



February 27th, 2026

Environmental Authority
C/o Department of Environment & Natural Resources
169 South Shore Road
Paget, DV 04 Bermuda

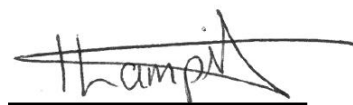
Attn: Dr. Geoffrey Smith,

Re: BELCO Annual Opacity Monitoring System Report for the period January 1st, 2025, to December 31st, 2025

On behalf of the Bermuda Electric Light Company Limited, please find the attached Annual Opacity Monitoring System Report for the period **January 1st, 2025 to December 31st, 2025** as required under Conditions 5.3 and 6.3 of BELCO's Operating Licence #OL-114.

The report presents information related to opacity previously reported in 2025 Quarterly Reports to the Environmental Authority and includes: summary data collected from the in-stack opacity instruments for diesel engines E7, E8, N1, N2, N3 and N4; availability statistics and maintenance performed on all operating opacity instruments; results for monthly visible emissions (VE); as well as a Non-Compliant Engine (NCE) summary for the year.

Sincerely,



Hannah Lampit
Environmental Technician
OHSE - Bermuda Electric Light Co.
Encl.: BELCO Annual Opacity Report 2025

BERMUDA ELECTRIC LIGHT COMPANY LIMITED

ANNUAL OPACITY MONITORING REPORT

For the period

JANUARY 1ST, 2025 – DECEMBER 31ST, 2025



Submitted: February 27th, 2026

Prepared by:
Hannah Lampit
Environmental Technician
Occupational Health, Safety & Environment (OHSE) Business Centre

TABLE OF CONTENTS

Contents

Introduction.....	1
In-Stack Opacity Monitor Exceedances	1
Data Availability.....	1
Figure 1: Comparison of Opacity Monitor Regulatory Exceedances 2010-25	2
Figure 2: Annual Data Availability of In-Stack Opacity Monitors 2025	2
Opacity System Calibration and Maintenance	3
Visible Emissions Monitoring	3
Operation of Non-Compliant Engines (NCEs)	4
Conclusion.....	4

List of Appendices

Appendix I – VIM Opacity Maintenance Trip Reports

- a) March 2025 Report
- b) September 2025 Report

Appendix II – Visible Emissions Certificates

- a) Kascia DaSilva, Method 9 & ALT-082
- b) Hannah Lampit, Method 9 & ALT-082
- c) Gabriel Cabral ALT-082

Bermuda Electric Light Company Limited
Annual Opacity Monitoring Report
(January 1st, 2025 through December 31st, 2025)

Introduction

This report summarizes BELCO's Continuous Opacity Monitoring System for the period **January 1st, 2025, to December 31st, 2025**, as required under Conditions 5.3 and 6.3 of BELCO's Operating Licence (OL-114). The report presents information related to BELCO's Opacity Monitoring program previously reported in 2025 Quarterly Reports to the Environmental Authority and includes: summary data collected from the in-stack opacity instruments on the E7, E8, N1, N2, N3 and N4 engines; availability statistics and maintenance performed on all operating opacity instruments; the results for monthly visible emissions (VE); as well as a Non-Compliant Engine (NCE) summary for the year.

In-Stack Opacity Monitor Exceedances

Bermuda Clean Air Regulations 1993 currently limits emissions to a standard of 20 percent opacity over a six-minute average. However, on July 31st, 2026, these emission standards will be updated and align with BELCO's Operating Licence OL-114, which limits emissions to a regulatory standard of 15 percent opacity over a six-minute block average as described in Section 5.3.2. Opacity emissions are presently measured using in-stack Continuous Opacity Monitoring Systems (COMS) on six (6) of BELCO's diesel engines (E7, E8, N1, N2, N3 and N4).

The COMS utilized in all installations consists of Teledyne Monitor Labs' Lighthawk Model 560 Compliance Opacity Monitors. It is noted that diesel engines E5 and E6 were not fitted with in-stack opacity meters and therefore BELCO's opacity emissions from these diesel engines were monitored in 2025 using monthly visual opacity observations as per EPA Alternative Method 9 & ALT-082.

During the 2025 monitoring period there were zero (0) exceedances of the regulatory standard recorded by the in-stack opacity monitors. Since 2010, there has been a significant reduction in the number of opacity exceedances reported (**Figure 1**). This is an example of BELCO's continued effort to improve our Standard Operating Procedures (SOP's) and operate more efficiently. All exceedances recorded by the in-stack opacity monitors presented in the quarterly reports are permitted under Section 5.3.2. of BELCO's Operating Licence.

Data Availability

Data availability throughout the reporting period was considered generally high on all in-stack opacity units in 2025 (**Figure 2**). The 2025 annual cumulative availability average for each unit was 98.33%, 95.76%, 98.72%, 98.47%, 98.42%, 98.85% for opacity monitors on E7, E8, N1, N2, N3 and N4 respectively. Data availability fell below the 95% target for E8 and N2 in Q4 2025 due to a power outage in November 2025. Overall, all COMS yearly average values met the 95% data availability target for 2025, with a combined average of 98.09% at the end of 2025.

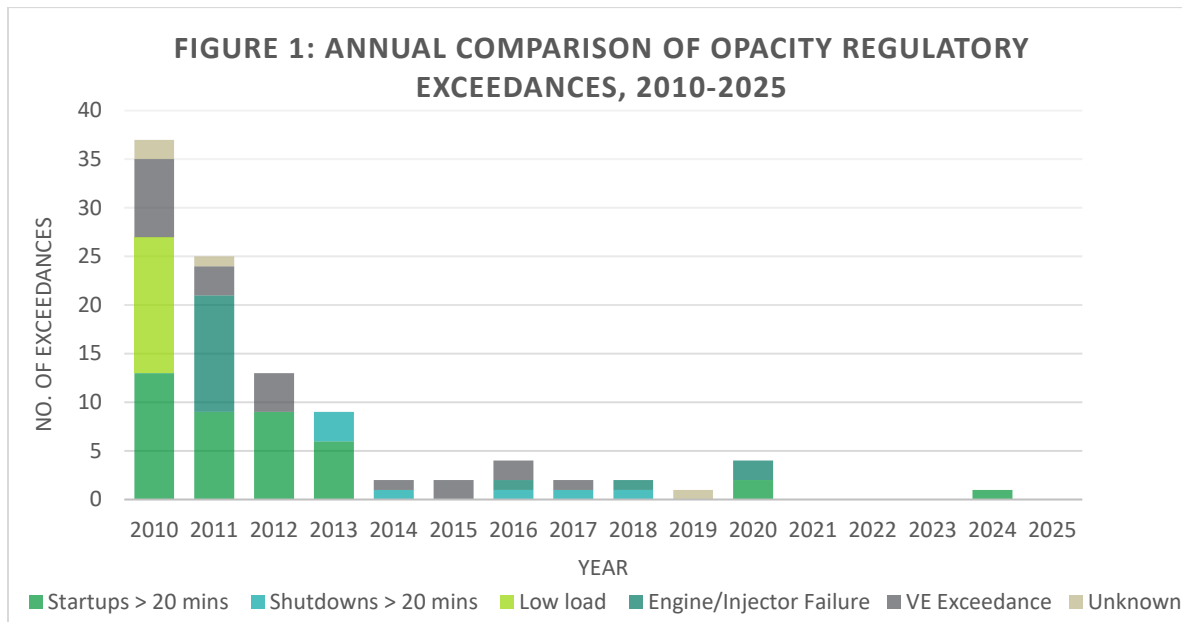


Figure 1: Comparison of Opacity Monitor Regulatory Exceedances 2010-2025
(Before Dec 2021, data represents Startup and Shutdown exceedances of the regulated 30-minute time frame)

