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Witness: Thomas J. Helfrich, P.E.
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Sponsoring Party: Missouri Gas Energy
Case No.: GR-2006-0422
Date Testimony Prepared: December 11, 2006

MISSOURI PUBLIC SERVICE COMMISSION

MISSOURI GAS ENERGY

CASE NO. GR-2006-0422

SURREBUTTAL TESTIMONY

OF

THOMAS J. HELFRICH, P.E.

ON BEHALF OF MISSOURI GAS ENERGY

FILED²

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Missouri Public
Service Commission

MGE Exhibit No. 22
Case No(s) GR-2006-0422
Date 1-11-07 Rptr TX

**SURREBUTTAL TESTIMONY OF THOMAS J. HELFRICH, P.E.
ON BEHALF OF
MISSOURI GAS ENERGY**

1 **Q. WOULD YOU PLEASE STATE YOUR NAME AND BUSINESS ADDRESS?**

2 A. Yes. My name is Thomas J. Helfrich and my business address is 17 Cassens Court, Fenton
3 Missouri 63026.

4
5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am employed by Burns & McDonnell Engineering Company, Inc. as a Program Manager.
7

8 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
9 **PROFESSIONAL EXPERIENCE.**

10 A. I have Bachelor of Science and Master of Science degree in Civil Engineering from the
11 University of Missouri Rolla. I am a registered professional engineer (P.E.) in nine states
12 including Missouri. I have over 25 years experience in environmental and geotechnical
13 consulting which includes a wide variety of environmental, hydrogeological and geotechnical
14 investigations; the investigation and remediation of former Manufactured Gas Plant (MGP)
15 sites as well as other soil and groundwater remediation projects; Phase I and II Environmental
16 Site Assessments; and, construction materials testing. I currently focus on the investigation,
17 remediation and risk-based closure of environmentally impaired sites for various industries.
18 In the past 12 years, I have focused on and gained extensive experience in the investigation,
19 remediation, and risk-based closure of former MGP sites and have worked on over 230 MGP
20 sites in 18 states including Missouri.

1

2 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

3 A. The purpose of my testimony is to address the rebuttal testimony of Paul R. Harrison,
4 Regulatory Auditor with the Missouri Public Service Commission Staff (at page 6)
5 concerning MGP-related expenditures in Missouri. Specifically, I will explain the kinds of
6 MGP-related expenditures Missouri Gas Energy (MGE) has incurred in the past and why
7 these types of costs are certain to continue to be incurred by MGE in the future even though
8 the timing and magnitude of such costs cannot presently be ascertained.

9

10 **Q. PLEASE EXPLAIN WHAT KINDS OF MGP-RELATED EXPENDITURES MGE**
11 **HAS INCURRED IN THE PAST.**

12 A. As indicated in the Surrebuttal Testimony of MGE witness Noack, through June 30, 2006,
13 MGE has incurred approximately \$9.9 million in MGP-related costs since February 1, 1994.
14 MGE has incurred costs to investigate and/or remediate MGP-impacted soil and
15 groundwater at the MGP sites located at 1st & Campbell (Station A) and 223 Gillis (Station
16 B) in Kansas City, Missouri. These past costs include, but are not limited to: records and
17 historical maps research; excavation test trenching; installation of soil borings; installation
18 of groundwater monitoring wells; soil and groundwater laboratory analysis; evaluation of
19 field and laboratory data; risk evaluation; excavation and hauling of impacted soil and
20 debris; landfill disposal; water pumping, storage, treatment and/or disposal; report
21 preparation and submittal of completed documentation to the appropriate regulatory
22 agencies. In addition, MGE has incurred costs associated with public relations, regulatory

1 interaction and oversight, third party negotiations and internal communications.

2
3 Representatives of the Port Authority of Kansas City, MO, indicated its intention to demand
4 that MGE assume responsibility for the further assessment and potentially the removal (if
5 necessary) of all MGP-impacted material located on the Riverfront Development site which is
6 located north of the Station A and B MGP sites in Kansas City, Missouri. In 2003, MGE paid
7 the Port Authority \$3.4 million in settlement of this demand, and paid the State of Missouri
8 \$120,000 in settlement of related Natural Resource Damage claims.

