

**Clinton Coal Gas Community Advisory Group Comments**  
***Comment Review Based on Final Release of EE/CA***

**Engineering Evaluation/Cost Analysis**  
**Part III – Remedial Alternatives Evaluation**  
**Clinton Coal Gas Site**  
**Clinton, Iowa**

**By**  
**TOSC Program**  
**Great Plains/Rocky Mountain Hazardous Substance Research Center**

January 17, 2002  
*Reviewed May 22, 2002*

The Technical Outreach Services for Communities (TOSC) program provides technical assistance to communities at cleanup sites, by presenting fundamental science information. The goal is to empower communities with an independent understanding of the underlying technical issues related to hazardous substances so they may participate substantively in the decision-making process.

The Clinton Coal Gas Site Community Advisory Group has been asked to make comments to EPA on the Engineering Evaluation/Cost Analysis, Part III – Remedial Alternatives Evaluation. This document includes CAG comments prepared following a January 16, 2002 CAG meeting.

The CAG appreciates that EPA has requested community review and comment of the Remedial Alternatives Evaluation. The CAG understands that these comments will be considered in revising the EE/CA, Part III prior to its release for public comment.

*Comments inserted in italics review changes in the final EE/CA that reflect a response or a lack of response to CAG comments and questions.*

The community's concerns center around drinking water safety, contamination of the river, groundwater contamination, and human health risks. The community would like to see the site cleaned up to a level that will permit its best possible future use. The CAG believes it is important to make good decisions regarding clean up of the site to allow safe and productive use of the property and to avoid community liability and need for further clean up in the future.

*The recommended remediation alternatives for vadose zone soil use institutional controls on development for determining potential future use of the property. On the IPL side, "Local governmental controls would be imposed to prevent the establishment of basements or other subgrade structures, residential redevelopment or school/day care facilities ...". (Part III, page 2-2). For the Allied Steel portion of the site future development is assumed to be: "For the purpose of this alternative evaluation a*

*development scenario incorporating a minimum of intrusive activity is assumed (e.g., greenspace, surface parking, or slab-on-grade construction activities). (Part III, page 2-2).*

As a general comment, the CAG believes a higher level of cleanup is necessary than is recommended in the EE/CA Part III. The two most likely uses of the property east of the railroad are either as a hotel with underground parking or as a green space with parking. Both of these uses will require more clean up than is currently proposed. The CAG expects existing concrete structures will need to be removed for both of these uses. The CAG also expects a greater proportion of the coal tar at the site will need to be removed or treated than is currently proposed in the EE/CA.

*Recommended cleanup alternatives have not been changed from the previous version of the EE/CA.*

In general, the EE/CA document is not specific enough about the proposed remediation alternatives for the community to fully understand what is being proposed. This includes the level of clean up that will be reached with each alternative, the potential use of the property after the clean up is complete, and the duration of the cleanup and monitoring. The community needs greater explanation of proposed institutional and engineering controls and utility contingency plans to understand if the proposed remedies will protect public health and safety and permit productive future use of the property.

*The current version of the EE/CA contains increased detail on the proposed duration of monitoring. Under the recommended alternative for groundwater the monitoring for the monitored natural attenuation alternative would include 5 years of semiannual monitoring followed by 10 years of annual monitoring. Monitoring would end after 15 years. No specific cleanup levels are described for any alternative. The EE/CA includes increased explanation of institutional and engineering controls.*

## **1. Safe Drinking Water**

Clinton residents are proud of the high quality of their drinking water. This must be preserved. Protection of Clinton's public water supply is the highest priority concern of the CAG. Monitoring of the groundwater at the site should continue to insure the safety of Clinton's drinking water.

The CAG remains concerned about the two deep wells at the site. Although one well has been located, more effort should be made to find the second deep well. Both wells need to be properly capped to eliminate a pathway for contaminants to reach the source of drinking water. The CAG is concerned that future development may disturb these wells. Measures should be taken to insure that future disturbance at the site does not compromise these wells.

*One of the two deep wells has been located. The EE/CA does not discuss further action to find or cap these wells.*

The IDPH (Iowa Department of Public Health) raised concerns that the deep aquifer may not be truly protected from contaminants migrating from the shallow aquifer because of the geology of the dolomite layer separating the aquifers. This issue needs to be addressed to determine if the deep aquifer is fully protected.