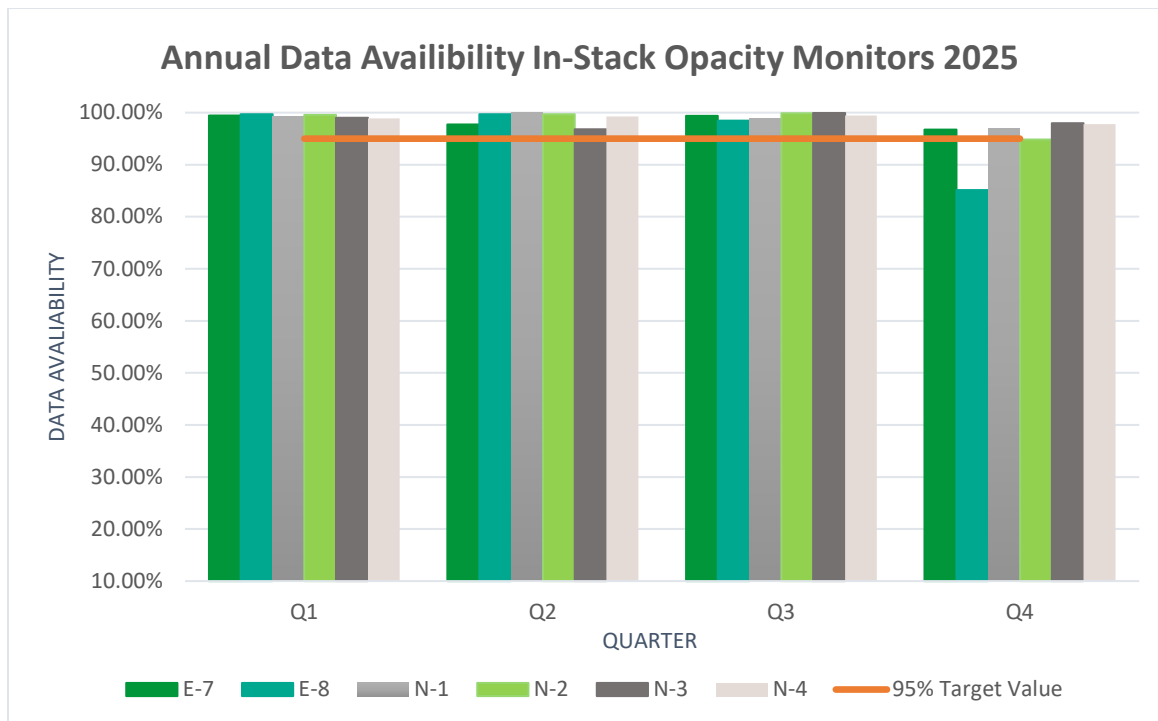


Figure 2: Annual Data Availability of In-Stack Opacity Monitors 2025

Opacity System Calibration and Maintenance

Each COMS instrument is challenged daily and is required to pass a zero (0%) and span calibration (25-28%). Annual calibration drift data indicates that for the six active opacity monitors, 3 of a possible 2,190 total daily calibrations failed in 2025. It is noted that E8 and N2 failed a daily calibration in Q1 and N4 failed a daily calibration in Q3, all of which were corrected the same or the following day.

All reported opacity data that followed a failed calibration was flagged as invalid in CEMLink6 until such time a successful calibration was achieved. In many cases, the COMS instrument self-corrected while for more serious failures a maintenance visit was required for instruments that did not self-correct. In accordance with BELCO's Operating License #OL-114, DENR was notified of all issues that resulted in significant data loss.

Regular bi-monthly maintenance was scheduled and executed by BELCO Bulk Generation Electrical Instrumentation & Control personnel on all operating COMS throughout the 2025 period. The semi-annual maintenance of the opacity monitoring system and software was performed in March and September 2025 by VIM Technologies. During these service visits, VIM Technologies performed all maintenance and inspections required by the Teledyne Monitor Labs Lighthawk Opacity monitors installed on Engines E7, E8, N1, N2, N3 and N4 and the associated VIM CEMLink 6 Data Acquisition System (DAS). A summary of VIM's maintenance visits are provided in **Appendix I**.

Visible Emissions Monitoring

Visible Emissions (VE) monitoring was completed monthly throughout 2025 for all active engines without dedicated COMS (i.e. E5 and E6) as well as the NPS engines for which there were no exceedances of the 15% regulatory standard recorded. Details of all visible emissions monitoring activities can be found in the quarterly reports previously submitted to the Environmental Authority.

BELCO maintained at least one certified visual opacity reader on staff at all times during 2025 as required under Conditions 5.3.4 of BELCO's Operating Licence #OL-114. All readers were certified by Eastern Technical Associates (ETA) in the case of U.S.E.P.A. Federal Reference Method 9, and Virtual Technology LLC in the case of U.S.E.P.A. Alternative Method 082 and utilizing ASTM D-7520-09 (ALT-082).

During the 2025 period BELCO held the following VE certifications:

- | | |
|-----------|---|
| Method 9: | Kascia DaSilva, Date of Certification August 13th, 2024, Certification Expiration February 14th, 2025. |
| | Hannah Lampit, Date of Certification February 11 th and August 11 th 2025, Certification Expiration August 11 th , 2026. |
| ALT-082: | Gabriel Cabrall, Date of Certification October 4, 2017 |
| | Kascia DaSilva, Date of Certification September 12, 2018 |
| | Hannah Lampit, Date of Certification September 18, 2023 |
| | Shane Robinson, Date of Certification November, 2025 |

The ALT-082 certification from Virtual Technology LLC is maintained by the submission of a valid observation on a semi-annual basis. **Appendix II** contains copies of all Visible Emissions Evaluator and Digital Still Camera Operator Certificates.

Operation of Non-Compliant Engines (NCEs)

The Environmental Authority's approval for NCE operation shall be requested on a case by case basis by BELCO as per the Appendix of BELCO's Operating License by the Department of Environment & Natural Resources' Environmental Authority. There were no engines assigned NCE status by BELCO for this reporting period. Therefore, there was no NCE operation in 2025.

Conclusion

During the 2025 monitoring period there were zero (0) exceedances of the regulatory standard for opacity recorded by the in-stack opacity monitors.

All six continuous opacity monitors passed daily calibration drift tests in 2025 with the exception of E8 and N2 in Q1, and N4 in Q3. This represents a total of three (3) failed daily calibration drift tests of a possible 2,190 for all opacity monitors in 2025.

Each unit's data availability met US EPA data availability requirements. Data availability throughout the period was high with a combined average of 98.09% at the end of 2025.

Visible Emissions Monitoring was completed monthly throughout the period for which there were no exceedances of the 15% regulatory standard recorded. BELCO maintained a certified VE reader in both EPA Method 9 and Alternative Method 082 specifications on staff at all times during 2025.

Maintenance of the opacity monitoring system was routinely performed throughout 2025. Bi-monthly maintenance was performed by BELCO Instrumentation and Control personnel, whilst semi-annual maintenance was performed by VIM personnel. The latter comprising of detailed on and off-stack calibrations for COMS in March and September 2025.

There were no engines assigned NCE status in 2025 and therefore no NCE operations in 2025.

Appendix I –

VIM Opacity Maintenance Trip Reports



TRIP REPORT

To: Tamara Davis (BELCO)
From: Matt Caldwell (VIM)
CC: Kascia DaSilva (BELCO), Hannah Lampit (BELCO), Eric Durham (BELCO), Jamarley Samuels (BELCO), Casey Steede (BELCO), Elijah Dublin (BELCO), Mike Leuz (CSG)
Date: March 21, 2025
Re: BELCO - Semi-Annual Maintenance Visit (3/17/25 – 3/21/25)

The purpose of this trip was to perform scheduled maintenance and inspection of the Monitor Labs Lighthawk Opacity monitors installed on Engines E-7, E-8, N1, N2, N3, N4 and to perform a thorough review of the associated VIM CEMLink 6 Data Acquisition System (DAS).

Mike Leuz and Matt Caldwell arrived on-site Monday morning and met with Tamara Davis and filed our permit to work. We immediately gathered our things and went to North Power Station (NPS) to begin clear stack procedures for N1, N2, N3, and N4.

Clear stack procedures were performed for N2 and N4 on Monday morning. In the afternoon we performed clear stack procedures on N1 and N3.

On Tuesday morning we performed clear stack procedures on E-8, and in the afternoon, we performed clear stack procedures on E-7.

