



Element  
Suite 100, 328 Ley Road  
Fort Wayne, Indiana  
46825, United States

T: +1 (260) 471-7000  
F: +1 (260) 471-7777  
E: Info.FortWayne@element.com  
W: www.element.com

October 18, 2022

Ken Myers  
East Chicago Sanitary District  
5201 Indianapolis Blvd  
East Chicago, IN 46312

RE: Upstream

Dear Ken Myers:

Lot Id: 128096

Element Materials Technology – Fort Wayne received 6 sample(s) on 10/10/2022 for the analyses presented in the following report.

In accordance with your instructions, a laboratory of Element Materials Technology Fort Wayne LLC either conducted or subcontracted these analyses. Subcontracted analyses will be identified in an accompanying case narrative and any associated report(s) will be attached in full. Unless otherwise noted in the case narrative, all analyses were conducted using approved methodologies. Reported results relate only to the items tested.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

A handwritten signature in cursive script that reads 'Nicole Breauchy'.

Nicole Breauchy  
Project Manager  
Suite 100, 328 Ley Road,  
Fort Wayne, IN 46825

**Accreditation**

TNI:2016 (Florida)  
ISO 17025:2017 (A2LA)  
Indiana  
Michigan  
South Dakota  
Tennessee

**Cert #**

E871168  
6190.02  
M-02-05  
9030  
--  
04911

## Analytical Report

|   |   |   |
|---|---|---|
| Bill To: East Chicago Sanitary District<br>5201 Indianapolis Blvd<br>East Chicago, IN, United States<br>46312 | Project ID: Upstream<br>Project Name:<br>Project Location:<br>LSD:<br>P.O.: | Lot ID: <b>128096</b><br>Control Number:<br>Date Received: Oct 10, 2022<br>Date Reported: Oct 18, 2022<br>Report Number: 228690 |
| Attn: Ken Myers<br>Sampled By: HP<br>Company:   | Proj. Acct. code:   |   |

|                               |               |                      |                  |                   |                                 |                         |
|-------------------------------|---------------|----------------------|------------------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b>       | 128096-1      | <b>Sample Date</b>   | 2022-10-09 09:50 |                   |                                 |                         |
| <b>Sample Description</b>     | Upstream      | <b>Sample Matrix</b> | Wastewater       |                   |                                 |                         |
| <b>Analyte</b>                | <b>Result</b> | <b>Units</b>         | <b>DF</b>        | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Subcontracted Services</b> |               |                      |                  |                   |                                 |                         |
| Subcontractor Report ID       | 180-146061-1  |                      | 1                |                   | Oct 14, 2022 14:52              | MK                      |
| Cyanide, Available            | <0.002        | mg/L                 | 1                | 0.002             | Oct 13, 2022 11:44              | MK                      |

|                                       |                            |                      |                  |                   |                                 |                         |
|---------------------------------------|----------------------------|----------------------|------------------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b>               | 128096-2                   | <b>Sample Date</b>   | 2022-10-09 09:50 |                   |                                 |                         |
| <b>Sample Description</b>             | Upstream                   | <b>Sample Matrix</b> | Wastewater       |                   |                                 |                         |
| <b>Analyte</b>                        | <b>Result</b>              | <b>Units</b>         | <b>DF</b>        | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Aggregate Organic Constituents</b> |                            |                      |                  |                   |                                 |                         |
| Oil & Grease, Total                   | <5                         | mg/L                 | 1                |                   | Oct 11, 2022 17:23              | SK                      |
| Oil & Grease, Total                   | Calculated Reporting Limit | mg/L                 | 1                |                   | Oct 11, 2022 17:23              | SK                      |

|                           |               |                      |                  |                   |                                 |                         |
|---------------------------|---------------|----------------------|------------------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b>   | 128096-3      | <b>Sample Date</b>   | 2022-10-09 09:50 |                   |                                 |                         |
| <b>Sample Description</b> | Upstream      | <b>Sample Matrix</b> | Wastewater       |                   |                                 |                         |
| <b>Analyte</b>            | <b>Result</b> | <b>Units</b>         | <b>DF</b>        | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Microbiology</b>       |               |                      |                  |                   |                                 |                         |
| Escherichia coli          | Multi Well    | 129                  | MPN/100mL        | 1                 | 1                               | Oct 10, 2022 18:10 CS   |

