



McCain FOODS USA, Inc.

100 Lee Street
Othello, WA
99344
509-488-9611

Received
Records Management
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State Of WASH.
UTIL. AND TRANSP.
COMMISSION

October 19th, 2022

Amanda Maxwell, Executive Director and Secretary
Washington Utilities and Transportation Commission
P.O. Box 47250
Olympia, WA 98504-7250

Subject: Request for Exemption for Othello 12” HDPE Biogas Pipeline

Dear Ms. Maxwell,

McCain Foods, with support from EverLine Compliance, is applying for exemption from the requirements of 49 CFR 192.59(a)(1), 49 CFR 192.59(d), and 49 CFR 192.63(a) for the Othello 12” HDPE biogas pipeline.

Applicant information
McCain Foods USA, Inc. (Operator)
100 Lee Street
Othello, WA 99344
McCain Plant Engineering Contact: Art Bolduc (509) 318-5342
McCain Technical Contact: Peter Cormier (920) 574-4271
EverLine Compliance Contact: Doug Erickson (719) 639-6639

The pipeline is located in the city of Othello, Adams County, WA. The pipeline begins at the McCain Foods wastewater treatment facility and ends at the processing facility. The total length of the pipeline is approximately 3000 feet.

This is an intrastate pipeline. Portions of the pipeline are installed in the public right-of-way of the City of Othello. Another segment crosses the right-of-way of BNSF railroad. Another segment crosses the Potholes East Canal, a waterway. All right-of-way permits were approved prior to construction of the pipeline. The pipeline is in a Class 3 location. The railroad crossing and canal crossing were installed by horizontal directional drilling (HDD). The HDD profile shows the pipeline to be located at a depth of 41 feet where it crosses the railroad, and a depth of 27 feet where it crosses the canal. The roadway and spur rail crossings were encased using 18” steel pipe.

Pipeline design and construction information

Installation year	2021
Material	HDPE 4710
Nominal diameter	12-inch
SDR	11
HDB at 73 F	1600 Psi
Design pressure	125 Psi
Operating temperature	60 F
Pressure test date	See attached records (Appendix A)
Minimum test pressure	50 Psi
MAOP	15 Psi
Normal operating pressure	11.5 Psi

The requirements of 49 CFR 192.59(a)(1) state that new plastic pipe must be manufactured in accordance with a specification listed in Subpart B, in this case ASTM D2513. The pipe used for the Othello biogas pipeline was manufactured according to ASTM D3035. 49 CFR 192.59(d) prohibits the use of rework/regrind material. The manufacturer indicated that they used rework material in the fabrication process for this pipe. 49 CFR 192.63(a) requires pipe to be marked as indicated in the listed specification. ASTM D2513 specifies a yellow stripe marking for plastic pipe. The pipe used does not have a yellow stripe.

The supporting documentation demonstrates that the pipe used substantially meets the material properties required by ASTM D2513. See the Pipe Comparison in Appendix B for a tabular breakdown. Rework material is allowed by ASTM D2513 as long as the material is generated from the manufacturer's facility, and the quantity of rework material does not exceed 30%.

The normal operating pressure of the pipeline is less than 10% of the design pressure; the MAOP is 12% of the design pressure. At these operating pressures, the risk of failure is minimal. All segments of pipe were pressure tested to more than 3 times the MAOP.

The pipe is subject to minimal external loading due to the method of installation and the depth below grade. The roadway crossing is encased to eliminate external loading on the carrier pipe. An external loading calculation was performed for the railroad crossing, which indicates that the stress due to external loading is well below the allowable limit (see Appendix C).

Despite the minimal risk of failure due to external loading, McCain Foods will patrol the pipeline at intervals not exceeding 4 1/2 months, but at least four times each calendar year, as specified in 49 CFR 192.721(b)(1). In addition, McCain will leak survey the pipeline annually with leak detector equipment, at intervals not exceeding 15 months, as specified in 49 CFR 192.723(b)(1). Any repair, replacement, or extension of the pipeline shall be completed using ASTM D2513 pipe, with a qualified procedure for joining the ASTM D2513 pipe with the ASTM D3035 pipe.

Not allowing this pipeline to be in service is a significant operational hindrance to McCain Foods. The McCain Foods facility generates approximately 1,000,000 standard cubic feet per day of biogas at its wastewater treatment facility; biogas is a renewable fuel which contains approximately 60% methane. The pipeline is intended to transport the biogas generated at McCain's wastewater treatment facility to the utility room in the new food manufacturing facility. The biogas supplements natural gas

usage in the facility boiler to produce steam for the manufacturing process. The use of biogas, a renewable fuel, offsets and reduces carbon emissions at the facility.

