41.3	5.43	ug/L	54.35	ND	76.0	8-158		
Butylbenzylphthalate	34.6	5.43	ug/L	54.35	ND	63.6	38-152		
Azobenzene	30.7	5.43	ug/L	54.35	ND	56.5	61-106		
Diethylphthalate	28.5	5.43	ug/L	54.35	ND	52.4	31-114		
Dimethyl Phthalate	24.4	5.43	ug/L	54.35	ND	44.8	28-120		
Di-N-Butyl Phthalate	34.2	5.43	ug/L	54.35	ND	62.9	1-120		
Di-N-Octyl Phthalate	41.7	5.43	ug/L	54.35	ND	76.7	4-146		
Hexachlorobenzene	31.7	5.43	ug/L	54.35	ND	58.3	35-152		
Hexachlorobutadiene	24.1	5.43	ug/L	54.35	ND	44.3	24-120		
Hexachlorocyclopentadiene	23.5	5.43	ug/L	54.35	ND	43.2	15-76		
Hexachloroethane	21.2	5.43	ug/L	54.35	ND	39.0	40-120		
Isophorone	26.3	5.43	ug/L	54.35	ND	48.4	21-196		
Nitrobenzene	25.6	5.43	ug/L	54.35	ND	47.1	35-180		
N-Nitrosodimethylamine	15.6	5.43	ug/L	54.35	ND	28.7	17-127		
N-Nitroso-Di-N-Propylamine	24.3	5.43	ug/L	54.35	ND	44.7	43-230		
N-Nitrosodiphenylamine	30.9	5.43	ug/L	54.35	ND	56.9	79-139		
Pentachlorophenol	33.2	5.43	ug/L	54.35	ND	61.1	14-176		
Phenol	13.6	5.43	ug/L	54.35	ND	25.0	5-120		
Pyrene	32.4	5.43	ug/L	54.35	ND	59.6	52-120		
Surrogate: 2-Fluoroaniline	*18.2*		ug/L	*54.35*		*33.4*	*60-140*		
Surrogate: Phenol-D6	*11.8*		ug/L	*54.35*		*21.8*	*60-140*		
Surrogate: Naphthalene-D8	*20.7*		ug/L	*54.35*		*38.1*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*20.4*		ug/L	*54.35*		*37.5*	*60-140*		
Surrogate: 2,4-Dibromophenol	*31.8*		ug/L	*54.35*		*58.6*	*60-140*		
Surrogate: Anthracene-D10	*26.7*		ug/L	*54.35*		*49.1*	*60-140*		

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
Matrix Spike (B308073-MS1)		**Source: 2308016-02**							
Surrogate: Chrysene-D12	*31.1*		ug/L	*54.35*		*57.2*	*60-140*		
Matrix Spike Dup (B308073-MSD1)		**Source: 2308016-02**							
Acenaphthene	37.5	5.75	ug/L	57.47	ND	65.3	47-145	17.4	24
Acenaphthylene	37.4	5.75	ug/L	57.47	ND	65.1	33-145	18.9	24
Anthracene	46.7	5.75	ug/L	57.47	ND	81.2	27-133	37.4	24
Benzo(A)Anthracene	39.3	5.75	ug/L	57.47	ND	68.4	33-143	20.3	24
Benzo(A)Pyrene	46.6	5.75	ug/L	57.47	ND	81.1	17-163	29.6	24
Benzo(B)Fluoranthene	43.9	5.75	ug/L	57.47	ND	76.3	24-159	25.3	24
Benzo(G,H,I)Perylene	58.2	5.75	ug/L	57.47	ND	101	35-219	39.1	24
Benzo(K)Fluoranthene	42.7	5.75	ug/L	57.47	ND	74.3	11-162	27.4	24
Chrysene	41.1	5.75	ug/L	57.47	ND	71.4	17-168	20.2	24
Dibenzo(A,H)Anthracene	54.8	5.75	ug/L	57.47	ND	95.3	33-227	38.1	24
Fluoranthene	43.1	5.75	ug/L	57.47	ND	75.0	26-137	27.6	24
Fluorene	46.8	5.75	ug/L	57.47	ND	81.5	59-121	42.2	24
Indeno(1,2,3-Cd)Pyrene	54.3	5.75	ug/L	57.47	ND	94.5	39-171	37.5	24
Naphthalene	29.3	5.75	ug/L	57.47	ND	51.0	21-133	20.5	24
Phenanthrene	46.7	5.75	ug/L	57.47	ND	81.2	54-120	37.6	24
1,2,4-Trichlorobenzene	27.6	5.75	ug/L	57.47	ND	47.9	44-142	21.1	24
2,4,6-Trichlorophenol	43.8	5.75	ug/L	57.47	ND	76.1	37-144	17.4	24
2,4-Dichlorophenol	47.7	5.75	ug/L	57.47	ND	83.0	39-135	20.9	24
2,4-Dimethylphenol	36.6	5.75	ug/L	57.47	ND	63.7	32-120	28.4	24
2,4-Dinitrotoluene	53.3	5.75	ug/L	57.47	ND	92.7	39-139	45.0	24
2,6-Dinitrotoluene	42.9	5.75	ug/L	57.47	ND	74.6	50-158	19.4	24
2,4-Dinitrophenol	49.6	5.75	ug/L	57.47	ND	86.4	21-191	10.7	24
2-Chloronaphthalene	35.1	5.75	ug/L	57.47	ND	61.1	60-120	18.4	24
2-Chlorophenol	33.1	5.75	ug/L	57.47	ND	57.5	23-134	18.8	24
2-Nitrophenol	40.7	5.75	ug/L	57.47	ND	70.9	29-182	17.9	24
3,3'- Dichlorobenzidine	37.4	5.75	ug/L	57.47	ND	65.0	38-262	23.7	24
4,6-Dinitro-2-Methylphenol	56.7	5.75	ug/L	57.47	ND	98.7	17-181	33.4	24
4-Bromophenyl-Phenylether	49.0	5.75	ug/L	57.47	ND	85.2	53-127	42.4	24
4-Chloro-3-Methylphenol	42.9	5.75	ug/L	57.47	ND	74.7	22-147	19.8	24
4-Chlorophenyl-Phenylether	47.1	5.75	ug/L	57.47	ND	81.9	25-158	42.7	24
4-Nitrophenol	23.9	5.75	ug/L	57.47	ND	41.6	9-132	13.8	24
Bis(-2-Chloroethoxy)Methane	32.4	5.75	ug/L	57.47	ND	56.5	33-184	24.2	24

