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APR 5 2007
Missouri Public
Service Commission

Exhibit No.:

Issue:

Flexible Piping for Service
Lines on Big Island

Witness:

Sponsoring Party:

James T. Crowder
Folsom Ridge LLC and Big
Island Homeowners Water
and Sewer Association, Inc.
Case No. WO-2007-0277
Joined for hearing with
Case No. WC-2006-0082

Case No.:

FOLSOM RIDGE LLC
AND BIG ISLAND HOMEOWNERS WATER AND SEWER ASSOCIATION, INC.

Case No. WO-2007-0277

Joined for hearing with
Case No. WC-2006-0082

DIRECT TESTIMONY

OF

JAMES T. CROWDER

Longmont, Colorado
March, 2007

FR Exhibit No. 106
Case No(s) WC-2006-0082 et al
Date 3-30-07 Rptr FF

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of the Application of)
Folsom Ridge LLC and Big Island)
Homeowners Water and Sewer Association,)
Inc. for an order authorizing the transfer) Case No. WO-2007-0277
and Assignment of Certain Water and)
Sewer Assets to Big Island Water)
Company and Big Island Sewer)
Company, and in connection therewith)
certain other related transactions.)

AFFIDAVIT OF JAMES T. CROWDER

STATE OF MISSOURI)
) ss.
COUNTY OF CAMDEN)

I, James T. Crowder, of lawful age, and being duly sworn, do hereby depose and state:

1. My name is James T. Crowder. I am presently property and construction manager for Diamond G Enterprises.
2. Attached hereto and made a part hereof for all purposes is my direct testimony.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my personal knowledge, information and belief.


James T. Crowder

Subscribed and sworn to before me, a Notary Public, this 12 day of March, 2007.


Notary Public

TARA GARCIA
NOTARY PUBLIC
STATE OF COLORADO

My Commission Expires 07/17/2010

1 DIRECT TESTIMONY OF JAMES T. CROWDER

2 Q. **What is your name and business address?**

3 A. My name is James T. Crowder. My business address 2602 Clover Basin Drive, Suite B,
4 P.O. Box 54, Longmont, CO 80502.
5

6 Q. **What is your position of employment?**

7 A. I am employed by Diamond G Enterprises, Longmont, Colorado as a property and
8 construction manager.
9

10 Q. **Please describe your education and experience.**

11 A. After graduation from high school I began work as an entry level laborer and carpenter in
12 residential and commercial construction in eastern Colorado. In 1960 I joined the United
13 States Air Force and trained as a cryogenic engineer in connection with the making of
14 liquid oxygen for Air Force requirements. After my discharge in 1964 I returned to the
15 construction contracting business with my father and worked primarily in residential
16 construction until 1969. In that year, I started work with a builder in Boulder, Colorado
17 continuing work in residential development and construction. As part of my duties I
18 oversaw the installation of streets and sidewalks and various utilities including water and
19 sewer mains. In 1985, I joined a Colorado commercial building contractor and
20 performed the same duties. I retired from that job in 1998. My retirement was brief and
21 was hired in 1998 by Diamond G Enterprises, Mr. Golden's firm, and have worked for
22 that business ever since.
23

1 Q. Will you explain your association with Folsom Ridge LLC or Big Island
2 Homeowners Water and Sewer Association, Inc.?

3 A. Folsom Ridge LLC hired me to act as the construction manager for the replacement of a
4 water line pursuant to a Settlement Agreement Folsom Ridge reached with the
5 Department of Natural Resources. On a daily basis I monitored and inspected the work
6 done by the contractor, Kenny Carroll Excavating, Inc., which was also responsible for
7 installing new water system service lines for each residence along the course of that
8 replacement line. I was also responsible for approving and sometimes purchasing the
9 materials the contractor used on the water main replacement project.
10

11 Q. What is the purpose of your testimony?

12 A. I will provide the Commission with a description of the flexible piping used for the
13 service line connections that were installed, the type of joints used on the service lines
14 and the kind of fill used to cover those service lines.
15

16 Q. Mr. Crowder, have you reviewed a series of photographs which have been marked
17 as Exhibit 63 in this case.

18 A. Yes, I have.
19

20 Q. Let me direct you to a photograph in the upper part of a page of that exhibit
21 depicting a blue flexible line. The photo is dated June 14, 2005. Do you recognize
22 the pipe in that photograph.

1 A. Yes, I do. This is an example of the pipe installed for purposes of reconnecting service
2 lines to the new replacement water main.

