# REVISED PHASE II ENVIRONMENTAL SITE ASSESSMENT
# US EPA BROWNFIELDS PETROLEUM ASSESSMENT GRANT: BF-98796701

## FORMER BAKER PROPERTIES

## POTTAWATTAMIE COUNTY
## COUNCIL BLUFFS, IOWA

**February 2012**

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# REVISED PHASE II ENVIRONMENTAL SITE ASSESSMENT
# US EPA BROWNFIELDS PETROLEUM ASSESSMENT GRANT: BF-98796701

## FORMER BAKER PROPERTIES

**Property #1:** 1316-1326 4th Avenue (Approx.), PIN#s 754435237008, 754435237009, 754435237010, 754435237011

**Property #2:** 1234 4th Avenue, PIN# 754435238001

**Property #3:** 1314 5th Avenue, PIN# 754435276001

**Property #4:** 1317 5th Avenue (Approx.), PIN# 754435279003

**Property #5:** 1228 6th Avenue (Approx.), PIN# 754435280008

**POTTAWATTAMIE COUNTY**
**COUNCIL BLUFFS, IOWA**

**HR GREEN, INC. PROJECT NO. 728500J02**

*Prepared for:*

**CITY OF COUNCIL BLUFFS**

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## 1.0 EXECUTIVE SUMMARY

The City of Council Bluffs is participating in the U.S. Environmental Protection Agency (EPA) Brownfields Petroleum Assessment program. The goal of this economic development initiative is to facilitate community revitalization and promote sustainable economic conditions by addressing any real or perceived environmental issues associated with abandoned or underused properties within the Council Bluffs Brownfields Redevelopment Area.

HR Green Inc. (HR Green) was retained by the City of Council Bluffs (City) to conduct a Phase II Environmental Site Assessment (ESA) on the properties located at 1316-1326 4th Avenue (Property #1), 1234 4th Avenue (Property #2), 1314 5th Avenue (Property #3), 1317 5th Avenue (Property #4), and 1228 6th Avenue (Property #5), hereinafter referred to as the Subject Properties, in the City of Council Bluffs, Pottawattamie County, Iowa (Appendix B, Figure 1).

Nine borings were advanced on the Subject Properties on March 28, 2011, and soil and groundwater samples were collected for analysis. Soil and groundwater sampling results have been compared against Iowa Statewide Soil and Groundwater Standards and the cumulative health risks for the detected constituents have been calculated. The results are provided in this document.

Since completion of the original Phase II ESA report in May 2011, the risk-based soil standard for cobalt outlined in Iowa Administrative Code (IAC) 567 *Chapter 137: Iowa Land Recycling Program and Response Action Standards* was changed from 23 to 78 milligrams per kilogram (mg/kg). The higher cobalt standard changed risk based calculations for several properties (Properties #1/2/4). The findings and conclusions are summarized as follows:

| **Property** | **Contaminants Detected Greater than Iowa Statewide Standards/Tier 1 Look-up Value** | | **Property Suitable for Redevelopment Based on Preliminary Risk Evaluations?** | |
|---|---|---|---|---|
| | ***Soil*** | ***Groundwater*** | ***Residential*** | ***Non-residential*** |
| #1-1316/1318/1324/ 1326 4th Ave (Approx.) | N/A | N/A | Yes* | Yes |
| #2-1234 4th Ave | Arsenic/ Mercury/Lead | Arsenic/Cadmium/Lead/Barium/ Chromium | No | Yes* |
| #3-1314 5th Ave | Lead | TEH-diesel/Benzene/ Ethylbenzene/Tetrachloroethane, 1,1,2,2-/Trimethylbenzene 1,2,4- /Arsenic/Lead/Barium/Chromium | No | No |
| #4-1317 5th Ave (Approx.) | N/A | N/A | Yes* | Yes |
| #5-1228 6th Ave (Approx.) | Cobalt/Lead | N/A | No | No |

*Changed based on new cobalt standard.

There are no drinking water wells with 1,000 feet of the site. The City of Council Bluffs has a groundwater ordinance (Chapter 4.33), which prevents the installation of private wells for groundwater consumption; therefore, the groundwater ingestion pathway is incomplete. However, soil and groundwater concentrations at the site exceed Statewide Standards, a Tier 1 Look-Up value, and calculated risk limits established by IDNR. HR Green recommends completing additional assessment on properties not suitable for

redevelopment to further evaluate the impacts found at the site and potential exposure risks in regard to redevelopment plans.

## 2.0 INTRODUCTION

The City of Council Bluffs is participating in the U.S. Environmental Protection Agency (EPA) Brownfields Petroleum Assessment program. The goal of this economic development initiative is to facilitate community revitalization and promote sustainable economic conditions by addressing any real or perceived environmental issues associated with abandoned or underused properties within the Council Bluffs Brownfields Redevelopment Area.

### 2.1 Purpose

The objective of this assessment was to evaluate environmental impairment to the property resulting from the RECs identified during the Phase I ESA process. The data gathered during this assessment will assist the city in evaluating the feasibility of redevelopment by comparing constituent concentrations on the property to the risk-based standards outlined in Iowa Administrative Code (IAC) 567 *Chapter 137: Iowa Land Recycling Program and Response Action Standards* or the Tier 1 Levels in IAC *Chapter 135: Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (USTs).*

### 2.2 Problem Statement

The City of Council Bluffs is evaluating abandoned and underused properties with the intent of encouraging redevelopment. Evaluation of these properties is conducted through the collection and analysis of environmental data.

Evaluation of environmental impairment is conducted using the regulatory programs outlined in IAC. Evaluation of environmental impairment not associated with USTs involves risk-based evaluation and response action through the voluntary Land Recycling Program (LRP) as set forth in IAC 567-137(457B) *Chapter 137: Iowa Land Recycling Program and Statewide Response Action Standards* (IAC 137). In the event contamination is associated with USTs, IAC 137 defers to the evaluation criteria outlined in IAC 567-135(455B) *Chapter 135: Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks* (IAC 135). For this Project, soil and groundwater evaluations for public risk were conducted according to IAC 135 and IAC 137, depending on the source of contamination.

### 2.3 Limitations and Exceptions of Assessments

The report has been prepared in accordance with generally accepted environmental methodologies referred to in ASTM 1903-05, and contains all o the limitations inherent in these methodologies. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

### 2.4 Limiting Conditions and Methodologies Used

No ESA can eliminate all uncertainty. Furthermore, any sample, either surface or subsurface, taken for chemical analysis may or may not be representative of a larger population. Professional judgment and interpretation are inherent in the process and uncertainty is inevitable. Additional assessment may be able to reduce the uncertainty.

Even when Phase II ESA work is executed with an appropriate site-specific standard of care, certain conditions present especially difficult detection problems. Such conditions may include, but are not limited to, complex geological settings, the fate and transport characteristics of certain hazardous substances and petroleum products, the distribution of existing contamination, physical limitations imposed by the location of utilities and other man-made objects, and the limitations of assessment technologies.

Phase II ESAs do not generally require an exhaustive assessment of environmental conditions on a property. There is a point at which the cost of information obtained and the time required to obtain it outweigh the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. If hazardous substance or petroleum releases are confirmed on a parcel of property, the extent of further assessment is related to the degree of uncertainty that is acceptable to the user with respect to the real estate transaction.

Measurements and sampling data only represent the site conditions at the time of data collection. Therefore, the usability of data collected as part of this Phase II ESA may have a finite lifetime depending on the application and use being made of the data. An environmental professional should evaluate whether the generated data are appropriate for any subsequent use beyond the original purpose for which it was collected.

## 3.0 BACKGROUND

The Subject Properties are located within the NE ¼ of Section 35 Township 75 North, Range 44 West in Pottawattamie County, Iowa and are further located by latitude and longitude at 41° 15' 26.2" North and 95° 51' 48.4" East (Figure 1, Appendix B).

### 3.1 Site Characteristics

The Subject Properties are located in the general industrial (I-1) and residential (R-3) area of the City of Council Bluffs. A railroad right-of-way is located adjacent to the north and west of Properties #2 and #3 and to the south and east of Property #1. Residential development surrounds Properties #4 and #5 and borders Properties #2 and #3 to the south and east and Property #1 to the north and west.

The Subject Properties consists of three vacant lots and two lots with structures. Property #2 contains a masonry building and a garage, and Property #3 contains a service garage with two additions and a metal shop. The Subject Properties are relatively flat with surface drainage to the streets.

### 3.2 Phase I Environmental Site Assessment

Thiele Geotech, Inc (TG) performed a Phase I ESA on the Baker Properties during September 2009. The 2009 assessment revealed evidence of three RECs with potential to impact the subject property. The RECs are summarized below.

1. Auto repair and service operations have been conducted at 1314 5th Avenue (Property 3) since at least 1957. These operations generally involve the use of petroleum hydrocarbons, paint, and solvents. The area under the waste oil aboveground storage tank was heavily stained. A pit in the garage floor appeared to contain paint thinner. Over time, leaks and spills of these substances can adversely impact underlying soils and groundwater at the assessment site.

