Work Plan for Contingency Air Monitoring Activities During Floor Slab/Footing Removal - FINAL

Former Chamberlain Mfg. Co.

550 Esther Street

Waterloo Iowa

April 19, 2013

WORK PLAN FOR CONTINGENCY AIR MONITORING ACTIVITIES DURING FLOOR SLAB/FOOTING REMOVAL - FINAL

FORMER CHAMBERLAIN MFG CO FACILITY
550 ESTHER STREET
WATERLOO, IOWA

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1.0 INTRODUCTION

This Work Plan was developed to have a method of evaluating ambient air quality during remaining slab and footing removal by the City of Waterloo's (City) contractor at the site. The plan was prepared based on a meeting held on February 19, 2013 between the United States Envrionmental Protection Agency (USEPA), Iowa Department of Natural Resources (IDNR), City of Waterloo representatives, and Chamberlain representatives. The draft Plan (dated March 4, 2013) was revised to incorporate changes recommended by Mr. Bruce Morrison of the USEPA (email dated March 6, 2013) and follow up comments by Mr. Morrison, including the addition of five additional air parameters for the initial air monitoring event. The Work Plan is set up to allow for monitoring of vapors through olfactory methods during routine demolition activities. In the event that noticeable odors are identified during demolition activities, the plan provides for notification, field, and analytical activities.

The objective of this Work Plan is to provide procedures to provide notification, respond to, monitor, and mitigate odor issues that may develop as a result of exposing contaminated soils during removal of slabs and footings as part of the City's construction project. This Work Plan also provides recommendations for documenting activities.

2.0 PLAN ACTIVITIES

This Work Plan provides for procedures to address potential odor issues associated with soil that may be exposed during construction activities related to the demolition of the floor slabs and footings. This Work Plan does not address worker health and safety or disposal of demolition materials during this construction project. This Work Plan is not intended to modify the City of Waterloo's overall approach to the project or contract terms with third parties involved in the construction project. In the case of potential conflict between this Work Plan and the

City's contract documents and other requirements, affected parties are advised to confer with the City.

In finishing the construction activities related to the City's demolition of the site slabs and footings the following overall approach should be followed:

1. Construction Activities with Qualitative Screening if odors are noticed
2. Notification of Third Parties and Field Screening
3. Ambient Air Monitoring Activities
4. Interim Mitigation Measures

2.1 Construction Activities with Periodic Qualitative Screening

Vieth Construction [Vieth] is the contractor that was selected by the City to perform the demolition activities associated with the removal of site floor slabs and concrete footings. Vieth shall use their normal means and methods to meet the requirements of their contract with the City. In terms of qualitative screening, Vieth personnel shall conduct the following activities when indications of odors are noticed or reported.

- A Vieth representative shall leave their vehicle to check for signs of chemical type odors within the active slab/foot removal area. It is preferred that Vieth use the same person, who is a non-smoker, to conduct these observation activities through the remaining project duration.

- The Vieth representative shall check soils immediate to the excavation for potential chemical type odors that may be emanating from the exposed soils. The Vieth representative shall walk the perimeter of the excavation and note where odors may be coming from.

- If chemical type odors are identified immediate to the excavation, the Vieth representative shall check a boundary at approximately 200 feet from the active excavation in each direction (or at the property boundary if closer than 200 feet).

- If chemical type odors are identified at 200 feet boundary from the excavation, Vieth shall check for chemical type odors at the property line. If odors are detected at the property line, interim mitigation measures as discussed in Section 2.4 should be implemented. Upon odor discovery at the property line, it is recommended that Vieth discuss this implementation with the City.

- Vieth shall call the City on a daily basis to provide an update on odors that may or may not have been detected. By collecting information from the Vieth via an interview process, the City will document the findings each day with respect to odors. In the event that odors are detected, documentation shall include the date, time, location of odorous

soils, discoloration, and locations where odors were detected (at the excavation, 200 ft boundary, and/or property line). The City shall distribute odor related documentation to Chamberlain's consultant (Terracon) via email. Following receipt of documentation from the City, Terracon will distribute the results to other parties listed in Section 2.2.

- Vieth shall make notification as discussed in Section 2.2.

For the purpose of this Work Plan, active slab/footing removal shall mean physically exposing or disturbing soil when slabs and/or footings are being removed from the ground surface. Active slab/footing removal shall not include incidental soil disturbance caused when loading/trucking slabs, soil, and footings from the site.

