

# **Iowa City’s Former Manufactured Gas Plant Site: From Iowa City Gas and Electric Co. to the Iowa-Illinois Manor**

According to a privately operated “website dedicated to informing the public about the little known history of manufactured gas and how it impacts us today,” there are nearly fifty-two thousand sites of former manufactured gas plants, or FMGPs in the United States.<sup>1</sup> An estimated two hundred of those are in Iowa, with facilities in Fairfield, Mason City, Dubuque, and Waterloo on the United States Environmental Protection Agency’s National Priority List of sites in need of future attention.<sup>2</sup> Iowa City is also home to an FMGP. Although the location’s history is fairly messy and numerous agencies have become involved over time, it has already undergone EPA-led cleanups to eliminate the hazardous materials often found at such sites.

The FMGP in Iowa City was Iowa’s first coal gas for lighting plant, located at the southeast corner of Burlington and Van Buren Streets.<sup>3</sup> First organized November 9, 1857, authority to incorporate was issued by the Iowa City Council to John N. Coldren & Co. The plant began operating immediately.<sup>4</sup>

Originally, fourteen furnaces, or retorts were used to make the gas. Each had a gas oven above the fire box which operated like a baker’s oven. Coal was shoveled into the oven, and a

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<sup>1</sup> Dr. Allen W. Hatheway, “FMGP | Former Manufactured Gas Plants,” Dr. Allen W. Hatheway, <http://www.hatheway.net> (accessed May 3, 2010); Dr. Allen W. Hatheway, “History and Chronology of Manufactured Gas,” Dr. Allen W. Hatheway, [http://www.hatheway.net/01\\_history.htm](http://www.hatheway.net/01_history.htm) (accessed May 3, 2010).

<sup>2</sup> Dr. Allen W. Hatheway, “Locations of Gas Plants and Other Coal-tar Sites in the U.S. – The State of Iowa,” Dr. Allen W. Hatheway, [http://hatheway.net/state\\_site\\_pages/ia\\_\\_main.htm](http://hatheway.net/state_site_pages/ia__main.htm). (accessed May 3, 2010); U.S. Environmental Protection Agency, “National Priority List Sites in the Midwest,” U.S. Environmental Protection Agency, [http://www.epa.gov/region7/cleanup/npl\\_files/index.htm#Iowa](http://www.epa.gov/region7/cleanup/npl_files/index.htm#Iowa) (accessed May 3, 2010).

<sup>3</sup> Bob Hibbs, “Saturday Postcard 234: Coal Gas in Antique Iowa City,” Johnson County IAGenWeb Project, <http://iagenweb.org/johnson/Postcard53.htm> (accessed May 3, 2010).

<sup>4</sup> *History of Johnson County, Iowa, Containing a History of the County, and its Townships, Cities, and Villages From 1836-1882* (Iowa City, Iowa:1883), under “City Gas Works” 865, [http://books.google.com/books?id=BfIN2L5htEwC&pg=PA685&lpg=PA685&dq=iowa+city+gas+co.+1857&source=bl&ots=bJjnXDEmuS&sig=-x1j4Cq-bMMqPKs3oRdNoFoyZSI&hl=en&ei=3NSxS8W7BIr-Ndva5N4D&sa=X&oi=book\\_result&ct=result&resnum=6&ved=0CBIQ6AEwBQ#v=onepage&q=iowa%20city%20gas%20co.%201857&f=false](http://books.google.com/books?id=BfIN2L5htEwC&pg=PA685&lpg=PA685&dq=iowa+city+gas+co.+1857&source=bl&ots=bJjnXDEmuS&sig=-x1j4Cq-bMMqPKs3oRdNoFoyZSI&hl=en&ei=3NSxS8W7BIr-Ndva5N4D&sa=X&oi=book_result&ct=result&resnum=6&ved=0CBIQ6AEwBQ#v=onepage&q=iowa%20city%20gas%20co.%201857&f=false) (accessed May 3, 2010).

fire of 1,800 degrees pulled the gas from the raw coal into one of the gas holders outside.<sup>5</sup> The gas holder, “a huge black tank”, was raised and lowered according to the amount of gas stored in it at the time.<sup>6</sup> Using three furnaces, the process took six to eight hours.<sup>7</sup> The resulting material was coke, or pure carbon, which was raked onto the ground and smothered with water. Not surprisingly, coke was in demand for heating homes because it was light, clean, and an excellent source of fuel.<sup>8</sup> Another product created from the process, tar, was occasionally mixed into road and sidewalk paving.