2. The property at 1234 4th Avenue (Property 2) was an electrical power substation from at least 1937 to 1971. Before 1977, PCBs were commonly used as lubricants in electrical power equipment. PCBs are hazardous to human health and the environment and their presence on the site would pose a threat to the underlying soils and groundwater at the assessment site. Evidence of spills was also observed in the building at 1234 4th Avenue from storage activities of Jay B Towing and Garage. Spills of petroleum hydrocarbons and/or solvents have potential to adversely impact the subsurface soils and groundwater.
3. Based on TG's previous experience in Council Bluffs in areas similar to the assessment site, there is potential for historical contaminated fill to be present in the subsurface soils at all of the properties of the assessment site. The contaminated fill exhibits high concentrations of metals such as lead and arsenic.

A detailed sampling plan was prepared to assess the RECs in the Property Specific Sampling and Analysis Checklist (PSSAC) dated November 2010.

## 4.0 PHASE II ACTIVITIES

On March 28, 2011, nine geoprobe borings were advanced on the Subject Properties (Figures 2 & 3 in Appendix B). Soil samples were collected and logged over the full depth of each soil boring and screened for volatile organic compounds (VOCs) using a photoionization detector (PID) and Resource Conservation and Recovery Act (RCRA) metals using a portable X-ray Fluorescence (XRF) device. Soil samples with a PID reading greater than 10 parts per million (ppm) were collected for analysis of VOCs and/or TEHs for each respective boring. Several soil samples screened with the XRF were submitted to the laboratory for RCRA metals analysis to confirm the XRF results. Groundwater samples were collected from select locations from temporary monitoring wells constructed of 2" PVC casing and a slotted screen. Wells were developed and sampled using disposable polyethylene tubing.

Duplicate soil samples were not taken for VOC or total extractable hydrocarbon (TEH) analysis. Only one sample was submitted for laboratory analysis, so the duplicate sample would not have been a blind duplicate. Duplicate soil and groundwater samples for PCBs were overlooked; no duplicate samples were collected. The analysis of TEHs in groundwater was overlooked at Baker-3; however, no visible signs of contamination such as odor or discoloration were observed on the samples. There were no other site-specific conditions which warranted deviation from the sampling plan.

### 4.1 Soil Assessment Results

Soils encountered in the borings generally ranged from sand to clay. Bedrock was not encountered in any borings. PID readings from nearly all borings were generally low (<10) and no evidence of contamination was observed. Elevated PID readings (up to 1534 ppm) were observed in Baker-5 (on Property #3). TEHs, VOCs, and metals were detected in select soil samples. Cobalt, arsenic, mercury, and lead were detected above Statewide Standards.

Soil sample locations are shown on Figure 2 (Appendix B). Soil boring logs are provided in Appendix D. Laboratory analytical reports and XRF Data can be found in Appendix C. Results are described in the following sections.

### 4.1.1 Property #1 – 1316/1318/1324/1326 4th Street (Approx.)

One boring was advanced to five feet below ground surface (bgs) on Property #1 during the Phase II ESA. According to XRF results, concentrations in soil from Property #1 did not exceed Statewide Standards (Table 1).

**Table 1**
**Property #1: Soil Analytical Results - Metals (milligrams per kilogram)**

| Constituent | Statewide Standard | Sample ID | |
|---|---|---|---|
| | | Baker-1 | Baker-1 |
| | | 0-2.5' | 2.5-5' |
| Chromium | 210 | **17.3** | <LOD* |
| Cobalt | 78 | **27*** | **24*** |
| Arsenic | 17 | **9.03** | <LOD* |
| Barium | 15000 | **217** | <LOD* |
| Mercury | 23 | **0.0554** | <LOD* |
| Lead | 400 | **31.4** | **21*** |

**NOTE:** LOD = XRF Level of Detection / **Bold** indicates concentration above laboratory reporting limits /* Analyzed with XRF

### *4.1.2 Property #2 – 1234 4th Avenue*

Three borings were advanced to 20 feet bgs on Property #2. According to XRF results, arsenic, mercury, and lead were detected above Statewide Standards in select soil samples (Table 2). No polychlorinated biphenyls (PCBs) were detected.

**Table 2**
**Property #2: Soil Analytical Results - Metals (milligrams per kilogram)**

| Constituent | | Chromium | Cobalt | Arsenic | Cadmium | Barium | Mercury | Lead |
|---|---|---|---|---|---|---|---|---|
| Statewide Standard | | 210 | 78 | 17 | 70 | 15000 | 23 | 400 |
| Sample ID | Depth | | | | | | | |
| Baker-2 | 0-2.5' | <LOD* | **56*** | <LOD* | <LOD* | <LOD* | <LOD* | **66*** |
| | 2.5-5' | <LOD* | **28*** | <LOD* | <LOD* | <LOD* | <LOD* | **67*** |
| | 5-7.5' | <LOD* | **48*** | **17*** | <LOD* | **1682*** | <LOD* | **32*** |
| | 7.5-10' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 10-12.5' | <LOD* | **49*** | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 12.5-15' | <LOD* | **23*** | <LOD | <LOD* | <LOD* | <LOD* | **18*** |
| | 15-20' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| Baker-3 | 0-2.5' | <LOD* | **25*** | **36*** | <LOD* | <LOD* | <LOD* | **187*** |
| | 2.5-5' | <LOD* | **32*** | <LOD* | <LOD* | <LOD* | <LOD* | **24*** |
| | 5-7.5' | <LOD* | **25*** | **21*** | <LOD* | <LOD* | <LOD* | **126*** |
| | 7.5-10' | <LOD* | **43*** | <LOD* | <LOD* | <LOD* | <LOD* | **22*** |
| | 10-12.5' | <LOD* | **31*** | <LOD* | <LOD* | <LOD* | <LOD* | **16*** |
| | 12.5-15' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 15-17.5' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 17.5-20' | <LOD* | **14*** | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| Baker-4 | 0-2.5' | <LOD* | **37*** | <LOD* | <LOD* | <LOD* | <LOD* | **24*** |
| | 2.5-5' | <LOD* | **55*** | **43*** | <LOD* | <LOD* | **24*** | **441*** |
| | 5-7.5' | <LOD* | **41*** | **18*** | <LOD* | **1514*** | <LOD* | **64*** |
| | 7.5-10' | <LOD* | **46*** | <LOD* | <LOD* | <LOD* | <LOD* | **17*** |
| | 10-12.5' | <LOD* | **42*** | <LOD* | <LOD* | <LOD* | <LOD* | **34*** |
| | 12.5-15' | <LOD* | **34*** | <LOD* | <LOD* | <LOD* | <LOD* | **18*** |
| | 15-17.5' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | **10*** |

**NOTE:** LOD = XRF Level of Detection / **Bold** indicates concentration above laboratory reporting limits / Shaded indicates concentration above applicable Standard / * Analyzed with XRF

### *4.1.3 Property #3 – 1314 5th Avenue*

On Property #3, two borings were advanced to 20 feet bgs, and one boring was advanced to five feet bgs. According to XRF results, lead was detected above Statewide Standards in one soil sample (Table 3). VOC and TEH constituents were detected, but below the applicable standards in Baker-5 (Table 4).

**Table 3**
**Property #3: Soil Analytical Results - Metals (mg/kg)**

| Constituent | | Chromium | Cobalt | Arsenic | Cadmium | Barium | Mercury | Lead |
|---|---|---|---|---|---|---|---|---|
| **Statewide Standard** | | **210** | **78** | **17** | **70** | **15000** | **23** | **400** |
| **Sample ID** | **Depth** | | | | | | | |
| Baker-5 | 0-2.5' | <LOD* | **24*** | **14*** | <LOD* | <LOD* | <LOD* | **13*** |
| | 2.5-5' | <LOD* | **57*** | <LOD* | <LOD* | **1831*** | <LOD* | **1515*** |
| | 5-7.5' | <LOD* | **55*** | <LOD* | <LOD* | **1958*** | <LOD* | **33*** |
| | 7.5-10' | <LOD* | **30*** | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 10-12.5' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | **14*** |
| | 12.5-15' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 15-17.5' | <LOD* | **18*** | <LOD* | <LOD* | **1213*** | <LOD* | **16*** |
| | 17.5-20' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| DUP-1 (Baker-6) | 0-2.5' | **21.4** | NA | **13.5** | <1.23 | **267** | **0.0704** | **24.5** |
| Baker-6 | 0-2.5' | **24.2** | **27*** | **11.8** | <1.24 | **259** | **0.0420** | **18.4** |
| | 2.5-5' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | **26*** |
| | 5-7.5' | <LOD* | **45*** | <LOD* | <LOD* | **1425*** | <LOD* | **21*** |
| | 7.5-10' | <LOD* | **33*** | <LOD* | <LOD* | <LOD* | <LOD* | **14*** |
| | 10-12.5' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | **15*** |
| | 12.5-15' | <LOD* | **29*** | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 15-17.5' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| | 17.5-20' | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* | <LOD* |
| Baker-7 | 0-2.5' | <LOD* | **35*** | <LOD* | <LOD* | **1674*** | <LOD* | **22*** |
| | 2.5-5' | <LOD* | **76*** | <LOD* | <LOD* | **2277*** | <LOD* | **168*** |

**NOTE:** LOD = XRF Level of Detection / **Bold** indicates concentration above laboratory reporting limits / Shaded indicates concentration above applicable Standard / * Analyzed with XRF

**Table 4**
**Property #3: Soil Analytical Results – VOCs & TEHs (mg/kg)**

| Constituent | Statewide Standards | Baker-5 12.5-15' |
|---|---|---|
| **Total Extractable Hydrocarbons** | | |
| Diesel | 3800* | **48.1** |
| Gasoline | NC | **293** |
| **Volatile Organic Compounds** | | |
| Butylbenzene, n- | 23000 | **8.59** |
| Cumene (Isopropylbenzene) | 7600 | **2.4** |
| Ethylbenzene | 7600 | **9.31** |
| Hexane, N- | 4600 | **5.87** |
| Naphthalene | 1100 | **9.8** |
| n-Propylbenzene | NC | **10.9** |
| p-Isopropyltoluene | NC | **1.79** |
| sec-Butylbenzene | NC | **1.42** |
| Trimethylbenzene, 1,2,4- | 3800 | **54.8** |
| Trimethylbenzene, 1,3,5- | 3800 | **17** |
| Xylene, Mixture | 15000 | **38.4** |

**NOTE: Bold** indicates concentration above laboratory reporting limits / * Tier 1 Look-Up value. NC = Not Calculated.

### *4.1.4 Property #4 – 1317 5th Avenue (Approx.)*

One boring was advanced to five feet bgs on Property #4. According to XRF results, no concentrations exceeded Statewide Standards in soil sample Baker-8 (Table 5).

