MS4 General Permit Town of Lisbon 2022 Annual Report

New MS4 Permittee Permit Number GSM 000018

January 1, 2022 – December 31, 2022

Primary MS4 Contact: Mr. Thomas Sparkman, First Selectman, (860) 376-3400 email: tsparkman@lisbonct.com

This report documents the town of Lisbon's efforts to comply with the conditions of the MS4 General Permit to the maximum extent practicable (MEP) from January 1, 2022 to December 31, 2022.

Part I: Summary of Minimum Control Measure Activities

1. Public Education and Outreach (Section 6(a)(1) / page 19)

1.1 BMP Summary

ВМР	Activities in current reporting period	Sources Used (if applicable)	Method of Distribution	Audience (and number of people reached)	Measurable Goal	Department / Person Responsible	Additional details
1-1 Implement public education and outreach	Maintain town website with information on program and informational links		Town website	General Public	Maintain website	First Selectman	
1-2 Address education/ outreach for pollutants of concern	Maintain town website with information on program and informational links appropriate to pollutants of concern		Town website	General Public	Maintain website	First Selectman /Engineering Consultant	

1.2 Describe any Public Education and Outreach activities planned for the next year, if applicable.

2. Public Involvement/Participation (Section 6(a)(2) / page 21)

ВМР	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Location Posted	Additional details
2-1 Final Stormwater Management Plan publicly available	Complete	Annual Report advertised, completed and posted	Storm water Management Plan posted on website	First Selectman/ Engineering Consultant	Aril 1, 2022	https://www.lisb onct.com/ms4- stormwater	
2-2 Comply with public notice requirements for Annual Reports (annually by 2/15)	Complete	Annual Report advertised, completed and posted	Annual Reports Posted on website	First Selectman/ Engineering Consultant	Feb 15, 2022	https://www.lisb onct.com/ms4- stormwater	

2.2 Describe any Public Involv	vement/Participation	n activities planned for	the next year, if a	oplicable.	
		7			

3. Illicit Discharge Detection and Elimination (Section 6(a)(3) and Appendix B / page 22)

ВМР	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Additional details
3-1 Develop written IDDE program (Due 7/1/19)	Complete	None	Develop written plan of IDDE program	Town's Engineering Consultant	May 2019 (Revised January 2020)	
3-2 Develop list and maps of all MS4 stormwater outfalls in priority areas (Due 7/1/20)	Complete	None	GIS layer of MS4 stormwater outfalls in priority areas	Town's Engineering Consultant	April 2019	Maps are available on the Town's website.
3-3 Implement citizen reporting program (Ongoing)	Ongoing	None	GIS layer of reports	First Selectman/ Town's Engineering Consultant	Ongoing	
3-4 Establish legal authority to prohibit illicit discharges (Due 7/1/19)	Complete	None	Adoption of town ordinance with enforcement provisions	Consulting Town planner/Town Attorney	Sept 2021	Ordinance has established legal authority and support land use regulation amendments in progress
3-5 Develop record keeping system for IDDE tracking (Due 7/1/17)	Complete	None	Develop GIS layer	Town's Engineering Consultant	April, 2019	
3-6 Address IDDE in areas with pollutants of concern	Not Commenced	None	Investigate outfalls with IDDE, build GIS layer	First Selectman/ Town's Engineering Consultant	Ongoing through term of permit	