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

NVOA GCMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308073									
Matrix Spike Dup (B308073-MSD1)	**Source: 2308016-02**								
Bis(2-Chloroethyl)Ether	28.7	5.75	ug/L	57.47	ND	49.9	12-158	26.2	24
Bis(2-Chloroisopropyl)Ether	27.2	5.75	ug/L	57.47	ND	47.4	36-166	24.9	24
Bis(2-Ethylhexyl)Phthalate	49.3	5.75	ug/L	57.47	ND	85.8	8-158	17.6	24
Butylbenzylphthalate	39.7	5.75	ug/L	57.47	ND	69.2	38-152	13.9	24
Azobenzene	46.4	5.75	ug/L	57.47	ND	80.7	61-106	40.6	24
Diethylphthalate	42.6	5.75	ug/L	57.47	ND	74.2	31-114	39.7	24
Dimethyl Phthalate	25.3	5.75	ug/L	57.47	ND	44.0	28-120	3.74	24
Di-N-Butyl Phthalate	48.1	5.75	ug/L	57.47	ND	83.7	1-120	33.8	24
Di-N-Octyl Phthalate	50.2	5.75	ug/L	57.47	ND	87.4	4-146	18.6	24
Hexachlorobenzene	48.8	5.75	ug/L	57.47	ND	84.9	35-152	42.5	24
Hexachlorobutadiene	29.3	5.75	ug/L	57.47	ND	51.1	24-120	19.8	24
Hexachlorocyclopentadiene	29.7	5.75	ug/L	57.47	ND	51.7	15-76	23.6	24
Hexachloroethane	26.2	5.75	ug/L	57.47	ND	45.6	40-120	21.3	24
Isophorone	33.3	5.75	ug/L	57.47	ND	57.9	21-196	23.4	24
Nitrobenzene	32.1	5.75	ug/L	57.47	ND	55.8	35-180	22.6	24
N-Nitrosodimethylamine	19.1	5.75	ug/L	57.47	ND	33.2	17-127	20.1	24
N-Nitroso-Di-N-Propylamine	31.1	5.75	ug/L	57.47	ND	54.2	43-230	24.7	24
N-Nitrosodiphenylamine	48.2	5.75	ug/L	57.47	ND	83.8	79-139	43.6	24
Pentachlorophenol	45.1	5.75	ug/L	57.47	ND	78.6	14-176	30.5	24
Phenol	17.9	5.75	ug/L	57.47	ND	31.2	5-120	27.5	24
Pyrene	41.8	5.75	ug/L	57.47	ND	72.7	52-120	25.3	24
Surrogate: 2-Fluoroaniline	*22.2*		ug/L	*57.47*		*38.6*	*60-140*		
Surrogate: Phenol-D6	*15.3*		ug/L	*57.47*		*26.6*	*60-140*		
Surrogate: Naphthalene-D8	*25.9*		ug/L	*57.47*		*45.1*	*60-140*		
Surrogate: 1-Fluoronaphthalene	*25.3*		ug/L	*57.47*		*44.1*	*60-140*		
Surrogate: 2,4-Dibromophenol	*37.6*		ug/L	*57.47*		*65.3*	*60-140*		
Surrogate: Anthracene-D10	*37.9*		ug/L	*57.47*		*65.9*	*60-140*		
Surrogate: Chrysene-D12	*35.6*		ug/L	*57.47*		*62.0*	*60-140*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
Blank (B308068-BLK1)									
alpha-BHC	--- U	0.002	ug/L						
alpha-BHC [2C]	--- U	0.002	ug/L						
gamma-BHC (Lindane)	--- U	0.002	ug/L						
gamma-BHC (Lindane) [2C]	--- U	0.002	ug/L						
beta-BHC	--- U	0.002	ug/L						
beta-BHC [2C]	--- U	0.002	ug/L						
delta-BHC	--- U	0.002	ug/L						
delta-BHC [2C]	--- U	0.002	ug/L						
Heptachlor	--- U	0.002	ug/L						
Heptachlor [2C]	--- U	0.002	ug/L						
Aldrin	--- U	0.002	ug/L						
Aldrin [2C]	--- U	0.002	ug/L						
Heptachlor epoxide	--- U	0.002	ug/L						
Heptachlor epoxide [2C]	--- U	0.002	ug/L						
Endosulfan I	--- U	0.002	ug/L						
Endosulfan I [2C]	--- U	0.002	ug/L						
4,4'-DDE	--- U	0.005	ug/L						
4,4'-DDE [2C]	--- U	0.005	ug/L						
Dieldrin	--- U	0.005	ug/L						
Dieldrin [2C]	--- U	0.005	ug/L						
Endrin	--- U	0.005	ug/L						
Endrin [2C]	--- U	0.005	ug/L						
4,4'-DDD	--- U	0.005	ug/L						
4,4'-DDD [2C]	--- U	0.005	ug/L						
Endosulfan II	--- U	0.005	ug/L						
Endosulfan II [2C]	--- U	0.005	ug/L						
4,4'-DDT	--- U	0.005	ug/L						
4,4'-DDT [2C]	--- U	0.005	ug/L						
Endrin aldehyde	--- U	0.005	ug/L						
Endrin aldehyde [2C]	--- U	0.005	ug/L						
Endosulfan sulfate	--- U	0.005	ug/L						
Endosulfan sulfate [2C]	--- U	0.005	ug/L						
Toxaphene	--- U	0.188	ug/L						
Toxaphene [2C]	--- U	0.188	ug/L						
Chlordane	--- U	0.062	ug/L						

