



October 09, 2025

Amir Rezvani,
Infratek Solutions Inc.
New Hope, PA | Hampton, NJ

Re: Jeremiah Morrow Bridge Testing Report
TCG Project 25072

Tourney Consulting Group, LLC (TCG) was assigned to collect powder samples and test them by Infratek. TCG team traveled to Cincinnati, Ohio, from September 29 to October 1 to obtain powdered samples from the bridge overlay and to perform ASTM C1218 chloride content testing at the TCG laboratory. This report summarizes the sampling locations on the bridge and presents the chloride testing data for the collected samples.

Field Work

The Jeremiah Morrow Bridge is a reinforced concrete bridge with two independent structures. Each structure contains traffic in one direction. The decks had a cementitious overlay nominally 1 ½ inches thick to act as a wearing surface.

On September 29, 2025 the TCG team traveled to Cincinnati, Ohio, to collect powdered concrete samples from the Jeremiah Morrow Bridge. The fieldwork was completed over two evenings. On Day 1, samples were collected from the southbound bridge, and on Day 2, samples were collected from the northbound bridge.

The agreed-upon procedures involved drilling 0.5-inch-diameter holes and collecting powder samples at three depth intervals: 0 to 0.5 inch, 1 to 1.5 inches, and 2 to 2.5 inches. Samples were obtained from 20 locations on the bridge, with two drill holes made at each location to collect sufficient material for testing.

Approximate sampling locations were determined prior to fieldwork, and the exact drilling locations were recorded during sampling. Tables 1 and 2 present the sampling locations.



Table 1: Sampling Location on Northbound Bridge

	Sample Location		Notes
Location No	Horizontal (ft)	Longitudinal (ft)	
Location 1	16	-18	South approach slab
Location 2	44	40	
Location 3	25	290	
Location 4	8	570	
Location 5	13	975	
Location 6	8	1275	
Location 7	45	1600	
Location 8	5	1800	
Location 9	38	2040	
Location 10	17	2270	North approach slab
General Notes:			
Longitudinal measurements started at the south end of span 1			
The horizontal measurements started at the end of the right shoulder			
The right shoulder on the plans is the traffic right shoulder.			
Right shoulder width = 10ft			
Right lane width = 12ft			
Left lane width = 12ft			
Left shoulder width = 18ft			



Table 2: Sample Location on Southbound Bridge

Location No	Sample Location		Notes
	Horizontal (ft)	Longitudinal (ft)	
Location 1	34	-15	South approach slab
Location 2	34	60	
Location 3	9	280	
Location 4	39	705	
Location 5	35	795	
Location 6	4	1160	
Location 7	44	1395	
Location 8	36	1820	
Location 9	24	2135	
Location 10	37	2265	North approach slab
General Notes:			
Longitudinal measurements started at the south end of span 1			
The horizontal measurements started at the end of the right shoulder			
The right shoulder on the plans is the left traffic shoulder.			
Right shoulder width = 10ft			
Right lane width = 12ft			
Left lane width = 12ft			
Left shoulder width = 18ft			

Laboratory Testing Results

ASTM C1218 was performed on the samples collected. The results are shown in Tables 3 and 4. ASTM C1218 report can be found in the attachments.



Table 3: ASTM C1218 Northbound Results

Sample ID	Depth Increments in Inches					
	0 to 0.5" (A)		1" to 1.5" (B)		2" to 2.5" (C)	
	Chloride Content ppm	Chloride content (% by mass of sample)	Chloride Content ppm	Chloride content (% by mass of sample)	Chloride Content ppm	Chloride content (% by mass of sample)
Location 1	3362	0.336%	373	0.037%	284	0.028%
Location 2	2561	0.256%	500	0.050%	207	0.021%
Location 3	2602	0.260%	1098	0.110%	302	0.030%
Location 4	2899	0.290%	717	0.072%	185	0.019%
Location 5	1809	0.181%	294	0.029%	212	0.021%
Location 6	1081	0.108%	373	0.037%	226	0.023%
Location 7	1565	0.156%	194	0.019%	244	0.024%
Location 8	1581	0.158%	442	0.044%	196	0.020%
Location 9	2911	0.291%	1282	0.128%	356	0.036%
Location 10	4855	0.485%	437	0.044%	292	0.029%

Table 4: ASTM C1218 Southbound Results

Sample ID	Depth Increments in Inches					
	0 to 0.5" (A)		1" to 1.5" (B)		2" to 2.5" (C)	
	Chloride Content ppm	Chloride content (% by mass of sample)	Chloride Content ppm	Chloride content (% by mass of sample)	Chloride Content ppm	Chloride content (% by mass of sample)
Location 1	3809	0.381%	319	0.032%	293	0.029%
Location 2	2531	0.253%	790	0.079%	219	0.022%
Location 3	2915	0.291%	582	0.058%	363	0.036%
Location 4	2610	0.261%	337	0.034%	296	0.030%
Location 5	2713	0.271%	453	0.045%	186	0.019%
Location 6	2381	0.238%	730	0.073%	232	0.023%
Location 7	2836	0.284%	753	0.075%	236	0.024%
Location 8	2224	0.222%	384	0.038%	266	0.027%
Location 9	2390	0.239%	839	0.084%	220	0.022%
Location 10	5287	0.529%	798	0.080%	269	0.027%



Sincerely,

Tourney Consulting Group, LLC

A handwritten signature in black ink, appearing to read "Mohammad Bani Maria".

Mohammad Bani Maria
Research Engineer

CC: Vincent Wheeler, Kyle Stanish

Attachments: ASTM C1218 report



ASTM C 1218 Water-Soluble Chloride Ion Contents (PPM)

Client: Infratek Solutions Inc.

Date Sampled: 9/29 - 9/30

Date Received: 10/1/2025

Date Tested: 10/8/2025

Date Reported: 10/8/2025

Attention: Amir Rezvani

TCG Project No. 25072

Job Description: Jeremiah Morrow Bridge overlay chloride content

Sample Description: Sixty (60) concrete powder samples were taken from bridges by TCG's team. 10 locations with 2 holes each were chosen per bridge. The depth increments are listed below. All samples were dried and crushed as needed to ensure all material passed a #20 Sieve. The Chloride data is reported by mass of sample.

TCG Technician: MW

Northbound Bridge						
Depth Increments in Inches						
	0 to 0.5" (A)		1" to 1.5" (B)		2" to 2.5" (C)	
Sample ID	Chloride Content ppm	Chloride content (%) by mass of sample)	Chloride Content ppm	Chloride content (%) by mass of sample)	Chloride Content ppm	Chloride content (%) by mass of sample)
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Southbound Bridge						
Depth Increments in Inches						
	0 to 0.5" (A)		1" to 1.5" (B)		2" to 2.5" (C)	
Sample ID	Chloride Content ppm	Chloride content (%) by mass of sample)	Chloride Content ppm	Chloride content (%) by mass of sample)	Chloride Content ppm	Chloride content (%) by mass of sample)
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Scale: Mettler Toledo Mod. AB204-S 1119211558

Titration: Mettler Toledo Mod. T-50 B409347785

Carousel: Mettler Toledo Rondo 2A 5126186242

Reviewed By;

Mohammad Bani Maria
Research Engineer