**Table 5**
**Property #4: Soil Analytical Results - Metals (mg/kg)**

| Constituent | Statewide Standard | Sample ID | |
|---|---|---|---|
| | | Baker-8 | Baker-8 |
| | | 0-2.5' | 2.5-5' |
| Chromium | 210 | <LOD* | <LOD* |
| Cobalt | 78 | <LOD* | **34*** |
| Arsenic | 17 | <LOD* | <LOD* |
| Cadmium | 70 | <LOD* | <LOD* |
| Barium | 15000 | <LOD* | <LOD* |
| Mercury | 23 | <LOD* | <LOD* |
| Lead | 400 | **39*** | **26*** |

**NOTE:** LOD = XRF Level of Detection / **Bold** indicates concentration above laboratory reporting limits / Shaded indicates concentration above applicable Standard / * Analyzed with XRF

### *4.1.5 Property #5 – 1228 6th Avenue (Approx.)*

One boring was advanced to five feet bgs on Property #5. According to XRF results, cobalt and lead were detected above Statewide Standards in one soil sample from Property #5 (Table 6).

**Table 6**
**Property #5: Soil Analytical Results - Metals (mg/kg)**

| Constituent | Statewide Standard | Sample ID | |
|---|---|---|---|
| | | Baker-9 | Baker-9 |
| | | 0-2.5' | 2.5-5' |
| Chromium | 210 | <LOD* | <LOD* |
| Cobalt | 78 | **36*** | **109*** |
| Arsenic | 17 | <LOD* | <LOD* |
| Cadmium | 70 | <LOD* | <LOD* |
| Barium | 15000 | **1922*** | <LOD* |
| Mercury | 23 | <LOD* | <LOD* |
| Lead | 400 | **17*** | **929*** |

**NOTE:** LOD = XRF Level of Detection / **Bold** indicates concentration above laboratory reporting limits / Shaded indicates concentration above applicable Standard / * Analyzed with XRF

## *4.2 Groundwater Assessment Results*

Groundwater was collected above bedrock from four boring locations as shown on Figure 3 in Appendix B. Results are described in the following sections. Laboratory analytical reports can be found in Appendix C.

TEHs, VOCs, and metals were detected in groundwater samples from the Former Baker Properties. VOCs and metals were detected above Statewide Standards. TEH-diesel was detected above the Tier 1 Look-up value in the groundwater sample collected from boring Baker-5. It should be noted the groundwater samples were unfiltered, dissolved metals concentrations may be lower.

Table 7 summarizes the analytical results for detected analytes in groundwater for all samples.

## Table 7 - Groundwater Analytical Results (micrograms per liter)

| Constituent | Statewide Standard | | Baker-2 | Baker-3 | Baker-5 | Baker-6 | Dup-1 (Baker-6) |
|---|---|---|---|---|---|---|---|
| | Protected | Non-Protected | | | | | |
| **Total Extractable Hydrocarbons** | | | | | | | |
| Diesel | 1.2* | 75.0* | <0.3 | NA | **1.32** | <0.3 | <0.3 |
| Gasoline | NC | NC | <0.3 | NA | **19.3** | <0.3 | <0.3 |
| **Volatile Organic Compounds** | | | | | | | |
| Acetone | 6.3 | 32 | **0.00205** | **0.00362** | **0.0251** | <0.00179 | <0.00179 |
| Acrylonitrile | 0.00032 | 0.0065 | <0.00019 | <0.00019 | <0.00019 | **0.00028** | <0.00019 |
| Benzene | 0.005 | 0.1 | <0.00011 | <0.00011 | **0.248** | **0.00046** | <0.00011 |
| Butylbenzene, n- | 2.1 | 10 | <0.00037 | <0.00037 | **0.049** | <0.00037 | <0.00037 |
| Carbon disulfide | 0.7 | 3.5 | <0.00015 | <0.00015 | **0.00034** | <0.00015 | <0.00015 |
| Carbon Tetrachloride | 0.005 | 0.027 | <0.00024 | <0.00024 | <0.00024 | <0.00024 | **0.00024** |
| Chloroethane | 2.8 | 14 | <0.00015 | <0.00015 | <0.00015 | **0.00029** | <0.00015 |
| Chloroform | 0.08 | 0.57 | <0.00028 | <0.00028 | **0.00926** | <0.00028 | <0.00028 |
| Chloromethane | 0.03 | 0.27 | <0.00031 | <0.00031 | **0.00042** | <0.00031 | <0.00031 |
| Chlorotoluene, p- | 0.1 | 0.7 | <0.00013 | <0.00013 | **0.028** | <0.00013 | <0.00013 |
| Cumene (Isopropylbenzene) | 0.7 | 3.5 | <0.00019 | <0.00019 | **0.0993** | **0.00025** | <0.00019 |
| Dibromo-3-chloropropane, 1,2- (DBCP) | 0.0002 | 0.0025 | <0.00012 | <0.00012 | <0.00012 | <0.00012 | **0.00016** |
| Ethylbenzene | 0.7 | 3.5 | <0.00021 | <0.00021 | **1.55** | <0.00021 | <0.00021 |
| Hexane, N- | 0.42 | 2.1 | <0.0002 | <0.0002 | **0.198** | **0.00086** | **0.00034** |
| Methyl Ethyl Ketone | 4 | 21 | <0.00016 | **0.00032** | **0.0167** | <0.00016 | **0.00057** |
| Methyl tert-Butyl Ether (MTBE) | 0.021 | 1 | <0.00016 | <0.00016 | **0.00036** | <0.00016 | <0.00016 |
| Methylene Chloride (Dichloromethane) | 0.005 | 0.47 | **0.00044** | **0.00018** | **0.00316** | <0.00017 | **0.00025** |
| Propylbenzene, N- | 0.7 | 3.5 | <0.0001 | <0.0001 | **0.313** | **0.0009** | **0.00024** |
| sec-Butylbenzene | NC | NC | <0.0002 | <0.0002 | **0.0129** | <0.0002 | <0.0002 |
| Tetrachloroethane, 1,1,2,2- | 0.0003 | 0.018 | <0.0001 | <0.0001 | **0.00033** | <0.0001 | <0.0001 |
| Tetrachloroethylene | 0.005 | 0.025 | **0.00351** | <0.00018 | <0.00018 | <0.00018 | <0.00018 |
| Toluene | 1 | 5 | **0.00026** | **0.00045** | **0.0204** | **0.00046** | **0.00043** |
| Trimethylbenzene, 1,2,4- | 0.35 | 1.8 | <0.0002 | <0.0002 | **1.88** | <0.0002 | <0.0002 |
| Trimethylbenzene, 1,3,5- | 0.35 | 1.8 | <0.0002 | <0.0002 | **0.281** | **0.00078** | <0.0002 |
| Xylene, Mixture | 10 | 50 | <0.00013 | **0.00019** | **1.86** | <0.00013 | <0.00013 |
| **RCRA Metals** | | | | | | | |
| Mercury | 0.002 | 0.01 | **0.000355** | **0.000295** | <0.000200 | **0.000215** | <0.000200 |
| Arsenic, Inorganic | 0.01 | 0.05 | **0.0821** | **0.327** | **0.111** | **0.116** | **0.146** |
| Cadmium | 0.005 | 0.025 | **0.00349** | **0.00558** | **0.00235** | **0.00365** | **0.00374** |
| Lead and Compounds | 0.015 | 0.075 | **0.0175** | **0.0341** | **0.0262** | **0.0226** | **0.0289** |
| Barium | 2 | 10 | **2.17** | **3.72** | **3.61** | **2.10** | **2.66** |
| Chromium (total) | 0.1 | 0.5 | **0.137** | **0.193** | **0.122** | **0.148** | **0.193** |

**NOTE: Bold** indicates concentration above laboratory reporting limits / Shaded indicates concentration above applicable Standard / NC = Not Calculated / NA = Not Analyzed / * Tier 1 Look-Up Value

### *4.3 Risk Evaluations*

Subrule 567 IAC 137.10(7) specifies cumulative risk criteria that must be complied with to acquire a no further action certificate under the Iowa Land Recycling Program (LRP). Cumulative risk is the summation of cancer and noncancer risks, determined separately, based on exposure to multiple contaminants from the same medium and exposure of the same individual to contaminants in multiple media. Evaluation of cumulative risk is conducted using the cumulative risk calculator on the IDNR Contaminated Sites Section website. The cumulative risk calculator assesses risk to potentially exposed parties, based on three standard exposure scenarios, from multiple contaminants and multiple media (i.e., groundwater, soil, and air).