*There is no indication in the EE/CA that IDPH concern about potential migration of contaminants between the shallow and deep aquifer was addressed.*

Mr. Robert Betsinger, a CAG member, has pointed out the heavy coal tar and perhaps fuel oil contamination that is present at the site of the one known artesian well. This is an ongoing threat to the deep aquifer. (See the attached additional documentation)

## **2. Shallow Groundwater**

The CAG is concerned about allowing contamination of the shallow aquifer to persist. They are interested in the Iowa Department of Natural Resources position regarding protection of this resource. There are several issues of concern about the shallow aquifer:

- a. Due to the proximity to the river it can be an ongoing potential source of contamination to the river.
- b. Parts of the groundwater plume extent offsite to areas at or near residential property. The CAG is concerned about potential exposure to present and future residents near the site.
- c. City of Clinton regulations regarding potential private use of the shallow groundwater for irrigation and other purposes need to be clarified to prevent exposure to the contaminated groundwater.
- d. The EE/CA proposes to use monitored natural attenuation to clean up the shallow groundwater. Under this clean up technology, natural processes are allowed to act on the contaminated groundwater while sufficient monitoring is done to insure that conditions are favorable for remediation and the plume is contained during the remediation period. The clean up goals using monitored natural attenuation need to be fully explained. Is this intended to clean up to a specific standard or to contain the plume in its present location? Monitoring of the natural attenuation process needs to be continued until the remediation objective is achieved with sufficient monitoring to determine if the size of the plume is expanding. The potential effectiveness of monitored natural attenuation will be different if the source of contamination is removed or treated. Without significant source removal the groundwater contamination is unlikely to diminish. The size and shape of the groundwater contamination plume on the east side of the property appears similar to the shape and extent of the former sluice pond. Without removing or treating the sluice pond coal tar little change in the groundwater contamination seems likely.

*On Part II, page 1-2 of the EE/CA the follow statement is made: "While a detailed biodegradation/natural attenuation study for the site has not been performed,*

*preliminary evidence collected from the site characterization and subsequent groundwater monitoring events suggest that naturally-occurring processes can be expected to reduce the mass, toxicity, mobility, volume, and concentration of impacts in the vadose zone and groundwater zones.” Since no groundwater modeling has been done to determine if monitored natural attenuation will be effective, it may not be possible to judge the potential effectiveness of this remediation technique. As described in the EE/CA, the recommended remedy for groundwater does not include a statement of cleanup objectives or the time needed to reach these objectives. Despite the lack of this information the monitoring period is proposed to last for only 15 years. The expected outcome of natural attenuation is strongly influenced by the amount of source present or removed prior to implementing this cleanup strategy. Further modeling and assessment of the need for source removal is needed before adopting monitored natural attenuation as the groundwater cleanup strategy. TOSC has learned that a computer model has recently been developed by Virginia Tech University to model natural attenuation so the time needed to achieve cleanup objectives can be estimated with different amounts of source removal. These types of tools would be useful for the Clinton Coal Gas site.*

- e. The CAG remains concerned about lead contamination at the site including in the drinking water. The CAG expects the clean up standards for lead will be consistent with the clean up standards for other contaminants.

*Lead issues are not addressed by the EE/CA.*

### **3. Defining the full extent of contamination and potential off site escape**

The CAG is concerned about potential future avenues for escape of contaminants from the site including sewers, current and former sloughs, and flood events.

- a. **Co-mingling with other sources of contamination.** The CAG is concerned that offsite contamination, especially to the west of the site, needs to be addressed more completely. How will potential co-mingling or mixing of contaminants from different sources (such as gasoline from underground storage tanks) be addressed? Gasoline constituents can enhance the mobility or spread of PAHs and other chemicals.

*Not discussed further in the EE/CA.*

- b. **Oil storage tanks.** The CAG is concerned that potential contamination from a number of oil storage tanks that were on or near the property has not been fully addressed. One of these tanks was a 203,000 cu ft old gas holder which was used to store fuel oil on the Allied Steel portion of the site. These are not listed on the present maps of the site prepared by Montgomery Watson. (See the attached additional documentation)

*Not discussed further in the EE/CA.*

- c. **Proper closure and abandonment of sewer and water lines.** The CAG supports the closure and proper abandonment of old sewer and water lines on the property. Some CAG members are concerned that some of the old utility lines that need to be properly closed have not been identified in the EE/CA. For example there is an abandoned sewer line at the eastern edge of the property that runs perpendicular to the sewer line that is proposed for closure in the EE/CA. The EE/CA document should show all existing and former utility lines and explain which lines should be properly abandoned. (See the attached additional documentation).