|  |                        |                      |                  |                   |                                 |                         |
|--|------------------------|----------------------|------------------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b>                  | 128096-4               | <b>Sample Date</b>   | 2022-10-09 09:50 |                   |                                 |                         |
| <b>Sample Description</b>                | Upstream               | <b>Sample Matrix</b> | Wastewater       |                   |                                 |                         |
| <b>Analyte</b>                           | <b>Result</b>          | <b>Units</b>         | <b>DF</b>        | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Aggregate Organic Constituents</b>    |                        |                      |                  |                   |                                 |                         |
| Biochemical Oxygen Demand                | BOD                    | 14                   | mg/L             | 1                 | 2                               | Oct 10, 2022 18:20 AS   |
| <b>Physical and Aggregate Properties</b> |                        |                      |                  |                   |                                 |                         |
| Total Suspended Solids                   | Non-Filterable Residue | 442                  | mg/L             | 1                 | 2                               | Oct 11, 2022 09:26 AS   |
| <b>Routine Water</b>                     |                        |                      |                  |                   |                                 |                         |
| Chloride                                 |                        | 50                   | mg/L             | 5                 | 2                               | Oct 12, 2022 15:18 RB   |
| Sulfate                                  |                        | 40                   | mg/L             | 5                 | 2                               | Oct 12, 2022 15:18 RB   |


|  |               |                      |                  |                   |                                 |                         |
|--|---------------|----------------------|------------------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b>                  | 128096-5      | <b>Sample Date</b>   | 2022-10-09 09:50 |                   |                                 |                         |
| <b>Sample Description</b>                | Upstream      | <b>Sample Matrix</b> | Wastewater       |                   |                                 |                         |
| <b>Analyte</b>                           | <b>Result</b> | <b>Units</b>         | <b>DF</b>        | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Metals - Total in Water by ICP-MS</b> |               |                      |                  |                   |                                 |                         |
| Cadmium                                  | Total         | 0.0004               | mg/L             | 1                 | 0.0002                          | Oct 11, 2022 07:07 FR   |
| Chromium                                 | Total         | 0.0136               | mg/L             | 1                 | 0.0004                          | Oct 11, 2022 07:07 FR   |
| Copper                                   | Total         | 0.0111               | mg/L             | 1                 | 0.0002                          | Oct 11, 2022 07:07 FR   |
| Lead                                     | Total         | 0.0150               | mg/L             | 1                 | 0.0002                          | Oct 11, 2022 07:07 FR   |

**Analytical Report**

|   |   |   |
|---|---|---|
| Bill To: East Chicago Sanitary District<br>5201 Indianapolis Blvd<br>East Chicago, IN, United States<br>46312 | Project ID: Upstream<br>Project Name:<br>Project Location:<br>LSD:<br>P.O.: | Lot ID: <b>128096</b><br>Control Number:<br>Date Received: Oct 10, 2022<br>Date Reported: Oct 18, 2022<br>Report Number: 228690 |
| Attn: Ken Myers<br>Sampled By: HP<br>Company:   | Proj. Acct. code:   |   |

|  |                                     |              |           |                   |                                 |                         |
|--|-------------------------------------|--------------|-----------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b> 128096-5                     | <b>Sample Date</b> 2022-10-09 09:50 |              |           |                   |                                 |                         |
| <b>Sample Description</b> Upstream                   | <b>Sample Matrix</b> Wastewater     |              |           |                   |                                 |                         |
| <b>Analyte</b>                                       | <b>Result</b>                       | <b>Units</b> | <b>DF</b> | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Metals - Total in Water by ICP-MS - Continued</b> |                                     |              |           |                   |                                 |                         |
| Nickel   | Total                               | 0.004        | mg/L      | 1                 | 0.001                           | Oct 11, 2022 07:07 FR   |
| Zinc   | Total                               | 0.0895       | mg/L      | 1                 | 0.0004                          | Oct 11, 2022 07:07 FR   |