With the pipeline out of service, a source of renewable gas is being wasted, while the processing facility is forced to seek alternate non-renewable fuel sources (natural gas). Allowing McCain to operate the pipeline under this exemption is of public interest due to the environmental and sustainability benefits of renewable biogas. A similar pipeline in Denmark, Wisconsin was allowed to operate under a state waiver, with concurrence from PHMSA as indicated in Appendix D.

Through an engineering analysis conducted by Stover Engineering, it has been certified that operation of this pipeline under the requested exemption is consistent with pipeline safety.

We humbly submit this to the UTC for review and consideration. Should you need any further information, please contact me at 920-574-4271 or peter.cormier@mccain.com.



Sincerely,

A handwritten signature in black ink, appearing to read "Peter Cormier". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Peter Cormier P. Eng.
McCain Foods USA, Inc.
Director of Engineering, Environmental & Sustainability

Appendix A – Pressure Test Records

Pressure Test Results

Test Performed By:	Kelly Smith	Company Name:	Fisher
Witness Name:	John Bradley	Test Date:	2/10/2021
Project Name:	McCain	Project Number:	19F076
Location of Test:	MH 1 to MH 2		
Pipe Material:	HDPE	Pipe Size:	12"
Pipe Purpose:	Bio Gas	Design Pressure:	50psi
Starting Time of Test:	5:01pm	Starting Pressure:	50psi
Ending Time of Test:	5:31pm	Ending Pressure:	50psi
Photo of Pressure Gauge at Start of Test		Photo of Pressure Gauge at End of Test	
 <p style="text-align: center;"><i>Insert Photo 1</i></p>		 <p style="text-align: center;"><i>Insert Photo 2</i></p>	



Comments: [Click or tap here to enter text.](#)

Test Gear Used: [Click or tap here to enter text.](#)

Tester Signature: [Click or tap here to enter text.](#)

Witness Signature: [Click or tap here to enter text.](#)

Pressure Test Results

Test Performed By:	Kelly Smith	Company Name:	Fisher
Witness Name:	John Bradley	Test Date:	2/26/2021
Project Name:	McCain	Project Number:	19F076
Location of Test:	MH2 to MH3		
Pipe Material:	HDPE	Pipe Size:	12"
Pipe Purpose:	Bio Gas	Design Pressure:	50psi
Starting Time of Test:	9:21am	Starting Pressure:	50psi
Ending Time of Test:	9:57am	Ending Pressure:	50psi
Photo of Pressure Gauge at Start of Test		Photo of Pressure Gauge at End of Test	
 <p style="text-align: center;"><i>Insert Photo 1</i></p>		 <p style="text-align: center;"><i>Insert Photo 2</i></p>	


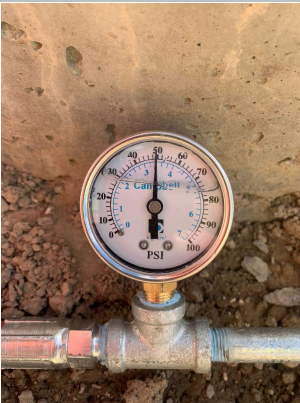
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Test Gear Used: [Click or tap here to enter text.](#)

Tester Signature: [Click or tap here to enter text.](#)

Witness Signature: [Click or tap here to enter text.](#)

Pressure Test Results

Test Performed By:	Kelly Smith	Company Name:	Fisher
Witness Name:	John Bradley	Test Date:	2/26/2021
Project Name:	McCain	Project Number:	19F076
Location of Test:	MH3 to MH4		
Pipe Material:	HDPE	Pipe Size:	12"
Pipe Purpose:	Bio Gas	Design Pressure:	50psi
Starting Time of Test:	12:31 pm	Starting Pressure:	50psi
Ending Time of Test:	1:03 pm	Ending Pressure:	50psi
Photo of Pressure Gauge at Start of Test		Photo of Pressure Gauge at End of Test	
 <p style="text-align: center;"><i>Insert Photo 1</i></p>		 <p style="text-align: center;"><i>Insert Photo 2</i></p>	

Comments: [Click or tap here to enter text.](#)