3.2 Describe any IDD	E activities plan	ned for the next	year, if appli	cable.				8
The written program wi throughout the permit t Maintain master IDDE t Begin catchment invest	term. tracking spreadshe					t; will update the written IDDE page process.	rogram	as needed
occurring July 2017 that do not consist en	hrough end of rentirely of stormy	eporting period vater or unconta	using the follo minated grou	owing table. Illicit on the state of the sta	discharges are ar ose discharges ic	curring during the reporting by unpermitted discharge to dentified in Section 3(a)(2) o ge from an identified MS4.	water	s of the state
Location (Lat long/ street crossing /address and receiving water)	Date and duration of occurrence	Discharge to MS4 or surface water	Estimated volume discharged	Known or suspected cause / Responsible party	Corrective meas dates)	ures planned and completed (in	clude	Sampling data (if applicable)
3.4 Provide a summal Method used to track illicit discharge reports	Location an	ken to address sed d nature of structur septic systems		using the table bel		Impacted waterbody or watershed, if known		pt. / Person
3 1	•							
3.5 Briefly describe the	e method and ef	fectiveness of sai	d method used	d to track illicit disc	harge reports.		1	
						,		

3.6 IDDE reporting metrics

Metrics	
Estimated or actual number of MS4 outfalls	91 (Mapped)
Estimated or actual number of interconnections	3 (Mapped)
Outfall mapping complete	100%
Interconnection mapping complete	100%
System-wide mapping complete (detailed MS4 infrastructure)	100%
Outfall assessment and priority ranking	100% (Priority Areas)
Dry weather screening of all High and Low priority outfalls complete	100%
Catchment investigations complete	0%
Estimated percentage of MS4 catchment area investigated	0%

3.7 Briefly describe the IDDE training for employees involved in carrying out IDDE tasks including what type of training is provided and how often it is given (minimum once per year).

Training is planned for 2023.	

4. Construction Site Runoff Control (Section 6(a)(4) / page 25)

ВМР	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Additional details
4-1 Implement, upgrade, and enforce land use regulations or other legal authority to meet requirements of MS4 general permit (Due 7/1/20)	Complete	None	Adopt upgraded land use regulations for erosion control, storm water mgt, LID	Town planner/First Selectman	Effective 9/1/21	Measures will protect/improve water quality, compliance with latest guidelines and enforce long term maintenance
4-2 Develop/Implement plan for interdepartmental coordination in site plan review and approval (Ongoing)	Completed and ongoing	None	Standardized review and enforcement process	Town planner/First Selectman	July 1, 2017	Planner coordinates and documents staff plan review process with relevant review agencies
4-3 Review site plans for stormwater quality concerns (Ongoing)	Ongoing	None	Standardized review of plans	Town planner/First Selectman	July 1, 2017	Planner has improved review process and monitoring of development plans/files
4-4 Conduct site inspections (Ongoing)	Ongoing	None	Standardize approach to inspections	Town planner/First Selectman	July 1, 2017	Planner and staff assess control measures during and after construction with detailed checklists
4-5 Implement procedure to allow public comment on site development (Ongoing)	Completed	Provision on website to display plans for public comment	Standardize project access to public on municipal website	Town planner/First Selectman	January 1, 2018	Location on website is in proximity to other storm water information and includes information for projects not presented at public hearings/meetings
4-6 Implement procedure to notify developers about DEEP construction stormwater permit (Ongoing)	Completed	Checklists in place for applications at submittal stage and preconstruction stage	Standardize notice throughout process	Town planner/First Selectman	January 1, 2018	Notice of state requirements is provided to developers before and after local approvals,

					and before construction begins
4.2 Describe any Constru	ıction Site Ru	unoff Control activities planned	for the next year,	if applicable.	

5. Post-construction Stormwater Management (Section 6(a)(5) / page 27)

ВМР	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Additional details
5-1 Establish and/or update legal authority and guidelines regarding LID and runoff reduction in site development planning (Due 7/1/22)	Complete	None	Provide checklist and guidelines document and adopt land use regulations	Town planner	Effective 9/1/21	Checklist and guidelines encourage good planning and design, minimize land disturbances, disconnect impervious areas and generate retrofits
5-2 Enforce LID/runoff reduction requirements for development and redevelopment projects (Due 7/1/22)	Complete	None	Disconnect impervious areas	Town planner	Effective 9/1/21	Revisions to stormwater mgt plan regulations include new DCIA standards
5-3 Identify retention and detention ponds in priority areas (Due 7/1/20)	In progress	Town wide identification under way	GIS layer completed	First Selectman/ planning staff/CLA	Summer 2023	
5-4 Implement long- term maintenance plan for stormwater basins and treatment structures (Ongoing)	In progress	BMPS being developed	Plans and BMPS on file	First Selectman/ planning staff/Engineering Consultant	Summer 2023	
5-5 DCIA mapping (Due 7/1/20)	In Progress	DCIA Tracking continues to be monitored and updated	GIS layer complete	Engineering Consultant		

