



LSSE: (412) 264-4400  
Rabell: (814) 756-4384  
Senate: (412) 826-5454  
www.lsse.com

---

LSSE

Rabell

Senate

---

March 26, 2024

S. O. No. 0495-03

VIA EMAIL AND HAND DELIVERED  
(martini@ctsapa.us)

Mr. Robert Martini, Operations Supervisor  
Center Township Sanitary Authority  
224 Center Grange Road  
Aliquippa, Pennsylvania 15001

**Subject: 2023 Annual Wasteload Management Report  
Center Township Sanitary Authority**

Dear Mr. Martini:

Transmitted herewith is the PaDEP Submission Confirmation and Chapter 94 Report for the subject project. The enclosed are for Authority files.

Should you have any questions, please contact Marie S. Hartman, P.E. directly (Ext. 246).

Sincerely,

Ned Mitrovich, P.E.

Marie S. Hartman, P.E.

NM/MSH:dcs

Enclosures

cc/enc: Marie S. Hartman, P.E., LSSE (mhartman@lsse.com)  
Wyatt D. Dishler, LSSE (wdishler@lsse.com)

- 
- Coraopolis, PA (Headquarters)
  - Aliquippa, Beaver County, PA
  - Greensburg, Westmoreland County, PA
  - Dublin, Franklin County, OH

- Albion, Erie County, PA

- Pittsburgh, Allegheny County, PA
- White Oak, Allegheny County, PA
- Kittanning, Armstrong County, PA
- Washington, Washington County, PA

**CENTER TOWNSHIP SANITARY AUTHORITY**  
**Beaver County, Pennsylvania**

**ANNUAL REPORT**  
**Municipal Wasteload Management**  
**(Chapter 94 Report)**

**OPERATING YEAR 2023**

**Elkhorn Run Sewage Treatment Plant**

NPDES Permit No. PA0037940

MARCH 2024



CENTER TOWNSHIP SANITARY AUTHORITY  
MUNICIPAL WASTELOAD MANAGEMENT REPORT  
OPERATING YEAR 2023

TABLE OF CONTENTS

	<u>PAGE NO.</u>
PURPOSE AND SCOPE	1
SECTION 1 – HYDRAULIC LOADING GRAPH	2
SECTION 2 – ORGANIC LOADING GRAPH	2
SECTION 3 – DISCUSSION OF HISTORIC HYDRAULIC AND ORGANIC LOADINGS AND PROJECTIONS	2 - 4
Historic Hydraulic Loadings	2 - 3
Historic Organic Loadings	3
Projected Future Hydraulic Loadings	3
Projected Future Organic Loadings	4
SECTION 4 – SEWER EXTENSIONS	4 - 6
SECTION 5 – SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION	6 - 11
SECTION 6 – CONDITION OF THE SEWER SYSTEM	11
SECTION 7 – LIFT STATIONS	11
SECTION 8 – INDUSTRIAL WASTE DISCHARGES	12
SECTION 9 – SLUDGE MANAGEMENT INVENTORY	12
SECTION 10 – SIGNATURES	13
APPENDICES:	
APPENDIX A – TABLES AND FIGURES	
APPENDIX B – CALIBRATION CERTIFICATE	
APPENDIX C – TAP SUMMARY	
APPENDIX D – MAINTENANCE SUMMARY	
APPENDIX E – SLUDGE MANAGEMENT INVENTORY REPORT	

CENTER TOWNSHIP SANITARY AUTHORITY  
MUNICIPAL WASTELOAD MANAGEMENT REPORT  
OPERATING YEAR 2023

LIST OF TABLES

<u>TABLE NO.</u>		<u>PAGE NO.</u>
1	SEWAGE TREATMENT PLANT HYDRAULIC LOADING OPERATING DATA SUMMARY	Appendix A
2	SEWAGE TREATMENT PLANT ORGANIC LOADING OPERATING DATA SUMMARY	Appendix A
3	CHAPTER 94 FLOW / LOAD PROJECTION BASIS	Appendix A
4	ORGANIC LOAD	Appendix A
5	2023 LIFT STATION DATA	Appendix A
6	ELKHORN RUN SEWAGE TREATMENT PLANT 2023 SOLIDS MANAGEMENT INVENTORY	Appendix E

LIST OF FIGURES

<u>FIGURE NO.</u>		<u>PAGE NO.</u>
1	SEWAGE TREATMENT PLANT HYDRAULIC LOADING GRAPH	Appendix A
2	SEWAGE TREATMENT PLANT ORGANIC LOADING GRAPH	Appendix A
3	SLUDGE GENERATION CALCULATION	Appendix E

# **CENTER TOWNSHIP SANITARY AUTHORITY MUNICIPAL WASTELOAD MANAGEMENT REPORT OPERATING YEAR 2023**

## **PURPOSE AND SCOPE**

This report is submitted to satisfy the requirements of Chapter 94 - Municipal Wasteload Management, of the Pennsylvania Code for National Pollutant Discharge Elimination System (NPDES) Permit No. PA0037940. This report presents the following:

1. Hydraulic loading graph.
2. Organic loading graph.
3. A discussion of the hydraulic and organic loadings and projections methodology.
4. A description of all sewer extensions approved and all sewer extensions constructed in the year reported.
5. A description of the operation and maintenance program for the sewer system including monitoring.
6. A discussion of the condition of the sewer system.
7. A discussion of the condition and capacity of the sewage lift stations within the collection system.
8. A description of industrial waste dischargers.
9. A sludge management inventory report.

Center Township Sanitary Authority (CTSA) owns, operates, and maintains one Sewage Treatment Plant (Elkhorn Run), eleven wastewater pumping stations, and the wastewater collection and conveyance system.

## **SECTION 1: HYDRAULIC LOADING GRAPH (§ 94.12.(a)(1))**

Figure 1 contained in Appendix A presents the hydraulic loading graph illustrating flows as recorded at the Elkhorn Run Sewage Treatment Plant (STP) for the period of time between 2019 and 2023. Figure 1 also presents flow projections for the coming five-year period (2024 through 2028). The data is presented in tabular form appended as Table 1. Section 3 of this report provides discussion of the past and projected future hydraulic loadings. Also shown on Figure 1 is the permitted hydraulic capacity (2.0 mgd).

## **SECTION 2: ORGANIC LOADING GRAPH (§ 94.12.(a)(2))**

Figure 2 contained in Appendix A presents the organic loading tributary to the Elkhorn Run STP for the most recent five-year period (2019 through 2023) and projects organic loading for the coming five-year period (2024 through 2028). Historic loading data is provided in tabular form appended as Table 2. Section 3 of this report discusses past and projected future organic loading. Figure 2 also presents the design influent BOD<sub>5</sub> loading (3,400 lbs/day).

## **SECTION 3: DISCUSSION OF HISTORIC HYDRAULIC AND ORGANIC LOADINGS AND PROJECTIONS (§ 94.12.(a)(3))**

### Historic Hydraulic Loading

The annual average flow to the STP during 2023 was 1.028 mgd as shown on Table 1 and Figure 1. The five-year average of the annual average flow (2019 through 2023 period of record) is 1.112 mgd.

The 90-day sustained flow recorded at the STP is computed at 1.373 mgd in 2023, occurring during the months of January, February, and March. The five-year average of the annual 90-day sustained flow rate is computed at 1.517 mgd, and the five-year average of the 90-day sustained hydraulic loading / annual average hydraulic loading is

1.36. During the most recent five-year period of record, the 90-day sustained recorded flow rates did not exceed the hydraulic design flow capacity of 2.0 mgd. There were no three consecutive months where the monthly average flow exceeded the hydraulic design capacity of the plant. Therefore, based upon reporting criteria as defined by Title 25, Chapter 94.1 of the Pennsylvania Code, the Sewage Treatment Plant was not hydraulically overloaded in 2023.

As required by Chapter 94 regulations, the calibration certificate for the sewage treatment plant flow meter is provided in Appendix B.

#### Historic Organic Loadings

The annual average loading to the treatment plant in 2023 was computed to be 1,037 lbs BOD<sub>5</sub>/day as shown on Table 2 and Figure 2. The 2023 maximum month loading (March) was found to be 1,721 lbs BOD<sub>5</sub>/day. The maximum month organic loading was below the design organic loading of 3,400 lbs. BOD<sub>5</sub>/day. Therefore, based upon reporting criteria as defined by Title 25, Chapter 94.1 of the Pennsylvania Code, the STP was not organically overloaded in 2023.

#### Projected Future Hydraulic Loadings

The base datum for hydraulic loading projections is the five-year annual average hydraulic loading of 1.112 mgd. Per PaDEP regulations, 100 gpcd was utilized. Projections of yearly increases are based upon additional EDUs as detailed in Section 4 of this report. The 5-year 90-day sustained hydraulic loading / annual average hydraulic loading (1.36) was used to project maximum flow rates. Table 3 presents a summary of the projected hydraulic loading. As shown on Figure 1, the projected 90-day sustained flow does not exceed the hydraulic design capacity in years 2024 through 2028. No hydraulic overload is projected.

Projected Future Organic Loadings

Projected future organic loadings were computed similarly to the projected hydraulic loadings using a “base datum”. The base datum for the organic loading projections is the 5-year annual average organic loading of 1,029 lbs BOD<sub>5</sub> per day. Projections of yearly increases are based upon additional EDUs as detailed in Section 4 of this report. Per PaDEP regulations, 0.17 lbs BOD<sub>5</sub> per day per person was utilized. Table 4 presents a summary of the projected organic load. Maximum monthly loads were projected based upon a historic ratio of maximum month to annual average of 1.55 derived as shown on Table 2. As shown on Figure 2, the maximum month loading is not projected to exceed the design BOD<sub>5</sub> Loading (3,400 lbs/day) in the coming 5-year period. Therefore, an organic overload is not projected.

**SECTION 4: SEWER EXTENSIONS (§ 94.12.(a)(4))**

In 2023, 63 taps/EDUs were made according to CTSA records. Appendix C contains a detailed listing of these taps and also a summary of anticipated taps for 2024-2029. The table below summarizes the current status of known developments in the CTSA service area.