Originally, only one large gas tank was used to store the manufactured gas.<sup>9</sup> As the amount of gas produced increased, a much larger tank was added between 1892 and 1899.<sup>10</sup> Starting around 1907, another, much faster system – the Lowe Process – was used at the plant.<sup>11</sup> It took only thirty minutes and concluded with a “12-foot high flame that erupted into the sky from a chimney.”<sup>12</sup> Although not considered dangerous, citizens tended to walk on the north sidewalk of Burlington Street to lessen the risk of injury.<sup>13</sup>

Due to these processes, there was usually “an aroma of gas in the neighborhood.”<sup>14</sup> Ironically, Iowa City children suffering from whooping cough in the 1870’s were actually sent to the “Gas House” to take advantage of the supposed therapeutic powers of the gas near the

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<sup>5</sup> Irving Weber, “Let There Be Light,” in *Irving Weber’s Iowa City*, vol. 6 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1990), 155.

<sup>6</sup> *Ibid.*

<sup>7</sup> *Ibid.*

<sup>8</sup> Irving Weber, “‘Some Said’ Gasworks Had Curative Powers” in *Irving Weber’s Iowa City*, vol. 2 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1979), 155-156.

<sup>9</sup> *Ibid.*, 154.

<sup>10</sup> *Ibid.*; Stanford Fire Maps of Iowa City 1892 (Figure 1) & 1899 (Figure 2)

<sup>11</sup> Irving Weber, “‘Some Said’ Gasworks Had Curative Powers” in *Irving Weber’s Iowa City*, vol. 2 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1979), 156; MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-1.

<sup>12</sup> Irving Weber, “Let There Be Light,” in *Irving Weber’s Iowa City*, vol. 6 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1990), 155.

<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*

facility.<sup>15</sup> Similarly, a mail carrier who lived nearby in the early years of the twentieth century “contended that the gas odor definitely helped his lung difficulty.”<sup>16</sup>

Throughout its years of operation, the plant served the community under many different names. Although still called Iowa City Light & Power Co., Tri-City Railway and Light Company, a subsidiary of United Light and Power Company out of Chicago actually owned the facility for a majority of its operating years.<sup>17</sup> On December 31, 1941, the Iowa-Illinois Gas and Electric Company acquired Iowa City Light and Power Co.<sup>18</sup> In 1988, MidAmerican Energy took ownership of Iowa-Illinois Gas & Electric. MidAmerican currently maintains many plants that were formerly operated by Iowa-Illinois.<sup>19</sup>

The facility’s operations were made obsolete by natural gas that was piped in from Texas and the Southwest, and the plant stopped burning coal in the late 1930s.<sup>20</sup> Nevertheless, according to city directories 505 Burlington Street in Iowa City housed a gas plant up until 1962.<sup>21</sup> The location was primarily used to distribute natural gas.<sup>22</sup> From 1963 to 1971, the address was a service building for the Iowa-Illinois Gas and Electric Company.<sup>23</sup> As of 1977, the L-shaped gas house buildings, although significantly remodeled over the years, were still present in Iowa City.

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<sup>15</sup> Irving Weber, “‘Some Said’ Gasworks Had Curative Powers” in *Irving Weber’s Iowa City*, vol. 2 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1979), 154.

<sup>16</sup> *Ibid.*

<sup>17</sup> MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-1; U.S. Environmental Protection Agency, *Letter to Dr. Peter Culver, U.S. E.P.A.*, CDM Federal Programs Corporation, May 24, 1994.

<sup>18</sup> Iowa-Illinois Gas & Electric Company, “Annual Report,” (Rock Island, Illinois: 1942), 3.

<sup>19</sup> U.S. Environmental Protection Agency, *Memorandum: Request for a Time-Critical Removal Action at the Iowa City Former Manufactured Gas Plant Site, Iowa City, Johnson County, Iowa*, Diana Engeman, Remedial Project Manager, December 4, 2003, 2.