|   |                                     |              |           |                   |                                 |                         |
|---|-------------------------------------|--------------|-----------|-------------------|---------------------------------|-------------------------|
| <b>Reference Number</b> 128096-6        | <b>Sample Date</b> 2022-10-09 09:50 |              |           |                   |                                 |                         |
| <b>Sample Description</b> Upstream      | <b>Sample Matrix</b> Wastewater     |              |           |                   |                                 |                         |
| <b>Analyte</b>                          | <b>Result</b>                       | <b>Units</b> | <b>DF</b> | <b>Nominal DL</b> | <b>Analysis Start Date/Time</b> | <b>Analyst Initials</b> |
| <b>Inorganic Nonmetallic Parameters</b> |                                     |              |           |                   |                                 |                         |
| Nitrogen, Ammonia (As N)                | 0.2                                 | mg/L         | 1         | 0.1               | Oct 13, 2022 11:50              | RW                      |
| Nitrogen, Nitrate + Nitrite (As N)      | 1.1                                 | mg/L         | 1         | 0.1               | Oct 12, 2022 14:44              | RW                      |
| Total Phosphorus                        | 0.5                                 | mg/L         | 1         | 0.1               | Oct 14, 2022 13:23              | JB                      |
| Total Kjeldahl Nitrogen                 | 1.9                                 | mg/L         | 1         | 0.5               | Oct 11, 2022 22:59              | AS                      |
| Total Nitrogen                          | 3.1                                 | mg/L         | 1         | 0.5               | Oct 11, 2022 22:59              | AS                      |

Approved by:   
Nicole Breauchy  
Project Manager

## Methodology and Notes

|   |                      |                             |
|---|----------------------|-----------------------------|
| Bill To: East Chicago Sanitary District<br>5201 Indianapolis Blvd<br>East Chicago, IN, United States<br>46312 | Project ID: Upstream | Lot ID: <b>128096</b>       |
| Attn: Ken Myers   | Project Name:        | Control Number:             |
| Sampled By: HP  | Project Location:    | Date Received: Oct 10, 2022 |
| Company:  | LSD:                 | Date Reported: Oct 18, 2022 |
|   | P.O.:                | Report Number: 228690       |
|   | Proj. Acct. code:    |                             |

## Method of Analysis

| Method Name                       | Reference  | Method   | Date Analysis Started | Location                |
|-----------------------------------|------------|--|-----------------------|-------------------------|
| Ammonia-N by FIA                  | EPA        | Determination of Ammonia Nitrogen by Semi-Automated Colorimetry, E350.1  | Oct 13, 2022          | Fort Wayne              |
| Anions by IC in Water             | EPA        | Determination of Inorganic Anions by Ion Chromatography, E300.0  | Oct 12, 2022          | Fort Wayne              |
| BOD and CBOD in water             | SMEWW      | BOD: 5-Day Test, 5210B   | Oct 10, 2022          | Fort Wayne              |
| Coliforms by Quantitray           | SMEWW      | Enzyme Substrate Test, 9223B   | Oct 10, 2022          | Fort Wayne              |
| External Sublet Data Entry        | Ext. Lab   | External Lab, Ext. Lab   | Oct 13, 2022          | Fort Wayne              |
| Metals ICP-MS Total in water      | EPA        | Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry, E200.8  | Oct 11, 2022          | Fort Wayne              |
| Nitrate Nitrite in Water by FIA   | EPA        | Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry, E353.2   | Oct 12, 2022          | Fort Wayne              |
| Oil and Grease                    | EPA        | n-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated n-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, E1664 | Oct 11, 2022          | Fort Wayne              |
| Phosphorus Total in Water by FIA  | SMEWW      | Phosphorus: Automated Ascorbic Acid Reduction Method, 4500-P F   | Oct 14, 2022          | Fort Wayne              |
| Solids - Suspended                | SMEWW      | Total Suspended Solids, 2540D  | Oct 11, 2022          | Fort Wayne              |
| Sublet to Test America-Pittsburgh | Ext. Lab   | External Lab, Ext. Lab   | Oct 14, 2022          | Test America-Pittsburgh |
| TKN in Water by FIA               | Calculated | Calculated Result, Calculated  | Oct 11, 2022          | Fort Wayne              |
| TKN in Water by FIA               | EPA        | Total Kjeldahl Nitrogen by Semi-Automated Colorimetry, E351.2  | Oct 11, 2022          | Fort Wayne              |

## References

|            |  |
|------------|--|
| Calculated | Calculated Result  |
| EPA        | United States Environmental Protection Agency                |
| Ext. Lab   | External Laboratory  |
| SMEWW      | Standard Methods for the Examination of Water and Wastewater |

## Comments:

- Oct 11, 2022 - The ecoli sample was received and analyzed out of hold time.
- Oct 14, 2022 - The Available Cyanide testing was subcontracted to Eurofins/Test America Pittsburgh PA. Their report is attached in its entirety.
- Oct 18, 2022 - The laboratory control standard (LCS) recovery was outside of acceptance limits for the BOD analysis. The acceptable recovery range is 84.6% to 115.4%. The LCS for this batch had a recovery of 72.3%. This data is reported based upon the acceptable recoveries in additional QC for the Method Blank, CBOD LCS and sample duplicates.