To evaluate compliance with the acceptable risk criteria, the cumulative concentrations of contaminants must meet standards limiting increased cancer and noncancer health risk. The cumulative risk criteria are as follows:

- Cumulative cancer risk shall not exceed 1 in 10,000.
- Noncancer health risk to the same target organ shall not exceed a cumulative Hazard Quotient of 1.

Determination of exposure point concentrations for the risk calculation can be accomplished using one of the following methods.

- The maximum value for each contaminant in each medium from multiple samples of each medium of concern.
- The 95% Upper Confidence Limit (95% UCL) of the mean contaminant concentration in each medium.

For the purposes of this evaluation, maximum values for each contaminant in each medium of concern from each property were used to evaluate risk associated with potential exposure pathways. This evaluation was conducted using site resident (residential) and site worker (non-residential) exposure scenarios. The site resident scenario is typically used when compliance with background or Statewide Standards is sought with no associated land use restrictions. Cumulative cancer risks ≤1 represent an acceptable risk and a sum value for each target organ must be ≤1 to be considered acceptable for noncancer health risk. The City has a groundwater ordinance (Chapter 4.33), preventing the installation of private wells for groundwater consumption; therefore, the groundwater ingestion pathway is incomplete and was not included in the risk calculations. A summary of the risk evaluation results for each property is included in Table 8 and the Cumulative Risk Calculator results are summarized in Appendix E.

**Table 8 - Summary of Risk Evaluations for Soil**

| Property | Residential Use | | | | Non-residential Use | | | |
|---|---|---|---|---|---|---|---|---|
| | Unacceptable Cumulative Cancer Risk | | Unacceptable Noncancer Health Risk | | Unacceptable Cumulative Cancer Risk | | Unacceptable Noncancer Health Risk | |
| | Range 1 | Range 2 | Range 1 | Range 2 | Range 1 | Range 2 | Range 1 | Range 2 |
| #1-1316/1318/1324/1326 4th Ave (Approx.) | | | | | | | | |
| #2-1234 4th Ave | | | X | X | | | | |
| #3-1314 5th Ave | | | | X | | | | X |
| #4-1317 5th Ave (Approx.) | | | | | | | | |
| #5-1228 6th Ave (Approx.) | | | | X | | | | X |

**NOTE:** Range 1 = 0 to 2 feet below ground surface and Range 2 = >2 feet bgs

## 5.0 FINDINGS AND CONCLUSIONS

The results of the Phase II investigations are provided in this document. The findings and conclusions are summarized in the table below:

| Property | Contaminants Detected Greater than Iowa Statewide Standards/Tier 1 Look-up Value | | Property Suitable for Redevelopment Based on Preliminary Risk Evaluations? | |
|---|---|---|---|---|
| | ***Soil*** | ***Groundwater*** | ***Residential*** | ***Non-residential*** |
| #1-1316/1318/1324/ 1326 4th Ave (Approx.) | N/A | N/A | Yes* | Yes |
| #2-1234 4th Ave | Arsenic/ Mercury/Lead | Arsenic/Cadmium/Lead/Barium/ Chromium | No | Yes* |
| #3-1314 5th Ave | Lead | TEH-diesel/Benzene/ Ethylbenzene/Tetrachloroethane, 1,1,2,2-/Trimethylbenzene 1,2,4- /Arsenic/Lead/Barium/Chromium | No | No |
| #4-1317 5th Ave (Approx.) | N/A | N/A | Yes* | Yes |
| #5-1228 6th Ave (Approx.) | Cobalt/Lead | N/A | No | No |

*Changed based on new cobalt standard.

The contaminants were included in the above table based on their concentrations exceeding the Statewide Standards or Tier 1 Look-up Value.

## 6.0 RECOMMENDATIONS

The City of Council Bluffs has a groundwater ordinance (Chapter 4.33), which prevents the installation of private wells for groundwater consumption; therefore, the groundwater ingestion pathway is incomplete. However, soil and groundwater concentrations at the site exceed Statewide Standards, the Tier 1 Look-Up value, and calculated risk limits established by IDNR. Therefore, HR Green recommends completing additional assessment on properties not suitable for redevelopment to further evaluate the impacts found at the site and potential exposure risks in regard to redevelopment plans.

## 7.0 DATA VALIDATION AND USABILITY

Validation of the data collected during Phase II assessment of the subject property is included below.

### 7.1 Representativeness

All samples were collected in such a manner and at locations specified in the sampling plan to accurately reflect the constituent concentrations in the media from which they were taken at the time of sampling. Sample locations were biased to focus efforts on areas of the property with the greatest potential to be impacted by on-site and off-site activities.

Representativeness of the data was partially ensured by avoiding cross-contamination, adhering to standard sample handling and analytical procedures, and use of proper chain-of-custody documentation procedures.

Field duplicates were collected and evaluated to assure samples were representative of the sampling point. Field duplicate analysis is included in Section 7.5.

### 7.2 Comparability

In order that one set of data may be compared with another, all analyses were performed by accepted EPA or state methods, and all analytical results were reported in similar concentration units and format.

### 7.3 Completeness

In order for a set of data to be used with confidence to make a decision, the data must be complete. The sampling design included the collection of samples from the area of the property most likely to have been impacted by on-site and off-site activities. Duplicate soil samples were not taken for VOC or total extractable hydrocarbon (TEH) analysis. Only one sample was submitted for laboratory analysis, so the duplicate sample would not have been a blind duplicate. Duplicate soil and groundwater samples for PCBs were overlooked; no duplicate samples were collected. The analysis of TEHs in groundwater was overlooked at Baker-3; however, no visible signs of contamination such as odor or discoloration were observed on the samples. The data set is incomplete; however, the missing data does not change the overall findings of this Phase II ESA or the recommendation of enrolling the site in the LRP.

### 7.4 Sensitivity

Detection and quantification limits for sample data must be below the Statewide Standard action levels specified in IAC 137. The laboratory MDLs for all of the constituents were below the Statewide Standards. The IDNR recognizes the Statewide Standard limits for these constituents cannot be achieved by routine commercial laboratory analysis and chooses to use the laboratory reporting limit for the action limit for project decisions.

### 7.5 Precision

Precision describes the variability of a measurement system. Precision was assessed through the collection and evaluation of field quality control samples. Precision is typically an estimate by means of duplicate measurements and is expressed in terms of relative percent difference (RPD). The goal for precision of field duplicate results is ±50 percent RPD for soil samples and ±35 percent RPD for water samples.

The relative percent difference (RPD) between the primary and corresponding duplicate sample will be calculated using the below formula.

$$RPD = \left[\frac{2\ x\ (C_1 - C_2)}{(C_1 + C_2)}\right] \times 100$$

where: $RPD$ = Relative percent difference
$C_1$ = Larger of the two observed measurement values
$C_2$ = Smaller of the two observed measurement values

A duplicate soil and groundwater sample was taken at Baker-6 (DUP-1). The RPDs between the original soil and groundwater samples and duplicate samples are identified in Tables 9 & 11. In addition, two of the soil samples screened with the XRF were

submitted for laboratory analysis of RCRA metals for additional data quality analysis. An effort was made to select soil samples with a variety of concentrations in order to do a comparative analysis of XRF and fix-based laboratory analyses. The RPDs for the XRF screening data and laboratory confirmation results are included in Table 10. The table only shows analytes detected by both the XRF and laboratory confirmation results.