<b>Development</b>	<b>Type</b>	<b>Estimated EDUs/Flow</b>	<b>Status / Phase</b>
Heritage Valley	Commercial	22 EDU	Completed 2018
Hilton Garden Inn	Commercial	52 EDU	Completed 2018
Allegheny Health Network Cancer Center	Commercial	32 EDU	Completed 2018
Eagles Landing at Mateer Farms	Residential	125 EDU	Completed 2018
CTWA Temporary Water Plant Sludge Discharge	Commercial	15 EDU	Completed 2018
Village at Riverside NVR/Ryan Homes	Residential	79 EDU	Completed 2018-2021
Beaver Valley Mall Outparcels	Commercial	6 EDU	Completed 2019
Western PA Surgery Center	Commercial	20 EDU	Completed 2019
Primanti’s Restaurant	Commercial	7 EDU	Completed 2019



<b>Development</b>	<b>Type</b>	<b>Estimated EDUs/Flow</b>	<b>Status / Phase</b>
Shell – Main Plant	Commercial	21,000 gpd	Completed 2018-2022
Shell – Support Buildings	Commercial	7,375 gpd	Completed 2018-2022
Highland Meadows Phase 1	Residential	24 EDU 1 EDU	Completed 2019-2022 Future Construction
Highland Meadows Phase 2	Residential	26 EDU	Future Construction
Highland Meadows Phase 3	Residential	25 EDU	Future Construction
Lakeview Farms Phase 5	Residential	40 EDU 43 EDU	Completed 2021-2022 Future Construction
BASF Corporation Pump Station	Commercial	11 EDU	Completed 2021
GetGo	Commercial	5 EDU	Completed in 2021
Glade Bluffs Apartments	Residential	182 EDU	Planning
Glade Bluffs Phase III	Commercial	50 EDU	Planning
Lincoln Learning Center	Commercial	10 EDU	Planning
Old Glass Dump Property	Commercial	10 EDU	Planning
Vacant 3-Acre Parcel	Commercial	5 EDU	Planning

As indicated above, Shell constructed an ethane cracker plant in the service area. Development has been spurred by the Shell plant and growth is expected to continue. It is not possible to make accurate predictions of the amount and location of development. For purposes of Chapter 94 reporting, the table below provides estimates for the coming five-year period based upon known information and historic data.

<b>Year</b>	<b>Number of EDUs</b>	<b>Notes/Explanation</b>
2016 (Actual)	141	Taps Purchased
2017 (Actual)	284	Taps Purchased (includes Shell)
2018 (Actual)	258	Taps Purchased
2019 (Actual)	76	Taps Purchased
2020 (Actual)	39	Taps Purchased
2021 (Actual)	51	Taps Purchased
2022 (Actual)	26	Taps Purchased
2023 (Actual)	63	Taps Purchased
2024 (Estimated)	66	Refer to Sewer Tap Summary Table (Appendix C)
2025 (Estimated)	45	Refer to Sewer Tap Summary Table (Appendix C)
2026 (Estimated)	247	Refer to Sewer Tap Summary Table (Appendix C)

2027 (Estimated)	72	Refer to Sewer Tap Summary Table (Appendix C)
2028 (Estimated)	34	Refer to Sewer Tap Summary Table (Appendix C)
2029 (Estimated)	27	Refer to Sewer Tap Summary Table (Appendix C)

No sanitary sewer line extensions were constructed in 2023.

**SECTION 5: SEWER SYSTEM MONITORING, MAINTENANCE, REPAIR AND REHABILITATION (§ 94.12.(a)(5))**

The Center Township Sanitary Authority (CTSA) owns, operates and maintains the sewage collection, conveyance, pumping and treatment facilities within its service area. The CTSA system includes separate sanitary sewers, eleven lift stations, and one sewage treatment plant. Responsibilities include the administration, operation, maintenance, and monitoring of the plant, pump stations, and sewer system.

CTSA maintains a staff of employees to perform maintenance and operate the sewers, pumping stations and wastewater treatment facility. Part-time and seasonal personnel are hired as needed. The Operations Supervisor, under the direction of the Authority Board of Directors, is responsible for the operation and administration of the sewer system, pumping stations and wastewater treatment facility. Two full-time employees are responsible for the administrative duties. The operations crew includes:

- Robert J. Martini, Operations Supervisor, Certification Number: S16819
- Lance Elias, Lab Supervisor/Lab Technician, Certification Number: S16821
- Kirk Johns, Chief Operator/Laborer, Certification Number: S18605
- Walt Reynolds, Laborer
- Richard Nicasro, Operator, Certification Number: S20891

Sampling is conducted by CTSA personnel. The 2023 Lab Equipment Calibration Report is provided in Appendix B. As of July 2018, all samples are analyzed at the CTSA Certified Laboratory onsite (Lab ID # 04-03013). Required monitoring parameters per the NPDES Permit are presented in the table below.

<b>PARAMETER</b>	<b>FREQUENCY</b>	<b>LOCATION</b>	<b>SAMPLE TYPE</b>
<b>Total Flow</b>	Continuous	Effluent	Recorded
<b>BOD<sub>5</sub> / CBOD<sub>5</sub></b>	Twice per week	Influent and Effluent	8 hour composite
<b>Suspended Solids</b>	Twice per week	Influent and Effluent	8 hour composite
<b>Fecal Coliform</b>	Twice per week	Effluent	Grab
<b>pH</b>	Once per day	Effluent	Grab
<b>Dissolved Oxygen</b>	Once per day	Effluent	Grab
<b>Total Residual Chlorine</b>	Once per day	Effluent	Grab
<b>Total Kjeldahl Nitrogen</b>	Quarterly	Effluent	8 hour composite
<b>Ammonia (as Nitrogen)</b>	Twice per week	Effluent	8 hour composite
<b>Total Phosphorus</b>	Quarterly	Effluent	8 hour composite

The current NPDES Permit became effective on April 1, 2017 and expired on March 31, 2022. The Draft NPDES Permit was received on February 9, 2023. CTSA submitted comments to PaDEP regarding the Draft NPDES Permit on March 22, 2023.

The following provides a summary of repair and maintenance performed within the collection and conveyance system in the past five years. Appendix D contains a more detailed listing of repairs and maintenance performed in 2023. Appendix D also includes a listing of preventative maintenance performed at each lift station.

CTSA utilized outside contractors for heavy / specialty maintenance and repair of the gravity sewers, force mains and lift stations, including:

- Optimum Controls Corp.
- State Pipe Services, Inc.
- Sudak Construction
- Tri State Maintenance
- Stefanik's Next Generation Contracting Company, Inc.
- Special Electric
- Halama Brothers Electric, Inc.
- Total Equipment Co.
- 1<sup>st</sup> Choice Building Co.
- Premier Safety
- W.C. Weil
- Multi-Metals Co., Inc.

Equipment owned by CTSA for operation and maintenance of the system includes a skid loader, dump truck, tractor, two utility trucks, two pick-up trucks, two mowers, tow trailer, safety equipment, push camera, and various hand tools and equipment.

In 2014, approximately 1,180 feet of sewer main was inspected and 8,000 feet of sewer main was cleaned. The Authority made an emergency repair of an 8-inch sewer line located off of Woods Avenue and 18-inch sewer line located along Elkhorn Run. During the repair of the sewer off of Woods Avenue, the Authority televised sewer runs upstream of the repair and confirmed the pipes need replaced. The construction project consisted of the replacement (by pipe bursting method) of two 8-inch sewer runs totaling approximately 520 LF. 58 manhole inspections were completed and 5 repairs were made.

In 2015, approximately 2,265 feet of sewer main was inspected and 14,400 feet of sewer main was cleaned. 404 feet of service lateral was inspected and 6,400 feet of sewer was smoke tested. The Authority replaced approximately 570 feet of 8-inch sewer main. Three manholes and reestablished service connection along Woods Avenue. Forty-two (42) manhole inspections were completed and five repairs were made.

In 2016, approximately 4,000 feet of sewer was televised and approximately 12,000 feet of sewer was cleaned in 2016. Construction was completed on the Moon Run Trunk Sewer Replacement project in 2016. The project involved replacement of approximately 1,100 LF of 8-inch and 15-inch sewer. Approximately 960 LF of sewer main was lined on Bainbridge Drive and 120 LF of sewer main was lined on Shadyside Drive. Approximately 215 LF of 10-inch sewer was replaced in the vicinity of the Community College of Beaver County during the summer of 2016. A program was initiated in 2016 to prepare a Geographic Information System (GIS) for mapping and management of the sewer system over a three-year period. This resulted in approximately 50 manholes being located that were previously unable to be located. Three manholes were rehabilitated on Chapel Road. The pumps, controls and generator were replaced at the New College Lift Station. Increasing its capacity to 2,000 gpm for the Shell Project.

In 2017, approximately 13,000 feet of sewer was televised and approximately 8,100 feet of sewer was cleaned. Approximately 75 LF of sewer was replaced and approximately 1,875 of sewer was CIPP lined. Additionally, 14 manholes were rehabilitated. Approximately 1,900 LF of sewer was rehabilitated via pipe bursting on Woods Avenue and Wilhelm Drive.

In 2018, approximately 15,250 feet of sewer was televised and approximately 16,975 feet of sewer was cleaned. Additionally, one lamp hole was replaced. A nighttime flow isolation study was performed on the Sylvan Crest area tributary to the Markey's Run Lift Station.

In 2019, approximately 2,500 feet of sewer line was televised and approximately 14,450 feet of sewer line was cleaned. Approximately 225 feet of 6-inch sewer line was replaced; 40 feet of 8-inch sewer line was replaced by conventional excavation and 193 feet of 8-inch sewer line was replaced by pipe bursting method; and 807 feet of 8-inch sewer line was lined with a cured-in-place liner.

In 2020, approximately 12,200 feet of sewer line was televised and approximately 3,100 feet of sewer line was cleaned. Approximately 1,300 feet of 12-inch sewer line and 70 feet of 10-inch sewer line were replaced by conventional excavation. Additionally, a forcemain was repaired at Gardenvue Estates; 4,556 linear feet of 8-inch diameter sanitary sewer line and 31 sanitary manholes were installed within the Lakeview Farms Phase 5 development; 424 linear feet of 8-inch diameter sanitary sewer line and one sanitary manhole were installed to serve Children's Choice Daycare; and a private wastewater pumping station and 953 linear feet of sanitary forcemain were constructed to serve BASF Corporation.

In 2021, approximately 4,865 feet of sewer line was televised and approximately 10,400 feet of sewer line was cleaned. Approximately 3,826 feet of 10-inch sewer line was

replaced with 15-inch PVC and/or 16-inch HDPE by conventional excavation and pipe burst along Upper Moon Run Interceptor. Two clarifiers at the sanitary sewer plant were replaced and the remaining two clarifiers were rehabilitated.

In 2022, approximately 1,750 feet of sewer line was televised and approximately 11,450 feet of sewer line was cleaned. Construction was completed on the Upper Moon Run Interceptor Upgrade including 3,826 feet of 15" PVC. Design of the Chapel Road Interceptor Upgrade was completed; the expected construction start date is April 2023. This project includes approximately 4,000 linear feet of 10-inch sewer line to be upsized to 15-inch PVC and/or 16-inch DIP.

In 2023, approximately 8,883 feet of sewer line was televised and approximately 14,083 feet of sewer line was cleaned. Construction was completed on the Chapel Road Interceptor Upgrade including 96 feet of 8" PVC, 42 feet of 12" SRJ DIP, 3,249 feet of 15" PVC, 207 feet of 16" SRJ DIP and 28 sanitary manholes. Influent and Effluent flow-proportioned automatic samplers were installed at the Elkhorn Run Sewage Treatment Plant to comply with the forthcoming NPDES Permit. Four (4) 1,200 GPM Return Activated Sludge Pumps were replaced with four (4) 1,700 GPM Return Activated Sludge Pumps to comply with the NPDES Permit to be issued by PaDEP increasing the permitted hydraulic loading from 2.0 MGD to 2.5 MGD.