The laboratory control standard (LCS) recovery was outside of acceptance limits for the CBOD analysis. The acceptable recovery range is 84.6% to 115.4%. The LCS for this batch had a recovery of 77.5%. This data is reported based upon the acceptable recoveries in additional QC for the Method Blank, BOD LCS and sample duplicates.

---

**Methodology and Notes**

|             |                                 |                   |          |                 |               |
|-------------|---------------------------------|-------------------|----------|-----------------|---------------|
| Bill To:    | East Chicago Sanitary District  | Project ID:       | Upstream | Lot ID:         | <b>128096</b> |
|             | 5201 Indianapolis Blvd          | Project Name:     |          | Control Number: |               |
|             | East Chicago, IN, United States | Project Location: |          | Date Received:  | Oct 10, 2022  |
|             | 46312                           | LSD:              |          | Date Reported:  | Oct 18, 2022  |
| Attn:       | Ken Myers                       | P.O.:             |          | Report Number:  | 228690        |
| Sampled By: | HP                              | Proj. Acct. code: |          |                 |               |
| Company:    |                                 |                   |          |                 |               |

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Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

## Report Transmission Cover Page

|   |   |   |
|---|---|---|
| Bill To: East Chicago Sanitary District<br>5201 Indianapolis Blvd<br>East Chicago, IN, United States<br>46312 | Project ID: Upstream<br>Project Name:<br>Project Location:<br>LSD:<br>P.O.: | Lot ID: <b>128096</b><br>Control Number:<br>Date Received: Oct 10, 2022<br>Date Reported: Oct 18, 2022<br>Report Number: 228690 |
| Attn: Ken Myers<br>Sampled By: HP<br>Company:   | Proj. Acct. code:   |   |

| Contact          | Company                               | Address   |
|------------------|---------------------------------------|---|
| <b>Ken Myers</b> | <b>East Chicago Sanitary District</b> | 5201 Indianapolis Blvd<br>East Chicago, IN 46312<br>Phone: (219) 391-8466 Fax:<br>Email: kmyers@eastchicago.com |

| Delivery                             | Format       | Deliverables      |
|--------------------------------------|--------------|-------------------|
| Email - Merge Deliverables           | PDF          | COC / Test Report |
| Email - Multiple Deliverables By Lot | East Chicago | Test Report       |

| Contact                | Company                               | Address   |
|------------------------|---------------------------------------|---|
| <b>Megan Krauskopf</b> | <b>East Chicago Sanitary District</b> | Fort Wayne, IN null<br>Phone: (260) 471-7000 Fax:<br>Email: megan.krauskopf@element.com |

| Delivery                   | Format       | Deliverables |
|----------------------------|--------------|--------------|
| Email - Single Deliverable | East Chicago | Test Report  |

| Contact             | Company                               | Address   |
|---------------------|---------------------------------------|---|
| <b>San Operator</b> | <b>East Chicago Sanitary District</b> | 5201 Indianapolis Blvd.<br>East Chicago, IN 46312<br>Phone: (219) 391-8466 Fax:<br>Email: sanoperator@eastchicago.com |

| Delivery                             | Format       | Deliverables      |
|--------------------------------------|--------------|-------------------|
| Email - Merge Deliverables           | PDF          | COC / Test Report |
| Email - Multiple Deliverables By Lot | East Chicago | Test Report       |

### Notes To Clients:

- Oct 11, 2022 - The ecoli sample was received and analyzed out of hold time.
- Oct 14, 2022 - The Available Cyanide testing was subcontracted to Eurofins/Test America Pittsburgh PA. Their report is attached in its entirety.
- Oct 18, 2022 - The laboratory control standard (LCS) recovery was outside of acceptance limits for the BOD analysis. The acceptable recovery range is 84.6% to 115.4%. The LCS for this batch had a recovery of 72.3%. This data is reported based upon the acceptable recoveries in additional QC for the Method Blank, CBOD LCS and sample duplicates.