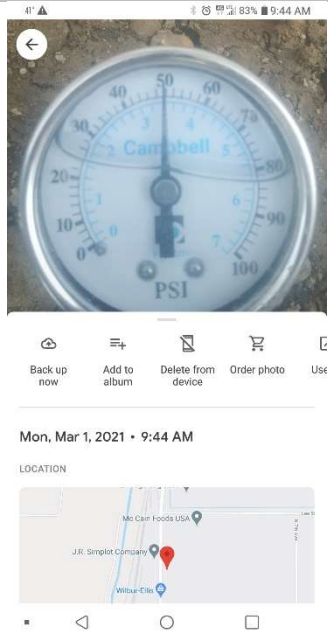
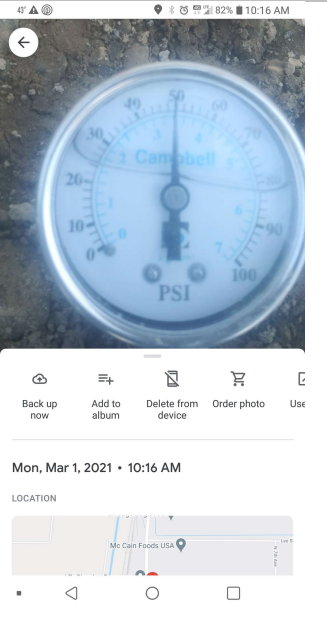
Test Gear Used: [Click or tap here to enter text.](#)

Tester Signature: [Click or tap here to enter text.](#)

Witness Signature: [Click or tap here to enter text.](#)

Pressure Test Results

Test Performed By:	Kelly Smith	Company Name:	Fisher
Witness Name:	John Bradley	Test Date:	3/1/2021
Project Name:	McCain	Project Number:	19F076
Location of Test:	MH4 to MH5		
Pipe Material:	HDPE	Pipe Size:	12"
Pipe Purpose:	Bio Gas	Design Pressure:	50psi
Starting Time of Test:	9:44am	Starting Pressure:	50psi
Ending Time of Test:	10:16am	Ending Pressure:	50psi

<p>Photo of Pressure Gauge at Start of Test</p>  <p><i>Insert Photo 1</i></p>	<p>Photo of Pressure Gauge at End of Test</p>  <p><i>Insert Photo 2</i></p>
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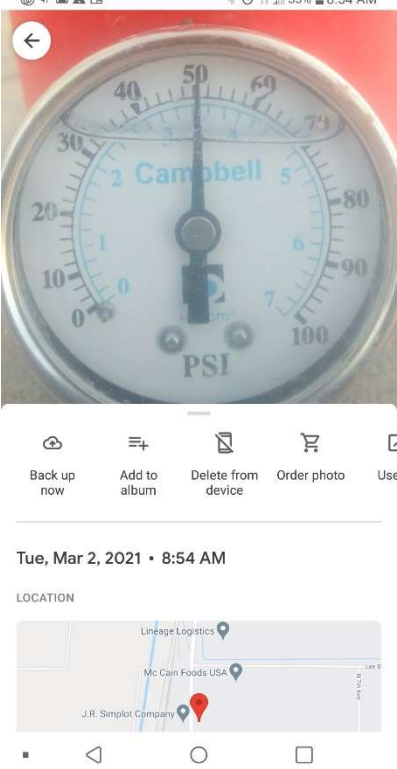

Test Gear Used: Click or tap here to enter text.

Tester Signature: Click or tap here to enter text.

Witness Signature: Click or tap here to enter text.

Pressure Test Results

Test Performed By:	Kelly Smith	Company Name:	Fisher
Witness Name:	John Bradley	Test Date:	3/2/2021
Project Name:	McCain	Project Number:	19F076
Location of Test:	MH5 to end of pipe north		
Pipe Material:	HDPE	Pipe Size:	12"
Pipe Purpose:	Bio Gas	Design Pressure:	50psi
Starting Time of Test:	8:54am	Starting Pressure:	50psi
Ending Time of Test:	9:27am	Ending Pressure:	50psi

<p>Photo of Pressure Gauge at Start of Test</p> 	<p>Photo of Pressure Gauge at End of Test</p> 
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Comments: Click or tap here to enter text.

Test Gear Used: Click or tap here to enter text.

Tester Signature: Click or tap here to enter text.

Witness Signature: Click or tap here to enter text.

Pipe Pressure Testing Report

Date: 1-28-21

Pipe System BIOGAS PIPELINE

Pipe Size: 12" IPS

Testing Pressure: 150 PSI

Air purged from the system: YES / NO

Gages Calibrated: YES / NO

Pressure test requirement: 1.5 X system design

Length of test: 4 HRS at full design pressure + 1HR at 10 PSI reduced pressure

Full system design pressure test (4HR):

Start Time: 8 am 1-28-21

End Time: 12 pm 1-28-21

Allowable Loss: 0

Actual Loss: 0

Pressure reduced 10 PSI from design pressure (1HR):

Start Time: 12 pm 1-28-21

End Time: 1 pm 1-28-21

Allowable Loss: 0

Actual Loss: 0

If loss observed record location of the leak and plan to address (if needed attach additional sheets of paper):