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
Blank (B308068-BLK1)									
Chlordane [2C]	--- U	0.062	ug/L						
Aroclor 1016	--- U	0.031	ug/L						
Aroclor 1016 [2C]	--- U	0.031	ug/L						
Aroclor 1221	--- U	0.062	ug/L						
Aroclor 1221 [2C]	--- U	0.062	ug/L						
Aroclor 1232	--- U	0.031	ug/L						
Aroclor 1232 [2C]	--- U	0.031	ug/L						
Aroclor 1242	--- U	0.031	ug/L						
Aroclor 1242 [2C]	--- U	0.031	ug/L						
Aroclor 1248	--- U	0.031	ug/L						
Aroclor 1248 [2C]	--- U	0.031	ug/L						
Aroclor 1254	--- U	0.031	ug/L						
Aroclor 1254 [2C]	--- U	0.031	ug/L						
Aroclor 1260	--- U	0.031	ug/L						
Aroclor 1260 [2C]	--- U	0.031	ug/L						
Surrogate: TCMX	*0.0451*		ug/L	*0.06000*		*75.2*	*29-93*		
Surrogate: TCMX [2C]	*0.0548*		ug/L	*0.06000*		*91.4*	*29-93*		
Surrogate: DCB	*0.0538*		ug/L	*0.06000*		*89.6*	*24-98*		
Surrogate: DCB [2C]	*0.0464*		ug/L	*0.06000*		*77.3*	*24-98*		
LCS (B308068-BS1)									
alpha-BHC	0.02	0.002	ug/L	0.02000		75.3	37-140		
alpha-BHC [2C]	0.02	0.002	ug/L	0.02000		81.0	37-140		
gamma-BHC (Lindane)	0.01	0.002	ug/L	0.02000		73.8	32-140		
gamma-BHC (Lindane) [2C]	0.02	0.002	ug/L	0.02000		81.2	32-140		
beta-BHC	0.01	0.002	ug/L	0.02000		62.0	17-147		
beta-BHC [2C]	0.01	0.002	ug/L	0.02000		70.3	17-147		
delta-BHC	0.02	0.002	ug/L	0.02000		76.4	19-140		
delta-BHC [2C]	0.02	0.002	ug/L	0.02000		82.7	19-140		
Heptachlor	0.01	0.002	ug/L	0.02000		74.2	34-140		
Heptachlor [2C]	0.02	0.002	ug/L	0.02000		76.1	34-140		
Aldrin	0.02	0.002	ug/L	0.02000		75.0	42-140		
Aldrin [2C]	0.02	0.002	ug/L	0.02000		82.0	42-140		
Heptachlor epoxide	0.01	0.002	ug/L	0.02000		73.7	37-142		
Heptachlor epoxide [2C]	0.02	0.002	ug/L	0.02000		82.0	37-142		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
LCS (B308068-BS1)									
Endosulfan I	0.01	0.002	ug/L	0.02000		64.6	45-153		
Endosulfan I [2C]	0.01	0.002	ug/L	0.02000		65.8	45-153		
4,4'-DDE	0.03	0.005	ug/L	0.04000		83.8	30-145		
4,4'-DDE [2C]	0.03	0.005	ug/L	0.04000		86.8	30-145		
Dieldrin	0.03	0.005	ug/L	0.04000		83.4	36-146		
Dieldrin [2C]	0.03	0.005	ug/L	0.04000		83.3	36-146		
Endrin	0.03	0.005	ug/L	0.04000		85.2	30-147		
Endrin [2C]	0.03	0.005	ug/L	0.04000		87.1	30-147		
4,4'-DDD	0.03	0.005	ug/L	0.04000		84.1	31-141		
4,4'-DDD [2C]	0.03	0.005	ug/L	0.04000		82.5	31-141		
Endosulfan II	0.03	0.005	ug/L	0.04000		67.5	50-202		
Endosulfan II [2C]	0.03	0.005	ug/L	0.04000		66.9	50-202		
4,4'-DDT	0.04	0.005	ug/L	0.04000		92.1	25-160		
4,4'-DDT [2C]	0.03	0.005	ug/L	0.04000		85.9	25-160		
Endrin aldehyde	0.03	0.005	ug/L	0.04000		78.4	10-154		
Endrin aldehyde [2C]	0.03	0.005	ug/L	0.04000		83.0	10-154		
Endosulfan sulfate	0.04	0.005	ug/L	0.04000		93.0	26-144		
Endosulfan sulfate [2C]	0.03	0.005	ug/L	0.04000		81.9	26-144		
Surrogate: TCMX	*0.0411*		ug/L	*0.06000*		*68.5*	*29-93*		
Surrogate: TCMX [2C]	*0.0481*		ug/L	*0.06000*		*80.1*	*29-93*		
Surrogate: DCB	*0.0449*		ug/L	*0.06000*		*74.8*	*24-98*		
Surrogate: DCB [2C]	*0.0377*		ug/L	*0.06000*		*62.8*	*24-98*		
LCS (B308068-BS2)									
Aroclor 1016	0.22	0.031	ug/L	0.2500		89.4	50-140		
Aroclor 1016 [2C]	0.22	0.031	ug/L	0.2500		86.6	50-140		
Aroclor 1260	0.22	0.031	ug/L	0.2500		87.4	8-140		
Aroclor 1260 [2C]	0.22	0.031	ug/L	0.2500		87.2	8-140		
Surrogate: TCMX	*0.0458*		ug/L	*0.06000*		*76.3*	*29-93*		
Surrogate: TCMX [2C]	*0.0522*		ug/L	*0.06000*		*86.9*	*29-93*		
Surrogate: DCB	*0.0506*		ug/L	*0.06000*		*84.3*	*24-98*		
Surrogate: DCB [2C]	*0.0431*		ug/L	*0.06000*		*71.9*	*24-98*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
LCS Dup (B308068-BSD1)									
alpha-BHC	0.01	0.002	ug/L	0.02000		71.9	37-140	4.50	36
alpha-BHC [2C]	0.02	0.002	ug/L	0.02000		76.4	37-140	5.77	36
gamma-BHC (Lindane)	0.01	0.002	ug/L	0.02000		70.4	32-140	4.72	39
gamma-BHC (Lindane) [2C]	0.02	0.002	ug/L	0.02000		76.9	32-140	5.45	39
beta-BHC	0.01	0.002	ug/L	0.02000		61.3	17-147	1.23	44
beta-BHC [2C]	0.01	0.002	ug/L	0.02000		68.7	17-147	2.30	44
delta-BHC	0.01	0.002	ug/L	0.02000		74.2	19-140	2.98	52
delta-BHC [2C]	0.02	0.002	ug/L	0.02000		78.1	19-140	5.82	52
Heptachlor	0.01	0.002	ug/L	0.02000		72.0	34-140	3.05	43
Heptachlor [2C]	0.01	0.002	ug/L	0.02000		71.8	34-140	5.77	43
Aldrin	0.01	0.002	ug/L	0.02000		72.3	42-140	3.73	35
Aldrin [2C]	0.02	0.002	ug/L	0.02000		77.4	42-140	5.81	35
Heptachlor epoxide	0.01	0.002	ug/L	0.02000		67.1	37-142	9.37	26
Heptachlor epoxide [2C]	0.01	0.002	ug/L	0.02000		74.7	37-142	9.28	26
Endosulfan I	0.01	0.002	ug/L	0.02000		60.6	45-153	6.41	28
Endosulfan I [2C]	0.01	0.002	ug/L	0.02000		61.5	45-153	6.80	28
4,4'-DDE	0.03	0.005	ug/L	0.04000		80.1	30-145	4.57	35
4,4'-DDE [2C]	0.03	0.005	ug/L	0.04000		80.6	30-145	7.31	35
Dieldrin	0.03	0.005	ug/L	0.04000		77.4	36-146	7.39	49
Dieldrin [2C]	0.03	0.005	ug/L	0.04000		76.8	36-146	8.04	49
Endrin	0.03	0.005	ug/L	0.04000		78.8	30-147	7.81	48