The laboratory control standard (LCS) recovery was outside of acceptance limits for the CBOD analysis. The acceptable recovery range is 84.6% to 115.4%. The LCS for this batch had a recovery of 77.5%. This data is reported based upon the acceptable recoveries in additional QC for the Method Blank, BOD LCS and sample duplicates.

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## ANALYTICAL REPORT

Eurofins Pittsburgh  
301 Alpha Drive  
RIDC Park  
Pittsburgh, PA 15238  
Tel: (412)963-7058

Laboratory Job ID: 180-146061-1

Client Project/Site: Available Cyanide 128096

For:

Element Materials Technology  
328 Ley Rd  
Suite100  
Fort Wayne, Indiana 46825

Attn: Don Ellis



Authorized for release by:

10/14/2022 1:46:42 PM

Khadejha Brown, Project Management Assistant I

(412)963-7058

[Khadejha.Brown@et.eurofinsus.com](mailto:Khadejha.Brown@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416



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# Case Narrative

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

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**Job ID: 180-146061-1**

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**Laboratory: Eurofins Pittsburgh**

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**Narrative**

**Job Narrative  
180-146061-1**

**Receipt**

The sample was received on 10/12/2022 10:30 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

**General Chemistry**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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# Definitions/Glossary

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

## Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CFU            | Colony Forming Unit   |
| CNF            | Contains No Free Liquid   |
| DER            | Duplicate Error Ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL             | Detection Limit (DoD/DOE)   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision Level Concentration (Radiochemistry)   |
| EDL            | Estimated Detection Limit (Dioxin)  |
| LOD            | Limit of Detection (DoD/DOE)  |
| LOQ            | Limit of Quantitation (DoD/DOE)   |
| MCL            | EPA recommended "Maximum Contaminant Level"   |
| MDA            | Minimum Detectable Activity (Radiochemistry)  |
| MDC            | Minimum Detectable Concentration (Radiochemistry)   |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| MPN            | Most Probable Number  |
| MQL            | Method Quantitation Limit   |
| NC             | Not Calculated  |
| ND             | Not Detected at the reporting limit (or MDL or EDL if shown)  |
| NEG            | Negative / Absent   |
| POS            | Positive / Present  |
| PQL            | Practical Quantitation Limit  |
| PRES           | Presumptive   |
| QC             | Quality Control   |
| RER            | Relative Error Ratio (Radiochemistry)   |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |
| TNTC           | Too Numerous To Count   |

# Accreditation/Certification Summary

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

## Laboratory: Eurofins Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority              | Program             | Identification Number | Expiration Date |
|------------------------|---------------------|-----------------------|-----------------|
| Arkansas DEQ           | State               | 19-033-0              | 06-27-22 *      |
| California             | State               | 2891                  | 04-30-23        |
| Connecticut            | State               | PH-0688               | 09-30-22 *      |
| Florida                | NELAP               | E871008               | 06-30-23        |
| Georgia                | State               | PA 02-00416           | 04-30-23        |
| Illinois               | NELAP               | 004375                | 06-30-23        |
| Kansas                 | NELAP               | E-10350               | 03-31-23        |
| Kentucky (UST)         | State               | 162013                | 04-30-23        |
| Kentucky (WW)          | State               | KY98043               | 12-31-22        |
| Louisiana              | NELAP               | 04041                 | 06-30-22 *      |
| Louisiana (All)        | NELAP               | 04041                 | 06-30-23        |
| Maine                  | State               | PA00164               | 03-06-24        |
| Minnesota              | NELAP               | 042-999-482           | 12-31-22        |
| New Hampshire          | NELAP               | 2030                  | 04-04-23        |
| New Jersey             | NELAP               | PA005                 | 06-30-23        |
| New York               | NELAP               | 11182                 | 04-01-23        |
| North Carolina (WW/SW) | State               | 434                   | 12-31-22        |
| North Dakota           | State               | R-227                 | 04-30-23        |
| Oregon                 | NELAP               | PA-2151               | 02-07-23        |
| Pennsylvania           | NELAP               | 02-00416              | 04-30-23        |
| Rhode Island           | State               | LAO00362              | 12-31-22        |
| South Carolina         | State               | 89014                 | 04-20-23        |
| Texas                  | NELAP               | T104704528            | 03-31-23        |
| USDA                   | US Federal Programs | P330-16-00211         | 06-21-24        |
| Utah                   | NELAP               | PA001462019-8         | 05-31-23        |
| Virginia               | NELAP               | 10043                 | 09-14-23        |
| West Virginia DEP      | State               | 142                   | 01-31-23        |
| Wisconsin              | State               | 998027800             | 08-31-23        |