9
10 **Q. WHY IS MGE CERTAIN TO CONTINUE TO INCUR MGP-RELATED**
11 **EXPENDITURES IN THE FUTURE EVEN THOUGH THE TIMING AND**
12 **MAGNITUDE OF SUCH COSTS CANNOT BE ASCERTAINED AT THIS TIME?**

13 **A.** MGE has received proposals and is proceeding with additional investigations at and around
14 the Station A and B MGP sites in Kansas City. This additional investigation work is being
15 completed at the request of the Missouri Department of Natural Resources (MDNR). Upon
16 completion of these additional investigations, a remedial action plan will be developed by
17 MGE to remove additional impacted materials at Station A and B and to remediate
18 contaminated groundwater as required by MDNR. Based on my experience with other MGP
19 sites across the country, the cost of the remediation efforts may be between \$1 million and
20 \$10 million in order to achieve site closure on Station A and Station B. Additional costs may
21 be necessary to address off-site contamination.

1 MGE's St. Joseph, Missouri MGP site has been the subject of underground storage tank
2 removal and remediation activities and, as a result, this site may become the subject of MGP-
3 related investigation, and perhaps remediation, activities in the foreseeable future. Based on
4 my experience with other MGP sites across the country, the cost of these investigation and
5 remediation efforts may exceed \$1 million.

6
7 Other MGP sites owned by MGE/Southern Union Company in Missouri that are included on
8 the MDNR's list of sites to investigate include East 5th Street in Joplin, Missouri and 23rd and
9 Pleasant Street in Independence, Missouri. It is not known whether, or when, MGP
10 investigation activities may be undertaken at these sites. However, to the extent that MGP
11 investigation and remediation activities become necessary at these sites, in excess of \$1
12 million may be spent on each such site in order to obtain MDNR site closure.

13
14 In addition, there are other MGP sites located within MGE's service territory that are not
15 owned by MGE/Southern Union Company, but for which MGE/Southern Union Company
16 may have some potential liability.

17
18
19 **Q. WHY IS IT NOT POSSIBLE TO ASCERTAIN THE TIMING AND MAGNITUDE OF**
20 **MGP INVESTIGATION AND REMEDIATION ACTIVITIES AT THIS TIME?**

21 **A.** It is not possible to predict the timing and magnitude of MGP investigation at this time. Even
22 once the investigative and remedial process has been initiated, the timing of any investigative

1 and remedial activity at MGP sites is subject to numerous variables. The timing is greatly
2 influenced by the nature and extent of the contamination that may be encountered at the site.
3 Investigative and remedial activity is conducted in a stepwise fashion with the information
4 and the results of the prior investigative or remedial step determining the subsequent
5 investigative and remedial step. At a minimum, until the site is fully characterized in the
6 investigative process the timing and the scope or magnitude of the remedial activities can not
7 be predicted with any certainty. Remedial activities are often conducted in a methodical
8 stepwise fashion as well with one phase of the remedial activity determining the scope and
9 magnitude of the subsequent remedial activity. Later in this testimony I will explain in more
10 detail and provide specific MGE related examples of the challenges associated with
11 investigation and remedial activities.

12
13 Another factor that greatly influences the timing and magnitude of any investigative and
14 remedial action is the actions of the state and/or federal environmental agencies which
15 exercise jurisdiction over the MGP sites and regulate the investigative and remedial activities.

16 Companies performing investigative and remedial activity submit proposals to the oversight
17 agency for approval in each step of the investigative and remedial process. The agency may
18 or may not approve the submission by the company and discussion may take place with the
19 agency in order to address comments or suggestions to the submission. Rejection of the
20 submittal typically revolves around the agency's desire for additional investigation or
21 remediation activities; hence, affecting the magnitude of the activities. The timing of an
22 agency response to a submittal varies significantly ranging from a few weeks to a few years.

1 Agency responses can sometimes be delayed for years as agencies prioritize allocation of
2 resources to fulfill their responsibilities and/or as discussions with an agency over a particular
3 submission become protracted. Numerous submittals and approvals must take place during
4 the investigation and remediation of a MGP site and the magnitude of the project often
5 changes during the approval process. At any point in the process the company and the agency
6 may reach an impasse on the appropriate investigative or remedial activity. Dispute
7 resolution may take a number of forms. All of these activities – the timing of responses and
8 approvals by agencies over submittals, discussions over the submittals and any dispute
9 resolution are not possible to predict with any certainty and therefore the magnitude of the
10 resultant MGP investigation and remediation cannot be predicted with any certainty.