Endrin [2C]	0.03	0.005	ug/L	0.04000		80.8	30-147	7.46	48
4,4'-DDD	0.03	0.005	ug/L	0.04000		77.7	31-141	8.00	39
4,4'-DDD [2C]	0.03	0.005	ug/L	0.04000		76.9	31-141	6.94	39
Endosulfan II	0.02	0.005	ug/L	0.04000		62.4	50-202	7.85	53
Endosulfan II [2C]	0.02	0.005	ug/L	0.04000		62.4	50-202	6.94	53
4,4'-DDT	0.03	0.005	ug/L	0.04000		86.8	25-160	5.99	42
4,4'-DDT [2C]	0.03	0.005	ug/L	0.04000		81.2	25-160	5.60	42
Endrin aldehyde	0.03	0.005	ug/L	0.04000		73.5	10-154	6.35	30
Endrin aldehyde [2C]	0.03	0.005	ug/L	0.04000		80.1	10-154	3.61	30
Endosulfan sulfate	0.03	0.005	ug/L	0.04000		86.8	26-144	6.92	38
Endosulfan sulfate [2C]	0.03	0.005	ug/L	0.04000		76.2	26-144	7.18	38
Surrogate: TCMX	*0.0409*		ug/L	*0.06000*		*68.1*	*29-93*		
Surrogate: TCMX [2C]	*0.0454*		ug/L	*0.06000*		*75.7*	*29-93*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
LCS Dup (B308068-BSD1)									
Surrogate: DCB	*0.0492*		ug/L	*0.06000*		*81.9*	*24-98*		
Surrogate: DCB [2C]	*0.0415*		ug/L	*0.06000*		*69.2*	*24-98*		
LCS Dup (B308068-BSD2)									
Aroclor 1016	0.20	0.031	ug/L	0.2500		81.2	50-140	9.58	36
Aroclor 1016 [2C]	0.24	0.031	ug/L	0.2500		96.4	50-140	10.7	36
Aroclor 1260	0.20	0.031	ug/L	0.2500		80.5	8-140	8.16	38
Aroclor 1260 [2C]	0.20	0.031	ug/L	0.2500		81.6	8-140	6.68	38
Surrogate: TCMX	*0.0401*		ug/L	*0.06000*		*66.9*	*29-93*		
Surrogate: TCMX [2C]	*0.0468*		ug/L	*0.06000*		*78.1*	*29-93*		
Surrogate: DCB	*0.0493*		ug/L	*0.06000*		*82.2*	*24-98*		
Surrogate: DCB [2C]	*0.0422*		ug/L	*0.06000*		*70.4*	*24-98*		
Matrix Spike (B308068-MS1)	**Source: 2308016-02**								
alpha-BHC	0.01	0.003	ug/L	0.02273	ND	62.1	37-140		
alpha-BHC [2C]	0.01	0.003	ug/L	0.02273	ND	62.7	37-140		
gamma-BHC (Lindane)	0.01	0.003	ug/L	0.02273	ND	60.5	32-140		
gamma-BHC (Lindane) [2C]	0.01	0.003	ug/L	0.02273	ND	64.1	32-140		
beta-BHC	0.01	0.003	ug/L	0.02273	ND	52.9	17-147		
beta-BHC [2C]	0.02	0.003	ug/L	0.02273	ND	68.7	17-147		
delta-BHC	0.01	0.003	ug/L	0.02273	ND	51.2	19-140		
delta-BHC [2C]	0.01	0.003	ug/L	0.02273	ND	64.5	19-140		
Heptachlor	0.02	0.003	ug/L	0.02273	ND	67.8	34-140		
Heptachlor [2C]	0.01	0.003	ug/L	0.02273	ND	58.7	34-140		
Aldrin	0.01	0.003	ug/L	0.02273	ND	51.8	42-140		
Aldrin [2C]	0.01	0.003	ug/L	0.02273	ND	53.8	42-140		
Heptachlor epoxide	0.01	0.003	ug/L	0.02273	ND	55.9	37-142		
Heptachlor epoxide [2C]	0.01	0.003	ug/L	0.02273	ND	61.1	37-142		
Endosulfan I	0.01	0.003	ug/L	0.02273	ND	55.5	45-153		
Endosulfan I [2C]	0.02	0.003	ug/L	0.02273	ND	66.2	45-153		
4,4'-DDE	0.02	0.006	ug/L	0.04545	ND	37.3	30-145		
4,4'-DDE [2C]	0.02	0.006	ug/L	0.04545	ND	41.5	30-145		
Dieldrin	0.03	0.006	ug/L	0.04545	ND	57.4	36-146		
Dieldrin [2C]	0.03	0.006	ug/L	0.04545	ND	60.7	36-146		
Endrin	0.03	0.006	ug/L	0.04545	ND	57.0	30-147		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
Matrix Spike (B308068-MS1)		**Source: 2308016-02**							
Endrin [2C]	0.03	0.006	ug/L	0.04545	ND	68.7	30-147		
4,4'-DDD	0.03	0.006	ug/L	0.04545	ND	61.0	31-141		
4,4'-DDD [2C]	0.03	0.006	ug/L	0.04545	ND	66.0	31-141		
Endosulfan II	0.02	0.006	ug/L	0.04545	ND	51.3	50-202		
Endosulfan II [2C]	0.03	0.006	ug/L	0.04545	ND	59.3	50-202		
4,4'-DDT	0.02	0.006	ug/L	0.04545	ND	51.7	25-160		
4,4'-DDT [2C]	0.02	0.006	ug/L	0.04545	ND	53.7	25-160		
Endrin aldehyde	0.02	0.006	ug/L	0.04545	ND	53.3	10-154		
Endrin aldehyde [2C]	0.03	0.006	ug/L	0.04545	ND	59.5	10-154		
Endosulfan sulfate	0.02	0.006	ug/L	0.04545	ND	54.0	26-144		
Endosulfan sulfate [2C]	0.03	0.006	ug/L	0.04545	ND	58.7	26-144		
Surrogate: TCMX	*0.0361*		ug/L	*0.06818*		*52.9*	*29-93*		
Surrogate: TCMX [2C]	*0.0478*		ug/L	*0.06818*		*70.1*	*29-93*		
Surrogate: DCB	*0.00975*		ug/L	*0.06818*		*14.3*	*24-98*		
Surrogate: DCB [2C]	*0.00909*		ug/L	*0.06818*		*13.3*	*24-98*		
Matrix Spike (B308068-MS2)		**Source: 2308016-02**							
Aroclor 1016	0.13	0.036	ug/L	0.2841	ND	44.4	50-140		
Aroclor 1016 [2C]	0.13	0.036	ug/L	0.2841	ND	46.3	50-140		
Aroclor 1260	0.21	0.036	ug/L	0.2841	ND	72.7	8-140		
Aroclor 1260 [2C]	0.29	0.036	ug/L	0.2841	ND	102	8-140		
Surrogate: TCMX	*0.00771*		ug/L	*0.06818*		*11.3*	*29-93*		
Surrogate: TCMX [2C]	*0.00669*		ug/L	*0.06818*		*9.82*	*29-93*		
Matrix Spike Dup (B308068-MSD1)		**Source: 2308016-02**							
alpha-BHC	0.01	0.003	ug/L	0.02247	ND	60.0	37-140	3.47	36
alpha-BHC [2C]	0.01	0.003	ug/L	0.02247	ND	66.2	37-140	5.38	36
gamma-BHC (Lindane)	0.01	0.003	ug/L	0.02247	ND	56.3	32-140	7.04	39
gamma-BHC (Lindane) [2C]	0.02	0.003	ug/L	0.02247	ND	67.6	32-140	5.30	39
beta-BHC	0.01	0.003	ug/L	0.02247	ND	57.8	17-147	8.79	44
beta-BHC [2C]	0.01	0.003	ug/L	0.02247	ND	61.9	17-147	10.4	44
delta-BHC	0.02	0.003	ug/L	0.02247	ND	69.8	19-140	30.8	52
delta-BHC [2C]	0.01	0.003	ug/L	0.02247	ND	59.8	19-140	7.55	52
Heptachlor	0.01	0.003	ug/L	0.02247	ND	63.2	34-140	7.04	43
Heptachlor [2C]	0.01	0.003	ug/L	0.02247	ND	62.0	34-140	5.34	43