Test Result (Circle one): Pass / Fail

RSCI Mechanical: [Signature]

Date: 1-28-21

RSCI QC Representative: [Signature]

Date: 2-3-21

Owner/Engineer Representative: _____

Date: _____



Pipe Pressure Test Report

Job # 539 Date: 7/11/2021
System: BIOGAS 12"
Material: HDPE DR11 Location: FROM BORE CONNECTION TO FISHER SCOPE
Dwg. Ref: _____
Test Pressure: 100 PSI Test Duration: 1 HR

Has the Air been bleed off from the lines being tested with liquid: Yes: No: _____
Contractor Rep to sign: [Signature] Pass: Fail: _____
Owners Engineer to sign: _____ Pass: _____ Fail: _____
Others to sign: _____ Pass: _____ Fail: _____

Notes: _____

Original to P.M.
Copies to job file
Copies to all that have signed



Memorandum

To: Tanner Jared
Peter Cormier

From: Bob Pharmer

Date: 09/20/2022

Re: HDPE Biogas Piping – Request for Approval

The HDPE pipe used to transport biogas from the new treatment system to the plant boiler facility at the McCain facility is different from that required by UTC per ASTM D2513. In actuality, both pipe types are manufactured from the same materials per PE4710, DR 11. The biogas going through the pipeline is cooled to 60 degrees F and has a design operating pressure of 11.5 psi with a maximum operating pressure of 15 psi. The rated pressure of the pipe is 200 psi at 80 degrees F.

The following table shows the side-by-side comparison of the installed pipe with the pipe specified in ASTM D2513. Because of the specified ratings of the two pipes, the major difference is that the installed pipe does not have yellow striping. Therefore, because of the similar pipe properties and that the installation will operate at less than 10% of the rated pipe pressure, we request that UTC approve this installation.

INSTALLED HIGH DENSITY POLYETHYLENE PIPE (HDPE)

A. Resin and Material Requirements

1. All material shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4.

The resin material shall meet the specifications of ASTM D 3350 with a minimum cell classification of 445474C.

HDPE pipe and fittings shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. HDPE products shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.



Pipe Comparison

Nominal Properties	Test Method	Yellow Stripe 8300 Series HDPE Pipe	Pipe Installed	Value
Material Resin Classification		PE4710	PE4710	
Density	ASTM 1505	0.961	0.96	g/cc
Melt Index	ASTM 1238	9	0.1	g/10 minutes
Hydrostatic Design Basis	ASTM 2837	1600	1600	psi @ 73 Deg F
Flexural Modulus	ASTM D790	>140,000	>110,000	psi @ 73 Deg F
Tensile Strength	ASTM D638	>3500	>3500	psi @ 73 Deg F
PENT	ASTM F1473	10,000	>500	hours
UV Stabilizer	ASTM D3350	Min 2% Carbon Black	Min 2% Carbon Black	
Cell Classification		ASTM D3550	ASTM D3550	
PPI TR-4 Designation		PE4710	PE4710	
Striping		Yellow	None but includes Marking Tape mover Pipe	
Pressure Rating			200	psi
Maximum Operating Pressure			15	psi
Average Operating Pressure			11.5	psi
Maximum Operating Temp			60	Deg F

Appendix C – External Loading Calculation

External Loading Calculation: Othello 12" HDPE Biogas Line

Project Identification:
 Prepared By: Doug Erickson
 Reviewed By: Doug Erickson

Calculation Data/Results...

Calculation Method: Plastic Pipe Institute - Railway

Pipe Data...

Pipe Size/Type Code: 12P-S11
 Outside Diameter: 12.750 Inches
 Pipe Wall Thickness: 1.159 Inches
 Allowable Compressive Stress: 1150 Psi
 Apparent Pipe Modulus Of Elasticity: 60000 Psi
 Minimum Pressure: 0 Psi
 Pipe Yield Strength: 3500 Psi

Trench/Bore Data...

Trench Width: 18 Inches
 Depth Below Grade: 41 Feet
 Water Table Depth: 0 Feet
 Backfill Density: 125 Lbf/cf
 Backfill Soil Modulus: 1000 Psi
 Native Soil Modulus: 1500 Psi

Crossing Data...

Rail Tie Length: 8.0 Feet
 Maximum Load Per Axle: 80000 Lb - Pounds

Calculated Values...

Combined Pressure: 37 Psi
 Safety Factor: 1.5

Other Values...