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Pittsburgh

# Sample Summary

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

---

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 180-146061-1  | 128096-1         | Water  | 10/09/22 09:50 | 10/12/22 10:30 |

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# Method Summary

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

| Method     | Method Description                       | Protocol | Laboratory |
|------------|--|----------|------------|
| OIA - 1677 | Available Cyanide by Flow Injection, Lig | EPA      | EET PIT    |

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058



# Lab Chronicle

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

**Client Sample ID: 128096-1**

**Lab Sample ID: 180-146061-1**

**Date Collected: 10/09/22 09:50**

**Matrix: Water**

**Date Received: 10/12/22 10:30**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | OIA - 1677   |     | 1          |                |              | 415039       | 10/13/22 11:44       | CMR     | EET PIT |

Instrument ID: ALPKEM3

**Laboratory References:**

EET PIT = Eurofins Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

**Analyst References:**

Lab: EET PIT

Batch Type: Analysis

CMR = Carl Reagle



# Client Sample Results

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

**Client Sample ID: 128096-1**

**Lab Sample ID: 180-146061-1**

**Date Collected: 10/09/22 09:50**

**Matrix: Water**

**Date Received: 10/12/22 10:30**

## General Chemistry

| Analyte                             | Result | Qualifier | RL     | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------------------------|--------|-----------|--------|--------|------|---|----------|----------------|---------|
| Cyanide, Available (EPA OIA - 1677) | ND     |           | 0.0020 | 0.0016 | mg/L |   |          | 10/13/22 11:44 | 1       |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

# QC Sample Results

Client: Element Materials Technology  
 Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

## Method: OIA - 1677 - Available Cyanide by Flow Injection, Lig

**Lab Sample ID: MB 180-415039/99**  
**Matrix: Water**  
**Analysis Batch: 415039**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

| Analyte            | MB<br>Result | MB<br>Qualifier | RL     | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------|--------------|-----------------|--------|--------|------|---|----------|----------------|---------|
| Cyanide, Available | ND           |                 | 0.0020 | 0.0016 | mg/L | - |          | 10/13/22 11:20 | 1       |

**Lab Sample ID: LCS 180-415039/100**  
**Matrix: Water**  
**Analysis Batch: 415039**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

| Analyte            | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits |
|--------------------|----------------|---------------|------------------|------|---|------|----------------|
| Cyanide, Available | 0.0501         | 0.0479        |                  | mg/L | - | 96   | 82 - 132       |





# QC Association Summary

Client: Element Materials Technology  
Project/Site: Available Cyanide 128096

Job ID: 180-146061-1

## General Chemistry

### Analysis Batch: 415039

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method     | Prep Batch |
|--------------------|--------------------|-----------|--------|------------|------------|
| 180-146061-1       | 128096-1           | Total/NA  | Water  | OIA - 1677 |            |
| MB 180-415039/99   | Method Blank       | Total/NA  | Water  | OIA - 1677 |            |
| LCS 180-415039/100 | Lab Control Sample | Total/NA  | Water  | OIA - 1677 |            |

- 1
- 2
- 3
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- 8
- 9
- 10
- 11
- 12
- 13



P/FW002550

Purchase Order Number: PO#  
Printed Date: Oct 10, 2022  
Shipping Method: Ground

### External Sublet Request

**To:**  
Attn: Sample Receiving  
Test America-Pittsburgh  
301 Alpha Dr  
Pittsburgh, PA 15238  
Phone: (111) 111-1111  
Fax:  
Email:

**Results To:**  
Fort Wayne  
Suite 100, 328 Ley Road  
Fort Wayne, IN 46825  
Phone: (260) 471-7000  
Fax: (260) 471-7777  
Email: Info.FortWayne@element.com

**Bill To:**  
Attn: Accounts Payable  
Element Materials Technology Canada Inc.  
3701 Port Union Road  
Fairfield OH 45014  
United States  
Phone: (513) 984-4112  
Fax: (513) 984-8258  
Email: accpayable.americas@element.com,  
wregpurch@element.com

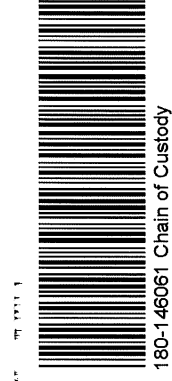
Please contact the requisitioner named below with all questions related to this purchase order.