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
Matrix Spike Dup (B308068-MSD1)		**Source: 2308016-02**							
Aldrin	0.02	0.003	ug/L	0.02247	ND	73.6	42-140	34.8	35
Aldrin [2C]	0.02	0.003	ug/L	0.02247	ND	80.4	42-140	39.7	35
Heptachlor epoxide	0.01	0.003	ug/L	0.02247	ND	52.6	37-142	6.07	26
Heptachlor epoxide [2C]	0.01	0.003	ug/L	0.02247	ND	56.4	37-142	8.02	26
Endosulfan I	0.02	0.003	ug/L	0.02247	ND	69.2	45-153	22.0	28
Endosulfan I [2C]	0.02	0.003	ug/L	0.02247	ND	68.4	45-153	3.26	28
4,4'-DDE	0.01	0.006	ug/L	0.04494	ND	32.9	30-145	12.5	35
4,4'-DDE [2C]	0.02	0.006	ug/L	0.04494	ND	38.6	30-145	7.27	35
Dieldrin	0.02	0.006	ug/L	0.04494	ND	54.7	36-146	4.93	49
Dieldrin [2C]	0.02	0.006	ug/L	0.04494	ND	53.8	36-146	12.2	49
Endrin	0.03	0.006	ug/L	0.04494	ND	63.2	30-147	10.3	48
Endrin [2C]	0.03	0.006	ug/L	0.04494	ND	56.3	30-147	19.8	48
4,4'-DDD	0.02	0.006	ug/L	0.04494	ND	50.3	31-141	19.2	39
4,4'-DDD [2C]	0.02	0.006	ug/L	0.04494	ND	53.9	31-141	20.2	39
Endosulfan II	0.02	0.006	ug/L	0.04494	ND	54.6	50-202	6.23	53
Endosulfan II [2C]	0.02	0.006	ug/L	0.04494	ND	45.8	50-202	25.7	53
4,4'-DDT	0.02	0.006	ug/L	0.04494	ND	51.2	25-160	0.966	42
4,4'-DDT [2C]	0.02	0.006	ug/L	0.04494	ND	34.1	25-160	44.6	42
Endrin aldehyde	0.02	0.006	ug/L	0.04494	ND	43.7	10-154	19.8	30
Endrin aldehyde [2C]	0.02	0.006	ug/L	0.04494	ND	46.5	10-154	24.6	30
Endosulfan sulfate	0.02	0.006	ug/L	0.04494	ND	46.9	26-144	14.1	38
Endosulfan sulfate [2C]	0.02	0.006	ug/L	0.04494	ND	34.2	26-144	52.7	38
Surrogate: TCMX	*0.0327*		ug/L	*0.06742*		*48.5*	*29-93*		
Surrogate: TCMX [2C]	*0.0413*		ug/L	*0.06742*		*61.3*	*29-93*		
Surrogate: DCB	*0.00777*		ug/L	*0.06742*		*11.5*	*24-98*		
Surrogate: DCB [2C]	*0.00607*		ug/L	*0.06742*		*9.00*	*24-98*		
Matrix Spike Dup (B308068-MSD2)		**Source: 2308016-02**							
Aroclor 1016	0.21	0.036	ug/L	0.2841	ND	74.9	50-140	51.0	36
Aroclor 1016 [2C]	0.34	0.036	ug/L	0.2841	ND	119	50-140	88.2	36
Aroclor 1260	0.09	0.036	ug/L	0.2841	ND	33.2	8-140	74.6	38
Aroclor 1260 [2C]	0.13	0.036	ug/L	0.2841	ND	44.5	8-140	78.8	38
Surrogate: TCMX	*0.0476*		ug/L	*0.06818*		*69.8*	*29-93*		
Surrogate: TCMX [2C]	*0.0631*		ug/L	*0.06818*		*92.6*	*29-93*		
Surrogate: DCB	*0.0153*		ug/L	*0.06818*		*22.5*	*24-98*		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Pest/PCBs GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308068									
Matrix Spike Dup (B308068-MSD2)		**Source: 2308016-02**							
Surrogate: DCB [2C]	*0.00663*		ug/L	*0.06818*		*9.72*	*24-98*		
Batch S308034									
Performance Mix (S308034-PEM1)									
4,4'-DDE	0.91		ug/L				0-200		
4,4'-DDE [2C]	1.84		ug/L				0-200		
Endrin	103		ug/L	100.0		103	0-200		
Endrin [2C]	111		ug/L	100.0		111	0-200		
4,4'-DDD	1.35		ug/L				0-200		
4,4'-DDD [2C]	1.37		ug/L				0-200		
4,4'-DDT	110		ug/L	100.0		110	0-200		
4,4'-DDT [2C]	105		ug/L	100.0		105	0-200		
Endrin aldehyde	2.18		ug/L				0-200		
Endrin aldehyde [2C]	1.22		ug/L				0-200		
Endrin ketone	2.23		ug/L				0-200		
Endrin ketone [2C]	1.84		ug/L				0-200		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B309003									
Blank (B309003-BLK1)									
Petroleum Hydrocarbons, Tot.	--- U	5.00	mg/L						
LCS (B309003-BS1)									
Petroleum Hydrocarbons, Tot.	35.5	5.00	mg/L	40.00		89	64-132		
LCS Dup (B309003-BSD1)									
Petroleum Hydrocarbons, Tot.	35.5	5.00	mg/L	40.00		89	64-132	0	20
Matrix Spike (B309003-MS1)	**Source: 2308016-09**								
Petroleum Hydrocarbons, Tot.	59.0	6.41	mg/L	51.28	1.84	111	64-132		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308070									
Blank (B308070-BLK1)									
Aluminum	--- U	100	ug/L						
Antimony	--- U	20.0	ug/L						
Arsenic	--- U	8.00	ug/L						
Barium	--- U	100	ug/L						
Beryllium	--- U	3.00	ug/L						
Boron	--- U	10.0	ug/L						
Cadmium	--- U	3.00	ug/L						
Calcium	--- U	500	ug/L						
Chromium	--- U	5.00	ug/L						
Cobalt	--- U	20.0	ug/L						
Copper	--- U	10.0	ug/L						
Iron	--- U	50.0	ug/L						
Lead	--- U	8.00	ug/L						
Magnesium	--- U	500	ug/L						
Manganese	--- U	5.00	ug/L						
Molybdenum	--- U	10.0	ug/L						
Nickel	--- U	20.0	ug/L						
Potassium	--- U	500	ug/L						
Selenium	--- U	20.0	ug/L						
Silver	--- U	5.00	ug/L						
Sodium	--- U	1000	ug/L						
Strontium	--- U	10.0	ug/L						
Thallium	--- U	20.0	ug/L						
Tin	--- U	10.0	ug/L						
Titanium	--- U	10.0	ug/L						
Vanadium	--- U	20.0	ug/L						
Zinc	--- U	20.0	ug/L						