5-6 Address post- construction issues in areas with pollutants of concern	None	Record of issues addressed	CLA/First Selectman/ Planning staff	July 1, 2023	
--	------	----------------------------------	---	--------------	--

2.2 Describe any Post-Construction Stormwater Management activities planned for the next year, if applicable.						

5.3 Post-Construction Stormwater Management reporting metrics

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/post-construction.htm. Scroll down to the DCIA section.

Metrics	
Baseline (2012)Directly Connected Impervious Area (DCIA)	268 acres
DCIA disconnected (redevelopment plus retrofits)	O acres this year /O acres total
Retrofit projects completed	0
DCIA disconnected	0% this year / 0% total since 2012
Estimated cost of retrofits	\$0
Detention or retention ponds identified	0 this year /0 total

5.4 Briefly describe the method to be used to determine baseline DCIA.

The baseline DCIA for each watershed has been determined using the Sutherland Equations as presented in the Small MS4 Permit Technical Support Document, Revised April 2014 (Original Document, April 2011)

6. Pollution Prevention/Good Housekeeping (Section 6(a)(6) / page 31)

вмр	Status (Complete, Ongoing, In Progress, or Not started)	Activities in current reporting period	Measurable Goal	Department / Person Responsible	Date completed or projected completion date (include the start date for anything that is 'in progress')	Additional details
6-1 Develop/implement formal employee training program (Ongoing)	Ongoing	None	Yearly training for staff	First Selectman/CLA	Ongoing	
6-2 Implement MS4 property and operations maintenance (Ongoing)	In Progress	Execute Existing SWPPS for town properties	Document execution	First Selectman	Ongoing	
6-3 Implement coordination with interconnected MS4s	Not begun	None	Document and create GIS layer. Make available to CTDOT as needed.	CLA	Ongoing	
6-4 Develop/implement program to control other sources of pollutants to the MS4	Not begun	None		First Selectman/CLA	Ongoing	
6-5 Evaluate additional measures for discharges to impaired waters*	Not begun	None		First Selectman/CLA	Ongoing	
6-6 Track projects that disconnect DCIA (Ongoing)	Not begun	None		First Selectman/CLA	Ongoing	
6-7 Implement infrastructure repair/rehab program (Due 7/1/21)	Ongoing	None		First Selectman/CLA	Ongoing	
6-8 Develop/implement plan to identify/prioritize retrofit projects (Due 7/1/20)	In Progress	None		First Selectman/CLA	July 2023	

6-9 Implement retrofit projects to disconnect 2% of DCIA (Due 7/1/22)	Not begun	None		First Selectman	,	
6-10 Develop/implement street sweeping program (Ongoing)	Complete	Annual sweeping	Document to file	First Selectman	Ongoing	
6-11 Develop/implement catch basin cleaning program (Ongoing)	Complete	Cleaned 33% of basins, GPS location and volumes	GIS layer developed	First Selectman	Ongoing	
6-12 Develop/implement snow management practices (Due 7/1/18)	Complete	None		First Selectman	Ongoing	

6.2 Describe any Pollution Prevention/Good Housekeeping activities planned for the next year, if applicable.

Ongoing street sweeping and catch basin clean out and location.	. DPW staff will be trained and SWPPS followed at town sites.	