<sup>20</sup> Irving Weber, “Let There Be Light,” in *Irving Weber’s Iowa City*, vol. 6 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1990), 153; MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-1.

<sup>21</sup> Iowa City Community Telephone Directories, 1943-1996.

<sup>22</sup> MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-1.

<sup>23</sup> *Ibid.*, 2-2.

The facility was essentially the same as when gas was manufactured there.<sup>24</sup> All coal gas production equipment had been removed, and the site was put to varied uses including a utility company storage area, bus garage, urethane foam factory, and a nightclub.<sup>25</sup>

On December 31, 1982, Greg Apel and Jim Miller purchased the property from Ron Shank. The current building at the address, an apartment complex entitled Iowa-Illinois Manor, or the “Pink Palace” was completed on July 18, 1983.<sup>26</sup> Consisting of 54 units, the building was intended to house approximately two hundred University of Iowa students.<sup>27</sup> In the spring of 1983, during the design and construction of the apartment building, Shive-Hattery and Associates, an engineering firm out of Iowa City assessed the site.<sup>28</sup> They determined that fill material containing what was believed to be coal gas plant refuse was present in the subsurface. They made several recommendations including:

1. Removal or filling of buried tanks on the property with sand or concrete.
2. Placement of a pile-driven foundation system to the limestone bedrock to support the structure.
3. Implementation of a gas venting system beneath the southern portion of the building to allow for the release of potentially dangerous concentrations of gas like methane.<sup>29</sup>

A liner and the passive venting system in the crawl space were added to ameliorate the risks associated with the subsurface materials and vapors encountered during the investigation.<sup>30</sup>

However the tanks were not addressed.

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<sup>24</sup> Irving Weber, “‘Some Said’ Gasworks Had Curative Powers” in *Irving Weber’s Iowa City*, vol. 2 of *Historical Stories about Iowa City* (Iowa City: Iowa City Lions Club, 1979), 154.

<sup>25</sup> Iowa City Community Telephone Directories, 1943-1996.

<sup>26</sup> MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-2.

<sup>27</sup> U.S. Environmental Protection Agency, *Memorandum: Request for a Time-Critical Removal Action at the Iowa City Former Manufactured Gas Plant Site, Iowa City, Johnson County, Iowa*, Diana Engeman, Remedial Project Manager, December 4, 2003, 2.

<sup>28</sup> Larry K. Davidson, letter to Jim Miller, “Methane Gas Venting System for Apartment Complex Iowa City, Iowa,” March 14, 1983

<sup>29</sup> U.S. Environmental Protection Agency, *Letter to Dr. Peter Culver, U.S. E.P.A., CDM Federal Programs Corporation*, May 24, 1994.

In 1988, Iowa-Illinois Gas and Electric conducted a site investigation. A Preliminary Assessment on behalf of the EPA was conducted in 1991 by Ecology and Environment, Inc. out of Overland Park, Kansas. From 1996 through 1998, expanded site inspections occurred, again performed by E&E, and also by CDM Federal Programs Corporation. During these evaluations the soil, air, groundwater, and minor surface water sampling took place. The EPA conducted investigations at the Site and issued an Expanded Site Investigation Report in 1998 in which it was determined further investigation was warranted due to the presence of elevated levels of volatile organic compounds (VOCs), more specifically benzene, toluene, ethylbenzene, and total xylenes (BTEX). Polynuclear aromatic hydrocarbons (PAHs), the carcinogens cyanide and arsenic were also detected.<sup>31</sup>

A survey of water wells and potential groundwater usage within a one-mile radius of the site was conducted. Eleven water wells were identified within the search radius and four of these are potentially used as a source of drinking water. None of the existing water wells are located in the contaminated plume area or are likely to ever be impacted by the contaminated site.

From 1999-2003, the site was monitored by the EPA's Superfund division and gained classification as Superfund Site #0702470 and CERCLIS ID #IAD984591172.<sup>32</sup> Superfund is the name given to the environmental program established to address abandoned hazardous waste sites. It is also the name of the fund established by the Comprehensive Environmental Response, Compensation Liability Act of 1980, or CERCLA. This law was enacted in the wake of the discovery of toxic waste dumps such as Love Canal and Times Beach in the 1970s. It allows the

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<sup>30</sup> MidAmerican Energy Company, "Site Characterization Report," vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-5.