Flow monitoring and sewer system modeling were conducted in 2017 in response to potential development interest, particularly in the vicinity of the Beaver Valley Mall. As a result of the information provided by this study, the below listed capital improvements are recommended to address potential hydraulic capacity needs resulting from proposed future development.

- Upgrade Markey's Run Interceptor Sewer (Completed 2019)
- Upgrade Markey's Run Lift Station (Completed 2019)

- Upgrade a portion of the Upper Moon Run Interceptor Sewer Line (Completed in 2021)
- Perform a rerating study at the Elkhorn Run Sewage Treatment Plant to pursue additional available hydraulic capacity. (Completed in 2021)
- Upgrade a portion of the Chapel Road Interceptor Sewer Line (Completed in 2023)
- Upgrade a portion of the Moon Run Interceptor Sewer Line (Planning / Permitting)

### **SECTION 6: CONDITION OF THE SEWER SYSTEM (§ 94.13.(a)(6))**

Center Township is divided into four drainage areas: Elkhorn Run, Moon Run, Markey’s Run and Raccoon Creek. Construction of the sewer system began in January 1961 and additions to the sewer system were constructed in 1972-1973. Later, sewer extensions were constructed in the Todd Lane and Stobo areas. Most of the development has occurred in the Elkhorn Run and Moon Run drainage areas. The Elkhorn Run area is served by approximately 43 miles of sanitary sewers and six sewage pumping stations. The Moon Run area is served by approximately 45 miles of sanitary sewers and three sewage pumping stations. The Markey’s Run area is served by approximately 7.5 miles of sanitary sewers and two sewage pumping stations.

### **SECTION 7: LIFT STATIONS (§ 94.12.(a)(7))**

Eleven sewage lift stations receive and convey wastewater flow within the CTSA system to the Elkhorn Run Sewage Treatment Plant. A summary of the lift station operating data is provided on Table 5 included in Appendix A.

**SECTION 8: INDUSTRIAL WASTE DISCHARGES (§ 94.12.(a)(8))**

Presently, there are no industrial dischargers to the sewage system. The Authority does not have ordinances or regulations controlling industrial discharge to the system as they are currently not necessary.

During 2019, the Center Township Sanitary Authority accepted wastewater used for hydrostatic testing of water storage tanks at the Shell ethane cracker plant. A summary of the volume of hydrostatic testing wastewater is detailed below:

<b>Month</b>	<b>Volume (Gallons)</b>
May, 2019	150,000
June, 2019	500,000
July, 2019	900,000
August, 2019	2,000,000
September, 2019	1,450,000
October, 2019	500,000
November, 2019	710,000
<b>Total</b>	<b>6,210,000</b>

**SECTION 9: SLUDGE MANAGEMENT INVENTORY**

Aerobically digested sewage sludge is dewatered on site using a belt filter press. Dewatered sludge is disposed at the Joseph J. Brunner Landfill. According to Discharge Monitoring Reports completed by CTSA in 2023, approximately 104 dry tons of dewatered sludge was disposed. Appended to the report is a copy of the sludge management inventory sludge generation calculation for the 2023 calendar year and a summary table. The calculation represents the mass balance of influent vs. effluent solids. It is noted that the actual dry tons of sludge leaving the plant for calendar year 2023 is less than 15% of the projected amount of sludge calculated by the sludge generation calculator. Actual sludge produced in 2023 was 104 dry tons; theoretical sludge production for 2023 is 113 dry tons.



**SECTION 10: SIGNATURES**

To comply with the requirements of the Chapter 94 Municipal Wasteload Management Program, the following signatures are provided.

Preparer:

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).



\_\_\_\_\_  
Marie S. Hartman, P.E.  
Lennon, Smith, Souleret Engineering, Inc.

\_\_\_\_\_  
March 26, 2024

Date

Permittee:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).



\_\_\_\_\_  
Robert Martini, Operations Supervisor  
Center Township Sanitary Authority

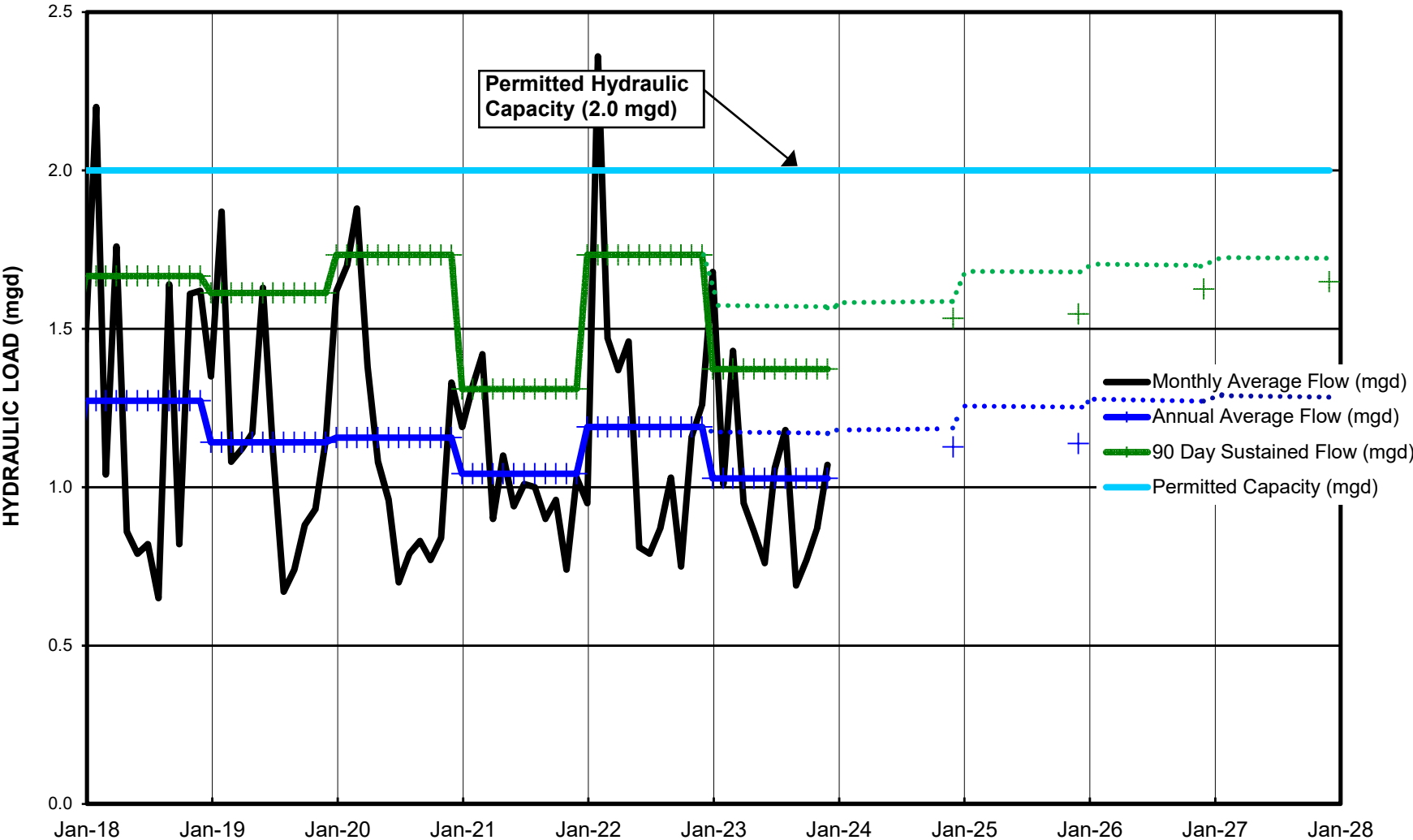
\_\_\_\_\_  
March 26, 2024

Date

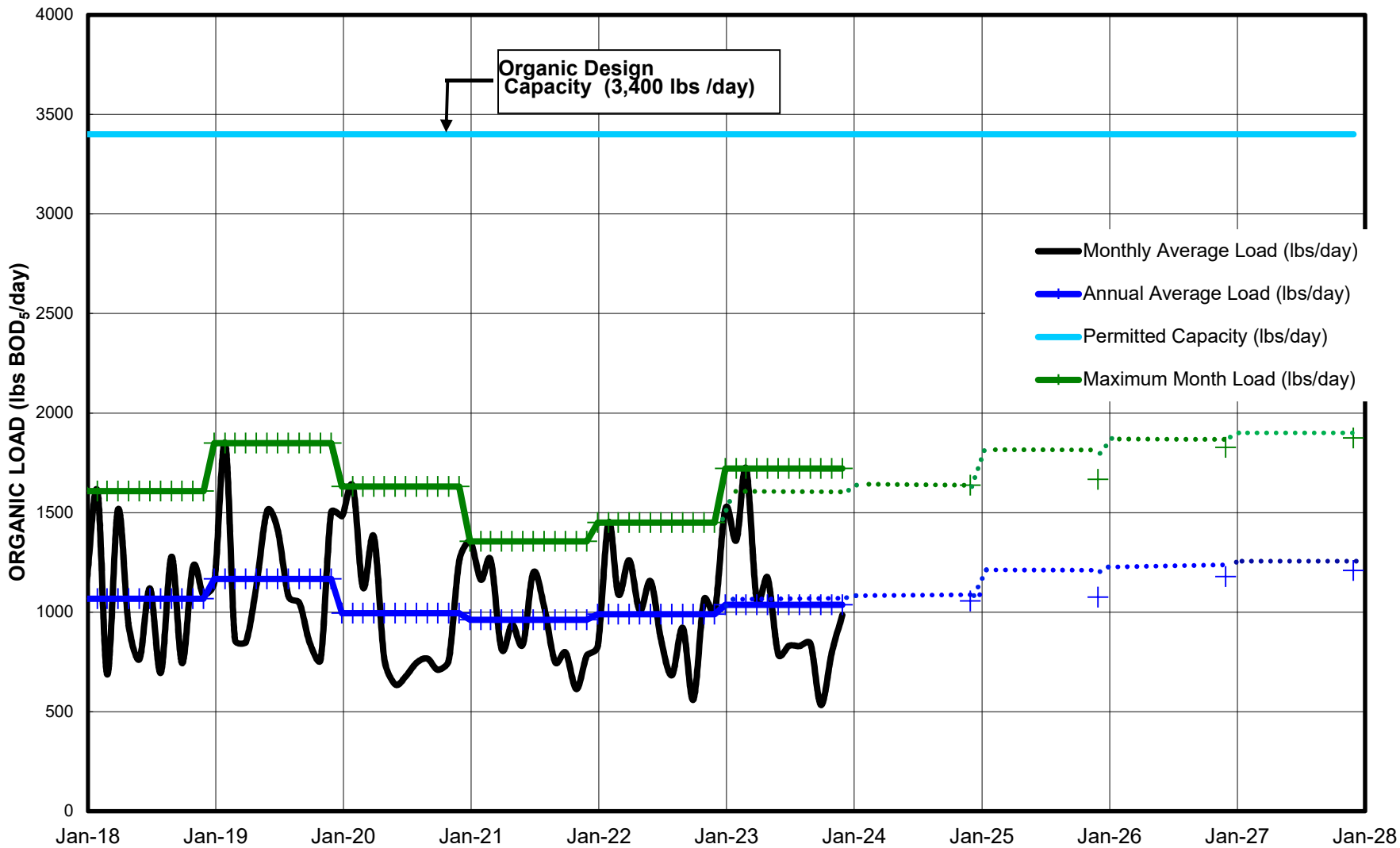
# **APPENDIX A**

**TABLES AND FIGURES**

**Sewage Treatment Plant Hydraulic Loading Graph**  
**Center Township Sanitary Authority, Beaver County, PA**  
**Figure 1**