3
4 Q. **Would you please identify the manufacturer and describe the specifications for this**
5 **line for the Commission.**

6 A. This flexible piping is called CenCore HDPE (high density polyethylene) and is a product
7 manufactured by Centennial Plastics LLC. The pipe was acquired from a local supplier,
8 Jack's Hardware in Camdenton. The specifications for this pipe are found on the
9 manufacturer's specifications sheet which I have attached as Crowder Direct Schedule 1.
10 This product is available in variable pressure ratings. The pipe installed for service lines
11 on the Big Island replacement water line is 1 inch in diameter, rated at 200 psi and has a
12 Standard Dimension Ratio (SDR) of 9 CTS. It has an ASTM rating of D2737.

13
14 Q. **How is the pipe joined to the main and the service line.**

15 A. The line is joined at the main by means of a compression joint or fitting. The line is
16 joined at the service line from the residence in the same way. This is an industry standard
17 means of compression coupling at the joints.

18
19 Q. **Please compare this type of joint with others that might have been used.**

20 A. The compression joint was developed to prevent leakage or seepage from the line. It is
21 the tightest plumbing joint that can be fitted for this kind of pipe.

22

1 Q. Is the pressure rating you are referring to also considered the "burst" rating for the
2 line.

3 A. No. That is a different rating. The line is burst rated at 1,600 psi.
4

5 Q. Is this pipe warranted by the manufacturer?

6 A. Yes, it is under a 50 year limited warranty. The terms of the warranty are found on
7 Centennial Plastics' web site. I have attached as Crowder Direct Schedule 2 a copy of
8 the web page where the limited warranty is found.
9

10 Q. Is this type of pipe recommended by municipalities in the Lake of the Ozarks area.

11 A. Yes, it is. I am aware that the City of Osage Beach design specifications for water meter
12 service lines and city service lines of two inches or less must be flexible piping like that
13 installed on Big Island.
14

15 Q. This same page of the exhibit also mentions that there is no protective sleeving on
16 the line. Is a protective sleeve needed for this installation?

17 A. No protective sleeve is required for this service line. The line itself is a high density
18 product which is designed for endurance in this application.
19

20 Q. Also in Exhibit 63, there is a full page photograph which appears to be a larger view
21 of the service line we have been discussing. Drawing your attention to that page of
22 the exhibit, can you describe for the Commission the fill that was used to cover this
line upon completion of installation.

1 A. The fill used is called limestone dust. It is a fine, rather than coarse, aggregate for
2 backfill. Although the density of the flexible piping protects it from puncture caused by
3 most fill material, using the limestone dust provides good compaction around the service
4 line and poses no risk of puncturing the flexible pipe.

5

6 Q. **Have there been any reports of breakage or leaks from these lines.**

7 A. We have had no reports.

-8

9 Q. **Does this conclude your direct testimony?**

10 A. Yes.



SPECIFICATIONS
 Effective Sept. 2, 2002
 Supersedes April 1, 2001
 1830 Centennial Ave.
 Hastings, NE 68901
 Ph: 402-462-2227
 Fax: 402-462-5529
 Toll Free: 866-851-2227
 centennialplastics.com

CenCore HDPE

HDPE 3408 — ASTM D2239 and ASTM D2737

- Flexible polyethylene pipe and tubing
- Produced from only the finest virgin material
- Backed by a **50-YEAR WARRANTY**
- **Natural Virgin Core with Blue Virgin Exterior**

100/125 PSI	ASTM D2239	PE3408	SIDR11.5	Premium Grade						
					1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
O.D.		0.742"	.968"	1.231"	1.620"	1.890"	2.427"			
I.D.		0.622"	.824"	1.049"	1.380"	1.610"	2.067"			
Wall		0.060"	.072"	.091"	.120"	.140"	.180"			
Wt/Ft		0.057#	.090#	.143#	.246#	.330#	.544#			
Coil Lengths		100-400 ft.	100-400 ft.	100-300 ft.	100-300 ft.	100-250 ft.	100-200 ft.			

160 PSI	ASTM D2239	PE3408	SIDR9	Premium Grade						
					1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
O.D.		N/A	1.008"	1.283"	1.686"	1.968"	2.527"			
I.D.		N/A	.824"	1.049"	1.380"	1.610"	2.067"			
Wall		N/A	.092"	.117"	.153"	.179"	.230"			
Wt/Ft		N/A	.116#	.186#	.320#	.430#	.710#			
Coil Lengths		N/A	100-400 ft.	100-300 ft.	100-300 ft.	100-250 ft.	100-200 ft.			