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308070									
LCS (B308070-BS1)									
Aluminum	4830	100	ug/L	5000		96.5	85-115		
Antimony	193	20.0	ug/L	200.0		96.3	85-115		
Arsenic	195	8.00	ug/L	200.0		97.3	85-115		
Barium	197	100	ug/L	200.0		98.5	85-115		
Beryllium	193	3.00	ug/L	200.0		96.3	85-115		
Boron	192	10.0	ug/L	200.0		95.8	85-115		
Cadmium	194	3.00	ug/L	200.0		96.8	85-115		
Calcium	4670	500	ug/L	5000		93.4	85-115		
Chromium	195	5.00	ug/L	200.0		97.4	85-115		
Cobalt	198	20.0	ug/L	200.0		99.2	85-115		
Copper	191	10.0	ug/L	200.0		95.4	85-115		
Iron	4870	50.0	ug/L	5000		97.4	85-115		
Lead	196	8.00	ug/L	200.0		98.0	85-115		
Magnesium	4740	500	ug/L	5000		94.8	85-115		
Manganese	194	5.00	ug/L	200.0		97.2	85-115		
Molybdenum	193	10.0	ug/L	200.0		96.5	85-115		
Nickel	196	20.0	ug/L	200.0		97.9	85-115		
Potassium	4870	500	ug/L	5000		97.4	85-115		
Selenium	197	20.0	ug/L	200.0		98.3	85-115		
Silver	195	5.00	ug/L	200.0		97.3	85-115		
Sodium	4680	1000	ug/L	5000		93.6	85-115		
Strontium	198	10.0	ug/L	200.0		98.8	85-115		
Thallium	199	20.0	ug/L	200.0		99.6	85-115		
Tin	194	10.0	ug/L	200.0		96.8	85-115		
Titanium	193	10.0	ug/L	200.0		96.7	85-115		
Vanadium	195	20.0	ug/L	200.0		97.3	85-115		
Zinc	200	20.0	ug/L	200.0		99.8	85-115		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308070									
LCS Dup (B308070-BSD1)									
Aluminum	4810	100	ug/L	5000		96.1	85-115	0.405	20
Antimony	193	20.0	ug/L	200.0		96.7	85-115	0.342	20
Arsenic	194	8.00	ug/L	200.0		97.2	85-115	0.0771	20
Barium	197	100	ug/L	200.0		98.6	85-115	0.0710	20
Beryllium	192	3.00	ug/L	200.0		96.2	85-115	0.0520	20
Boron	191	10.0	ug/L	200.0		95.7	85-115	0.0679	20
Cadmium	194	3.00	ug/L	200.0		96.8	85-115	0.0620	20
Calcium	4650	500	ug/L	5000		93.1	85-115	0.340	20
Chromium	194	5.00	ug/L	200.0		97.2	85-115	0.206	20
Cobalt	198	20.0	ug/L	200.0		99.1	85-115	0.111	20
Copper	191	10.0	ug/L	200.0		95.4	85-115	0.0891	20
Iron	4860	50.0	ug/L	5000		97.1	85-115	0.265	20
Lead	196	8.00	ug/L	200.0		98.1	85-115	0.107	20
Magnesium	4720	500	ug/L	5000		94.4	85-115	0.431	20
Manganese	194	5.00	ug/L	200.0		97.0	85-115	0.165	20
Molybdenum	192	10.0	ug/L	200.0		96.2	85-115	0.301	20
Nickel	195	20.0	ug/L	200.0		97.7	85-115	0.220	20
Potassium	4850	500	ug/L	5000		96.9	85-115	0.461	20
Selenium	195	20.0	ug/L	200.0		97.6	85-115	0.751	20
Silver	194	5.00	ug/L	200.0		97.2	85-115	0.0823	20
Sodium	4670	1000	ug/L	5000		93.4	85-115	0.182	20
Strontium	198	10.0	ug/L	200.0		98.9	85-115	0.0556	20
Thallium	204	20.0	ug/L	200.0		102	85-115	2.53	20
Tin	194	10.0	ug/L	200.0		96.9	85-115	0.114	20
Titanium	193	10.0	ug/L	200.0		96.7	85-115	0.0724	20
Vanadium	194	20.0	ug/L	200.0		97.1	85-115	0.221	20
Zinc	198	20.0	ug/L	200.0		99.1	85-115	0.779	20