**\*\* THE PURCHASE ORDER NUMBER MUST APPEAR ON ALL INVOICES. INVOICES MUST BE SENT TO BOTH BILL TO EMAIL ADDRESSES. \*\***

| Due Date     | Requisitioner | Sample Id  | Sampled Date       | Element Service Code | Vendor Service Code | Service Name                                      | Sample Description |
|--------------|---------------|------------|--------------------|----------------------|---------------------|---|--------------------|
| Oct 17, 2022 | John Himelick | 128096 - 1 | Oct 09, 2022 09:50 | CYAN 1677            | CYAN 1677           | Cyanide, Available by Upstream<br>Ligand Exchange |                    |

| Relinquished By      | Date/Time        | Received By          | Date/Time     | Temp of Samples | Attempt to Cool? Y / N |
|----------------------|------------------|----------------------|---------------|-----------------|------------------------|
| <i>John Himelick</i> | SEP 1 1 2022 5pm | <i>John Himelick</i> | 10/7/22 10:30 | 1.2 °C          |                        |
|                      | OCT 1 1 2022 5pm |                      |               |                 |                        |
|                      |                  |                      |               |                 |                        |

Comments: **RUSH!**



The standard terms and conditions of purchase below are included in each purchase order (PO) of Element Materials Technology Canada Inc. and its subsidiaries (Element) as part of its contract with a supplier of goods and/or services (Vendor). Any Vendor terms and conditions of supply do not apply unless Element agrees in writing. Where terms and conditions exist under an existing written contract between Element and a Vendor, these terms and conditions do not apply.

**NOTE: Element Materials Technology Canada Inc. is not an exempt entity and subject to GST, HST, QST and applicable provincial sales taxes.**

Terms and Conditions <http://www.element.com/terms-and-conditions>



# Login Sample Receipt Checklist

Client: Element Materials Technology

Job Number: 180-146061-1

**Login Number: 146061**

**List Source: Eurofins Pittsburgh**

**List Number: 1**

**Creator: Abernathy, Eric L**

| Question  | Answer | Comment |
|---|--------|---------|
| Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.      | N/A    |         |
| The cooler's custody seal, if present, is intact.   | True   |         |
| Sample custody seals, if present, are intact.   | True   |         |
| The cooler or samples do not appear to have been compromised or tampered with.                      | True   |         |
| Samples were received on ice.   | True   |         |
| Cooler Temperature is acceptable.   | True   |         |
| Cooler Temperature is recorded.   | True   |         |
| COC is present.   | True   |         |
| COC is filled out in ink and legible.   | True   |         |
| COC is filled out with all pertinent information.   | True   |         |
| Is the Field Sampler's name present on COC?   | True   |         |
| There are no discrepancies between the containers received and the COC.                             | True   |         |
| Samples are received within Holding Time (excluding tests with immediate HTs)                       | True   |         |
| Sample containers have legible labels.  | True   |         |
| Containers are not broken or leaking.   | True   |         |
| Sample collection date/times are provided.  | True   |         |
| Appropriate sample containers are used.   | True   |         |
| Sample bottles are completely filled.   | True   |         |
| Sample Preservation Verified.   | True   |         |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs                    | True   |         |
| Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4"). | True   |         |
| Multiphasic samples are not present.  | True   |         |
| Samples do not require splitting or compositing.  | True   |         |
| Residual Chlorine Checked.  | N/A    |         |