Wednesday and Friday were spent reviewing data in CEMLink 6, and cleaning up and documenting the maintenance procedures in CEMLink 6 that were performed earlier in the week. We reviewed the CEMLink 6 system since our last visit in September, 2024. After reviewing the logbook entries it appears as though the bi-monthly service to all engines was performed, however, there are no logbook entries to verify.

We highly recommend using the Logbook for these isolated occasions as it will aid in the proper reporting of these incidents in the future.

After reviewing all data, we edited data to invalidate the time spent performing maintenance on the instruments, and processed all downtimes and excess emissions to ensure that the maintenance was tagged properly. No other exceptions were noted.

Notes from this visit:

- Purge Air filters were replaced for E-7 and E-8 with the instrument shop replacing the purge air filters for NPS.
- No desiccators were replaced on this visit – we recommend that protective boots are installed at NPS and that once in place, desiccators should be replaced for all units at NPS.

Data edits were performed as follows:

- E-7 – No data edits required on 3/18/25 due to unit was OFFLINE.
- E-8 – Edited data while clear stack performed on 3/18/25 as Maintenance
- N1 – Edited data while clear stack performed on 3/17/25 as Maintenance
- N2 – No data edits required on 3/17/25 due to unit was OFFLINE.
- N3 – Edited data while clear stack performed on 3/17/25 as Maintenance
- N4 – Edited data while clear stack performed on 3/17/25 as Maintenance

We held a close out meeting on Friday morning with the following items discussed:

- Moisture at NPS – BELCO will procure and install boots for the Opacity heads and retros at NPS.
- VIM to provide proposal for connecting all six (6) units to the Process Network and incorporate diagnostics into CEMLink 6 for troubleshooting, with the goal of installing remote diagnostics in September, 2025.
- We discussed as a reminder the continued use of the CEMLink 6 Logbook. Any tasks performed should be logged to the CEMLink 6 Logbook to help track activity.
- We also discussed replacing the existing purge air switches at E-7 and E-8 with something more reliable to eliminate I&C from having to deal with failing switches.
- A draft proposal has been submitted for 2025-2028. The existing contract expires July 31, 2025.

Data:

1. Edited data and marked data as in Maintenance while performing maintenance on the analyzers.
2. Reviewed downtimes and exceedances to make sure all data was accounted for.

Spare Parts:

1. VIM does not have access to BELCO spare parts list however, we worked with Ben Phillip on establishing a minimum list that is automatically replenished. We are available to review this list upon request and submittal by BELCO.
2. Four (4) purge air filters (for E-7 and E-8) were consumed from stores on this visit.
3. Two (2) purge air filters (for NPS) were consumed from stores on this visit.

Noteworthy Items:

1. VIM to prepare proposal for ethernet connectivity and incorporation of diagnostics into CEMLink 6 for all six (6) units for remote troubleshooting.
2. Purge air filters - continue to replace every other month.
3. BELCO to procure and install boots for the Opacity heads and retros at NPS.
4. Return visit is tentatively set for September 2-5, 2025.
5. If there are any questions at any time, please call VIM Technical Support at 410-859-5455 or e-mail at support@vimtechnologies.com.

Clear Stack Procedure Results:

Before the clear stack procedures were performed, Unit E-7 was OFFLINE and reading approximately 3.5% (OFFLINE) and came out of the procedure reading approximately 0.4% (OFFLINE). Unit E-8 was reading approximately 6.2% (ONLINE), and came out of the procedure reading approximately 6.3% (ONLINE). Purge Air Filters were also replaced at this time. *(The results of the off-stack procedures can be found toward the bottom of this report).*

Before the clear stack procedures were performed at NPS, Unit N1 was ONLINE and reading approximately 4.3% (ONLINE) and came out of the procedure reading approximately 3.7% (ONLINE). Unit N2 was OFFLINE and reading approximately -0.55% (OFFLINE) and came out of the procedure reading approximately 0.3% (OFFLINE). Unit N3 was ONLINE and reading approximately 3.9% (ONLINE) and came out of the procedure reading approximately 3.7% (ONLINE). Unit N4 was ONLINE and reading approximately 3.2% (ONLINE) and came out of the procedure reading approximately 03.2% (ONLINE). Purge Air Filters were also replaced at this time by BELCO. *(The results of the off-stack procedures can be found toward the bottom of this report).*

Clear stack maintenance procedure results can be found below.

E-7 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit and replaced the Purge Filters.
4. We inspected the purge air hoses and desiccator and they were fine.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 8.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	13.95 %	23.24 %	46.82 %	100.00 %
Response	<u>0.13 %</u>	<u>14.04 %</u>	<u>23.54 %</u>	<u>46.90 %</u>	<u>99.46 %</u>
Difference	0.13 %	0.09 %	0.30 %	0.08 %	- 0.54 %

After the service to the monitor, the opacity reading was 0.40% (OFFLINE).

E-8 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit and replaced the Purge Filters.
4. We inspected the purge air hoses and desiccator and they were fine.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 8.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	14.04 %	23.15 %	46.62 %	100.00 %
Response	<u>0.39 %</u>	<u>14.27 %</u>	<u>23.37 %</u>	<u>47.12 %</u>	<u>99.46 %</u>
Difference	0.39 %	0.13 %	0.22 %	0.50 %	-0.54 %

After the service to the monitor, the opacity reading was around 6.3% (ONLINE).

N1 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit.
4. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	15.70 %	25.20 %	50.30 %	100.00 %
Response	<u>0.64 %</u>	<u>16.58 %</u>	<u>25.88 %</u>	<u>50.42 %</u>	<u>98.30 %</u>
Difference	0.64 %	0.88 %	0.68 %	0.12 %	- 1.70 %

After the service to the monitor, the opacity reading was around 3.70% (ONLINE).

N2 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. At the monitor location, we checked the alignment of the unit.
3. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
4. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
5. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
6. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	15.00 %	24.60 %	49.70 %	100.00 %
Response	<u>0.07 %</u>	<u>15.70 %</u>	<u>25.08 %</u>	<u>50.11 %</u>	<u>99.05 %</u>
Difference	0.07 %	0.70 %	0.48 %	0.41 %	- 0.95 %

After the service to the monitor, the opacity reading was around 0.30% (OFFLINE).

N3 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit.
4. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	14.90 %	25.50 %	49.30 %	100.00 %
Response	<u>0.39 %</u>	<u>15.28 %</u>	<u>25.78 %</u>	<u>49.67 %</u>	<u>97.90 %</u>
Difference	0.39 %	0.38 %	0.28 %	0.37 %	- 2.10 %

After the service to the monitor, the opacity reading was around 3.7% (ONLINE).

N4 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit.
4. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	15.20 %	25.20 %	49.70 %	100.00 %
Response	<u>0.09 %</u>	<u>15.34 %</u>	<u>25.49 %</u>	<u>50.10 %</u>	<u>98.30 %</u>
Difference	0.09 %	0.14 %	0.29 %	0.40 %	- 1.70 %

After the service to the monitor, the opacity reading was around 3.2% (ONLINE).

The Maintenance Check Sheets for all units are attached to this trip report.

Please feel free to contact me if you have any questions or need any additional information.