*The EE/CA proposes abandonment and closure of sewer and water lines. The EE/CA states that efforts will be made to locate an apparently abandoned sewer that could not be located during the site characterization (EE/CA Part III page 5-2).*

- d. **Potential cyanide contamination.** The CAG continues to be concerned about potential cyanide contamination as noted by high cyanide found on the residential property near 3<sup>rd</sup> Ave. N. and 2<sup>nd</sup> Ave. N. Please explain findings regarding cyanide contamination since it is a common contaminant near former manufactured gas plants.

*No new information.*

- e. **Sluice pond.** The CAG is concerned about properly defining the full extent of the former sluice pond, which may contain the largest volume of coal tar contamination. The sluice pond also appears to extend off the property such as the area to the east near the band shell. (See the attached additional documentation). Properly cleaning or capping the sluice pond is important for future use of the property.

*Under the proposed remedy for vadose zone soil, potential exposure to sluice pond contaminants would be reduced by institutional and contingent engineering controls. This soil would not be removed or treated. If future development at the site includes subsurface excavation, the former sluice pond soil would be a potential source of exposure. It is likely the former sluice pond is a significant source area for groundwater contamination.*

- f. **Extent of contamination shown in cross sectional view.** Only one cross section is included in the EE/CA, Figure 1-9. This particular cross sectional view does not show the full extent of the contamination. Additional cross sections should be included to show the full extent of the contamination in the east-west and north-south directions. The one identified artesian well should also be included in one of the cross sections.

*Need to check site characterization to see if this information is included.*

#### **4. Special Consideration Areas**

The CAG supports the concept of identifying special consideration areas and proposing appropriate remediation plans for each area. The CAG is concerned about the limited

number of special consideration areas that were designated compared to the number of know operational units at the manufactured gas plant.

- a. Two areas of particular concern are the sluice pond and deep wells. Remediation options should be evaluated for these and other appropriate special consideration areas.

*No change in the EE/CA.*

- b. The area referred to as the inaccessible gas holder should probably be properly cleaned and closed. The current use and value of the building should be considered in relation to the importance of properly cleaning the most highly contaminated sources areas at the site. If the 'inaccessible gas holder' is not cleaned at the present time, then provisions should be made to have it cleaned before any future change in the building ownership or use.

*No change in the EE/CA. Institutional controls are proposed for this gas holder.*

5. **Indoor air quality.** The CAG understands that additional testing will be done to document potential risks from inhalation of airborne contaminants in the IPC building.

*Need for additional testing is not discussed.*

6. **Stormwater management** and flood management plans. The remedy for this site should anticipate flooding and long periods of high water when contaminated water could migrate into other parts of the city. A stormwater management and flood management plan should be included as part of each remedy.

*Stormwater management not discussed further.*

## 7. **Other questions:**

- a. The CAG is concerned with the visual appearance of the site after the remedies are implemented. If there are restrictions to future development of the site, what visual site improvements and landscaping will be done at the site.  
*Not discussed.*
- b. What level of public access to the site will be allowed under each clean up scenario?  
*Depends on redevelopment of site. Not specifically addressed.*
- c. Any future land use of the Allied Steel property most likely will require removing the foundation for the building and investigating the health risks associated with lead and other contaminants under the foundation. Initial removal of lead contamination used an industrial standard. Further cleanup of lead will be necessary to provide for most future uses of the property.  
*Lead issues not addressed in the EE/CA.*
- d. There is a proposed development of low income housing near the Clinton Coal Gas site. Some CAG members are concerned that increasing the number of residences near this location will increase the number of people that may be exposed to the contaminants. Should further residential

development be limited near the site? There is also interest within the Clinton community for preserving some of the historic structures near the Clinton Coal Gas Site. Would this be a preferable use of some of the property near the site compared to increasing the number of residences near the site?

*Not addressed.*

- e. Who will be responsible in the future for contamination that exists under the roads? Is this an issue that DOT will need to address?

*Not addressed.*

- f. The City of Clinton incinerator used to be located just north of the manufactured gas plant site. What was the relationship between the incinerator and the present contamination pattern?

*Not addressed.*

## **8. Additional Comments and supporting material submitted by Mr. Robert Betsinger.**

1) Groundwater Contamination affecting the river and the abandoned artesian wells, which are in the heart of the contamination. I have a problem with the fact that one of the wells cannot be located. Of the well that was located there is no information on the integrity of the casing or how the well was closed if at all. This well is a deep one-1400-1500 feet into the artesian aquifer.

2) Contamination (freeproduct) in a city sewer at the site. There is contamination present in old sewer lines that have not been addressed in the EE/CA. See Figure 1.

3) Hotspots in the Mississippi River by the old gas works sewer outfall. These hotspots are identified in the baseline risk assessment document.