6.3 Pollution Prevention/ Good Housekeeping reporting metrics

Metrics	
Employee training provided for key staff	Not Provided in 2022
Street sweeping	Sec. 3 (4-2) (5)
Curb miles swept	56 (Approx.)
Volume (or mass) of material collected	Not Known
Catch basin cleaning	
Total catch basins in priority areas (value will be less than or equal to total catch basins town or institution-wide)	82 (Mapped)
Total catch basins town- (or institution-) wide	417 (Mapped) 554 (According to Town)
Catch basins inspected	417
Catch basins cleaned	417
Volume (or mass) of material removed from all catch basins	Not Known
Volume removed from catch basins to impaired waters (if known)	Not Known
Snow management	
Type(s) of deicing material used	Sand/Salt
Total amount of each deicing material applied	209 (Salt) 703 (Sand)
Type(s) of deicing equipment used	
Lane-miles treated (A lane-mile is a mile of roadway in a single driving lane)	56
Snow disposal location	N/A
Staff training provided on application methods & equipment	OSHA
Municipal turf management program actions (for permittee properties in basins with N/P impairments)	
Reduction in application of fertilizers (since start of permit)	0
Reduction in turf area (since start of permit)	0
Lands with high potential to contribute bacteria (dog parks, parks with open water, & sites with failing septic systems)	
Cost of mitigation actions/retrofits	0

6.4 Catch basin cleaning program

Provide any updates or modifications to your catch basin cleaning program.

All catch basins are cleaned annually. No optimization required.

6.5 Retrofit program

Briefly describe th and the total DCIA	ne Retrofit Program identification and prioritization process, the projects selected for implementation, the rationale for the selection of those projects A to be disconnected upon completion of each project. (Due 7/1/20)
List of detention	basins has been collated. Basins will be investigated to determine if they can be modified to infiltrate WQV.
Describe plans for	continuing the Retrofit program and how to achieve a goal of 1% DCIA disconnection annually in future years. (Due 7/1/22)

Part II: Impaired waters investigation and monitoring

1. Impaired waters investigation and monitoring program

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

1.1 Indicate which stormwater pollutant(s) of concern occur(s) in your municipality or institution. This data is available on the MS4 map viewer: http://s.uconn.edu/ctms4map.

Nitrogen/ Phosphorus ⊠ ⊠	Bacteria 🗌	Mercury	Other Pollutant of Concern

1.2 Describe program status

Discuss 1) the status of monitoring work completed, 2) a summary of the results and any notable findings, and 3) any changes to the Stormwater Management Plan based on monitoring results.

Inspection of outfalls in proximity to impaired waters located in Lisbon was completed in March 2019. These inspections concluded only one directly connected outfall (#139) discharging to impaired waters was found. Monitoring of this outfall commenced in 2019 year in accordance with Section 6(i) of the General Permit. Subsequent monitoring was performed 11/23/20. Analysis determined that all pollutant levels were below benchmarks. No further monitoring has been performed.

2. Screening data for outfalls to impaired waterbodies (Section 6(i)(1) / page 41)

2.1 Screening data

Complete the table below to report data for any wet weather sampling completed for MS4 outfalls that discharge directly to a stormwater impaired waterbody during the reporting period. For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the yellow column of the Monitoring comparison chart and the Impaired waters monitoring flowchart.

Each Annual Report will add on to the previous year's data showing a cumulative list of sampling data. You may also attach an excel spreadsheet with the same data rather than copying it into this table. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall ID	Latitude / Longitude	Sample date	Parameter (Nitrogen, Phosphorus, Bacteria, or Other pollutant of concern)	Results	Name of Laboratory (if used)	Follow-up required? *
139	-72.041869 41.602584	11/05/19	Nitrogen Phosphorus	0.53 mg/l 0.135 mg/l	Phoenix Labs Phoenix Labs	No No
139	-72.041869 41.602584	11/23/20	Nitrogen Phosphorus	0.18 mg/l 0.08 mg/l	Phoenix Labs Phoenix Labs	No No