Best regards,



Matt Caldwell

V: 410-859-5455

F: 410-859-5457

E: matt.caldwell@vimtechnologies.com

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION E-7SERVICE PERSON M. CALDWELL / M. LEUZE SERIAL # 560

DATE _____ TIME _____

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☐

EXPLAIN: _____

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>3.56</u> %	<u>3.51</u> %	(OFFLINE)
AS LEFT	<u>0.44</u> %	<u>0.41</u> %	(OFFLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>+1.25</u>	<u>-0.02</u>	OPACITY
2. UPSCALE CAL	<u>26.80</u>	<u>24.07</u>	OPACITY
3. DUST COMP	<u>0.81</u>	<u>-0.02</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>26.90</u>	<u>23.90</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 1.25 % OPACITYDUST COMP= % OPACITYUPSCALE CAL = 26.82 % OPACITYP. L. C. F. = 0.911

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER



OUTPUT DEVICE (DAS)

AVERAGING INTERVAL MIN MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

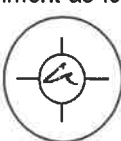
* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

(3) On-Stack Checks

A. LED CURRENT 5.892 (S2)OK ☐6
≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☐	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☒	☐	☐	☐	☐

C. Optical Head
Alignment as foundRetro
Alignment as found

		OPTICAL ALIGNMENT	
		HEAD	RETRO
OK			
ADJUSTED			

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE 0.00 U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO -0.02 UPSCALE 24.07

OK ☒

K. CAL KIT READINGS PLCF = 0.911 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	<u>0.00</u>	<u>13.95</u>	<u>23.24</u>	<u>46.82</u>	<u>100.0</u>
CORRECTED VALUE					
LightHawk® READING	<u>0.13</u>	<u>14.04</u>	<u>23.54</u>	<u>46.90</u>	<u>99.46</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.13</u>	<u>0.09</u>	<u>0.30</u>	<u>0.08</u>	<u>-0.54</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVE

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION E-8SERVICE PERSON M. CAUDWELL / M. LEID SERIAL # 5601968

DATE _____ TIME _____

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐ EMERGENCY ☐ INSTALL ☐ OTHER ☒EXPLAIN: SEMI-ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>6.21</u> %	<u>6.11</u> %	(ONLINE)
AS LEFT	<u>6.28</u> %	<u>6.35</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>-0.16</u>	<u>0.03</u>	OPACITY
2. UPSCALE CAL	<u>34.21</u>	<u>34.33</u>	OPACITY
3. DUST COMP	<u>-0.16</u>	<u>0.03</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>33.75</u>	<u>34.30</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = -0.21 % OPACITYDUST COMP= % OPACITYUPSCALE CAL = 34.21 % OPACITYP. L. C. F. = LOT 0911

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER



OUTPUT DEVICE (DAS)

AVERAGING INTERVAL MIN 6 MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

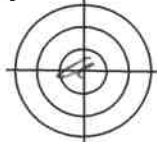
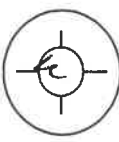
(3) On-Stack Checks

A. LED CURRENT

5.252 (S2)OK ☒6
≤ ~~400A~~

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☐	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☒	☐	☐	☐	☐

C. Optical Head
Alignment as foundRetro
Alignment as found

	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☒
ADJUSTED	☐	☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒E. **INSTALL** CAL KIT FIXTURE OK ☒F. PERFORM BACKGROUND SET OK ☒G. PERFORM NORMAL SET OK ☒H. PERFORM ZERO SET OK ☒I. CHECK CAL ZERO VALUE 0000 U4 Extended Status CodeOK ☒J. COMMAND CAL CYCLE OK ☐CAL CYCLE RESULTS ZERO 0.03 UPSCALE 34.33OK ☒

K. CAL KIT READINGS

PLCF = 0.911 ~~1.000~~ (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	<u>0.00</u>	<u>14.04</u>	<u>23.15</u>	<u>46.62</u>	<u>100.0</u>
CORRECTED VALUE					
LightHawk® READING	<u>0.39</u>	<u>14.27</u>	<u>23.37</u>	<u>47.12</u>	<u>99.46</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.39</u>	<u>0.13</u>	<u>0.22</u>	<u>0.50</u>	<u>-0.54</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVEB. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION N-1SERVICE PERSON M. CALDWELL / M. LEWIS SERIAL # 5603218DATE 3/17/25 TIME 14:30

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☒EXPLAIN: SEMI-ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY		AVG OPACITY	
AS FOUND	<u>4.31</u> %		<u>4.79</u> %	(ONLINE)
AS LEFT	<u>3.73</u> %		<u>3.78</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.015</u>	<u>-0.01</u>	OPACITY
2. UPSCALE CAL	<u>30.86</u>	<u>30.31</u>	OPACITY
3. DUST COMP	<u>-1.07</u>	<u>-0.01</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>30.50</u>	<u>30.00</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

N-1

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 429 % OPACITY DUST COMP = % OPACITY
 UPSCALE CAL = 31.18 % OPACITY P. L. C. F. = 1.09

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN 6 MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

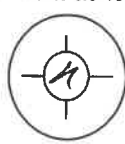
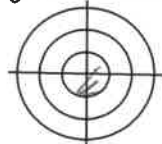
(3) On-Stack Checks

A. LED CURRENT 29.57 (S2) OK ☒ ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☐	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☒	☐	☐	☐	☐

C. Optical Head Retro
 Alignment as found Alignment as found



	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☒
ADJUSTED	☐	☐

COMMENTS:

N-1

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE 0000 U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO 0.29

30.31
UPSCALE 31.18

OK ☐

K. CAL KIT READINGS PLCF = _____ (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	<u>0.00</u>	<u>15.70</u>	<u>25.20</u>	<u>50.30</u>	<u>100.00</u>
CORRECTED VALUE					
LightHawk® READING	<u>0.64</u>	<u>16.58</u>	<u>25.88</u>	<u>50.42</u>	<u>98.30</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.64</u>	<u>0.88</u>	<u>0.68</u>	<u>0.12</u>	<u>-1.70</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVE

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME PELCO LOCATION N-2SERVICE PERSON M. CAWDELL / M. CELIZ SERIAL # 5603219DATE 3/17/25 TIME 10:30

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☒EXPLAIN: SEMI-ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>-0.55</u> %	<u>-0.78</u> %	(OFFLINE)
AS LEFT	<u>0.28</u> %	<u>0.30</u> %	(OFFLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 00000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.292</u>	<u>0.13</u>	OPACITY
2. UPSCALE CAL	<u>22.74</u>	<u>21.95</u>	OPACITY
3. DUST COMP	<u>4.126</u>	<u>0.13</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>23.50</u>	<u>22.00</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

N-2

LIGHTHAWK® 560ES OPACITY/DUST MONITOR

PAGE 2 OF 3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.42 % OPACITY DUST COMP = % OPACITY
 UPSCALE CAL = 22.88 % OPACITY P. L. C. F. = 1.08

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN 6 MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

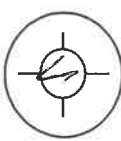
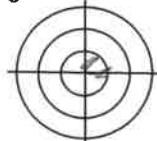
(3) On-Stack Checks

A. LED CURRENT 33.27 (S2) OK ☒ ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☐	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☒	☐	☐	☐	☐

C. Optical Head Retro
 Alignment as found Alignment as found



OPTICAL ALIGNMENT	
	HEAD RETRO
OK	☒ ☒
ADJUSTED	☐ ☐

COMMENTS:

N-2

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE 0.00 U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO 0.13 UPSCALE 21.92

OK ☒

K. CAL KIT READINGS PLCF = 1.00 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	<u>0.00</u>	<u>15.00</u>	<u>24.60</u>	<u>49.70</u>	<u>100.0</u>
CORRECTED VALUE					
LightHawk® READING	<u>0.07</u>	<u>15.70</u>	<u>25.08</u>	<u>50.11</u>	<u>99.05</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.07</u>	<u>0.70</u>	<u>0.48</u>	<u>0.41</u>	<u>-0.95</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE VALUES ABOVE OK ☒

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION N-3SERVICE PERSON M. CAUDWELL / M. LEWIS SERIAL # 5603220DATE 3/17/25 TIME 14:00

(1) A. REASON FOR CALIBRATION
 QUARTERLY ☐ EMERGENCY ☐ INSTALL ☐ OTHER ☒
 EXPLAIN: SEMI-ANNUAL

(2) Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY		AVG OPACITY	
AS FOUND	<u>3.86</u> %		<u>4.04</u> %	(ONLINE)
AS LEFT	<u>3.68</u> %		<u>3.74</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.015</u>	<u>0.033</u>	OPACITY
2. UPSCALE CAL	<u>31.25</u>	<u>31.30</u>	OPACITY
3. DUST COMP	<u>-0.13</u>	<u>0.033</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>31.50</u>	<u>31.00</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

N-3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.42 % OPACITY DUST COMP = % OPACITY
 UPSCALE CAL = 31.66 % OPACITY P. L. C. F. = 1.00

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN 6 MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

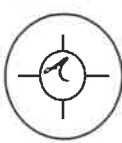
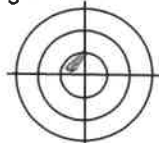
(3) On-Stack Checks

