External Pipeline Inspection Form for L5 Straits of Mackinac

General Information			
Date:	08/24/2017	**Contractor:**	Ballard Marine Co
AFE / W.O.#:	20008990	**Company Rep / Inspector:**	Trish McClelland
Segment:	EAS-2	**Water Depth (ft):**	75
Longitude:	[redacted]	**Latitude:**	[redacted]

External Pipe Coating Inspection Results			
Coating Condition	☐ Disturbed Area ☐Dislodged Coating ☐Holiday ☒Other	**Size of anomaly (ft^2):**	0.14 (2.5" x 8")
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
	☐ Disturbed Area ☐Dislodged Coating ☐Holiday	**Size of anomaly (ft^2):**	
Corrosion present:	☐YES ☒NO	**Biota present:**	☒YES ☐ NO
Dislodged coating observed on the lake floor: ☐YES ☒NO		**Lake floor location wrt pipe:**	N/A (pipe is suspended)

Comments/Issues/Discussion

EAS-2 is within span of E-74.

DFT measurements indicate normal coating thickness through majority of area, with one small area of slightly reduced thickness, which may indicate possible dislodgement of outer wrap. This could not be confirmed due to the presence of a white deposit.

The Polatrak CP gun was used to check for coating holiday through the white deposit. CP measurements could not be obtained, indicating the corrosion barrier coating is intact.

It is recommended to revisit this site to destructively remove the white deposit and inspect the coating condition beneath it. This should be performed during the recoating project so that any resulting coating damage can be repaired.

Contractor Signature	Enbridge Representative/ Inspector Signature

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Visual Inspection (General Coating Condition)

For all sections of dislodged coating or holidays, provide pictures below.
Included the date and time stamps associated with video surveillance.





Date:	8/24/17	Frame(HH:MM:SS)	14:11:12	Date:	8/24/17	Frame(HH:MM:SS)	14:38:33

Coating Gauge Information

Manufacturer:	Elcometer Inspection Equip	**Product:**	211 Coating Thickness Gauge
Last Calibrated:	08/09/2017	**Next Calibration Due:**	08/09/2018
Gauge verified prior to use:	☒YES ☐ NO		

Coating Thickness Inspection Data

Thickness Measure (mil)	Area of Interest	Undisturbed Area (< 2 in.)	Undisturbed Area (> 5 ft.)
North End #1	135	130	115
#2	140	130	115
#3	110	140	120
South End #4	117	119	125
#5	130	94	130
#6	70	150	135
Average Thickness	117	127	121

Additional Coating Thickness Inspection Data (A/R)

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Cathodic Protection and Coating Measurements (if Holiday is found) (note: holiday could not be confirmed)					
CP Reading #1 (mV) See note (below)	**-261 -291**	**CP Reading #2 (mV)**	**N/R**	**CP Reading #3 (mV)**	**N/R**
Temperature (°F)	**NR**	**DFT at Feature (mil)**	**≥ 70 avg.117**	**DFT Adjacent to Feature (mil)**	**≥ 94 avg.127**

For all sections of dislodged coating or holidays, provide pictures below. Included the date and time stamps associated with video surveillance.





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Note: CP readings at this feature were recorded with the probe of Polatrak CP gun pressed firmly through the white substance covering the pipe. These readings were identical to 'open water' CP readings, which were recorded with the CP gun probe close to (but not touching) the pipe.