**Sewage Treatment Plant Organic Loading Graph**  
**Center Township Sanitary Authority, Beaver County, PA**  
**Figure 2**



**TABLE 1**  
**CENTER TOWNSHIP SANITARY AUTHORITY**  
**ELKHORN RUN SEWAGE TREATMENT PLANT**  
**HYDRAULIC LOADING DATA SUMMARY**  
**JANUARY 2019 THROUGH DECEMBER 2023**

DATE	2019		2020		2021		2022		2023	
	January	1.350	*	1.620	*	1.190	*	0.950		1.680
February	1.870	*	1.700	*	1.320	*	2.360	*	1.010	*
March	1.080	*	1.880	*	1.420	*	1.470	*	1.430	*
April	1.120		1.380		0.900		1.370	*	0.950	
May	1.170		1.080		1.100		1.460		0.860	
June	1.630		0.960		0.940		0.810		0.760	
July	1.110		0.700		1.010		0.790		1.060	
August	0.670		0.790		1.000		0.870		1.180	
September	0.740		0.830		0.900		1.030		0.690	
October	0.880		0.770		0.960		0.750		0.770	
November	0.930		0.840		0.740		1.160		0.870	
December	1.150		1.330		1.030		1.260		1.070	
<b>Annual Average (mgd)</b>	<b>1.142</b>		<b>1.157</b>		<b>1.043</b>		<b>1.190</b>		<b>1.028</b>	
<b>90 Day Sustained Flow Rate (mgd)</b>	<b>1.433</b>		<b>1.733</b>		<b>1.310</b>		<b>1.733</b>		<b>1.373</b>	
<b>Ratio (90-Day Sustained to Annual Average)</b>	<b>1.26</b>		<b>1.50</b>		<b>1.26</b>		<b>1.46</b>		<b>1.34</b>	
<b>5-Year 90-Day Sustained/Annual Average Ratio</b>	<b>1.36</b>									
<b>5-Year Annual Average Hydraulic Loading (mgd)</b>	<b>1.112</b>									
<b>5-Year 90-Day Sustained Hydraulic Loading (mgd)</b>	<b>1.517</b>									

\*Maximum 3-month flow period.

**TABLE 2**  
**CENTER TOWNSHIP SANITARY AUTHORITY**  
**ELKHORN RUN SEWAGE TREATMENT PLANT**  
**ORGANIC LOADING DATA SUMMARY**  
**JANUARY 2019 THROUGH DECEMBER 2023**

DATE	2019	2020	2021	2022	2023
January	1,070	1,482	1,356	830	1,521
February	1,849	1,631	1,163	1,450	1,361
March	862	1,124	1,262	1,089	1,721
April	848	1,379	815	1,261	1,055
May	1,129	763	938	1,008	1,175
June	1,509	637	839	1,155	787
July	1,415	677	1,200	861	831
August	1,080	746	1,024	683	830
September	1,047	767	750	921	842
October	845	711	797	560	534
November	764	758	614	1,064	798
December	1,502	1,258	784	999	986
<b>Annual Average (LBS BOD<sub>5</sub>/Day)</b>	<b>1,160</b>	<b>994</b>	<b>962</b>	<b>990</b>	<b>1,037</b>
<b>Maximum Month (LBS BOD<sub>5</sub>/Day)</b>	<b>1,849</b>	<b>1,631</b>	<b>1,356</b>	<b>1,450</b>	<b>1,721</b>
<b>Ratio (Maximum Month to Annual Average)</b>	<b>1.59</b>	<b>1.64</b>	<b>1.41</b>	<b>1.46</b>	<b>1.66</b>
<b>5-Year Maximum Month/Annual Ratio Average</b>	<b>1.55</b>				
<b>5-Year Annual Average Organic Loading (LBS BOD<sub>5</sub>/Day)</b>	<b>1,029</b>				

**TABLE 3  
CENTER TOWNSHIP SANITARY AUTHORITY  
5 YEAR HYDRAULIC LOADING PROJECTION**

<b>PROJECTED HYDRAULIC LOAD</b>						
<b>YEAR</b>	<b>ANNUAL AVERAGE FLOW (mgd)</b>			<b>90 DAY SUSTAINED FLOW (mgd)</b>		
	<b>BASE FLOW</b>	<b>ADDITIONAL FLOW <sup>(2)</sup></b>	<b>TOTAL</b>	<b>AVERAGE</b>	<b>RATIO <sup>(3)</sup></b>	<b>FLOW</b>
2024 <sup>(1)</sup>	1.112	0.0154	1.127	1.127	1.36	1.533
2025	1.127	0.0105	1.138	1.138	1.36	1.547
2026	1.138	0.0576	1.195	1.195	1.36	1.625
2027	1.195	0.0168	1.212	1.212	1.36	1.648
2028	1.212	0.0079	1.220	1.220	1.36	1.659

<sup>(1)</sup> 2024 Base Flow utilizes the 5-year Annual Average Hydraulic Loading (2019 to 2023).

<sup>(2)</sup> Additional flow assumes 2.33 pph (2018-2022 Center Township US Census Data), 100 gpcd, and the annual additional EDUs discussed in the report (Appendix C).

<sup>(3)</sup> 5-Year 90-Day Sustained /Annual Average Ratio.

**TABLE 4  
CENTER TOWNSHIP SANITARY AUTHORITY  
5 YEAR ORGANIC LOADING PROJECTION**

YEAR	PROJECTED ORGANIC LOAD					
	ANNUAL AVERAGE LOAD (#/day)			MAXIMUM MONTH LOAD (#/day)		
	BASE LOADING	ADDITIONAL LOADING <sup>(2)</sup>	TOTAL	ANNUAL AVERAGE	RATIO <sup>(3)</sup>	TOTAL
2024 <sup>(1)</sup>	1,029	28	1,056	1,056	1.55	1,637
2025	1,056	19	1,075	1,075	1.55	1,667
2026	1,075	104	1,179	1,179	1.55	1,827
2027	1,179	30	1,209	1,209	1.55	1,874
2028	1,209	14	1,223	1,223	1.55	1,896

<sup>(1)</sup> 2024 Base Organic Loading utilizes the 5-year Annual Average Organic Loading (2019 to 20

<sup>(2)</sup> Additional organic loading assumes 2.33 pph (2018 - 2022 Center Township US Census Data), 0.17 lb/cap/day, and the annual additional EDUs discussed in the report (Appendix C).

<sup>(3)</sup> 5-Year Maximum Month / Annual Ratio Average.



**TABLE 5**  
Center Township Sanitary Authority  
2023 Chapter 94 Report

**Lift Station Data <sup>(1)</sup>**

	New College <sup>(3)</sup>	Logstown Run	Stobo	Markey's Run	Shirley Drive	Cherrywood (Walnut Grove)	Spruce Drive	Bunker Hill (Biggins)	Krisana Woods	Franklin (SR18)	Stoney Ridge
<b>Pumping Capacity (gpm)</b>	<b>2,000</b>	<b>300</b>	<b>80</b>	<b>400</b>	<b>80</b>	<b>80</b>	<b>100</b>	<b>80</b>	<b>80</b>	<b>312</b>	<b>80</b>
<b>Pumping Capacity (gpd)</b>	<b>2,880,000</b>	<b>432,000</b>	<b>115,200</b>	<b>576,000</b>	<b>115,200</b>	<b>115,200</b>	<b>144,000</b>	<b>115,200</b>	<b>115,200</b>	<b>449,280</b>	<b>115,200</b>
January	964,742	160,548	6,906	92,439	867	31,897	17,458	4,645	3,608	13,587	9,027
February	601,071	98,421	4,286	73,029	463	20,794	19,179	3,000	2,589	14,107	9,720
March	828,871	122,574	6,101	83,768	604	26,710	24,658	3,391	3,252	16,244	12,155
April	616,200	85,260	4,656	84,480	576	20,784	29,440	3,152	2,608	13,478	14,464
May	544,935	65,555	4,924	83,923	666	22,297	25,452	3,267	2,911	10,990	12,449
June	487,800	54,600	4,928	83,840	656	22,320	33,980	2,960	3,376	12,106	13,600
July	639,000	82,510	5,961	78,194	712	24,511	26,690	3,499	4,490	15,278	14,710
August	682,258	94,994	7,092	59,458	883	28,537	30,135	3,499	4,150	11,353	14,663
September	455,400	52,140	4,800	46,960	816	21,728	26,500	2,640	3,504	10,920	11,616
October	489,774	51,561	4,599	49,239	697	21,383	26,497	2,632	2,617	15,157	11,272
November	534,600	61,560	5,040	47,040	688	22,880	26,760	2,736	4,272	17,098	11,024
December	639,290	77,226	5,435	50,865	650	25,719	25,819	3,252	5,017	16,546	10,514
Annual Average	623,662	83,912	5,394	69,436	690	24,130	26,047	3,223	3,533	13,905	12,101
Maximum Month	964,742	160,548	7,092	92,439	883	31,897	33,980	4,645	5,017	17,098	14,710
2-Year Projected Monthly Max <sup>(2)</sup>	990,605	163,759	7,233	94,287	900	32,535	34,660	4,738	5,117	17,440	15,004

<sup>(1)</sup> Flow (gpd) calculated from total hours pumped as reported by operations staff and pumping capacity of each pump.

<sup>(2)</sup> Flow projections based on "Added Flow" from Table 3 for New College Lift Station and the addition of 1% o the maximum month flow base flow per year for each of the remaining 9 lift stations.

<sup>(3)</sup> New College Pump Station flow (gpd) calculated from total hours pumped as reported by operations staff and typical pump operation point of 1500 gpm.

# **APPENDIX B**

## **CALIBRATION CERTIFICATE**

C.T.S.A.  
 224 Ctr. Grange Rd.  
 Aliquippa, Pa. 15001

W.W.T.P.

PHONE # \_\_\_\_\_ / \_\_\_\_\_

REQUESTED SERVICE: Flow meter calibrations

PO # / SO # \_\_\_\_\_  
 MODEL # SOXM1000  
 SERIAL # \_\_\_\_\_

OTHER \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

DESCRIPTION / CAUSE OF PROBLEM: See above QTY PART/PRODUCT NUMBER AMOUNT

CORRECTIVE ACTION / WORK PERFORMED: Cleaned, checked & calibrated the Plant Inlet Ultrasonic flow meters. The Return Sludge #1 & #2 flow converters. The Waste Sludge Converter. The Waste Recirculation & Return Flow recorders. Checked outputs & indications at 0.25-50-75% flow. No adjustments were needed.