Follow-up investigation required (last column) if the following pollutant thresholds are exceeded:

Pollutant of concern	Pollutant threshold			
Nitrogen	Total N > 2.5 mg/l			
Phosphorus	Total P > 0.3 mg/l			
Bacteria (fresh waterbody)	 E. coli > 235 col/100ml for swimming areas or 410 col/100ml for all others Total Coliform > 500 col/100ml 			
Bacteria (salt waterbody)	 Fecal Coliform > 31 col/100ml for Class SA and > 260 col/100ml for Class Enterococci > 104 col/100ml for swimming areas or 500 col/100 for all or 			
Other pollutants of concern				

3. Follow-up investigations (Section 6(i)(1)(D) / page 43)

Provide the following information for outfalls exceeding the pollutant threshold.

Outfall ID	Status of drainage area investigation	Control
	otatas of aramage area investigation	Control measure to address impairment

4. Prioritized outfall monitoring (Section 6(i)(1)(D) / page 43)

Once outfall sampling has been completed for at least 50% of outfalls to impaired waters, identify 6 of the highest contributors of any pollutants of concern. Begin monitoring these outfalls on an annual basis by July 1, 2021. You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall	Latitude / Longitude	Sample Date	Parameter(s)	Results	Name of Laboratory (if used)
					-

Part III: Additional IDDE Program Data

1. Assessment and Priority Ranking of Catchments data (Appendix B (A)(7)(c) / page 5)

Provide a list of all catchments with ranking results (DEEP basins may be used instead of manual catchment delineations).

Outfall ID	Waterbody	DEEP Basin	Category	Ranking
33	Versailles Pond	CT3805-00-3-L7_01	Low Priority	5
36	Versailles Pond	CT3805-00-3-L7_01	Low Priority	5
37	Shetucket River	CT3800-00_01	Low Priority	5
38	Shetucket River	CT3800-00_01	Low Priority	5
78	Quinebaug River	CT3700-00_01	Low Priority	5
79	Shetucket River	CT3800-00_01	Low Priority	5 .
83	Shetucket River	CT3800-00_01	Low Priority	5
84	Shetucket River	CT3800-00_01	Low Priority	5
85	Shetucket River	CT3800-00_01	Low Priority	5
86	Shetucket River	CT3800-00_01	Low Priority	5
87	Shetucket River	CT3800-00_01	Low Priority	5
92	Shetucket River	CT3800-00_01	Low Priority	5
93	Shetucket River	CT3800-00_01	Low Priority	5
97	Shetucket River	CT3800-00_01	Low Priority	5
98	Shetucket River	CT3800-00_01	Low Priority	5
99	Shetucket River	CT3800-00_01	Low Priority	5
102	Shetucket River	CT3800-00_01	Low Priority	5
128	Shetucket River	CT3800-00_01	Low Priority	5
138	Shetucket River	CT3800-00_01	Low Priority	5
139	Versailles Pond	CT3805-00-3-L7_01	Low Priority	5
140	Quinebaug River	CT3700-00_01	Low Priority	5
141	Versailles Pond	CT3805-00-3-L7_01	Low Priority	5
142	Shetucket River	CT3800-00_01	Low Priority	5
146	Quinebaug River	CT3700-00_01	Low Priority	5
147	Shetucket River	CT3800-00_01	Low Priority	5
148	Shetucket River	CT3800-00 01	Low Priority	5

2. Outfall and Interconnection Screening and Sampling data (Appendix B (A)(7)(d) / page 7)

2.1 Dry weather screening and sampling data from outfalls and interconnections

For details on this requirement, visit https://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the blue column of the Monitoring comparison chart and the IDDE baseline monitoring flowchart.