2.2 Notification of Third Parties and Field Screening

Individuals in the notification chain may include:

- Mr. Bruce Morrison, USEPA, (913) 551-7755
- Mr. Dan Cook, IDNR, (515) 281-4171, cell (641) 414-0169
- Mr. Chris Western, City of Waterloo, (319) 291-4366
- Mr. Dave Cleary, Terracon Consultants, Inc., (319) 277-4016, cell (319) 464-6945, Secondary contact – Mr. Mike Hagemeister, (402) 384-7019, cell (402) 699-5254.

In the event of chemical type odors emanating from the excavation, it shall be the responsibility of Vieth to provide immediate notification to the City of Waterloo and Terracon. Additional notification requirements as discussed herein will be handled by Terracon. Terracon will call the USEPA and IDNR within about one hour during normal business hours of being notified of the odor from the City or Vieth. This initial call serves to provide notice to the USEPA and IDNR that a potential odor issue may exist but little information may be available during this initial call.

In the event that odors are identified immediate to the excavation but not to extend to the property boundary, Terracon will mobilize to the site as soon as practical (within 24 hours of notification) to evaluate the field conditions. Terracon will mobilize to the site on the same day as notification (if reasonably feasible) if odors have been identified at the property boundary. Terracon will notify the City of the schedule of planned activities.

Terracon on behalf of Chamberlain shall conduct the following field screening as part of their response to the odor notification:

- Observe the soils within the excavation with a chemical type odor for possible discoloration. Record the location of the excavation on a map and note distinctive odors and/or discoloration.

- A photo-ionization detector (PID) with an 11.7 eV lamp will be used.

- Collect one soil sample from the excavation with odorous soils for PID screening using customary headspace screening protocol.

- The PID shall be used to screen the breathing zone (approximately 4-5 feet above grade) at the excavation, the 200-ft boundary, and property line. Additional emphasis will be placed upon screening at the western property boundary as well as the prevailing down-wind direction.

- Record PID results on a site map.

- Take photographs of the excavation and other pertinent features related to the work.

- Record temperature, wind speed, wind direction, and humidity from the Waterloo Municipal Air Port Weather Station, available at http://w1.weather.gov/xml/current_obs/KALO.xml. On-site relative wind direction will also be documented.

Following the field screening, Terracon shall develop an approach to additional ambient air monitoring, if warranted per the Work Plan. It is envisioned that the follow up ambient air monitoring will be conducted consistent with Section 2.3; however, the approach will be discussed with the USEPA prior to implementation and is subject to change. The parties in the notification list of Section 2.2 will be notified of the additional planned ambient air monitoring.

On behalf of Chamberlain, Terracon will prepare a document to summarize the field screening summary which may be submitted via email to parties included in Section 2.2. The results document will include: 1) a site diagram showing the excavation with odorous characteristics and PID sampling locations; 2) the field PID data; 3) weather conditions; and the 4) the agreed to plan of additional action (if warranted).

2.3 Ambient Air Monitoring Activities

Quantitative ambient air sampling may be conducted for each new discovery of odorous soils that result in a noticeable qualitative odor at the western site property boundary. Other excavation areas with localized odors (not reaching the property boundary) will be documented with the use of field screening data but analytical samples may not be collected. Terracon shall provide the schedule for sampling activities to those on the notification list in Section 2.2 (in advance of implementation) so that additional parties may participate as warranted.

Up to three ambient air samples will be collected at the property boundary for each new discovery that results in noticeable odors at the property boundary. The spacing of the air samples will generally be on the order of 500-feet and will not be collected near buildings or large trees to the extent practical. Emphasis in sample coverage will be on the west property

boundary because of the proximal residential neighborhood. The sample locations may be selected based on a forecast of the prevailing wind direction for the 24-hour sampling period.

During the initial sampling event, Terracon will attempt to collect two background ambient air samples. The samples will be collected in the same manner as the three property boundary samples. The background sampling locations will be selected based on the anticipated wind direction and will be collected at least 500 feet from the site property. Terracon will work with the City to identify potential background sampling locations with adequate security to limit the potential for unauthorized contact that could adversely affect the results. If more than one sampling event is necessary due to odors, additional background ambient air samples are not planned to be collected at this time.