[A] PARTS TOTAL >  
 LABOR (REG) HRS @ /HR  
 LABOR (O.T.) HRS @ /HR  
 TRAVEL HRS @ /HR

[B] LABOR TOTAL > \$680.00  
 EXPENSES (TOLLS, ROOMS, MEALS)  
 MILEAGE MILES @ /MILE  
 AIR AND/OR CAR RENTAL

[C] EXPENSE TOTAL >  
 [D] SHIPPING CHARGES > \$80.00

TOTAL [A] + [B] + [C] + [D] > \$760.00  
 C. A. CODE [ ]

SALES TAX OR TAX ID # [ ]  
 COUNTY TAX OR TAX ID # [ ]

TERMS: NET 30 DAYS FINAL AMOUNT DUE > \$760.00

I HEREBY ACCEPT AND APPROVE ALL WORK AS DEFINED ABOVE.

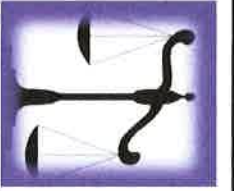
Pawbalski TECH (PRINT) Kim Pringle TECH (SIGNATURE) 2/21/23 DATE

Kirk Johns CUSTOMER (PRINT) \_\_\_\_\_ CUSTOMER (SIGNATURE) 2/21/23 DATE

WHITE - INVOICE

YELLOW - TIM

PINK - CUSTOMER RECEIPT



**Total SP LLC**  
**Laboratory & Pharmacy Balances & Scales**  
**Service, Sales, Calibration & Repair**  
 22 Crest Drive Monongahela PA 15063-1081  
 Phone (724) 825-6872 or email: totalsp22@gmail.com

**CALIBRATION REPORT**

DATE OF SERVICE: **October 16, 2023**  
 NEXT CALIBRATION DUE DATE: **October 31, 2024**

CENTER TOWNSHIP  
 ELKHORN TREATMENT PLANT  
 ATTN: LANCE ELIAS  
 996 BISKUP LANE  
 MONACA PA 15061

- Procedures:
- A.) Toploading balances > one kilogram capacity use procedure A5A.
  - B.) Toploading balances <= one kilogram capacity use procedure A4A.
  - C.) Analytical balances use calibration procedure A1A.
  - D.) Micro balances use procedure A2A.

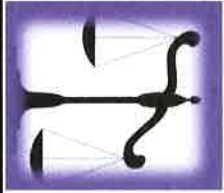
Nr.	Manuf.	Model	Serial Nr.	Location	Cal. Weight/ Procedure	Readability /mg	Pre-Service Reading	Post-Service Reading	Repeatability /mg	Condition or Not / Serviced
1	METTLER	HB43	119513375	LAB	20 g / B	1	1.001 / 5.000 20.000 / 40.004	1.000 / 5.000 20.000 / 40.000	1	GOOD SC EXT
2	METTLER	AE100	K17105	LAB	100 g / C	0.1	0.1000 / 1.0001 10.0000 / 50.0002 100.0002	0.1000 / 1.0000 10.0000 / 50.0000 100.0000	0.1	GOOD SC INT

Notes: Condition “good” means that the unit meets Total SP’s and manufacturer’s tolerances for repeatability and readability in the environment found unless otherwise noted. “INT” means internal weight is used for calibration, “EXT” means external weight is used for calibration. “SC” means unit is self calibrating, and “SET” means unit is calibrated by means of manually setting the calibration potentiometer. Balance calibrations and balance internal weights, if any, are checked against technician’s test weights of TOTAL SP LLC. Test weights are calibrated annually against the primary standards of TOTAL SP LLC Set No. 4000011832, which have been certified by Henry Troemner, LLC, through Certificate No. 220603191 dated 30-AUGUST 2022 and expires 30-AUGUST 2023. This Certification is directly traceable to the National Standards of the National Institute of Standards and Technology through NIST Test No. 822-275872-1.1. Traceability documents are on file in the offices of TOTAL SP LLC and are available upon request. Calibrations comply with ANSI-NCSS Z 540-1-1994, MIL-STD-45662A and ISO 10012-1 specifications regarding calibration service and procedures.

  
 \_\_\_\_\_  
 Marian E Bma, Pres.

\_\_\_\_\_  
 October 17, 2023  
 Date

◇ *Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California* ◇  
 More than 55 years of laboratory experience  
 ◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
 ◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇



### Total SP LLC

*Laboratory & Pharmacy Balances & Scales*

*Service, Sales, Calibration & Repair*

22 Crest Drive Monongahela PA 15063-1081

Phone (724) 825-6872 or email: [totalssp22@gmail.com](mailto:totalssp22@gmail.com)

## CALIBRATION REPORT

DATE OF SERVICE: **October 16, 2023**

NEXT CALIBRATION DUE DATE: **October 31, 2024**

CENTER TOWNSHIP  
ELKHORN TREATMENT PLANT  
ATTN: LANCE ELIAS  
996 BISKUP LANE  
MONACA PA 15061

TEMPERATURE: 22.8 °C

RELATIVE HUMIDITY: 48.5 %

Nr.	ID	Model Nr	Serial Nr.	Location	Cal. Procedure	Service			In Tolerance or Not / Serviced
						Reading	Total SP Reading	Correction Factor	
1	THERMO INCUBATOR THERMOMETER	ERTCO 2020	268394	LAB	TO-02	20.5 °C	20.2 °C	- 0.3 °C	IN TOLERANCE
2	HEATING BLOCK THERMOMETER	DRB200	11060C0159	LAB	TO-02	LEFT 120 °C	120.5 °C	+ 0.5 °C	IN TOLERANCE
						RIGHT 120 °C	120.2 °C	+ 0.2 °C	
						LEFT 150 °C	150.6 °C	+ 0.6 °C	
						RIGHT 150 °C	149.6 °C	- 0.4 °C	
3	HEATING BLOCK THERMOMETER	DR104115	4133	LAB	TO-02	NOT SERVICED			
4	MILLIPORE INCUBATOR THERMOMETER	XX6310000 XX63200045	1921	LAB	TO-02	44.5 °C	44.3 °C	- 0.2 °C	IN TOLERANCE
5	KENMORE REFRIGERATOR THERMOMETER	ERTCO	23195	LAB	TO-02	4.0 °C	4.2 °C	+ 0.2 °C	IN TOLERANCE
6	PRECISION OVEN THERMOMETER	ERTCO ECONOMY	68N010556 8221	LAB	TO-02	103 °C	102.7 °C	- 0.3 °C	IN TOLERANCE
7	FISHER FURNACE THERMOMETER	126	96N10003	LAB	TO-02	550 °C	561.5 °C	+ 11.5 °C	IN TOLERANCE
8	VWR THERMOMETER		201824	LAB	TO-02	140 °C	141.0 °C	- 1.0 °C	IN TOLERANCE

CALIBRATION INSTRUMENT(S): FLUKE ASSET #53760403MV, SOP #TO-02. CALIBRATION INFORMATION: CALIBRATED 22 DECEMBER 2022, EXPIRES 22 DECEMBER 2023, CERTIFICATE #622816. CALIBRATION PERFORMED IS TO THE MANUFACTURERS SPECIFICATIONS FOLLOWING DOCUMENTED PROCEDURE, USING N.I.S.T. TRACEABLE EQUIPMENT IN ACCORDANCE WITH ANSI-NCSL Z 540-1-1994. MILL STANDARDS 45662A AND ISO 10012-1. COLLECTIVE UNCERTAINTY OF THE CALIBRATION PROCEDURES ARE DECLARED AT A 95% CONFIDENCE LEVEL. UNCERTAINTY RATIO IS NOMINALLY FOUR TO ONE UNLESS OTHERWISE NOTED. TOTAL SP LLC WILL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF THIS INSTRUMENT.

Marian E Brna, Pres.

October 17, 2023

Date

◇ *Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California* ◇  
More than 55 years of laboratory experience  
◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇



### Total SP LLC

*Laboratory & Pharmacy Balances & Scales  
Service, Sales, Calibration & Repair*

22 Crest Drive Monongahela PA 15063-1081

Phone (724) 825-6872 or email: [totalsp22@gmail.com](mailto:totalsp22@gmail.com)

## CALIBRATION REPORT

DATE OF SERVICE: **October 16, 2023**

NEXT CALIBRATION DUE DATE: **October 31, 2024**

CENTER TOWNSHIP  
ELKHORN TREATMENT PLANT  
ATTN: LANCE ELIAS  
996 BISKUP LANE  
MONACA PA 15061

TEMPERATURE: 22.8 °C

RELATIVE HUMIDITY: 48.5 %

Nr.	ID	Model Nr	Serial Nr.	Location	Cal. Procedure	Service Reading	Total SP Reading	Correction Factor	In Tolerance or Not / Serviced
9	WATER BATH	TSCOL19	300524393	LAB	TO-02	35.0 °C	34.9 °C	-0.1 °C	IN TOLERANCE
						44.5 °C	44.4 °C	-0.1 °C	IN TOLERANCE
10	THERMOMETER		4610	LAB	TO-02	35.0 °C	34.9 °C	-0.1 °C	IN TOLERANCE
						44.5 °C	44.4 °C	-0.1 °C	IN TOLERANCE
11	MUFFLE FURNACE		96N10003	LAB	TO-02	550 °C	561.3 °C	+ 11.3 °C	IN TOLERANCE

CALIBRATION INSTRUMENT(S): FLUKE ASSET #33760403MV, SOP #TO-02. CALIBRATION INFORMATION: CALIBRATED 22 DECEMBER 2022, EXPIRES 22 DECEMBER 2023, CERTIFICATE #822816. CALIBRATION PERFORMED IS TO THE MANUFACTURERS SPECIFICATIONS FOLLOWING DOCUMENTED PROCEDURE. USING N.I.S.T. TRACEABLE EQUIPMENT IN ACCORDANCE WITH ANSI/NCSL Z 540-1-1994, MILL STANDARDS 45662A AND ISO 10012-1. COLLECTIVE UNCERTAINTY OF THE CALIBRATION PROCEDURES ARE DECLARED AT A 95% CONFIDENCE LEVEL. UNCERTAINTY RATIO IS NOMINALLY FOUR TO ONE UNLESS OTHERWISE NOTED. TOTAL SP LLC WILL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF THIS INSTRUMENT.