Value Type	Value, Psi	Limit Value, Psi
Pressure - Due To Soil Load	36	N/A
Pressure - Due To Live Load	1	N/A
Pressure - Total External	37	N/A
Pressure - Internal	0	N/A
Pressure - Total Combined (For Wa	37	193 - OK
Pressure - Total Combined (For Cr	37	8396 - OK
Compressive Stress - Total Combin	183	767 - OK
Deflection - Due To All Loads, Inch	0.355	0.464 - OK

Calculation Notes...

Comments:

These calculations are only valid for circular pipe and within the bounds and limits established by the selected calculation method.

These calculations are only valid for polyethylene plastic pipe material.

References:

Calculation Method - Plastic Pipe Institute, Handbook of Polyethylene Pipe, Second Edition, 2008.

Notes:

BNSF RR crossing uncased

Appendix D – PHMSA State Pipeline Waiver



U.S. Department
of Transportation
Pipeline and Hazardous
Materials Safety
Administration

1200 New Jersey Avenue, SE
Washington, D.C. 20590

AUG 31 2018

Mr. Thomas M. Stemrich
Pipeline Safety Program Manger
Division of Energy Regulation
Public Service Commission of Wisconsin
4822 Madison Yards Way
P. O. Box 7854
Madison, WI 53707-7854

PHMSA-2018-0089

Dear Mr. Stemrich:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has reviewed your letter dated August 17, 2018 notifying us that on behalf of New Organic Digestion (NOD), Zion Engineering petitioned the Public Service Commission (Commission) of Wisconsin for a State Waiver to waive compliance of 49 CFR 192.59 and 192.63, for the use of an 8-inch high density polyethylene (HDPE) pipe that is manufactured and tested to meet the requirements of ASTM F2619, for its Denmark Pipeline project near Denmark, Wisconsin.

NOD is constructing a new bio-digester near Denmark, Wisconsin. The bio-digester will break down organic material and produce methane gas. This gas will be collected and cleaned by a proprietary process on site. The clean, pipeline quality gas will be transported by pipeline to an interconnect injection site approximately 3.22 miles away near the intersection of North Avenue and Brown County Trunk Highway R on the north side of Denmark, Wisconsin. At the interconnect site, the methane gas will be compressed, run through a custody transfer meter, and injected into an ANR Pipeline, 4-inch, steel natural gas interstate pipeline. There is additional equipment at the interconnect site to remove free water, particulates and compressor lubricant from the natural gas. Additional information on the project is available via the Commission docket (PSC REF#: 346328).

A waiver is needed because 49 CFR 192.59 requires that plastic pipe be manufactured in accordance with a listed specification. The only listed specification in Federal Code for HDPE pipe is ASTM D2513. The pipe supplied and installed for the project is 8-inch, O.D., SDR 11, PE4710 material manufactured and tested to ASTM F2619/API 15LE by the manufacturer. ASTM F2619 covers the requirements and test methods for high-density polyethylene (PE) materials, line pipe, and fittings used in pressure or non-pressure oil and gas producing applications to convey fluids such as oil, dry or wet gas, multiphase fluids, and non-potable oilfield water. 49 CFR 192.63 requires the pipe to be marked in accordance with the requirements of the listed specification, which includes listing the manufacturing standard for the pipe. The markings on the pipe that was installed show other standards including ASTM F2619, but not ASTM D2513.

Page 2
Mr. Thomas M. Stemrich
Public Service Commission of Wisconsin

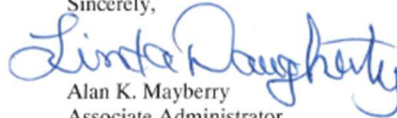
PHMSA-2019-0089

The pipe manufacturer provided the HDPE Pipe Test Certificate for the pipe supplied for the project along with a sample HDPE Pipe Test Certificate for their ASTM D2513 pipe, which was manufactured at the same plant. The testing for both products indicate that they have been tested to the same specifications and both meet or exceed the requirements of ASTM D2513.

The Commission is also imposing additional restrictions on the operator, including limiting repair to electrofusion only, and limiting any replacement or extension of the system to pipe manufactured and marked with the ASTM D2513 designation. Based on review of the application and the conditions placed on NOD by the Commission, PHMSA has no objection to the waiver and asks that the Commission return to PHMSA a copy of a Final Order provided to NOD.

My staff would be pleased to discuss this matter or any other regulatory matter with you. John Gale, Director, Standards and Rulemaking Division, may be contacted at 202-366-0434 on regulatory matters. Kenneth Lee, Director, Engineering and Research Division, may be contacted at 202-366-2694 on technical matters specific to this waiver.

Sincerely,



Alan K. Mayberry
Associate Administrator
Office of Pipeline Safety