4) Water gas relief holder under Alliant Energy office (the contamination found in this holder is probably the highest concentration to be found at the entire site. This holder held 60K cu ft.

Inaccessible Gas Holder (water gas relief holder). These holders were the dirtiest as they received foul water gas directly from the generator. This foul gas was stored until it could be run back into the plant through the scrubbing and purifying machinery. Hence, tar and light oils were deposited in these holders. This is the dirtiest spot on the whole site. It's been there since the 1880's. There is still piping into and out of this holder. There is no reason to leave this contamination there. This office building isn't of any historical or architectural significance.

If it could be sold the owner would inherit the liability. I can't think of any future use for the building. It won't be there forever and neither should the contamination. I've seen other clean-ups where these holders are cleaned or removed. We don't need to establish a precedent for future clean-ups. There is even evidence that the contamination is migrating from this holder.

5) I have identified several fuel oil storage tanks including a 203,000 cu ft old gas holder which was used to store fuel oil on the Allied Steel portion of the site. These are not listed on the present maps of the site prepared by Montgomery Watson. The information I have comes from historical maps of the site that EPA has.

6) Hotspots by the baseball stadium and MW33 at the foot of the dike. The sampling results for these are in the last testing results from Montgomery Watson.

7) Fuel oil or petroleum products migrating into the site from either Kelly Oil or/and former Macheal Oil Co. I have the test boring logs that were done at this site in 1991 as part of the site investigation for the Hardees restaurant. Groundwater flows are indicated as flowing northeast. Allied Steel is directly east of this on the south end. These results are in "Geotechnical Engineering Exploration and Analysis for the Proposed Hardees Restaurant, Clinton, IA, GEA Project No. 860845" performed by Giles Engineering Associates, Inc. W228N683 Westmound Drive, Waukesha, WI, ph. 414-544-0118.

They did testing there in 1986 and 1991. Groundwater flows are showed to go to the northeast and there are concerns for the petroleum or chemical contamination detected 18-21' bgs. The Iowa DNR had ordered further testing but it never happened. I have evidence that suggests that there were political considerations and pressures. I have all these documents. I can't find the page showing the groundwater flow to the northeast. The EPA has this document also, but disputes the groundwater flow finding as it is their contention that groundwater flows south with the river. (See the attached documentation, which includes results from this study.)

8) Boring logs taken in 1983 at the site of the present swimming pool indicated (waste oil) being present in 2 of the boring samples 18-21 feet bgs.

MW33 was hot, but considered an anomaly, although it was in the area of the sewer outfall. I believe it had petroleum products as well as FMGP waste. It's also in the area where the test borings were taken in 1983 by the swimming pool, which identified "waste oil" 18-21' bgs. These boring logs are at city hall and in the response that the city provided to EPA. These boring logs were about 20 pages and referred to as CPI, CPII, CPIII and I believe there was a CPIV. I can't seem to locate this boring log in my files. I believe it was done by Shive Hattery and it was done in 1983 in preparation for a new municipal swimming pool. This testing was not done for contamination, only for soil conditions to support a new pool, so there was no analysis done on the "waste oil".

9) Cyanide contamination on 2nd Av N along the area that I walked you through a year or so ago. This is the area where the ditch had been filled with purifier box waste or spent oxide from the gas plant. This contamination typically contains cyanide.

The cyanide contamination noted in the area of 2nd Av N was dismissed as an anomaly and not connected to the gas site. However, the concentration of it and the anecdotal information that purifier box waste was dumped here supports the conclusion that this contamination is related to the FMGP. Kevin Larson even stated that cyanide is a