  
Marian E Brna, Pres. October 17, 2023  
Date

◇ *Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California* ◇  
More than 55 years of laboratory experience  
◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇





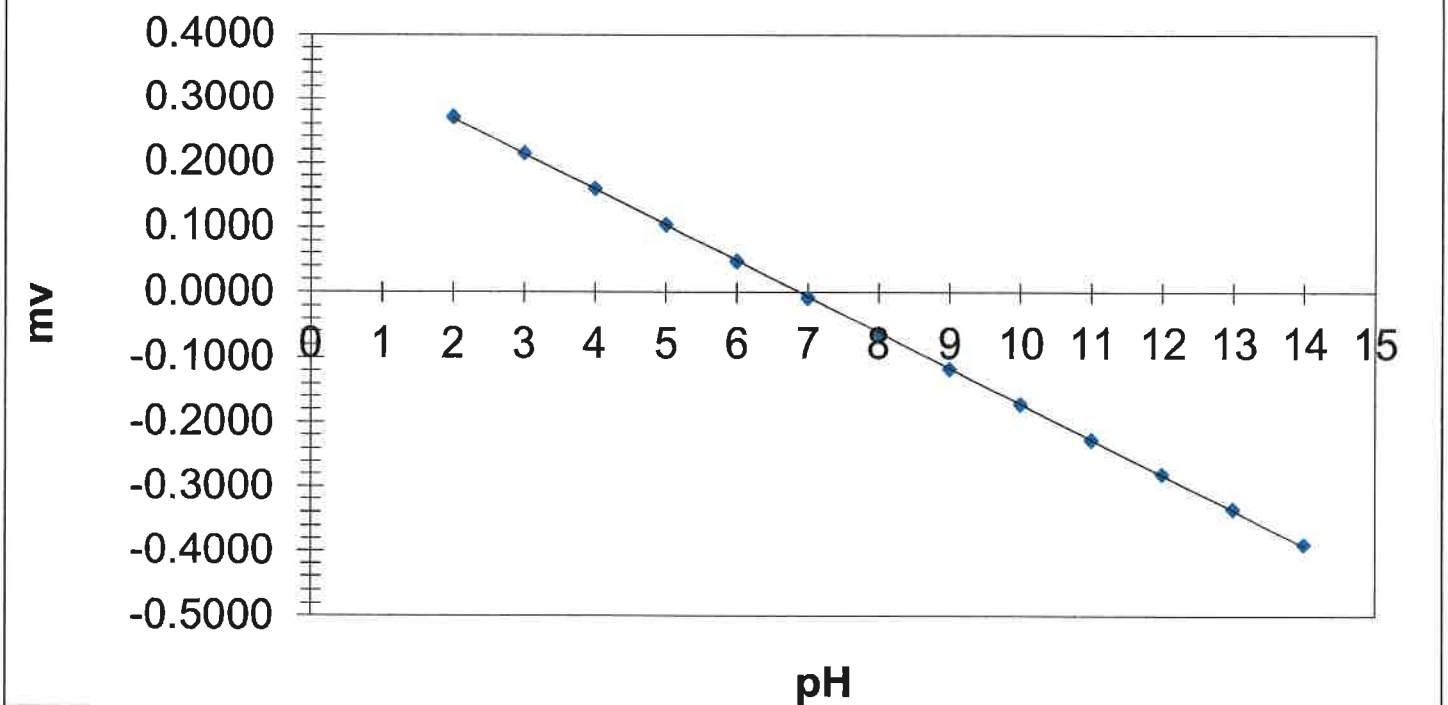
**Total SP LLC**  
*Laboratory & Pharmacy Balances & Scales*  
*Service, Sales, Calibration & Repair*  
 22 Crest Drive Monongahela PA 15063-1081  
 Phone (724) 825-6872 or email:  
 totalsp22@gmail.com

# CALIBRATION REPORT

**DATE OF SERVICE: October 16, 2023**  
**NEXT CALIBRATION DUE DATE:  
 October 31, 2024**

CENTER TOWNSHIP  
 ELKHORN TREATMENT PLANT  
 ATTN: LANCE ELIAS  
 996 BISKUP LANE  
 MONACA PA 15061

CENTER TOWNSHIP  
 ELKHORN TREATMENT PLANT  
 ORION VERASTAR V00938  
 pH Meter Calibration  
 10/16/2023



ZERO CROSSING = 6.89

CALIBRATION INSTRUMENT(S): CALIBRATORS, INC ASSET #701901, SOP #PH-01, CALIBRATION INFORMATION: CALIBRATED 26 DECEMBER 2022, EXPIRES 26 DECEMBER 2023, CERTIFICATE #769995. CALIBRATION PERFORMED IS TO THE MANUFACTURERS SPECIFICATIONS FOLLOWING DOCUMENTED PROCEDURE, USING N.I.S.T. TRACEABLE EQUIPMENT IN ACCORDANCE WITH ANSI-NCSL Z 540-1-1994, MIL STANDARDS 45662A AND ISO 10012-1. COLLECTIVE UNCERTAINTY OF THE CALIBRATION PROCEDURES ARE DECLARED AT A 95% CONFIDENCE LEVEL. UNCERTAINTY RATIO IS NOMINALLY FOUR TO ONE UNLESS OTHERWISE NOTED. TOTAL SP LLC WILL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF THIS INSTRUMENT.

*Marian E Brna*

Marian E Brna, Pres.

October 17, 2023

Date

◇ Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California ◇  
 More than 55 years of laboratory experience  
 ◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
 ◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇



**Total SP LLC**

*Laboratory & Pharmacy Balances & Scales*

*Service, Sales, Calibration & Repair*

22 Crest Drive Monongahela PA 15063-1081

Phone (724) 825-6872 or email: [totalssp22@gmail.com](mailto:totalssp22@gmail.com)

**CALIBRATION REPORT**

DATE OF SERVICE: **October 16, 2023**

NEXT CALIBRATION DUE DATE: **October 31, 2024**

TEMPERATURE: 22.8 °C

RELATIVE HUMIDITY: 48.5 %

CENTER TOWNSHIP  
ELKHORN TREATMENT PLANT  
ATTN: LANCE ELIAS  
996 BISKUP LANE  
MONACA PA 15061

Nr.	ID	Model	Serial Nr	Set Point	Total SP Reading	Standard Deviation	% Standard Deviation	In Tolerance or Not / Serviced
1	HACH SPECTROPHOTOMETER	DR3900	1720127					
	Absorbance Check			546 nm	1.044 abs	0.008	0.76 %	IN TOLERANCE
	Stray Light Check			340 nm	0.963 abs	0.016	1.67 %	IN TOLERANCE
	Wavelength Check			807 nm	807.3 nm	0.212	0.03 %	IN TOLERANCE

CALIBRATION INSTRUMENT(S): NEWPORT FILTER SET CS-255. CALIBRATION INFORMATION: CALIBRATED 31 OCTOBER 2017 CERTIFICATE #1907320. CALIBRATION PERFORMED IS TO THE MANUFACTURERS SPECIFICATIONS FOLLOWING DOCUMENTED PROCEDURE. USING N.I.S.T. TRACEABLE EQUIPMENT IN ACCORDANCE WITH ANSI/NCSL Z 540-1-1994. MILL STANDARDS 45662A AND ISO 10012-1. COLLECTIVE UNCERTAINTY OF THE CALIBRATION PROCEDURES ARE DECLARED AT A 95% CONFIDENCE LEVEL. UNCERTAINTY RATIO IS NOMINALLY FOUR TO ONE UNLESS OTHERWISE NOTED. TOTAL SP LLC WILL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF THIS INSTRUMENT.

  
Marian E. Brna, Pres.

October 17, 2023  
Date

◇ *Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California* ◇  
More than 55 years of laboratory experience

◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇





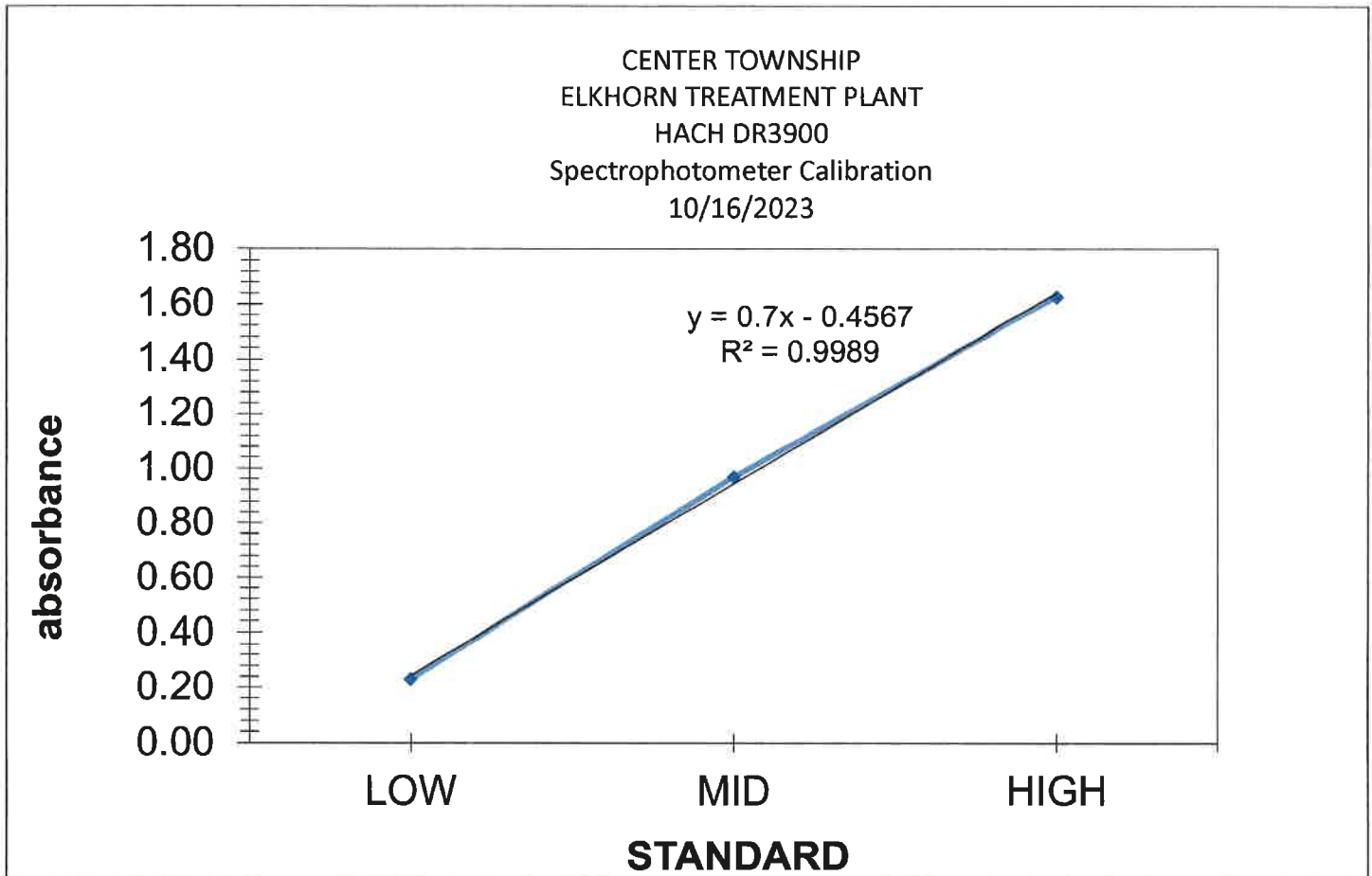
**Total SP LLC**  
*Laboratory & Pharmacy Balances & Scales*  
*Service, Sales, Calibration & Repair*  
 22 Crest Drive Monongahela PA 15063-1081  
 Phone (724) 825-6872 or email:  
 totalsp22@gmail.com

# CALIBRATION REPORT

**DATE OF SERVICE: October 16, 2023**  
**NEXT CALIBRATION DUE DATE: October 31, 2024**

CENTER TOWNSHIP  
 ELKHORN TREATMENT PLANT  
 ATTN: LANCE ELIAS  
 996 BISKUP LANE  
 MONACA PA 15061

TEMPERATURE: 22.8 °C  
 RELATIVE HUMIDITY: 48.5 %



SLOPE = 0.9989

CALIBRATION INSTRUMENT(S): HACH STANDARDS KIT #2635300, CALIBRATION INFORMATION: CALIBRATED FEBRUARY 2022, EXPIRES FEBRUARY 2024. CALIBRATION PERFORMED IS TO THE MANUFACTURERS SPECIFICATIONS FOLLOWING DOCUMENTED PROCEDURE, USING N.I.S.T. TRACEABLE EQUIPMENT IN ACCORDANCE WITH ANSI-NCSL Z 540-1-1994, MIL STANDARDS 45662A AND ISO 10012-1. COLLECTIVE UNCERTAINTY OF THE CALIBRATION PROCEDURES ARE DECLARED AT A 95% CONFIDENCE LEVEL. UNCERTAINTY RATIO IS NOMINALLY FOUR TO ONE UNLESS OTHERWISE NOTED. TOTAL SP LLC WILL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF THIS INSTRUMENT.