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308070									
Matrix Spike (B308070-MS1)	**Source: 2308016-01**								
Cadmium	192	3.00	ug/L	200.0	ND	96.0	80-120		
Chromium	249	5.00	ug/L	200.0	55.4	97.0	80-120		
Copper	247	10.0	ug/L	200.0	47.3	99.9	80-120		
Lead	193	8.00	ug/L	200.0	ND	96.4	80-120		
Nickel	230	20.0	ug/L	200.0	36.0	97.1	80-120		
Silver	195	5.00	ug/L	200.0	ND	97.5	80-120		
Zinc	332	20.0	ug/L	200.0	132	100	80-120		
Matrix Spike Dup (B308070-MSD1)	**Source: 2308016-01**								
Cadmium	191	15.0	ug/L	200.0	ND	95.5	80-120	0.585	10
Chromium	244	25.0	ug/L	200.0	55.4	94.4	80-120	2.16	10
Copper	236	50.0	ug/L	200.0	47.3	94.3	80-120	4.65	10
Lead	193	40.0	ug/L	200.0	ND	96.4	80-120	0.0208	10
Nickel	229	100	ug/L	200.0	36.0	96.5	80-120	0.501	10
Silver	190	25.0	ug/L	200.0	ND	95.0	80-120	2.67	10
Zinc	328	100	ug/L	200.0	132	97.9	80-120	1.28	10