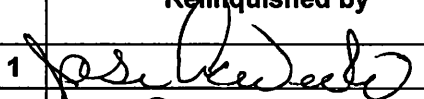

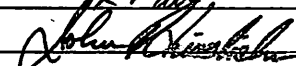
element™

# Chain of Custody

Laboratory Number: **128096**

|   |                                |                             |                                    |  |                     |
|---|--------------------------------|-----------------------------|------------------------------------|--|---------------------|
| Company Name:<br>Contact Name:<br>Address:<br>City, State Zip:<br>Phone Number:<br>Fax Number:<br>E-mail Address: | Client Information:            | Billing Information:        | PO Number:                         | Project Name/Number:   | Page 1 of 1         |
|   | East Chicago Sanitary District | Same                        |                                    | <b>Upstream</b>  | <b>Matrix Code</b>  |
|   | Henry Padilla                  |                             | Quote Number:                      | Sampler's Signature<br> | DW = Drinking Water |
|   | 5201 Indianapolis Blvd         |                             | Required QC Level:                 |  | WW = Waste Water    |
|   | East Chicago IN 46401          |                             | Bill Monthly:                      | Shipping Method:   | GW = Ground Water   |
|   | 219-391-8466 Ext. 240          | Ext:                        | <input type="checkbox"/> Yes       | UPS / FedEx / Airborne   | AQ = Aqueous        |
| hpadilla@eastchicago.com  |                                | <input type="checkbox"/> No | DHL / <u>Element</u> / Hand / Mail | OT = Other   |                     |

| Which Regulations Apply:   | Turn Time              | (Rush turn times will incur a surcharge and must be pre-approved by lab.) | Container        |        | Pres.    | Requested Tests  |              |              |              |                             |                             |                                    |                                    |              |              | Comments |   |
|--|------------------------|---|------------------|--------|----------|--|--------------|--------------|--------------|-----------------------------|-----------------------------|------------------------------------|------------------------------------|--------------|--------------|----------|---|
|  |                        |   | Quantity         | Type   |          | HCl, HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , NaOH, Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> | CYANIDE 1677 | Oil & Grease | E. coli      | 300: Chlor, SO <sub>4</sub> | *Metals                     | NH <sub>3</sub> , T. Phos, Total N | TSS, BOD                           | Low level Hg |              |          |   |
| <input type="checkbox"/> RCRA<br><input type="checkbox"/> POTW<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> USDA/FDA<br><input type="checkbox"/> RECAP/RISC<br><input type="checkbox"/> Drinking Water<br><input type="checkbox"/> Distribution<br><input type="checkbox"/> Special<br><input type="checkbox"/> State<br><input type="checkbox"/> Other | 5 TAT                  |   |                  |        |          |  |              |              |              |                             |                             |                                    |                                    |              |              |          | Samples Meet Acceptance Policy Yes <input checked="" type="checkbox"/> No<br>*Cd, Cr, Cu, Pb, Ni Zn<br>Low level Hg is once a week<br>No Hg<br>F5% PIP<br>Ecoli received out of hold, process as received N/A |
| Sample ID/Description  | Collection Information |   |                  | Matrix | Quantity | Type   | Pres.        | CYANIDE 1677 | Oil & Grease | E. coli                     | 300: Chlor, SO <sub>4</sub> | *Metals                            | NH <sub>3</sub> , T. Phos, Total N | TSS, BOD     | Low level Hg |          |   |
| Upstream   | Date                   | Time  | Grab / Composite | WW     | 1        | P  | NAOH         | X            |              |                             |                             |                                    |                                    |              |              |          |   |
|  | 10-9-22                | 9:50  | G                | WW     | 1        | G  | H2SO4        |              | X            |                             |                             |                                    |                                    |              |              |          |   |
|  |                        |   |                  | WW     | 1        | G  | Na2S2O3      |              |              | X                           |                             |                                    |                                    |              |              |          |   |
|  |                        |   |                  | WW     | 1        | G  | BrCl         |              |              |                             |                             |                                    |                                    |              | X            |          |   |
|  |                        |   |                  | WW     | 2        | P  | NONE         |              |              |                             | X                           |                                    |                                    | X            |              |          |   |
|  |                        |   |                  | WW     | 1        | P  | HNO3         |              |              |                             |                             | X                                  |                                    |              |              |          |   |
|  |                        |   |                  | WW     | 1        | P  | H2SO4        |              |              |                             |                             |                                    | X                                  |              |              |          |   |

| Retinquished by   | Date/Time         | Received by  | Date/Time         | Composite Sampler:  |
|---|-------------------|--|-------------------|---|
|  | 10-10-22 11:30 AM |  | 10-10-22 11:30 AM | Start Date/Time: _____<br>End Date/Time: _____  |
| R. Mill   | 10-10-22 11:35    |  | 10/10/22 16:35    | Received at lab on ice?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 5.72 |
|   |                   |  |                   |   |

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the Element Materials Technology reserves the right to return unused sample pc

Lot: 128096 COC



8800 North US 31  
Columbus, IN  
47201 USA

328 Ley Road, Suite 100  
Fort Wayne, IN  
46825 USA

909 Executive Dr.  
Warsaw, IN  
46580 USA

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