  
 \_\_\_\_\_  
 Marian E Brna, Pres.

October 17, 2023  
 \_\_\_\_\_  
 Date

◇ *Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California* ◇  
 More than 55 years of laboratory experience  
 ◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
 ◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇



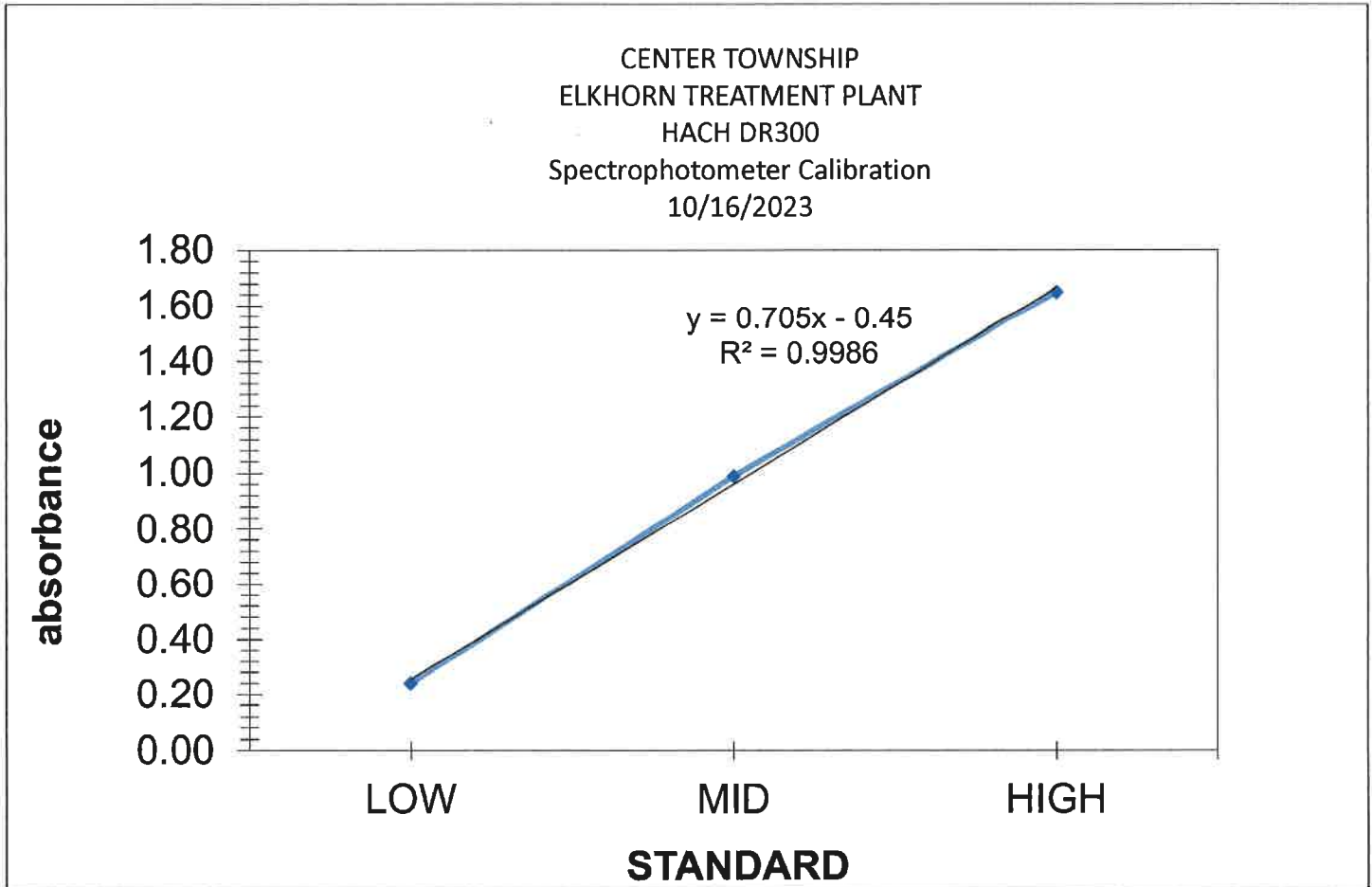
**Total SP LLC**  
*Laboratory & Pharmacy Balances & Scales  
 Service, Sales, Calibration & Repair*  
 22 Crest Drive Monongahela PA 15063-1081  
 Phone (724) 825-6872 or email:  
 totalsp22@gmail.com

# CALIBRATION REPORT

**DATE OF SERVICE: October 16, 2023**  
**NEXT CALIBRATION DUE DATE:  
 October 31, 2024**

CENTER TOWNSHIP  
 ELKHORN TREATMENT PLANT  
 ATTN: LANCE ELIAS  
 996 BISKUP LANE  
 MONACA PA 15061

TEMPERATURE: 22.8 °C  
 RELATIVE HUMIDITY: 48.5 %



SLOPE = 0.9986

CALIBRATION INSTRUMENT(S): HACH STANDARDS KIT #2635300, CALIBRATION INFORMATION: CALIBRATED FEBRUARY 2022, EXPIRES FEBRUARY 2024. CALIBRATION PERFORMED IS TO THE MANUFACTURERS SPECIFICATIONS FOLLOWING DOCUMENTED PROCEDURE, USING N.I.S.T. TRACEABLE EQUIPMENT IN ACCORDANCE WITH ANSI-NCSL Z 540-1-1994, MIL STANDARDS 45662A AND ISO 10012-1. COLLECTIVE UNCERTAINTY OF THE CALIBRATION PROCEDURES ARE DECLARED AT A 95% CONFIDENCE LEVEL. UNCERTAINTY RATIO IS NOMINALLY FOUR TO ONE UNLESS OTHERWISE NOTED. TOTAL SP LLC WILL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM THE USE OF THIS INSTRUMENT.

*Marian E Brna*  
 \_\_\_\_\_  
 Marian E Brna, Pres.

October 17, 2023  
 \_\_\_\_\_  
 Date

◇ *Independent Service, Calibration, Repair & Sales of Laboratory & Pharmacy Balances & Scales from New York to California* ◇  
 More than 55 years of laboratory experience  
 ◇ Thank you for choosing Total SP LLC, a woman owned company ◇  
 ◇ NIST Traceable Weights Certification ◇ Antistatic Products & Accessories ◇

# **APPENDIX C**

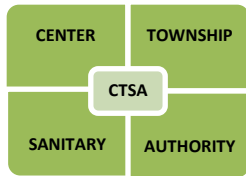
## **TAP SUMMARY**

## Center Township Sanitary Authority Sewer Tap Summary

Development	Actual 2018	Actual 2019	Actual 2020	Actual 2021	Actual 2022	Actual 2023	Estimated						Remaining	Total Estimated	
							2024	2025	2026	2027	2028	2029			
Heritage Valley - Glade Bluffs	22	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Village at Riverside - NVR/Ryan Homes	5	29	21	24	0	0	0	0	0	0	0	0	0	0	79
Allegheny Health Network Cancer Center	32	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Beaver Valley Mall Outparcels	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Western PA Surgery Center	0	20	0	0	0	0	0	0	0	0	0	0	0	0	20
Eagles Landing at Mateer Farms	125	0	0	0	0	0	0	0	0	0	0	0	0	0	125
Hilton Garden Inn	52	0	0	0	0	0	0	0	0	0	0	0	0	0	52
Glade Bluffs Apartments	0	0	0	0	0	0	0	0	182	0	0	0	0	182	182
Glade Bluffs Phase III	0	0	0	0	0	0	0	0	25	25	0	0	0	50	50
Lincoln Learning Center	0	0	0	0	0	0	0	0	10	0	0	0	0	10	10
Old Glass Dump Property	0	0	0	0	0	0	0	0	0	10	0	0	0	10	10
Vacant 3 Acre Parcel	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
Highland Meadows Phase 1	0	3	6	5	4	6	1	0	0	0	0	0	0	1	25
Highland Meadows Phase 2	0	0	0	0	0	0	5	5	5	5	6	0	0	26	26
Highland Meadows Phase 3	0	0	0	0	0	0	0	0	0	0	13	12	0	25	25
Lakeview Farms Phase 5	0	0	0	3	4	33	35	8	0	0	0	0	0	43	83
CTWA Temporary Water Treatment Facility Sludge Discharge	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Primanti's Restaurant	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
BASF Corporation	0	0	0	7	4	0	0	0	0	0	0	0	0	0	11
Get Go #3016	0	0	0	3	0	2	0	0	0	0	0	0	0	0	5
Joe Hall Apartments	0	0	0	0	0	0	10	10	10	12	0	0	0	42	42
Firehouse Subs	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Chipotle	0	0	0	0	0	7	0	0	0	0	0	0	0	0	7
Planet Fitness	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5
Gateway Rehabilitation Adolescent Building	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7
Miscellaneous	7	11	12	9	14	8	15	15	15	15	15	15	15	90	151
<b>Total</b>	<b>258</b>	<b>76</b>	<b>39</b>	<b>51</b>	<b>26</b>	<b>63</b>	<b>66</b>	<b>45</b>	<b>247</b>	<b>72</b>	<b>34</b>	<b>27</b>	<b>491</b>	<b>1004</b>	

# **APPENDIX D**

## **MAINTENANCE SUMMARY**



# Center Township Sanitary Authority

## 2023 CSTA Maintenance & Camera Report

- Inspections completed on all authority vehicles.