11
12 Another factor that influences the timing and magnitude of the investigation and remediation
13 activities is land ownership and permitting. In order to complete some investigation and
14 remediation activities it is necessary to procure permits (construction, excavation, boring,
15 etc.) from local, state or federal agencies. These permits can take anywhere from a few weeks
16 to a few months to procure and can sometimes be delayed beyond that if submittals are
17 rejected and resubmittals are required. In the case of the interim removal action completed at
18 the Station A MGP in 2003, the removal action was delayed about three months while permits
19 from the City of Kansas City were procured and those permits were procured on an expedited
20 basis that greatly shortened what might have otherwise been a much longer process. When
21 MGE is not the owner of land on which investigation or remediation activities are to occur, it
22 is necessary to obtain access from the respective land owner. This requires the identification

1 of the affected land owner and negotiating an access agreement and/or completing necessary
2 applications for access as in the case of most railroads. The time frame and cost associated
3 with this process varies greatly depending upon the landowner and can range from a few days
4 and no cost to in excess of six months and tens of thousands of dollars. In the case of past
5 work at the Station A and B MGP, access to the property owned by Union Pacific Railroad
6 has taken anywhere from three to six months to procure with initial costs approaching
7 \$20,000 plus thousands of dollars per year in annual fees. Therefore, permitting requirements
8 and land ownership issues also make it impossible to predict the timing and magnitude of
9 MGP investigation and remediation that may be required of MGE.

10
11 Regarding the magnitude of MGP investigation and remediation, these MGP sites operated up
12 to 125 years ago and have been lying dormant and generally undetected/unnoticed for up to
13 100 years in some cases. The remnants of the MGPs are generally no longer visible; they
14 have been covered over long ago and are below the ground. As such, intuitively it is
15 impossible to ascertain the magnitude of something you cannot see. No one can ascertain the
16 magnitude of the investigation and remediation activities until the investigation and
17 remediation activities are conducted such as those that have been completed and continue at
18 the Station A and B MGP. However, even with the completion of investigation and
19 remediation activities, there is still some level of uncertainty as to the magnitude of these
20 activities because no one really knows what will be encountered in the subsurface at these old
21 facilities until remediation activities are underway and the remnants of the MGP are
22 unearthed. Based on my experience with hundreds of other MGP across the country and in

1 Missouri, even the estimated remediation costs up to the time remediation commences are
2 often underestimated by large percentages because of unforeseen below ground conditions
3 that are encountered during remediation. Therefore, it is not possible to ascertain the
4 magnitude of MGP investigation and remediation that may be required of MGE with any
5 certainty until the investigation is completed. Even then the certainty is not high until the
6 remediation is completed and approved by MDNR.

7
8 As an example we can refer to investigation and remediation activities that have occurred at
9 Station A MGP. In 1999 when MGE was approached by MDNR, MGE could not ascertain
10 the magnitude of the investigation and remediation activities except for the initial phase of
11 investigation that was completed in 2000. As that 2000 investigation was completed and data
12 became available and MDNR commented on initial activities, it was possible to ascertain the
13 magnitude of the next step (supplemental/comprehensive investigations completed in 2001).
14 As that 2001 investigation was completed and new data became available and MDNR
15 commented on the supplemental work, it was possible to ascertain the magnitude of the next
16 step (interim removal action in 2002 and 2003). As you can see, the investigation and
17 remediation is an iterative process of data collection and evaluation, agency review and
18 comment, ultimately followed by remediation (if necessary) and at any point in the process it
19 is only possible to ascertain the magnitude and possibly the timing of the next step. Only
20 after remediation activities are underway and the MGP remnants have been unearthed, does
21 anyone really know the magnitude of the remediation. At Station A, it was not known until
22 2003, four years after initiating investigation activities, the magnitude of the interim removal

1 action. And that was only an interim action, the total magnitude of complete remediation to
2 satisfy regulatory requirements is still uncertain. However, as previously stated based on my
3 experience with other MGP sites across the country, the cost of the remediation efforts may
4 be between \$1 million and \$10 million in order to achieve site closure. Additional costs may
5 be necessary to address off-site contamination.

6

7 **Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

8 **A. Yes, it does.**

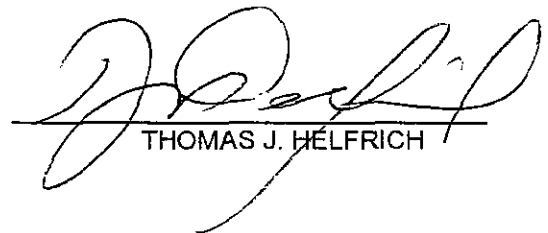
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's)	
Tariff Sheets Designed to Increase Rates)	Case No. GR-2006-0422
for Gas Service in the Company's Missouri)	
Service Area.)	

AFFIDAVIT OF THOMAS J. HELFRICH

STATE OF ILLINOIS)	
)	ss.
COUNTY OF MONROE)	

Thomas J. Helfrich, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.



THOMAS J. HELFRICH

Subscribed and sworn to before me this 8th day of December 2006.



Notary Public

My Commission Expires: 9-1-2009