A. LED CURRENT 34.04 (S2) OK ☒ ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☐	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☒	☐	☐	☐	☐

C. Optical Head Retro
 Alignment as found Alignment as found



OPTICAL ALIGNMENT	
	HEAD RETRO
OK	☒ ☒
ADJUSTED	☐ ☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE 0.033 U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO 0.033 UPSCALE 3.30

OK ☒

K. CAL KIT READINGS PLCF = 1.00 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	<u>0.00</u>	<u>14.90</u>	<u>25.50</u>	<u>49.30</u>	<u>100.0</u>
CORRECTED VALUE					
LightHawk® READING	<u>0.39</u>	<u>15.28</u>	<u>25.78</u>	<u>49.67</u>	<u>97.90</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.39</u>	<u>0.38</u>	<u>0.28</u>	<u>0.37</u>	<u>-2.10</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVE

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION N-4SERVICE PERSON M. CAUDWELL / M. LEUZ SERIAL # 5603221DATE 3/17/25 TIME 10:00

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☒EXPLAIN: SEM1 - ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY		AVG OPACITY	
AS FOUND	<u>3.20</u> %		<u>3.21</u> %	(ONLINE)
AS LEFT	<u>3.14</u> %		<u>3.19</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.00</u>	<u>0.00</u>	OPACITY
2. UPSCALE CAL	<u>34.96</u>	<u>34.86</u>	OPACITY
3. DUST COMP	<u>-0.02</u>	<u>0.00</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>35.50</u>	<u>34.40</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

LIGHTHAWK® 560ES OPACITY/DUST MONITOR

PAGE 2 OF 3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.00 % OPACITY DUST COMP = N/A % OPACITY
 UPSCALE CAL = 35.05 % OPACITY P. L. C. F. = 1.00

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN 6 MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

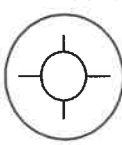
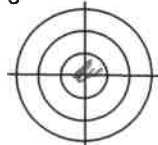
(3) On-Stack Checks

A. LED CURRENT 34.76 (S2) OK ☒ ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☐	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☒	☐	☐	☐	☐

C. Optical Head Retro
 Alignment as found Alignment as found



	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☐
ADJUSTED	☐	☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☐

I. CHECK CAL ZERO VALUE 0.00 U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☐

CAL CYCLE RESULTS ZERO _____ UPSCALE _____

OK ☐

K. CAL KIT READINGS PLCF = _____ (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	0.00	15.20	25.20	49.70	100.0
CORRECTED VALUE					
LightHawk® READING	0.09	15.34	25.49	50.10	98.3
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	0.09	0.14	0.29	0.40	-1.70

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVE

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :



TRIP REPORT

To: Tamara Davis (BELCO)
From: Matt Caldwell (VIM)
CC: Kascia DaSilva (BELCO), Hannah Lampit (BELCO), Jamarley Samuels (BELCO), Casey Steede (BELCO), Elijah Dublin (BELCO), Mike Leuz (CSG)
Date: September 23, 2025
Re: BELCO - Semi-Annual Maintenance Visit (9/8/25 – 9/11/25)

The purpose of this trip was to perform scheduled maintenance and inspection of the Monitor Labs Lighthawk Opacity monitors installed on Engines E-7, E-8, N1, N2, N3, N4 and to perform a thorough review of the associated VIM CEMLink 6 Data Acquisition System (DAS).

Mike Leuz and Matt Caldwell arrived on-site Monday morning and met with Tamara Davis and filed our permit to work. We immediately gathered our things and went to North Power Station (NPS) to begin clear stack procedures for N1, N2, N3, and N4.

Clear stack procedures were performed for N3 and N4 on Monday morning. In the afternoon we performed clear stack procedures on N1 and N2. We experienced some issues with the clear stack procedure on N1 and were unable to successfully calibrate the instrument due to a failed zero iris.

On Tuesday morning, we successfully obtained a new calibration wheel from the instrument shop and replaced the calibration wheel on N1 and recalibrated the instrument.

On Tuesday afternoon we performed clear stack procedures on E-7 and E-8. In the process of powering up the instruments in the Environmental Office we observed that E-8 was not powering up properly. After discussing this with Teledyne Tech Support, we determined that the power supply had failed. We obtained a new spare power supply from Stores, installed it, and completed the clear stack procedures on E-8.

On Wednesday, Ryan Hayward and myself went over to E-7/E-8 Control Room and were able to assign IP addresses to both Opacity remote displays. We were then able to get them on the Process Network. We will be adding NPS in the months ahead with the ultimate goal of having diagnostic data within CEMLink 6 to remotely diagnose any issues,

Wednesday and Thursday were spent reviewing data in CEMLink 6 and cleaning up and documenting the maintenance procedures in CEMLink 6 that were performed earlier in the week. We reviewed the CEMLink 6 system since our last visit in March, 2025. It appears as though the bi-monthly service to all engines is being performed, however, there are no logbook entries to verify.

We highly recommend using the Logbook for these isolated occasions as it will aid in the proper reporting of these incidents in the future.

After reviewing all data, we edited data to invalidate the time spent performing maintenance on the instruments, and processed all downtimes and excess emissions to ensure that the maintenance was tagged properly. No other exceptions were noted.

Notes from this visit:

- Purge Air filters were NOT replaced for E-7 and E-8. Stores needs to be replenished. Once that has been done we recommend the instrument shop replace all air filters.
- No desiccators were replaced on this visit – we recommend that once protective boots are installed at NPS new desiccators should be replaced for all units at NPS.

Data edits were performed as follows:

- E-7 – Edited data for 9/9/25 while clear stack performed as Maintenance.
- E-8 – Edited data for 9/9/25 while clear stack performed as Maintenance.
- E-7 – Edited data for 9/11/25 while filters were being measured as Maintenance.
- E-8 – Edited data for 9/11/25 while filters were being measured as Maintenance.
- N1 – Edited data while clear stack performed on 9/8/25 and 9/9/25 as Maintenance.
- N2 – Edited data while clear stack performed on 9/8/25 as Maintenance.
- N3 – No data edits required due to unit was OFFLINE.
- N4 – Edited data while clear stack performed on 9/8/25 as Maintenance

We held a close out meeting on Thursday afternoon with the following items discussed:

- Moisture at NPS – BELCO will procure and install boots for the Opacity heads and retros at NPS.
- We discussed as a reminder the continued use of the CEMLink 6 Logbook. Any tasks performed should be logged to the CEMLink 6 Logbook to help track activity.
- We briefly discussed the Comms Upgrade going on with Ben Phillip. We hope to get this installed in the next few months and commissioned remotely.

Data:

1. Edited data and marked data as in Maintenance while performing maintenance on the analyzers.
2. Reviewed downtimes and exceedances to make sure all data was accounted for.

Spare Parts:

1. VIM does not have access to BELCO spare parts list however, we worked with Ben Phillip on establishing a minimum list that is automatically replenished. We are available to review this list upon request and submittal by BELCO.
2. One (1) Spare Calibration Wheel was consumed from stores on this visit.
3. One (1) Spare Lighthawk 560 Power Supply was consumed from stores on this visit.

Noteworthy Items:

1. Purge air filters - continue to replace every other month.
2. BELCO to procure and install boots for the Opacity heads and retros at NPS.
3. Return visit is tentatively set for March 23-26, 2025.
4. Attached to this trip report are proposals for replacing the used Calibration Wheel and Power Supply.
5. Hannah Lampit also requested an additional day for training be quoted. We have included a proposal for that as well. This can be purchased prior to scheduling our next visit.
6. If there are any questions at any time, please call VIM Technical Support at 410-859-5455 or e-mail at support@vimtechnologies.com.

Clear Stack Procedure Results:

Before the clear stack procedures were performed, Unit E-7 was ONLINE and reading approximately 2.75% (ONLINE) and came out of the procedure reading approximately 3.4% (ONLINE). Unit E-8 was reading approximately 7.6% (ONLINE), and came out of the procedure reading approximately 4.2% (ONLINE). Purge Air Filters were NOT replaced at this time. (*The results of the off-stack procedures can be found toward the bottom of this report*).