### Collections System

COMPANY	DATE	ITEM	NOTE
Stefanik's	1/9/2023	Emergency repairs of forced main and valves at Logstown L/S.	Repair - \$14,032
Stefanik's	2/16/2023	Spot repair on Todd Lane to clear roots from line.	Repair - \$5,122
W.C.Weil	2/21/2023	Pump #3 at Franklin Lift Station. Pump seal fail. Cleaned and reset.	Repair - \$605
W.C. Weil	3/9/2023	Repaired #4 Pump at Franklin Lift Station. New Bearings, Sensors, seals, o-rings and impeller.	Repair - \$10,501
Stefanik's	4/28/2023	Emergency Repair to piping in wet well at Logstown Lift Station.	Repair - 21,366
W.C. Weil	5/10/2023	PM's on Markey Run, New College and Franklin L/S.	PM'S - \$3,332
W.C. Weil	5/18/2023	Repair Walnut Grove Lift Station motor.	Repair - \$500
Tepco	7/19/2023	Pump #2 was jammed with cloth. Pulled pump and removed volute to clear blockage.	Repair - \$480
W.C. Weil	7/19/2023	Replace and Install 8" inline vertical check valve #1 at Markey's Run.	Replace - \$6,574
Halama Electric	5/18/2023	Repair Walnut Grove lift Station / pump contactor bad / remove and install new motor contactor.	Repair - \$1,200
W.C. Weil	7/24/2023	Replaced pump seal on pump #2.	Repair - Warranty
W.C. Weil	8/11/2023	Replace and install 8" inline vertical check valve #2 at Markey's Run.	Replace - \$6,374
CTSA	10/16/2023	Replace generator batteries at Franklin Lift Station.	Replace - \$312
Stefanik's	10/17/2023	Locate and repair Manhole	Repair - \$2,221
W.C. Weil	11/13/2023	Repair pump at Logstown L/S	Repair - \$737

### Manhole Repairs / Replacements

MANHOLE #		ISSUE	SOLUTION
ER 2385	CNO		Opened and inspected
MR 738	CNO		Opened and inspected
ER 1610	CNO		Opened and inspected
ER 1611	CNO		Opened and inspected
ER 1418	Buried		Uncovered and inspected
MR 687	CNO		Opened and inspected
MR 688	CNO		Opened and inspected
ER 2559	CNO		Opened and inspected
MR 358	CNO		Opened and inspected
ER 2265	CNO		Opened and inspected
ER 2360	CNO		Opened and inspected
ER 691	CNO		Opened and inspected
ER 736	CNO		Opened and inspected
MR 800	Asphalt in manhole from road resurface filling invert.		Chiseled out and cleaned.
ER 2357	CNO		Opened and inspected
ER 2420	CNO		Opened and inspected
ER 1390	CNO		Opened and inspected
ER 1425	CNO		Opened and inspected
ER 2155	CNO		Opened and inspected
ER 2399	CNO		Opened and inspected

### Plant & Associated Equipment

COMPANY	DATE	ITEM	NOTE
CTSA	7/27/2023	Speed switch on Clarifier #2 bad.	Replaced - \$1,160
CTSA	9/17/2023	Repaired effluent line in blower room #1.	Repaired- \$65
Halama Electric	2/28/2023	PM's at Plant	PM's - \$3,178
Halama Electric	10/31/2023	Maintenance plant	Repairs - \$3,373
Kappe Assoc.	7/14/2023	VFD on bar screen	Repair - \$1,468
Kappe Assoc.	6/5/2023	Repair bar screen	Repair - \$2,260

### Sanitary Sewer Lines High Pressure Cleaned

COMPANY	DATE	LOCATION	LENGTH
Tri – State	1/30/2023	Highland Meadows	500'
Tri – State	2/16/2023	Todd Lane	300'
Robinson Pipe	3/1/2023	Columbia gas sewer line crossings	3,210'
Robinson Pipe	4/15/2023	Columbia Gas Road Crossings	5,273'
Tri – State	5/6/2023	Van Kirk Road	300'
Tri – State	11/8/2023	Wagner Road	4,500'

### Sanitary Wet Wells / Tanks Vacuumed Cleaned / Manholes Flushed

COMPANY	DATE	LOCATION	ITEM
CTSA	3/17/2023	Mengel Avenue	Flushed
Tri – State	4/20/2023	Digestor #2	Vacuumed
Tri - State	4/14/2023	Cleaned out tank	Vacuumed
Tri – State	7/14/2023	Stoney Ridge Wet Well	Vacuumed
Tri – State	9/18/2023	Logstown Wet Well	Vacuumed
Tri – State	12/1/2023	Markey’s Run Wet Well	Vacuumed
Tri – State	12/1/2023	New College Wet Well	Vacuumed

### Residential Plunge of Trap & Sewer Line Inspections

COMPANY	DATE	LOCATION	ITEM
CTSA	2/16/2023	111 Center Grange Road	Plunge
CTSA	8/23/2023	293 Sherwood Drive	Plunge
CTSA	10/14/2023	289 Sherwood Drive	Plunge
CTSA	12/7/2023	547 Chapel Road	Plunge
CTSA	8/10/2023	107 Oakland Heights Rd.	Inspection
CTSA	2/8/2023	184 Gourley Lane	Inspection
CTSA	2/14/2023	112 Gross Drive	Inspection
CTSA	2/21/2023	112 Fronko Street	Inspection
CTSA	2/21/2023	183 Gourley Lane	Inspection
CTSA	2/23/2023	282 Pleasant Drive	Inspection
CTSA	3/16/2023	177 Stone Quarry Road	Inspection
CTSA	3/16/2023	223 Columbia Drive	Inspection
CTSA	4/19/2023	302 Shirley Drive	Inspection
CTSA	4/13/2023	218 W Woodland Drive	Inspection
CTSA	4/20/2023	205 Bainbridge Drive	Inspection
CTSA	5/2/2023	124 Clover Drive	Inspection
CTSA	5/12/2023	214 Princeton Drive	Inspection
CTSA	6/7/2023	114 Gourley Lane	Inspection
CTSA	6/9/2023	3585 Brodhead Road	Inspection
CTSA	6/19/2023	115 Lafayette Drive	Inspection
CTSA	6/21/2023	1285 Chapel Road	Inspection
CTSA	7/21/2023	200 Geneva Drive	Inspection
CTSA	8/10/2023	115 Oakland Heights Road	Inspection
CTSA	8/18/2023	133 Baker Road	Inspection

### Camera Inspection on Sanitary Sewer Lines

COMPANY	DATE	LOCATION	LENGTH
Tri - State	1/24/2022	Brodhead Road	400’
Robinson Pipe	3/1/2023	Columbia gas crossings	3,210’
Robinson Pipe	4/15/2023	Columbia gas crossings	5,273’



# **APPENDIX E**

## **SLUDGE MANAGEMENT INVENTORY REPORT**

SLUDGE GENERATION CALCULATION

Facility Name: Elkhorn Run Sewage Treatment Plant

Permit Number: PA0037940

Date of Calculation: 3/7/2024

Required Information For Calculation

Average Daily Flow (mgd): 1.028, Influent BOD (mg/l): 128.5, Effluent BOD (mg/l): 8.1, Digester Capacity (gal): 577043, %Solids of Outgoing Sludge: 17.59, Monitoring Period (days): 365

Wastewater Treatment Processes

Place an "X" in the box beside the corresponding treatment process. Select a maximum of Primary Clarification and one other treatment process:

Primary Clarification, Contact Stabilization (X), RBC, Conventional Activated Sludge, SBR, ABF, Extended Aeration, Trickling Filter, Small Plant with low SOR (<500 gpd/sq ft)

Operational Information

BOD Removed (lbs/day): 1032, TSS Removed (lbs/day): 1032

Digester Information

Type of Digester

Place an "X" in the box beside the corresponding treatment process

Aerobic Digestion (X), Anaerobic Digestion, None

Sludge Feed Rate to Digesters (gpd): 15471.4, Digester Hydraulic Detention Time (days): 37, Estimated Total Solids Reduction (%): 0.4

Sludge Generation

dry lbs/day: 619, wet lbs/day: 3521, dry tons/monitoring period: 113, wet tons/monitoring period: 643, gal/day: 422, gal/monitoring period: 154098

Amount of Sludge Reported as Being Generated by the Facility

wet tons/monitoring period: 0

OR

dry tons/monitoring period: 104

Enter only one of the above values. The remaining value should be "0"

Is the amount reported by the generator within 15% of the calculated value? YES

NO explanation:

Actual Sludge Produced is Less Than Theoretical Calculated Sludge Produced

What type of information was used to calculate the above information: Discharge Monitoring Reports

Dates used: 1/1/2023 TO 12/31/2023

Name of person performing the calculation: Marie S. Hartman, P.E.

**Table 6**  
Center Township Sanitary Authority  
Elkhorn Run Sewage Treatment Plant  
**2023 Solids Management Inventory** <sup>(1)</sup>  
January 2023 Through December 2023

	Average Flow (mgd)	Average Influent BOD (mg/L)	Average Effluent CBOD (mg/L)	Total Volume of Sludge Hauled <sup>(2)</sup>		
				Tons Dewatered	% Solids	Dry tons
Jan-23	1.680	101.7	8.0	70.7	17.3	12.3
Feb-23	1.010	148.3	7.4	60.9	17.4	11.0
Mar-23	1.430	184.1	9.3	62.7	17.5	11.0
Apr-23	0.950	149.6	11.1	12.4	18.0	2.2
May-23	0.860	158.6	9.4	52.3	17.7	9.3
Jun-23	0.760	122.5	11.3	87.4	17.4	15.3
Jul-23	1.060	119.4	7.8	36.0	17.5	6.3
Aug-23	1.180	108.9	7.1	66.0	17.7	11.7
Sep-23	0.690	151.9	5.8	23.8	18.0	4.3
Oct-23	0.770	90.3	7.0	36.7	17.5	6.4
Nov-23	0.870	94.6	6.0	35.6	17.5	6.2
Dec-23	1.070	111.9	6.8	46.6	17.7	8.2
<b>Average</b>	<b>1.028</b>	<b>128.5</b>	<b>8.1</b>			
<b>TOTAL</b>				<b>591</b>	<b>17.59</b>	<b>104</b>

(1) Per Values Recorded in Discharge Monitoring Reports

(2) Sludge is hauled regularly from the dewatered sludge storage bin at the sewage treatment plant by Joseph J. Brunner Inc.

**From:** [depgreenporthelpdesk@state.pa.us](mailto:depgreenporthelpdesk@state.pa.us)  
**To:** [Marie Hartman](#)  
**Subject:** Notice of Application Received  
**Date:** Tuesday, March 26, 2024 12:56:41 PM

---

### Submission Details

**Details have been submitted successfully. Please review and print the Transaction Receipt for your records.**

**Reference :** 222419  
**Form Name :** CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT 3800-FM-BPNPSM0507  
**Submitter Name :** Marie S. Hartman  
**Submitter Organization :** Lennon, Smith, Souleret Engineering, Inc.  
**Submitter Email :** [mhartman@lsse.com](mailto:mhartman@lsse.com)  
**Phone Number :** (412) 264-4400  
**Submitted To :** Southwest Regional Office  
**Date Submitted :** 03/26/2024