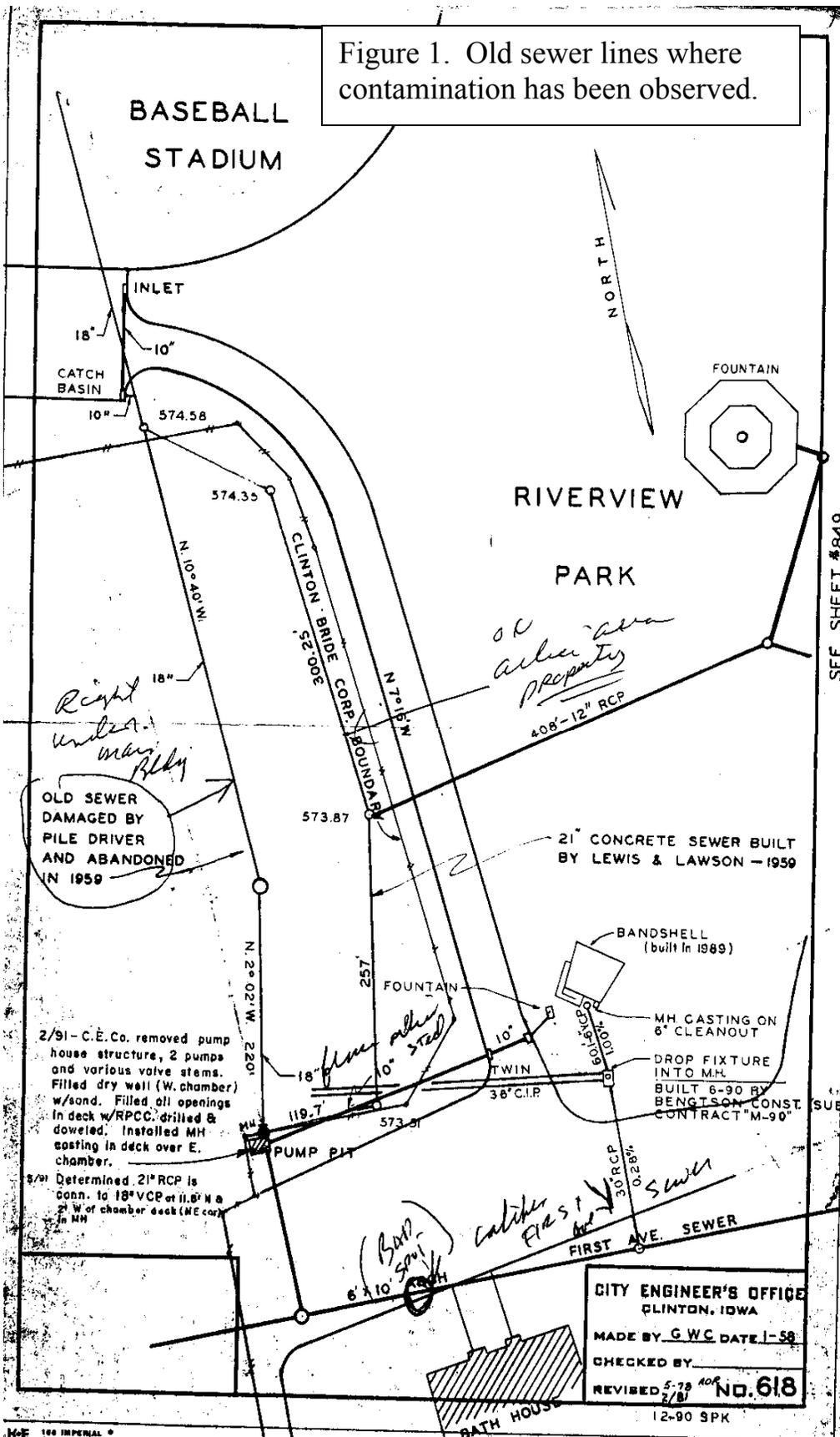
contaminant found in FMGP sites. The cyanide contamination at this site on 2nd Av N by the former slough needs to be clearly defined.

10) There are several waterlines and an 8" high-pressure natural gas line that run through the site on the north end. Repairs on either of these as well a city sewer line across the site are subject to repairs at some point in time, exposing workers to contamination.

I have a blueprint of the original floor plan for Allied Structural Steel. It shows one of the artesian wells as well as all the underground utilities. EPA has this also. The fact that contamination is seeping into the city sewer lines on the site is documented and this is a conduit to the Mississippi River and this fact was not stressed in the last risk assessment. In fact, free product exists (coal tar) is in the sediment of one of these sewer lines. When Kevin Larson was here in December I took him to this sewer, lifted up the manhole cover and he got a good whiff of the smell of the coal tar. I also pointed out that the sample had not been taken where the tar was as was done by the Iowa DNR in 1993.

11) There is no mention of cleaning up the coal tar pond area referred to as "sluice pond". I have a memo about the visual observations done during the test borings done by Montgomery Watson in 1997 in this area. Some of these refer to heavy coal tar contamination beginning a 10' and continuing to 30'bgs-in other words a 20' thick layer of heavy contamination. These are in the area of the tar pit and are within a couple yards of the deep-well pump house (artesian well that was identified). This is a very important point so if we ignore the tar pit we will be ignoring the threat that it poses to the well.

Figure 1. Old sewer lines where contamination has been observed.



CITY ENGINEER'S OFFICE  
 CLINTON, IOWA  
 MADE BY G.W.C. DATE 1-58  
 CHECKED BY \_\_\_\_\_  
 REVISED 5-79 AOP 8/81 NO. 618  
 12-90 9PK