**Table 9**
**Relative Percent Difference – Soil (mg/kg)**

| Location | Analyte | Sample Concentration | Duplicate Concentration | RPD |
|---|---|---|---|---|
| Baker-6 | **RCRA Metals** | | | |
| | Mercury | 0.042 | 0.0704 | 50.53 |
| | Arsenic, Inorganic | 11.8 | 13.5 | 13.44 |
| | Barium | 259 | 267 | 3.04 |
| | Chromium III | 24.2 | 21.4 | 12.28 |
| | Lead and Compounds | 18.4 | 24.5 | 28.44 |

**Table 10**
**Relative Percent Difference – Soil XRF (mg/kg)**

| Location | Depth | Analyte | XRF Reading | Lab Result | RPD (%) |
|---|---|---|---|---|---|
| **Baker-1** | **0-2.5'** | Lead | 37 | 31.4 | 16.37 |
| **Baker-6** | **0-2.5'** | Lead | 66 | 18.4 | 112.80 |

**Table 11**
**Relative Percent Difference – Groundwater (mg/L)**

| Location | Analyte | Sample Concentration | Duplicate Concentration | RPD |
|---|---|---|---|---|
| Baker-6 | **Volatile Organic Compounds** | | | |
| | Acrylonitrile | 0.00028 | <0.00019 | NC |
| | Benzene | 0.00046 | <0.00011 | NC |
| | Carbon Tetrachloride | <0.00024 | 0.00024 | NC |
| | Chloroethane | 0.00029 | <0.00015 | NC |
| | Cumene (Isopropylbenzene) | 0.00025 | <0.00019 | NC |
| | Dibromo-3-chloropropane, 1,2- (DBCP) | <0.00012 | 0.00016 | NC |
| | Hexane, N- | 0.00086 | 0.00034 | 86.67 |
| | Methyl Ethyl Ketone | <0.00016 | 0.00057 | NC |
| | Methylene Chloride (Dichloromethane) | <0.00017 | 0.00025 | NC |
| | Propylbenzene, N- | 0.0009 | 0.00024 | 115.79 |
| | Toluene | 0.00046 | 0.00043 | 6.74 |
| | Trimethylbenzene, 1,3,5- | 0.00078 | <0.0002 | NC |
| | **RCRA Metals** | | | |
| | Mercury | 0.000215 | <0.000200 | NC |
| | Arsenic, Inorganic | 0.116 | 0.146 | 22.90 |
| | Cadmium | 0.00365 | 0.00374 | 2.44 |
| | Lead and Compounds | 0.0226 | 0.0289 | 24.47 |
| | Barium | 2.10 | 2.66 | 23.53 |
| | Chromium (total) | 0.148 | 0.193 | 26.39 |

**NOTE:** NC = Not Calculated

With respect to the RPD values being outside the respective goals for soils and groundwater, samples are obtained as a 'grab', rather than a 'composite' sample. Therefore, grab samples are more heterogeneous (i.e. more variable) when compared to

the homogenous composite sample. Best efforts are made to minimize the heterogeneous nature of soil samples while in the field; however, these samples are still significantly heterogeneous. Groundwater samples are obtained using a disposable bailer or through low-flow pumps, and are directly sampled, rather than being mixed prior to sampling. Therefore, different levels of detected constituents may enter the groundwater between bails or over a period of time while using a pump.

Methods used in order to increase the ability to meet the goals with respect to the RPD in soil samples will be to:

- Take the duplicate in the immediate area of the original sample,
- collect the duplicate sample at the same time as the original sample, and
- avoid taking samples from areas of sand seams or other non-homogenous soils, whenever possible based on recovery.

### 7.6 Accuracy

Trip blanks are used to evaluate the purity of sample containers, chemical preservatives, and sampling equipment. Acetone, acrylonitrile, n-hexane, methyl ethyl ketone, methylene chloride, and n-propylbenzene were detected in the field blank associated with the Baker Property sample shipments. A trip blank was also used in the mobilization to the Baker Properties. N-hexane, methyl ethyl ketone, methylene chloride, 1,2,4-trimethylbenzene, and xylene were detected in the trip blank. However, the concentrations of the constituents detected in the blanks did not exceed the Statewide Standard in the blanks or in any of the samples collected from the properties; therefore, detection of the constituents in the blanks does not change the recommendations in this report.

All sampling and analytical activities were conducted in accordance with EPA approved methods or industry standard practices.

## 8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the *subject site*. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Signatures of the environmental professionals responsible for this report:

Michael Goalen, Project Manager, Quality Control and Assurance

Diane Pals, Technical Review

Bridget Wolfe, Staff Scientist, Report Preparer

# APPENDIX A

# QUALIFICATIONS

# QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

## COMPANY QUALIFICATIONS

Howard R. Green Company is a multi-disciplined consulting engineering firm providing services in the civil, environmental, structural, mechanical and electrical engineering disciplines. The firm, founded in 1913, serves Midwest cities, utilities, industries, and various state and federal agencies. The home office is located in Cedar Rapids, Iowa, with branch offices in Des Moines and Sioux City, Iowa; Saint Paul, Minnesota; St. Louis, Missouri; Sioux Falls, South Dakota; Houston, Texas; York, Pennsylvania; and in McHenry, New Lenox, Yorkville, Chicago and Moline, Illinois. The firm currently employs approximately 400 architects, engineers, planners, scientists, surveyors, technicians, and support staff.

Howard R. Green Company has completed environmental site assessments and property transfer evaluations for a variety of public and private clients in Iowa, Minnesota, Missouri, South Dakota, and Wisconsin. The firm is experienced in multiple phases of environmental services, including site assessments, contaminant release investigations, and remediation programs. Additionally, hazardous materials management, permit compliance, solid waste management, storm water management, and underground storage tank system management services are provided by the firm.

## QUALIFICATIONS OF INDIVIDUALS PREPARING THIS REPORT

Mr. Michael Goalen is an environmental scientist with eleven years of experience in the environmental consulting industry and has experience with a wide variety of environmental issues including Phase I and II Environmental Site Assessments in accordance with the ASTM standard, Brownfield Site Assessments, remediation, and risk based assessments of hazardous waste sites. Mr. Goalen is 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certified.

Ms. Diane Pals is a Project Scientist II with experience with a variety of environmental projects including Phase I Environmental Site Assessments Brownfields site assessments, remediation oversight, stormwater sampling, Iowa Land Recycling Program, Iowa risk Based Corrective Action Program, former manufactured gas plant site, and project management of municipal solid waste reduction studies. Diane is 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) and HAZWOPER supervisor certified.

Ms. Bridget Wolfe is an Environmental Scientist with experience on a wide range of environmental projects including Phase I and Phase II environmental site assessments in accordance with the ASTM standard, soil boring installation, soil and groundwater water sampling, and acquiring field parameters. She has worked on multiple Brownfield redevelopment projects and is also 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) certified.

# APPENDIX B

## FIGURES

Figure 1 – Subject Properties
Figure 2 – Soil Sample Location Map
Figure 3 – Groundwater Sample Location Map

Subject Properties

**Figure 1**

**Subject Properties**

**Former Baker Properties**
**Council Bluffs, Iowa**

Feet
0 60 120

N
W E
S

HRGreen

Soil Boring

RECs

Baker properties

REC #3

RECs

1. Auto Repair
2. Auto Repair & Electrical Power Substation
3. Possible existence of historically contaminated fill

**Figure 2**

**Soil Sample Location Map**

**Former Baker Properties**
**Council Bluffs, Iowa**

Feet
0 60 120

N
W E
S

HRGreen

Groundwater Sample

RECs

Baker properties

REC #3

RECs

1. Auto Repair
2. Auto Repair & Electrical Power Substation
3. Possible existence of historically contaminated fill

**Figure 3**

**Groundwater Sample Location Map**

**Former Baker Properties**
**Council Bluffs, Iowa**

Feet
0 60 120

N
W E
S

HRGreen

# APPENDIX C

# LABORATORY REPORTS/CHAIN OF CUSTODY DOCUMENTATION

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

April 08, 2011

Client:
HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404

Attn: Mike Goalen

Work Order: CUC1582
Project Name: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Date Received: 03/30/11

The Chain(s) of Custody, 4 pages, are included and are an integral part of this report.

If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-(800)750-2401

| SAMPLE IDENTIFICATION | LAB NUMBER | COLLECTION DATE AND TIME |
|---|---|---|
| Baker-1 0-2.5' | CUC1582-01 | 03/28/11 16:55 |
| Baker-2 0-2.5' | CUC1582-02 | 03/28/11 14:05 |
| Baker-2 | CUC1582-03 | 03/28/11 14:25 |
| Baker-3 0-2.5' | CUC1582-04 | 03/28/11 13:19 |
| Baker-3 | CUC1582-05 | 03/28/11 13:35 |
| Baker-4 0-2.5' | CUC1582-06 | 03/28/11 12:42 |
| Baker-5 12.5-15' | CUC1582-07 | 03/28/11 15:36 |
| Baker-5 | CUC1582-08 | 03/28/11 15:50 |
| Baker-6 0-2.5' | CUC1582-09 | 03/28/11 14:48 |
| Baker-6 | CUC1582-10 | 03/28/11 15:10 |
| Dup-1 | CUC1582-11 | 03/28/11 |
| Dup-1 | CUC1582-12 | 03/28/11 |
| Field Blank | CUC1582-13 | 03/28/11 17:30 |
| Trip Blank | CUC1582-14 | 03/28/11 |

**Samples were received into laboratory at a temperature of 4.00 °C.**

NELAC states that samples which require thermal preservation shall be considered acceptable if the arrival temperature is within 2 degrees C of the required temperature or the method specified range. For samples with a temperature requirement of 4 degrees C, an arrival temperature from 0 degrees C to 6 degrees C meets specifications. Samples that are delivered to the laboratory on the same day that they are collected may not meet these criteria. In these cases, the samples are considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

Please refer to the Temperature and Sample Receipt form that is included with this report for additional information regarding the condition of samples at the time of receipt by the laboratory.

The reported results were obtained in compliance with the 2003 NELAC standards unless otherwise noted.

*Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.*

*TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the specific sample analyzed.*

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

| | | | |
|---|---|---|---|
| HOWARD R. GREEN CO. - CEDAR RAPIDS < | Work Order: | CUC1582 | Received: 03/30/11 |
| 8710 Earhart Lane SW | | | Reported: 04/08/11 11:15 |
| Cedar Rapids, IA 52404 | Project: | Baker Properties - Council Bluffs, IA | |
| Mike Goalen | Project Number: | 728500J02 | |

Approved By:

Angela Muehling

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | MDL | MRL | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: CUC1582-01 (Baker-1 0-2.5' - Soil)** | | | | | | **Sampled: 03/28/11 16:55** | | | **Recvd: 03/30/11 08:48** | |
| **Sampled By:** | **Bridget Wolfe** | | | **Phone** | | **(651) 325-8659** | | | | |
| General Chemistry Parameters | | | | | | | | | | |
| **% Solids** | **80.9** | | % | | 0.100 | 1 | 03/30/11 15:51 | sas | 11C1441 | SM 2540 G |
| Total Metals by SW 846 Series Methods | | | | | | | | | | |
| **Arsenic** | **9.03** | | mg/kg dry | | 1.24 | 0.939 | 04/02/11 13:22 | sns | 11D0019 | SW 7060A |
| **Barium** | **217** | | mg/kg dry | | 0.618 | 0.959 | 04/07/11 22:35 | cjt | 11D0126 | SW 6010B |
| Cadmium | <1.24 | | mg/kg dry | | 1.24 | 0.959 | 04/07/11 22:35 | cjt | 11D0126 | SW 6010B |
| **Chromium** | **17.3** | | mg/kg dry | | 1.24 | 0.959 | 04/07/11 22:35 | cjt | 11D0126 | SW 6010B |
| **Lead** | **31.4** | | mg/kg dry | | 6.18 | 0.959 | 04/07/11 22:35 | cjt | 11D0126 | SW 6010B |
| **Mercury** | **0.0554** | | mg/kg dry | | 0.0247 | 0.957 | 04/01/11 16:52 | kmd | 11C1420 | SW 7471A |
| Selenium | <9.27 | | mg/kg dry | | 9.27 | 0.959 | 04/07/11 22:35 | cjt | 11D0126 | SW 6010B |
| Silver | <1.24 | | mg/kg dry | | 1.24 | 0.959 | 04/07/11 22:35 | cjt | 11D0126 | SW 6010B |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

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THE LEADER IN ENVIRONMENTAL TESTING
704 Enterprise Drive Cedar Falls, IA 50613 * 800-750-2401 * Fax 319-277-2425

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | MDL | MRL | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: CUC1582-02 (Baker-2 0-2.5' - Soil)** | | | | | | **Sampled: 03/28/11 14:05** | | | **Recvd: 03/30/11 08:48** | |
| **Sampled By: Bridget Wolfe** | | | | **Phone** | | **(651) 325-8659** | | | | |
| General Chemistry Parameters | | | | | | | | | | |
| **% Solids** | **80.1** | | % | | 0.100 | 1 | 03/30/11 15:51 | sas | 11C1441 | SM 2540 G |
| Polychlorinated Biphenyls by EPA Method 8082 | | | | | | | | | | |
| PCB-1016 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1221 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1232 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1242 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1248 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1254 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1260 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| PCB-1268 | <0.0624 | | mg/kg dry | | 0.0624 | 0.993 | 04/04/11 10:49 | jar | 11C1515 | SW 8082 |
| *Surr: Decachlorobiphenyl (55-120%)* | *68 %* | | | | | | | | | |
| *Surr: Tetrachloro-meta-xylene (45-105%)* | *67 %* | | | | | | | | | |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

# ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | MDL | MRL | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: CUC1582-03 (Baker-2 - Ground Water)** | | | | | | **Sampled: 03/28/11 14:25** | | | **Recvd: 03/30/11 08:48** | |
| **Sampled By: Bridget Wolfe** | | | | **Phone** | | **(651) 325-8659** | | | | |
| Total Metals by SW 846 Series Methods | | | | | | | | | | |
| **Arsenic** | **0.0821** | M1 | mg/L | | 0.0100 | 10 | 04/05/11 01:23 | sns | 11C1466 | SW 7060A |
| **Barium** | **2.17** | | mg/L | | 0.0100 | 1 | 03/31/11 16:48 | cjt | 11C1463 | SW 6010B |
| **Cadmium** | **0.00349** | | mg/L | | 0.00100 | 2 | 03/31/11 22:50 | sns | 11C1466 | SW 7131A |
| **Chromium** | **0.137** | | mg/L | | 0.0200 | 1 | 03/31/11 16:48 | cjt | 11C1463 | SW 6010B |
| **Lead** | **0.0175** | M1 | mg/L | | 0.00400 | 1 | 03/31/11 16:10 | sns | 11C1466 | SW 7421 |
| **Mercury** | **0.000355** | | mg/L | | 0.000200 | 1 | 03/31/11 11:33 | kmd | 11C1495 | SW 7470A |
| Selenium | <0.00500 | M1 | mg/L | | 0.00500 | 1 | 04/01/11 00:52 | sns | 11C1466 | SW 7740 |
| Silver | <0.0200 | | mg/L | | 0.0200 | 1 | 03/31/11 16:48 | cjt | 11C1463 | SW 6010B |
| Volatile Organic Compounds | | | | | | | | | | |
| **Acetone** | **2.05** | J | ug/L | 1.79 | 10.0 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Acrylonitrile | <0.190 | | ug/L | 0.190 | 10.0 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Benzene | <0.110 | | ug/L | 0.110 | 0.500 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Bromobenzene | <0.210 | | ug/L | 0.210 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Bromochloromethane | <0.120 | | ug/L | 0.120 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Bromodichloromethane | <0.120 | | ug/L | 0.120 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Bromoform | <0.140 | | ug/L | 0.140 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Bromomethane | <0.220 | | ug/L | 0.220 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 2-Butanone (MEK) | <0.160 | | ug/L | 0.160 | 10.0 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| n-Butylbenzene | <0.370 | | ug/L | 0.370 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| sec-Butylbenzene | <0.200 | | ug/L | 0.200 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| tert-Butylbenzene | <0.120 | | ug/L | 0.120 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Carbon disulfide | <0.150 | | ug/L | 0.150 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Carbon Tetrachloride | <0.240 | | ug/L | 0.240 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Chlorobenzene | <0.190 | | ug/L | 0.190 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Chlorodibromomethane | <0.200 | | ug/L | 0.200 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Chloroethane | <0.150 | | ug/L | 0.150 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Chloroform | <0.280 | | ug/L | 0.280 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Chloromethane | <0.310 | | ug/L | 0.310 | 3.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 2-Chlorotoluene | <0.120 | | ug/L | 0.120 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 4-Chlorotoluene | <0.130 | CIN | ug/L | 0.130 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2-Dibromo-3-chloropropane | <0.120 | | ug/L | 0.120 | 10.0 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2-Dibromoethane (EDB) | <0.130 | | ug/L | 0.130 | 10.0 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Dibromomethane | <0.180 | | ug/L | 0.180 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2-Dichlorobenzene | <0.140 | CIN | ug/L | 0.140 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,3-Dichlorobenzene | <0.170 | | ug/L | 0.170 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,4-Dichlorobenzene | <0.200 | | ug/L | 0.200 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Dichlorodifluoromethane | <0.200 | | ug/L | 0.200 | 3.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1-Dichloroethane | <0.210 | | ug/L | 0.210 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2-Dichloroethane | <0.180 | | ug/L | 0.180 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1-Dichloroethene | <0.150 | | ug/L | 0.150 | 2.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| cis-1,2-Dichloroethene | <0.130 | | ug/L | 0.130 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| trans-1,2-Dichloroethene | <0.210 | | ug/L | 0.210 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2-Dichloropropane | <0.110 | | ug/L | 0.110 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,3-Dichloropropane | <0.160 | | ug/L | 0.160 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 2,2-Dichloropropane | <0.180 | | ug/L | 0.180 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1-Dichloropropene | <0.150 | | ug/L | 0.150 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| cis-1,3-Dichloropropene | <0.150 | | ug/L | 0.150 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| trans-1,3-Dichloropropene | <0.220 | | ug/L | 0.220 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