Before the clear stack procedures were performed at NPS, Unit N1 was ONLINE and reading approximately 3.4% (ONLINE) and came out of the procedure reading approximately 5.3% (ONLINE). Unit N2 was ONLINE and reading approximately 5.3% (ONLINE) and came out of the procedure reading approximately 5.8% (ONLINE). Unit N3 was OFFLINE and reading approximately 1.6% (OFFLINE) and came out of the procedure reading approximately 0.6% (OFFLINE). Unit N4 was ONLINE and reading approximately 5.1% (ONLINE) and came out of the procedure reading approximately 5.2% (ONLINE). Purge Air Filters were also replaced at this time by BELCO. (*The results of the off-stack procedures can be found toward the bottom of this report*).

Clear stack maintenance procedure results can be found below.

E-7 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit and replaced the Purge Filters.
4. We inspected the purge air hoses and desiccator and they were fine.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 8.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	13.95 %	23.24 %	46.82 %	100.00 %
Response	- 0.10 %	14.54 %	23.69 %	47.03 %	100.38 %
Difference	- 0.10 %	0.69 %	0.45 %	0.21 %	0.38 %

After the service to the monitor, the opacity reading was 3.40% (ONLINE).

E-8 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit and replaced the Purge Filters.
4. We inspected the purge air hoses and desiccator and they were fine.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 8.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	14.04 %	23.15 %	46.62 %	100.00 %
Response	- 0.01 %	13.78 %	23.11 %	46.79 %	100.28 %
Difference	- 0.01 %	- 0.26 %	- 0.04 %	0.50 %	0.28 %

After the service to the monitor, the opacity reading was around 4.2% (ONLINE).

N1 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit.
4. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	15.70 %	25.20 %	50.30 %	100.00 %
Response	<u>0.42 %</u>	<u>16.48 %</u>	<u>25.28 %</u>	<u>50.46 %</u>	<u>98.18 %</u>
Difference	0.42 %	0.78 %	0.08 %	0.16 %	- 1.82 %

After the service to the monitor, the opacity reading was around 5.3% (ONLINE).

N2 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. At the monitor location, we checked the alignment of the unit.
3. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
4. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
5. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
6. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	15.00 %	24.60 %	49.70 %	100.00 %
Response	<u>0.23 %</u>	<u>16.27 %</u>	<u>25.46 %</u>	<u>49.92 %</u>	<u>98.14 %</u>
Difference	0.23 %	1.27 %	0.86 %	0.22 %	- 1.86 %

After the service to the monitor, the opacity reading was around 5.8% (ONLINE).

N3 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit.
4. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	14.90 %	25.50 %	49.30 %	100.00 %
Response	<u>0.22 %</u>	<u>15.15 %</u>	<u>26.06 %</u>	<u>49.97 %</u>	<u>100.00 %</u>
Difference	0.22 %	0.25 %	0.56 %	0.67 %	0.00 %

After the service to the monitor, the opacity reading was around 0.6% (OFFLINE).

N4 Opacity Monitor:

1. All signal voltages and currents were within appropriate limits and required no adjustment.
2. All system status indicators were normal and required no action.
3. At the monitor location, we checked the alignment of the unit.
4. We inspected the purge air and desiccator and decided to leave the desiccator until boots are installed.
5. We thoroughly cleaned the Retro-Reflector, Optical Head exit window, Calibration Mechanism, and Calibration Kit.
6. We performed all required clear stack sets as described in Section 9.0 of the operations manual.
7. After tuning the instrument to within the required specifications, we checked the Monitor's performance with the calibration kit and filters. The monitor's response was within the acceptable limits. The filter values, monitor response, and the differences are listed below.

	Zero	Low	Mid	High	Full Scale
Filter Value	0.00 %	15.20 %	25.20 %	49.70 %	100.00 %
Response	<u>0.30 %</u>	<u>15.75 %</u>	<u>26.14 %</u>	<u>49.91 %</u>	<u>98.00 %</u>
Difference	0.30 %	0.55 %	0.94 %	0.21 %	- 2.00 %

After the service to the monitor, the opacity reading was around 5.2% (ONLINE).

The Maintenance Check Sheets for all units are attached to this trip report.

Please feel free to contact me if you have any questions or need any additional information.

Best regards,



Matt Caldwell

V: 410-859-5455

F: 410-859-5457

E: matt.caldwell@vimtechnologies.com

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for LightHawk® 560ES OPACITY SYSTEM

PLANT NAME BELCO LOCATION E-7
 SERVICE PERSON M. CALDWELL / M. LEWIS SERIAL # 5601967
 DATE 9/9/25 TIME 14:30

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☒

EXPLAIN:

SEMI ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY		AVG OPACITY	
AS FOUND	<u>2.86</u> %		<u>2.90</u> %	(ONLINE)
AS LEFT	<u>3.35</u> %		<u>3.39</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD

φφφφ

(MAIN DISPLAY SCREEN)

EXPLAIN

NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.06</u>	<u>0.016</u>	OPACITY
2. UPSCALE CAL	<u>23.86</u>	<u>24.99</u>	OPACITY
3. DUST COMP	<u>0.06</u>	<u>0.016</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>φ.φφ</u>	<u>φ.φφ</u>	% OPACITY
2. UPSCALE SET POINT	<u>23.90</u>	<u>25.00</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>0.911</u>	<u>0.911</u>	

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = -0.01 % OPACITYDUST COMP = -0.01 % OPACITYUPSCALE CAL = 24.09 % OPACITYP. L. C. F. = 0.911

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER



OUTPUT DEVICE (DAS)



AVERAGING INTERVAL MIN _____ MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

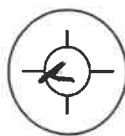
* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

(3) On-Stack Checks

A. LED CURRENT 5.781 (S2)OK ☒6 mA
~~≤ 40 mA~~

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☒	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☐	☐	☐	☐	☐

C. Optical Head
Alignment as foundRetro
Alignment as found

	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☒
ADJUSTED	☐	☐

COMMENTS:

E-7

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒E. **INSTALL** CAL KIT FIXTURE OK ☒F. PERFORM BACKGROUND SET OK ☒G. PERFORM NORMAL SET OK ☒H. PERFORM ZERO SET OK ☒I. CHECK CAL ZERO VALUE 0000 U4 Extended Status CodeOK ☒J. COMMAND CAL CYCLE OK ☒CAL CYCLE RESULTS ZERO -0.20 UPSCALE 25.04OK ☐

K. CAL KIT READINGS

PLCF = 0.911 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	0.00	15.2	25.2	49.8	100.0
CORRECTED VALUE	0.00	13.95	23.24	46.82	100.0
LightHawk® READING	-0.10	14.54	23.69	47.03	100.38
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	-0.10	0.69	0.45	0.21	0.38

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVEB. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION E-8SERVICE PERSON M. CHADWEN / M. LEUZ SERIAL # 5601968DATE 9/9/25 TIME 15:00

(1) A. REASON FOR CALIBRATION

QUARTERLY ☐ EMERGENCY ☐ INSTALL ☐ OTHER ☒

EXPLAIN: SEMI-ANNUAL

(2) Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>7.62</u> %	<u>7.72</u> %	(ONLINE)
AS LEFT	<u>4.23</u> %	<u>4.25</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD OFF (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.029</u>	<u>-0.01</u>	OPACITY
2. UPSCALE CAL	<u>34.33</u>	<u>32.31</u>	OPACITY
3. DUST COMP	<u>0.029</u>	<u>-0.01</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>34.30</u>	<u>33.60</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>0.911</u>	<u>0.911</u>	

E-8

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.97 % OPACITY DUST COMP = N/A % OPACITY
 UPSCALE CAL = 34.44 % OPACITY P. L. C. F. = 0.911

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH	MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒

AVERAGING INTERVAL MIN _____ MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

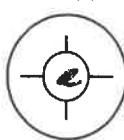
(3) On-Stack Checks

A. LED CURRENT 5.207 (S2) OK ☒ Count ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☒	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☐	☐	☐	☐	☐