200 PSI*	ASTM D2239	PE3408	SIDR7	Premium Grade						
					1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
O.D.		N/A	1.060"	1.349"	1.774"	2.070"	2.657"			
I.D.		N/A	.824"	1.049"	1.380"	1.610"	2.067"			
Wall		N/A	.118"	.150"	.197"	.230"	.295"			
Wt/Ft		N/A	.152#	.246#	.424#	.578#	.952#			
Coil Lengths		N/A	100-400 ft.	100-300 ft.	100-300 ft.	100-250 ft.	100-200 ft.			

200 PSI*	ASTM D2737	PE3408	SDR9 CTS	Premium Grade						
					1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
O.D.		.625"	.875"	1.125"	1.375"	1.625"	2.125"			
I.D.		.487"	.681"	.875"	1.069"	1.263"	1.653"			
Wall		.069"	.097"	.125"	.153"	.181"	.236"			
Wt/Ft		.053#	.103#	.170#	.254#	.353#	.602#			
Coil Lengths		100-400 ft.	100-400 ft.	100-300 ft.	100-300 ft.	100-250 ft.	100-200 ft.			

Note: CenCore SIDR 11.5, SIDR 9 and SIDR 7 are suitable for connections with insert fittings and clamps.

Note: CenCore SDR 9 CTS is suitable for connections with CTS compression fittings.



CenCore HDPE is tested and certified by NSF and meets requirements of AWWA C901.

Crowder Direct Schedule 1

CORH-1

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Centennial Plastics: CenCore HDPE Warranty

*Quality
& Service
That Soars*

50 year Warranty

CenCore HDPE

Centennial Plastics L.L.C. warrants to the original retail purchaser that in the event the CenCore HDPE pipe (the "pipe") purchased at the time of delivery of the Limited Warranty fails to perform in accordance with its specifications due to a defect in the materials or workmanship of the Pipe within fifty (50) years from the date of the original purchase of the Pipe, Centennial Plastics L.L.C. will provide to the holder of the Limited Warranty the following:

1. Replacement pipe of substantially equivalent or better quality freight prepaid; and
2. The cost of reasonable direct labor charges up to One Dollar (\$1.00) per linear foot incurred by the holder of the Limited Warranty for the removal of the defective Pipe and its replacement.

THIS LIMITED WARRANTY IS THE EXPRESS WARRANTY RELATING TO THE PIPE. THE LIMITED WARRANTY IS THE ONLY WARRANTY ISSUED BY CENTENNIAL PLASTICS L.L.C. FOR THE PIPE AND IS ISSUED IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The limited Warranty is not applicable in the event of installation and/or use of the Pipe by the holder of the Limited Warranty or any third party which is not in accordance with the specifications for installation and use of the Pipe, and is not applicable with respect to any failure in performance of the Pipe which is due in whole or in part to any reason other than a defect in the materials or workmanship

Crowder Direct Schedule 2

of the Pipe.

If the Pipe fails to perform in accordance with its specifications due to a defect in the materials or workmanship of the Pipe within fifty (50) years from the date of original retail purchase of the Pipe, the holder of the Limited Warranty shall submit to Centennial Plastics L.L.C. written notice of the defect and a sample of the defective Pipe, clearly identifiable as CenCore HDPE within thirty (30) days after the defect becomes or should become known to the holder. Written notice and the sample must be sent to:

Centennial Plastics L.L.C.
1830 Centennial Avenue
P.O. Box 329
Hastings, NE 68902

This Limited Warranty is not transferable or assignable by the original retail purchaser of the Pipe.

THIS IS THE SOLE AND EXCLUSIVE REMEDY OFFERED BY CENTENNIAL PLASTICS L.L.C. FOR THE PIPE. CENTENNIAL PLASTICS L.L.C. WILL NOT BE LIABLE FOR ANY OTHER COSTS ASSOCIATED WITH FAILURE OR PERFORMANCE OF THE PIPE WHICH MAY ARISE, INCLUDING BUT NOT LIMITED TO, ANY SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY, OR OTHER LEGAL THEORY.

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PROUD
MEMBERS OF



Centennial Plastics
1830 Centennial Ave.
Hastings, NE 68902-0329
Phone: 402-462-2227

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