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308074									
Blank (B308074-BLK1)									
Sulfate	--- U	1.00	mg/L						
Blank (B308074-BLK2)									
Sulfate	--- U	1.00	mg/L						
LCS (B308074-BS1)									
Sulfate	13.1	1.00	mg/L	12.50		105	90-110		
LCS Dup (B308074-BSD1)									
Sulfate	13.0	1.00	mg/L	12.50		104	90-110	0.8	20
Matrix Spike (B308074-MS1)	**Source: 2308016-01**								
Sulfate	229	10.0	mg/L	40.00	192	92	90-110		
Batch B308090									
Blank (B308090-BLK1)									
Cyanide, Total	--- U	10.0	ug/L						
LCS (B308090-BS1)									
Cyanide, Total	735	10.0	ug/L	726.0		101	90-110		
LCS Dup (B308090-BSD1)									
Cyanide, Total	696	10.0	ug/L	726.0		96	90-110	5	20
Matrix Spike (B308090-MS1)	**Source: 2308016-09**								
Cyanide, Total	496	10.0	ug/L	500.0	ND	99	90-110		

Final Report

Project: Thorlabs Finishing - 2308016

Project Number: 2308016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B308107									
Blank (B308107-BLK1)									
Phosphorus	--- U	0.0500	mg/L						
Blank (B308107-BLK2)									
Phosphorus	--- U	0.0500	mg/L						
LCS (B308107-BS1)									
Phosphorus	8.95	0.250	mg/L	8.450		106	90-110		
LCS Dup (B308107-BSD1)									
Phosphorus	8.95	0.250	mg/L	8.450		106	90-110	0	20
Matrix Spike (B308107-MS1)	**Source: 2308016-01**								
Phosphorus	1.30	0.0500	mg/L	1.000	0.349	95	90-110		
Matrix Spike (B308107-MS2)	**Source: 2308021-01**								
Phosphorus	1.60	0.0500	mg/L	1.000	0.638	96	90-110		

8.0 Photographs

Photo #1. Compliance samples were collected from the sampling tap.

Photo #2. No calibration stick was observed on the flow meter/recorder.

Photo #3. The facility's sample tubing was dirty and/or contain algal growth.

Photo #4. Process waste streams from the rinse baths are pumped to the master lift station.

Photo #5. Only one (1) of 2 pH Neutralization Tanks is used to treat process wastewater.