C. Optical Head Alignment as found Retro Alignment as found



	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☒
ADJUSTED	☐	☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒E. **INSTALL** CAL KIT FIXTURE OK ☒F. PERFORM BACKGROUND SET OK ☒G. PERFORM NORMAL SET OK ☒H. PERFORM ZERO SET OK ☒I. CHECK CAL ZERO VALUE ~~0.00~~ U4 Extended Status CodeOK ☒J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS

ZERO -0.19UPSCALE 33.30OK ☐

K. CAL KIT READINGS

PLCF = 0.911 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE	0.00	15.3	25.1	49.8	100.0
CORRECTED VALUE	0.00	14.04	23.15	46.62	100.0
LightHawk® READING	-0.01	13.78	22.46	47.03	100.28
OUTPUT VALUE (DAS)			23.11	46.79	
DIFFERENCE (+/- 2.0 %)	-0.01	-0.26	0.54	0.44	0.28

L. **REMOVE** CAL KIT FIXTUREOK ☐-0.04 0.17

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE
VALUES ABOVEOK ☐

B. FILL IN OPACITY READINGS SECTION 2A

"AS LEFT"

OK ☐

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELLO LOCATION NISERVICE PERSON M. CAUDWELL / M. LEWIS SERIAL # 5603218DATE 9/8/25 TIME 10:00

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☒

EXPLAIN:

SEMI ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>3.38</u> %	<u>3.43</u> %	<u>(ONLINE)</u>
AS LEFT	<u>5.30</u> %	<u>5.31</u> %	

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD OK (MAIN DISPLAY SCREEN)

EXPLAIN

NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.048</u>	<u>-0.022</u>	OPACITY
2. UPSCALE CAL	<u>29.49</u>	<u>26.49</u>	OPACITY
3. DUST COMP	<u>0.481</u>	<u>-0.022</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>30.00</u>	<u>26.50</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

101

LIGHTHAWK® 560ES OPACITY/DUST MONITOR

PAGE 2 OF 3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.35 % OPACITY

DUST COMP = NA % OPACITY

UPSCALE CAL = 29.80 % OPACITY

P. L. C. F. = 1.00

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN _____ MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

(3) On-Stack Checks

A. LED CURRENT 32.01 (S2) OK ☒ ≤ 40mA

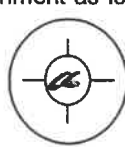
B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☒	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☐	☐	☐	☐	☐

C. Optical Head Alignment as found



Retro Alignment as found



	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☒
ADJUSTED	☐	☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE 0.26 U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO 0.26 UPSCALE 27.01

OK ☒

K. CAL KIT READINGS PLCF = 1.00 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE					
CORRECTED VALUE	0.00	15.70	25.20	50.30	100.0
LightHawk® READING	0.42	16.48	25.28	50.46	98.18
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	0.42	0.78	0.08	0.16	1.82

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVE

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELLO LOCATION NZSERVICE PERSON M. CAUDWELL / M. LEUZ SERIAL # 5603219DATE 9/8/25 TIME 16:00

(1) A. REASON FOR CALIBRATION

QUARTERLY ☐ EMERGENCY ☐ INSTALL ☐ OTHER ☒

EXPLAIN: SEMI ANNUAL

(2) Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>5.33</u> %	<u>5.50</u> %	(ONLINE)
AS LEFT	<u>5.85</u> %	<u>5.84</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>-0.001</u>	<u>0.003</u>	OPACITY
2. UPSCALE CAL	<u>22.55</u>	<u>22.39</u>	OPACITY
3. DUST COMP	<u>-1.67</u>	<u>0.003</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>21.20</u>	<u>22.35</u>	% OPACITY <u>23.35</u>
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

LIGHTHAWK® 560ES OPACITY/DUST MONITOR

PAGE 2 OF 3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = -0.4 % OPACITY

DUST COMP = N/A % OPACITY

UPSCALE CAL = 23.33 % OPACITY

P. L. C. F. = 1.00

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN _____ MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

(3) On-Stack Checks

A. LED CURRENT 35.00 (S2) OK ☒ ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☒	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☐	☐	☐	☐	☐

C. Optical Head
Alignment as found



Retro
Alignment as found



		OPTICAL ALIGNMENT	
		HEAD	RETRO
OK	☒	☒	☒
ADJUSTED	☐	☐	☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE ~~0.00~~ U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO 0.19 UPSCALE 23.20

OK ☒

K. CAL KIT READINGS PLCF = 1.00 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE					
CORRECTED VALUE	<u>0.00</u>	<u>15.00</u>	<u>24.60</u>	<u>49.70</u>	<u>100.0</u>
LightHawk® READING	<u>0.23</u>	<u>16.27</u>	<u>25.46</u>	<u>49.92</u>	<u>98.14</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.23</u>	<u>1.27</u>	<u>0.86</u>	<u>0.22</u>	<u>-1.86</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE OK ☒
VALUES ABOVE

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION N3SERVICE PERSON M. CHOWELL / M. LEUZ SERIAL # 5603220DATE 9/8/25 TIME 11:35

(1)

A. REASON FOR CALIBRATION

QUARTERLY ☐EMERGENCY ☐INSTALL ☐OTHER ☒EXPLAIN: SEM - ANNUAL

(2)

Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>1.63</u> %	<u>0.0</u> %	(OFFLINE)
AS LEFT	<u>0.59</u> %	<u>0.0</u> %	(OFFLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD 0000 (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>-0.01</u>	<u>0.01</u>	OPACITY
2. UPSCALE CAL	<u>31.00</u>	<u>31.40</u>	OPACITY
3. DUST COMP	<u>-0.01</u>	<u>0.01</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>31.00</u>	<u>31.00</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

LIGHTHAWK® 560ES OPACITY/DUST MONITOR

PAGE 2 OF 3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.48 % OPACITY

DUST COMP = MA % OPACITY

UPSCALE CAL = 31.40 % OPACITY

P. L. C. F. = 1.00

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN _____ MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

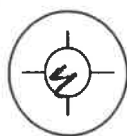
(3) On-Stack Checks

A. LED CURRENT 35.19 (S2) OK ☒ ≤ 40mA

B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☒	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☐	☐	☐	☐	☐

C. Optical Head Alignment as found Retro Alignment as found



	OPTICAL ALIGNMENT	
	HEAD	RETRO
OK	☒	☒
ADJUSTED	☐	☐

COMMENTS:

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒E. **INSTALL** CAL KIT FIXTURE OK ☒F. PERFORM BACKGROUND SET OK ☒G. PERFORM NORMAL SET OK ☒H. PERFORM ZERO SET OK ☒I. CHECK CAL ZERO VALUE ~~check~~ U4 Extended Status CodeOK ☒J. COMMAND CAL CYCLE OK ☒CAL CYCLE RESULTS ZERO 0.48 UPSCALE 31.40OK ☒

K. CAL KIT READINGS

PLCF = 1.00 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE					
CORRECTED VALUE	<u>0.00</u>	<u>14.90</u>	<u>25.50</u>	<u>49.30</u>	<u>100.0</u>
LightHawk® READING	<u>0.22</u>	<u>15.15</u>	<u>26.04</u>	<u>49.97</u>	<u>100</u>
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	<u>0.22</u>	<u>0.25</u>	<u>0.56</u>	<u>0.67</u>	<u>0.00</u>

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE VALUES ABOVE OK ☒B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

Rev. 1/26/15

PAGE 1 OF 3

TELEDYNE MONITOR LABS

ON-STACK CALIBRATION CHECKLIST for *LightHawk*® 560ES OPACITY SYSTEMPLANT NAME BELCO LOCATION N4SERVICE PERSON M. CHANDLER / M. LEWIS SERIAL # 5603221DATE 9/8/25 TIME 11:35

(1) A. REASON FOR CALIBRATION

QUARTERLY ☐ EMERGENCY ☐ INSTALL ☐ OTHER ☒

EXPLAIN: SEMI ANNUAL

(2) Enhanced Remote Display Checks

A. Current Opacity Readings (MAIN DISPLAY)

	INST OPACITY	AVG OPACITY	
AS FOUND	<u>5.16</u> %	<u>5.18</u> %	(ONLINE)
AS LEFT	<u>5.21</u> %	<u>5.19</u> %	(ONLINE)