Provide sample data for outfalls where flow is observed. Only include Pollutant of concern data for outfalls that discharge into stormwater impaired waterbodies. You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall / Interconnection ID	Latitude / Longitude	Screening / sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or enterococcus	Surfactants	Water Temp	Pollutant of concern	If required, follow-up actions taken
92	72.039277 41.558203	7/15/2019	0.1	<0.02	141	0	10	0.05	61.3	None	
142	72.038228 41.557842	7/15/2019	0.1	0.04	132	0	41	0	63.6	None	Follow up Required

2.2 Wet weather sample and inspection data

For details on this requirement, visithttps://nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

Provide sample data for outfalls and key junction manholes of any catchment area with at least one System Vulnerability Factor. You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall / Interconnection ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Conductivity	Salinity	E. coli or Enterococcus	Surfactants	Water Temp	Pollutant of concern

3. Catchment Investigation data (Appendix B (A)(7)(e) / page 9)

For details on this requirement, visit www.nemo.uconn.edu/ms4/tasks/monitoring.htm. Refer to the green column of the Monitoring comparison chart and the IDDE catchment investigation flowchart.

3.1 System Vulnerability Factor Summary

For those catchments being investigated for illicit discharges (i.e. categorized as high priority, low priority, or problem) document the presence or absence of System Vulnerability Factors (SVF). If present, report which SVF's were identified. An example is provided below.

Outfall ID	Receiving Water	System Vulnerability Factors

Where SVFs are:

- 1. History of SSOs, including, but not limited to, those resulting from wet weather, high water table, or fat/oil/grease blockages.
- 2. Sewer pump/lift stations, siphons, or known sanitary sewer restrictions where power/equipment failures or blockages could readily result in SSOs.
- 3. Inadequate sanitary sewer level of service (LOS) resulting in regular surcharging, customer back-ups, or frequent customer complaints.
- 4. Common or twin-invert manholes serving storm and sanitary sewer alignments.
- 5. Common trench construction serving both storm and sanitary sewer alignments.
- 6. Crossings of storm and sanitary sewer alignments.
- 7. Sanitary sewer alignments known or suspected to have been constructed with an underdrain system;
- 8. Sanitary sewer infrastructure defects such as leaking service laterals, cracked, broken, or offset sanitary infrastructure, directly piped connections between storm drain and sanitary sewer infrastructure, or other vulnerability factors identified through Inflow/Infiltration Analyses, Sanitary Sewer Evaluation Surveys, or other infrastructure investigations.
- 9. Areas formerly served by combined sewer systems.
- 10. Any sanitary sewer and storm drain infrastructure greater than 40 years old in medium and densely developed areas.
- 11. Widespread code-required septic system upgrades required at property transfers (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).
- 12. History of multiple local health department or sanitarian actions addressing widespread septic system failures (indicative of inadequate soils, water table separation, or other physical constraints of the area rather that poor owner maintenance).

3.2 Key junction manhole dry weather screening and sampling data

You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

Key Junction Manhole ID	Latitude / Longitude	Screening / Sample date	Visual/ olfactory evidence of illicit discharge	Ammonia	Chlorine	Surfactants

3.3 Wet weather investigation outfall sampling data

You may also attach an excel spreadsheet with the same data rather than copying it to this table. If you do attach a spreadsheet, please write "See Attachment" below.

Outfall ID	Latitude / Longitude	Sample date	Ammonia	Chlorine	Surfactants

3.4 Data for each illicit discharge source confirmed through the catchment investigation procedure

Discharge location	Source location	Discharge description	Method of discovery	Date of discovery	Date of elimination	Mitigation or enforcement action	Estimated volume of flow removed

Part IV: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Chief Elected Official or Principal Executive Officer	Document Prepared by
Print name: THOMAS SPANKMAN	Print name: Darren Hayward, P.E.
Signature / Date: 03/d1/d0d3	Signature / Date: Date: 03/21/23
Email: +SPARKMAN & LISBONGT. COM	Email: O dhayward@claengineers.com