<sup>31</sup> *Ibid.*, 2-5 & 2-6.

<sup>32</sup> U.S. Environmental Protection Agency, "Record of Decision Declaration," *Iowa City Former Manufactured Gas Plant Site, Iowa City, Iowa*, September 2006, 2.

EPA to clean up such sites and to compel the responsible parties to perform cleanups or reimburse the government for EPA-lead cleanups.<sup>33</sup>

After repeated assessments by the EPA and the discovery of hazardous materials contained in underground tanks, on October 15, 2008, a proposed consent decree was lodged in *United States v. MidAmerican Energy Co. and Iowa-Illinois Manor, LLC*, in U.S. District Court for the Southern District of Iowa. The U.S. sought to recover the costs incurred in response to releases of hazardous substances at the FMGP in accordance with CERCLA. MidAmerican and Iowa-Illinois Manor agreed to remove and dispose of all the materials in underground tanks and pay \$429,300.64 to the Superfund in payment to the United States' unreimbursed response costs. In return, the U.S. agreed never to sue MidAmerican or Iowa-Illinois Manor under CERCLA.<sup>34</sup>

According to a Health Consultation issued by the U.S. Department of Health and Human Services in September of 2006 based on soil sampling and other data collected at 505 Burlington Street from 1999 to 2004, the Iowa City FMGP is categorized as posing "No Apparent Public Health Hazard."<sup>35</sup> Moreover, residents and workers exposed to the air and soil in the immediate vicinity would not be expected to experience any adverse health effects. Nevertheless, the department recommended that construction workers who would be exposed to the "contaminated" soil should wear protective clothing and exercise "prudent decontamination procedures" before leaving the site.<sup>36</sup> Similarly, workers should take extra care to control public access to construction areas. Air monitoring during site construction activities should also occur to protect workers and the residents of Iowa-Illinois Manor. If the area is no longer utilized as an

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<sup>33</sup> U.S. Environmental Protection Agency, "Superfund – Basic Information," U.S. Environmental Protection Agency, <http://www.epa.gov/superfund/about.htm> (accessed May 3, 2010).

<sup>34</sup> U.S. Department of Justice, "Notice of Lodging of Consent Decree Under the Comprehensive Environmental Response, Compensation Liability Act," *Federal Register* 73, no. 206 (October 23, 2008): 63196.

<sup>35</sup> U.S. Department of Health and Human Services, "Health Consultation," on *Iowa City Former Manufactured Gas Plant Site*, September 14, 2006, 14.

<sup>36</sup> *Ibid.*, 15.

apartment complex for adult students who live there for 1-2 years, the Department of Health and Human Services will require a revised health consultation to reassess the possible effects of the contaminated site.<sup>37</sup>

Although conclusive data has been gathered to establish the effects of the FMGP on the soil, air, and groundwater quality in the area, little attention has been paid to possible surface water contamination. Nevertheless, development at and around this site has altered Ralston Creek. The creek has been relocated twice: once before 1888, and again between 1948 and 1970.<sup>38</sup> Ongoing threats to wildlife and ecosystems have rarely been considered. A letter from the Iowa DNR dated August 1997 notes the presence of endangered species 15 miles downstream in the Iowa River, but that no “state or county wildlife areas [are] located in the area.”<sup>39</sup>

Moreover, pollution to Ralston Creek, no matter how obvious or significant, has been played down. For example, an attorney for Iowa-Illinois Gas and Electric Co. stated that because data from surface water samples taken from Ralston Creek show contaminant levels that are roughly the same upstream, adjacent, and downstream of the former gas plant, the site had no effect on the water quality of the creek.<sup>40</sup> Such an attitude appears in nearly all conversations about the relationship between the plant and nearby creek. In one instance, a water sample was not collected directly west of the apartments – i.e. in Ralston Creek – because it would have been too physically dangerous for an EPA employee to scale the creek’s bank.<sup>41</sup> Because “contaminants of concern were detected only sporadically and at low levels”, it has been concluded that “the

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<sup>37</sup> *Ibid.*, 15.