B. FAULT INDICATOR'S (LED's)

	FAULTS	ALARM
ON	☐	☐
OFF	☒	☒

C. STATUS WORD OK (MAIN DISPLAY SCREEN)EXPLAIN NORMAL

D. CURRENT CALIBRATION VALUES (From MAIN DISPLAY page 2)

	BEFORE	AFTER	
1. CURRENT CAL ZERO	<u>0.015</u>	<u>-0.03</u>	OPACITY
2. UPSCALE CAL	<u>35.17</u>	<u>35.69</u>	OPACITY
3. DUST COMP	<u>0.015</u>	<u>-0.03</u>	OPACITY

E. CALIBRATION SET POINTS (from the VIEW SYSTEM PROPERTIES screen)

	BEFORE	AFTER	
1. CAL ZERO SET POINT	<u>0.00</u>	<u>0.00</u>	% OPACITY
2. UPSCALE SET POINT	<u>34.40</u>	<u>35.70</u>	% OPACITY
3. CAL FAIL LEVEL	<u>2.00</u>	<u>2.00</u>	% OPACITY
4 P. L. C. F.	<u>1.00</u>	<u>1.00</u>	

LIGHTHAWK® 560ES OPACITY/DUST MONITOR

PAGE 2 OF 3

F. CHECK THE PERMANENT DATA RECORD FOR THE LAST CAL RESULTS

ZERO CAL = 0.13 % OPACITY

DUST COMP = N/A % OPACITY

UPSCALE CAL = 35.28 % OPACITY

P. L. C. F. = 1.00

G. ANALOG OUTPUTS ENHANCED REMOTE DISPLAY

CHECKED WITH

MULTIMETER	☐	OUTPUT DEVICE (DAS)	☒
------------	-----------------------	---------------------	----------------------------------

AVERAGING INTERVAL MIN _____ MIN ("VIEW SYSTEM PROPERTIES" screen)

	*SELECTION	*WITH CAL? (Y/N/EXP)	ADJUSTED? (Y/N)
CHANNEL 1			
CHANNEL 2			
CHANNEL 3			
CHANNEL 4			

* Viewed on "ANALOG OUTPUT 1,2" and "ANALOG OUTPUT 3,4" screens

(3) On-Stack Checks

A. LED CURRENT 36.41 (S2)

OK ☒ ≤ 40mA

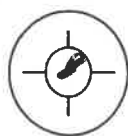
B. INSPECT

	PURGE AIR FILTERS	FLEX HOSES	MOUNTING TUBES	PURGE SHUTTERS	DESIC- CATOR
OK	☒	☒	☒	☒	☒
CLEANED	☐	☐	☐	☐	☐
REPLACED	☐	☐	☐	☐	☐

C. Optical Head
Alignment as found



Retro
Alignment as found



OPTICAL ALIGNMENT	
	HEAD
OK	☒
ADJUSTED	☐

COMMENTS:

N4

APPENDIX B, MAINTENANCE CHECK SHEETS

PAGE 3 OF 3

D. CLEAN: RETRO ☒ EXIT WINDOW ☒ CAL MECH ☒ CAL KIT ☒

E. **INSTALL** CAL KIT FIXTURE OK ☒

F. PERFORM BACKGROUND SET OK ☒

G. PERFORM NORMAL SET OK ☒

H. PERFORM ZERO SET OK ☒

I. CHECK CAL ZERO VALUE ~~0.00~~ U4 Extended Status Code

OK ☒

J. COMMAND CAL CYCLE OK ☒

CAL CYCLE RESULTS ZERO 0.13 UPSCALE 35.66

OK ☒

K. CAL KIT READINGS PLCF = 1.00 (F7)

	ZERO	LOW	MID	HIGH	FS
ATTENUATOR VALUE					
CORRECTED VALUE	0.60	15.20	25.20	49.70	100.0
LightHawk® READING	0.30	15.75	26.14	49.91	98.0
OUTPUT VALUE (DAS)					
DIFFERENCE (+/- 2.0 %)	0.30	0.55	0.94	0.21	2.00

L. **REMOVE** CAL KIT FIXTURE OK ☒

(4) DATA COLLECTION

A. RE-CHECK OUTPUT DEVICE VALUES ABOVE OK ☒

B. FILL IN OPACITY READINGS SECTION 2A "AS LEFT" OK ☒

NOTES OR RECOMMENDATIONS :

*PERFORMED
CLEAR STACK*

Appendix II– Visible Emissions Certificates



VISIBLE EMISSIONS EVALUATOR

Kascia Dasilva

This is to certify that the above named observer has met the specifications of Federal Reference Method 9 and is qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates, Inc. of Raleigh, N.C. This certificate is valid for six months from date of issue.

498450

Certificate #

WHI468552

Student ID Number

8/13/2024

Date of Certification

Raleigh, NC

Location

2/12/2025

Certification Expiration Date

8/21/2018

Last Lecture

Jody Monk
General Manager



VISIBLE EMISSIONS EVALUATOR

Hannah Lampit

This is to certify that the above named observer has met the specifications of Federal Reference Method 9 and is qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates, Inc. of Raleigh, N.C. This certificate is valid for six months from date of issue.

502931

Certificate #

LAM783491

Student ID Number

2/11/2025

Date of Certification

Raleigh, NC

Location

8/13/2025

Certification Expiration Date

2/6/2023

Last Lecture

Jody Monk
General Manager



VISIBLE EMISSIONS EVALUATOR

Hannah Lampit

This is to certify that the above named observer has met the specifications of Federal Reference Method 9 and is qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates, Inc. of Raleigh, N.C. This certificate is valid for six months from date of issue.

506182

Certificate #

LAM783491

Student ID Number

8/12/2025

Date of Certification

Raleigh, NC

Location

2/11/2026

Certification Expiration Date

2/6/2023

Last Lecture

Jody Monk
General Manager

Digital Still Camera Operator

In accordance with the criteria set forth in U.S. Environmental Protection Agency
Alternative Method 082 and utilizing ASTM D7520-09

GABRIEL CABRALL

was certified to operate a digital camera for the purpose of recording
Visible Emissions Observations on:

October 4, 2017

This certification is renewed and validated annually, by the Virtual
Technology LLC, Opacity Laboratory, upon the receipt of digital
images compliant with training received.



A handwritten signature in blue ink, appearing to read "John D. [unclear]".

Certifier, Virtual Technology LLC



Digital Still Camera Operator

In accordance with the criteria set forth in U.S. Environmental Protection Agency
Alternative Method 082 and utilizing ASTM D7520-16

KASCIA DASILVA

was certified to operate a digital camera for the purpose of recording
Visible Emissions Observations on:

September 12, 2018

This certification is renewed and validated annually, by the Virtual
Technology LLC, Opacity Laboratory, upon the receipt of digital
images compliant with training received.



A handwritten signature in blue ink, likely belonging to the certifier, Virtual Technology LLC.

Certifier, Virtual Technology LLC



Digital Camera Operator

In accordance with the criteria set forth in U.S. Environmental Protection Agency
Alternative Method 082 and utilizing ASTM D7520-16

HANNAH LAMPIT

was certified to operate a digital still camera for the purpose of recording
Visible Emissions Observations on:

September 18, 2023

This certification is renewed and validated annually, by the Virtual
Technology LLC, Opacity Laboratory, upon the receipt of digital
images compliant with training received.



A handwritten signature in black ink, appearing to read "Ali A. Ali", positioned above a horizontal line.

Certifier, Virtual Technology LLC



Digital Camera Operator

In accordance with the criteria set forth in U.S. Environmental Protection Agency
Alternative Method 082 and utilizing ASTM D7520-16

SHANE ROBINSON

was certified to operate a digital still camera for the purpose of recording
Visible Emissions Observations on:

NOVEMBER, 2025

This certification is renewed and validated annually, by the Virtual
Technology LLC, Opacity Laboratory, upon the receipt of digital
images compliant with training received.



A handwritten signature in black ink, appearing to read "Shane Robinson", written over a horizontal line.

Certifier, Virtual Technology LLC