There are no known nearby outdoor sources of site related Chemicals of Concern (COCs), except vehicular traffic (no known dry cleaners or other commercial or industrial facilities) proximal to the facility. However, analytical testing involving petroleum related hydrocarbons (or combusted byproducts) would anticipate to more affected by typical background artifacts (primarily vehicles including those on site conducting the work) than the site related chlorinated COCs. The site related COCs include tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride, trans-1,2-dichloroethene (trans-DCE), cis-1,2-dichloroethene (cis-DCE), 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane (1,1,1-TCA), and 1,1,2-trichloroethane.

The ambient air samples will be collected using individually-certified Summa canisters with a calibrated critical orifice to allow for collection of 24-hour duration samples. The inlet to the flow controller will be positioned between 3 and 5 feet above the ground surface. The samples should be collected within the fenced area of the facility to limit potential unauthorized handling/disturbance. The samples should be collected in accordance with instructions provided by the laboratory. The Summa canisters will be submitted for analysis to a laboratory with applicable certifications under chain-of-custody for the parameters listed in attached Table 1 using EPA Method TO-15.

For quality assurance/quality control, one arbitrary blind duplicate sample will be collected during each sampling event for the COCs. The blind duplicate will also be collected with a Summa canister and critical orifice. Equipment blanks are not planned for collection or analyses since non-dedicated equipment that may come into contact with the air samples are unlikely.

The locations of the air samples will be documented on a site map. Relevant weather information (temperature, humidity, wind speed, and wind direction) from the Waterloo Municipal Air Port Weather Station (http://w1.weather.gov/xml/current_obs/KALO.xml) will be documented for the sample collection period. On-site relative wind direction will documented during sample collection.

On behalf of Chamberlain, Terracon will prepare a letter report that includes: 1) a site map with sampling locations, 2) brief description of work with a discussion of deviations in planned work;

3) tabular summary of the weather data; 4) tabular summary of analytical data; and 5) laboratory analytical reports. This letter report may be distributed via email to all the notification parties listed in Section 2.2.

2.4 Interim Mitigation Measures

Short-term management of odors at the property boundary as a result of exposing odorous soils during on-site demolition activities will be managed by Terracon on behalf of Chamberlain. Responsibility for implementing longer term management of odors due to soil impact is not part of this Work Plan. This document is not intended to identify all methods that may be effective odor mitigation. Rather the document provides two mitigation method examples that are proven to substantially reduce odor issues. Odor mitigation implementation should commence at such time odors are identified at the property boundary.

Terracon will cover the odorous soils with a minimum of 6-mil polyethylene sheeting (or equal) with a minimum of one-foot overlap at all seams. The sheeting will need to be anchored with the use of stakes or weighted down (with soil or otherwise) adequately to reduce the risk of wind damage. Once the sheeting has been installed, Terracon and the City should periodically inspect to make sure it is functioning as intended. The use of sheeting should not be considered a long term (greater than 6 months) solution.

As longer term solution, odorous soil may be covered with a minimum of nine-inches of uncontaminated soil. Soils with high sand and/or gravel or soil content (>30 percent) should not be used as cover material. Special compactive efforts during placement are not required when using soil as a cover material to reduce odors. However, it is recommended that soils be graded and compacted to a degree to support vegetative grow and limit settlement (90 percent of standard proctor). The use of soils would be considered a longer term solution to managing odorous soils until a more permanent solution is implemented.

Terracon shall document the short-term methods used to manage odors emanating from excavations. The document shall be submitted to all parties listed in Section 2.2.

3.0 DOCUMENTATION

The required documentation of activities conducted under this Work Plan has been covered in Sections 2.1 through 2.4. Depending upon the task, the City of Waterloo and Terracon are responsible for generating and distributing the required documentation. The documentation may be distributed via electronically without hard copy distribution.

TABLE 1
CONTINGENCY AIR MONITORING WORK PLAN FOR DEMOLITION ACTIVITIES
FORMER CHAMBERLAIN MANUFACTURING FACILITY

Ambient Air Sample Laboratory Analytical Parameter List (EPA Method TO-15)

Actetonitrile
Acrolein (2-propenal)
Benzene
Benzyl chloride
Bromomethane
1,3-butadiene
2,butanone
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
3-Chloropropene (allyl chloride)
1,2-Dibromoethane (EDB)
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
cis-1,2-Dichloroethene
1,1-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
1,2-Dichloro-1,1,2,2-tetrafluoroethane
Ethylbenzene
Hexachlorobutadiene
Methylene chloride
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichlorofluoromethane
1,1,2-Trichloro-1,2,2-trifluoroethane
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vinyl chloride
m-Xylene & p-Xylene
o-Xylene