<sup>38</sup> MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 2-2.

<sup>39</sup> Larry J. Wilson, letter to Jeffrey Gadt, “Environmental Review Request for Iowa-Illinois Manor Apartments Johnson County, August 1, 1997.

<sup>40</sup> CDM Federal Programs Corporation, letter to Dr. Peter Culver, U.S. E.P.A., May 24, 1994.

<sup>41</sup> CDM Federal Programs Corporation, letter to Dr. Peter Culver, U.S. E.P.A., “Site Reconnaissance,” April 20, 1995.

FMGP site does not appear to have a significant impact on water quality in Ralston Creek.”<sup>42</sup>

Surprisingly, such conclusions have gone unchallenged because although detected, levels of PAHs, benzene, cyanide, and lead deposits were not “above the applicable ecological screening benchmarks.”<sup>43</sup>

While the work done at the site by the EPA has undoubtedly made Iowa City safer and educated the public about such facilities, Ralston Creek has repeatedly been left out of the equation. Exposés like that of Iowa City’s independent publication, *Icon*, in 1996 which revealed the unknown threat to University of Iowa students are commendable.<sup>44</sup> Nevertheless, without further, definitive research on all aspects of the FMGP site, it seems the health of Iowa City residents is still at risk.

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<sup>42</sup> MidAmerican Energy Company, “Site Characterization Report,” vol. 1, *Former Manufactured Gas Plant Site Iowa City, Iowa*, August 2003, 8-5 & 8-6.

<sup>43</sup> *Ibid.*, 8-6.

<sup>44</sup> Andy Douglas, “They Live on a Toxic Waste Site,” *Icon*, November 14, 1996, 4-5.

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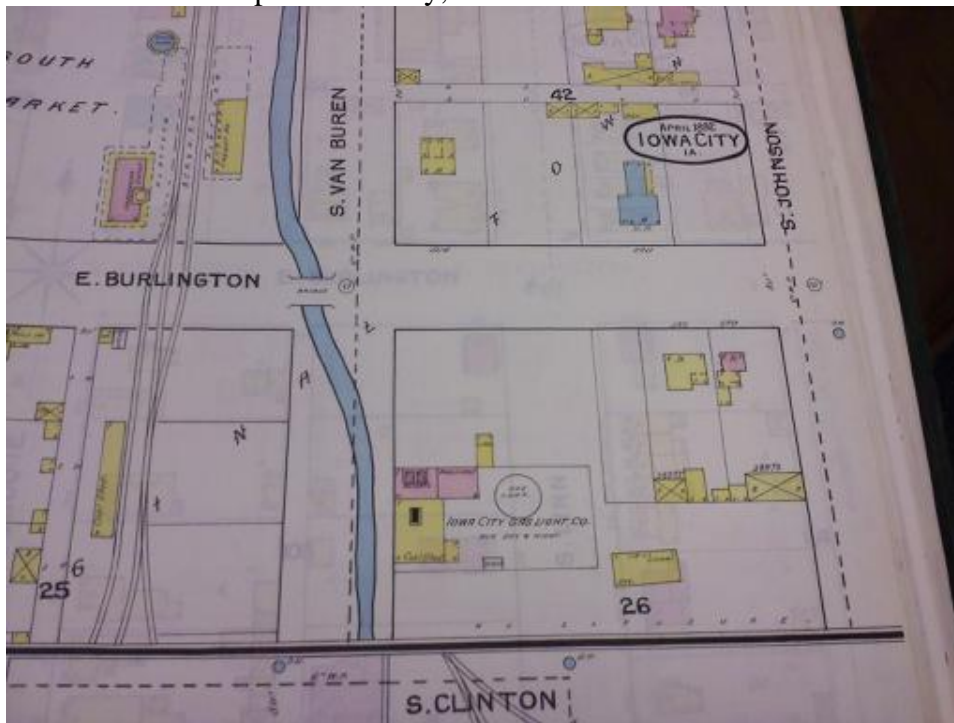
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## Illustrations

### 1. Stanford Fire Map of Iowa City, Iowa 1892.



2. Stanford Fire Map of Iowa City, Iowa 1899.