# ANALYTICAL REPORT

**Sample ID: CUC1582-03 (Baker-2 - Ground Water) - cont.** Sampled: 03/28/11 14:25 Recvd: 03/30/11 08:48

| Analyte | Sample Result | Data Qualifiers | Units | MDL | MRL | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| Volatile Organic Compounds - cont. | | | | | | | | | | |
| Ethylbenzene | <0.210 | | ug/L | 0.210 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Hexachlorobutadiene | <0.200 | | ug/L | 0.200 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Hexane | <0.200 | CIN | ug/L | 0.200 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Isopropylbenzene | <0.190 | | ug/L | 0.190 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| p-Isopropyltoluene | <0.140 | CIN | ug/L | 0.140 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| **Methylene Chloride** | **0.440** | J | ug/L | 0.170 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Methyl tert-Butyl Ether | <0.160 | | ug/L | 0.160 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Naphthalene | <0.370 | CIN | ug/L | 0.370 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| n-Propylbenzene | <0.100 | | ug/L | 0.100 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Styrene | <0.100 | CIN | ug/L | 0.100 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1,1,2-Tetrachloroethane | <0.210 | CIN | ug/L | 0.210 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1,2,2-Tetrachloroethane | <0.100 | | ug/L | 0.100 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| **Tetrachloroethene** | **3.51** | | ug/L | 0.180 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| **Toluene** | **0.260** | J | ug/L | 0.150 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2,3-Trichlorobenzene | <0.160 | | ug/L | 0.160 | 5.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2,4-Trichlorobenzene | <0.160 | | ug/L | 0.160 | 10.0 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1,1-Trichloroethane | <0.120 | | ug/L | 0.120 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,1,2-Trichloroethane | <0.120 | | ug/L | 0.120 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Trichloroethene | <0.190 | | ug/L | 0.190 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Trichlorofluoromethane | <0.170 | | ug/L | 0.170 | 4.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2,3-Trichloropropane | <0.190 | CIN | ug/L | 0.190 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,2,4-Trimethylbenzene | <0.200 | | ug/L | 0.200 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| 1,3,5-Trimethylbenzene | <0.200 | | ug/L | 0.200 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Vinyl chloride | <0.100 | CIN | ug/L | 0.100 | 1.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| Xylenes, total | <0.130 | | ug/L | 0.130 | 3.00 | 1 | 03/31/11 12:18 | sjn | 11D0018 | SW 8260B |
| *Surr: Dibromofluoromethane (75-120%)* | *94 %* | | | | | | | | | |
| *Surr: Toluene-d8 (80-120%)* | *100 %* | | | | | | | | | |
| *Surr: 4-Bromofluorobenzene (75-110%)* | *99 %* | | | | | | | | | |
| VOC Preservation Check | | | | | | | | | | |
| pH | <2.00 | | units | | 2.00 | 1 | 04/01/11 13:37 | fmk | 11D0039 | SW |
| UST ANALYSIS PARAMETERS | | | | | | | | | | |
| Total Extractable Hydrocarbons | <300 | | ug/L | | 300 | 1 | 04/01/11 15:27 | jdb | [CALC] | OA-2 - 8015B |
| Diesel | <300 | | ug/L | | 300 | 1.03 | 04/01/11 15:27 | jdb | 11C1428 | OA-2 - 8015B |
| Gasoline | <300 | | ug/L | | 300 | 1.03 | 04/01/11 15:27 | jdb | 11C1428 | OA-2 - 8015B |
| Motor Oil | <300 | | ug/L | | 300 | 1.03 | 04/01/11 15:27 | jdb | 11C1428 | OA-2 - 8015B |
| *Surr: Octacosane (55-150%)* | *87 %* | | | | | | | | | |
| Polychlorinated Biphenyls by EPA Method 8082 | | | | | | | | | | |
| PCB-1016 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1221 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1232 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1242 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1248 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1254 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1260 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| PCB-1268 | <0.800 | | ug/L | | 0.800 | 1.03 | 04/04/11 13:15 | jar | 11D0057 | SW 8082 |
| *Surr: Decachlorobiphenyl (45-110%)* | *21 %* | *Z6* | | | | | | | | |
| *Surr: Tetrachloro-meta-xylene (40-90%)* | *65 %* | | | | | | | | | |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## ANALYTICAL REPORT

| Analyte | Sample Result | Data Qualifiers | Units | MDL | MRL | Dilution Factor | Date Analyzed | Analyst | Seq/ Batch | Method |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sample ID: CUC1582-04 (Baker-3 0-2.5' - Soil)** | | | | | | **Sampled: 03/28/11 13:19** | | | **Recvd: 03/30/11 08:48** | |
| **Sampled By: Bridget Wolfe** | | | | **Phone** | | **(651) 325-8659** | | | | |
| General Chemistry Parameters | | | | | | | | | | |
| **% Solids** | **79.7** | | % | | 0.100 | 1 | 03/30/11 15:51 | sas | 11C1441 | SM 2540 G |
| Polychlorinated Biphenyls by EPA Method 8082 | | | | | | | | | | |
| PCB-1016 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1221 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1232 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1242 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1248 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1254 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1260 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| PCB-1268 | <0.0627 | | mg/kg dry | | 0.0627 | 0.978 | 04/04/11 11:00 | jar | 11C1515 | SW 8082 |
| *Surr: Decachlorobiphenyl (55-120%)* | *60 %* | | | | | | | | | |
| *Surr: Tetrachloro-meta-xylene (45-105%)* | *59 %* | | | | | | | | | |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## SAMPLE EXTRACTION DATA

| Parameter | Batch | Lab Number | Wt/Vol Extracted | Extracted Vol | Date | Analyst | Extraction Method |
|---|---|---|---|---|---|---|---|
| UST ANALYSIS PARAMETERS | | | | | | | |
| OA-2 - 8015B | [CALC] | CUC1582-03 | 1.00 | 1.00 | 03/30/11 14:07 | | [CALC] |
| OA-2 - 8015B | 11C1428 | CUC1582-03 | 970.00 | 1.00 | 03/30/11 14:07 | AM | SW 3510C GC |
| OA-2 - 8015B | [CALC] | CUC1582-07 | 1.00 | 1.00 | 03/31/11 15:19 | | [CALC] |
| OA-2 - 8015B | 11C1516 | CUC1582-07 | 30.55 | 1.50 | 03/31/11 15:19 | ALF | SW 3550B GC |
| OA-2 - 8015B | [CALC] | CUC1582-08 | 1.00 | 1.00 | 03/30/11 14:07 | | [CALC] |
| OA-2 - 8015B | 11C1428 | CUC1582-08 | 960.00 | 1.00 | 03/30/11 14:07 | AM | SW 3510C GC |
| OA-2 - 8015B | [CALC] | CUC1582-10 | 1.00 | 1.00 | 03/30/11 14:07 | | [CALC] |
| OA-2 - 8015B | 11C1428 | CUC1582-10 | 960.00 | 1.00 | 03/30/11 14:07 | AM | SW 3510C GC |
| OA-2 - 8015B | [CALC] | CUC1582-12 | 1.00 | 1.00 | 03/30/11 14:07 | | [CALC] |
| OA-2 - 8015B | 11C1428 | CUC1582-12 | 960.00 | 1.00 | 03/30/11 14:07 | AM | SW 3510C GC |
| OA-2 - 8015B | [CALC] | CUC1582-13 | 1.00 | 1.00 | 03/30/11 14:07 | | [CALC] |
| OA-2 - 8015B | 11C1428 | CUC1582-13 | 970.00 | 1.00 | 03/30/11 14:07 | AM | SW 3510C GC |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
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Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

# LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals by SW 846 Series Methods** | | | | | | | | | | | | | | |
| Mercury | 11C1420 | | | mg/kg wet | N/A | 0.0200 | <0.0200 | | | | | | | |
| Barium | 11C1463 | | | mg/L | N/A | 0.0100 | <0.0100 | | | | | | | |
| Chromium | 11C1463 | | | mg/L | N/A | 0.0200 | <0.0200 | | | | | | | |
| Silver | 11C1463 | | | mg/L | N/A | 0.0200 | <0.0200 | | | | | | | |
| Arsenic | 11C1466 | | | mg/L | N/A | 0.00100 | <0.00100 | | | | | | | |
| Cadmium | 11C1466 | | | mg/L | N/A | 0.000500 | <0.000500 | | | | | | | |
| Lead | 11C1466 | | | mg/L | N/A | 0.00400 | <0.00400 | | | | | | | |
| Selenium | 11C1466 | | | mg/L | N/A | 0.00500 | <0.00500 | | | | | | | |
| Mercury | 11C1495 | | | mg/L | N/A | 0.000200 | <0.000200 | | | | | | | |
| Arsenic | 11D0019 | | | mg/kg wet | N/A | 1.00 | <1.00 | | | | | | | |
| Barium | 11D0126 | | | mg/kg wet | N/A | 0.500 | <0.500 | | | | | | | |
| Cadmium | 11D0126 | | | mg/kg wet | N/A | 1.00 | <1.00 | | | | | | | |
| Chromium | 11D0126 | | | mg/kg wet | N/A | 1.00 | <1.00 | | | | | | | |
| Lead | 11D0126 | | | mg/kg wet | N/A | 5.00 | <5.00 | | | | | | | |
| Selenium | 11D0126 | | | mg/kg wet | N/A | 7.50 | <7.50 | | | | | | | |
| Silver | 11D0126 | | | mg/kg wet | N/A | 1.00 | <1.00 | | | | | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Acetone | 11D0018 | | | ug/L | 1.79 | 10.0 | <1.79 | | | | | | | |
| Acrylonitrile | 11D0018 | | | ug/L | 0.190 | 10.0 | <0.190 | | | | | | | |
| Benzene | 11D0018 | | | ug/L | 0.110 | 0.500 | <0.110 | | | | | | | |
| Bromobenzene | 11D0018 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| Bromochloromethane | 11D0018 | | | ug/L | 0.120 | 5.00 | <0.120 | | | | | | | |
| Bromodichloromethane | 11D0018 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| Bromoform | 11D0018 | | | ug/L | 0.140 | 5.00 | <0.140 | | | | | | | |
| Bromomethane | 11D0018 | | | ug/L | 0.220 | 4.00 | 0.250 | | | | | | | J |
| 2-Butanone (MEK) | 11D0018 | | | ug/L | 0.160 | 10.0 | <0.160 | | | | | | | |
| n-Butylbenzene | 11D0018 | | | ug/L | 0.370 | 1.00 | <0.370 | | | | | | | |
| sec-Butylbenzene | 11D0018 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| tert-Butylbenzene | 11D0018 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| Carbon disulfide | 11D0018 | | | ug/L | 0.150 | 1.00 | 0.150 | | | | | | | J |
| Carbon Tetrachloride | 11D0018 | | | ug/L | 0.240 | 2.00 | <0.240 | | | | | | | |
| Chlorobenzene | 11D0018 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | |
| Chlorodibromomethane | 11D0018 | | | ug/L | 0.200 | 5.00 | <0.200 | | | | | | | |
| Chloroethane | 11D0018 | | | ug/L | 0.150 | 4.00 | <0.150 | | | | | | | |
| Chloroform | 11D0018 | | | ug/L | 0.280 | 1.00 | <0.280 | | | | | | | |
| Chloromethane | 11D0018 | | | ug/L | 0.310 | 3.00 | <0.310 | | | | | | | |
| 2-Chlorotoluene | 11D0018 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| 4-Chlorotoluene | 11D0018 | | | ug/L | 0.130 | 1.00 | <0.130 | | | | | | | CIN |
| 1,2-Dibromo-3-chloropropane | 11D0018 | | | ug/L | 0.120 | 10.0 | <0.120 | | | | | | | |
| 1,2-Dibromoethane (EDB) | 11D0018 | | | ug/L | 0.130 | 10.0 | <0.130 | | | | | | | |
| Dibromomethane | 11D0018 | | | ug/L | 0.180 | 1.00 | <0.180 | | | | | | | |
| 1,2-Dichlorobenzene | 11D0018 | | | ug/L | 0.140 | 1.00 | <0.140 | | | | | | | CIN |
| 1,3-Dichlorobenzene | 11D0018 | | | ug/L | 0.170 | 1.00 | <0.170 | | | | | | | |
| 1,4-Dichlorobenzene | 11D0018 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | 11D0018 | | | ug/L | 0.200 | 3.00 | <0.200 | | | | | | | |
| 1,1-Dichloroethane | 11D0018 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| 1,2-Dichloroethane | 11D0018 | | | ug/L | 0.180 | 1.00 | <0.180 | | | | | | | |
| 1,1-Dichloroethene | 11D0018 | | | ug/L | 0.150 | 2.00 | <0.150 | | | | | | | |
| cis-1,2-Dichloroethene | 11D0018 | | | ug/L | 0.130 | 1.00 | <0.130 | | | | | | | |
| trans-1,2-Dichloroethene | 11D0018 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| 1,2-Dichloropropane | 11D0018 | | | ug/L | 0.110 | 1.00 | <0.110 | | | | | | | |
| 1,3-Dichloropropane | 11D0018 | | | ug/L | 0.160 | 1.00 | <0.160 | | | | | | | |
| 2,2-Dichloropropane | 11D0018 | | | ug/L | 0.180 | 4.00 | <0.180 | | | | | | | |
| 1,1-Dichloropropene | 11D0018 | | | ug/L | 0.150 | 1.00 | <0.150 | | | | | | | |
| cis-1,3-Dichloropropene | 11D0018 | | | ug/L | 0.150 | 5.00 | <0.150 | | | | | | | |
| trans-1,3-Dichloropropene | 11D0018 | | | ug/L | 0.220 | 5.00 | <0.220 | | | | | | | |
| Ethylbenzene | 11D0018 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| Hexachlorobutadiene | 11D0018 | | | ug/L | 0.200 | 5.00 | 0.250 | | | | | | | J |
| Hexane | 11D0018 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | CIN |
| Isopropylbenzene | 11D0018 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | |
| p-Isopropyltoluene | 11D0018 | | | ug/L | 0.140 | 1.00 | <0.140 | | | | | | | CIN |
| Methylene Chloride | 11D0018 | | | ug/L | 0.170 | 5.00 | <0.170 | | | | | | | |
| Methyl tert-Butyl Ether | 11D0018 | | | ug/L | 0.160 | 1.00 | <0.160 | | | | | | | |
| Naphthalene | 11D0018 | | | ug/L | 0.370 | 5.00 | <0.370 | | | | | | | CIN |
| n-Propylbenzene | 11D0018 | | | ug/L | 0.100 | 1.00 | 0.100 | | | | | | | J |
| Styrene | 11D0018 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | CIN |
| 1,1,1,2-Tetrachloroethane | 11D0018 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | CIN |
| 1,1,2,2-Tetrachloroethane | 11D0018 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | |
| Tetrachloroethene | 11D0018 | | | ug/L | 0.180 | 1.00 | <0.180 | | | | | | | |
| Toluene | 11D0018 | | | ug/L | 0.150 | 1.00 | <0.150 | | | | | | | |
| 1,2,3-Trichlorobenzene | 11D0018 | | | ug/L | 0.160 | 5.00 | 0.310 | | | | | | | J |
| 1,2,4-Trichlorobenzene | 11D0018 | | | ug/L | 0.160 | 5.00 | 0.370 | | | | | | | J |
| 1,1,1-Trichloroethane | 11D0018 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| 1,1,2-Trichloroethane | 11D0018 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| Trichloroethene | 11D0018 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | |
| Trichlorofluoromethane | 11D0018 | | | ug/L | 0.170 | 4.00 | <0.170 | | | | | | | |
| 1,2,3-Trichloropropane | 11D0018 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | CIN |
| 1,2,4-Trimethylbenzene | 11D0018 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| 1,3,5-Trimethylbenzene | 11D0018 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| Vinyl chloride | 11D0018 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | CIN |
| Xylenes, total | 11D0018 | | | ug/L | 0.130 | 3.00 | <0.130 | | | | | | | |
| *Surrogate: Dibromofluoromethane* | *11D0018* | | | ug/L | | | | | *98* | | *75-120* | | | |
| *Surrogate: Toluene-d8* | *11D0018* | | | ug/L | | | | | *99* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0018* | | | ug/L | | | | | *102* | | *75-110* | | | |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Acetone | 11D0079 | | | ug/kg wet | N/A | 2450 | <2450 | | | | | | | |
| Acrylonitrile | 11D0079 | | | ug/kg wet | N/A | 2450 | <2450 | | | | | | | |
| Benzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Bromobenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Bromochloromethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Bromodichloromethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | L |
| Bromoform | 11D0079 | | | ug/kg wet | N/A | 489 | <489 | | | | | | | |
| Bromomethane | 11D0079 | | | ug/kg wet | N/A | 979 | <979 | | | | | | | |
| 2-Butanone (MEK) | 11D0079 | | | ug/kg wet | N/A | 2450 | <2450 | | | | | | | |
| n-Butylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| sec-Butylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| tert-Butylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Carbon disulfide | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Carbon Tetrachloride | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Chlorobenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Chlorodibromomethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Chloroethane | 11D0079 | | | ug/kg wet | N/A | 979 | <979 | | | | | | | |
| Chloroform | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Chloromethane | 11D0079 | | | ug/kg wet | N/A | 979 | <979 | | | | | | | |
| 2-Chlorotoluene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 4-Chlorotoluene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 11D0079 | | | ug/kg wet | N/A | 2450 | <2450 | | | | | | | |
| 1,2-Dibromoethane (EDB) | 11D0079 | | | ug/kg wet | N/A | 2450 | <2450 | | | | | | | |
| Dibromomethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,2-Dichlorobenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,3-Dichlorobenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,4-Dichlorobenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Dichlorodifluoromethane | 11D0079 | | | ug/kg wet | N/A | 734 | <734 | | | | | | | |
| 1,1-Dichloroethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,2-Dichloroethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | L |
| 1,1-Dichloroethene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| cis-1,2-Dichloroethene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| trans-1,2-Dichloroethene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,2-Dichloropropane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,3-Dichloropropane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 2,2-Dichloropropane | 11D0079 | | | ug/kg wet | N/A | 979 | <979 | | | | | | | |
| 1,1-Dichloropropene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| cis-1,3-Dichloropropene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| trans-1,3-Dichloropropene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | L |
| Ethylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Hexachlorobutadiene | 11D0079 | | | ug/kg wet | N/A | 1220 | <1220 | | | | | | | |
| Hexane | 11D0079 | | | ug/kg wet | N/A | 1220 | <1220 | | | | | | | |
| Isopropylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| p-Isopropyltoluene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Methylene Chloride | 11D0079 | | | ug/kg wet | N/A | 2450 | <2450 | | | | | | | |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Methyl tert-Butyl Ether | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Naphthalene | 11D0079 | | | ug/kg wet | N/A | 1220 | <1220 | | | | | | | |
| n-Propylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Styrene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Tetrachloroethene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Toluene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,2,3-Trichlorobenzene | 11D0079 | | | ug/kg wet | N/A | 1220 | <1220 | | | | | | | |
| 1,2,4-Trichlorobenzene | 11D0079 | | | ug/kg wet | N/A | 1220 | <1220 | | | | | | | |
| 1,1,1-Trichloroethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,1,2-Trichloroethane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Trichloroethene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Trichlorofluoromethane | 11D0079 | | | ug/kg wet | N/A | 979 | <979 | | | | | | | |
| 1,2,3-Trichloropropane | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,2,4-Trimethylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| 1,3,5-Trimethylbenzene | 11D0079 | | | ug/kg wet | N/A | 245 | <245 | | | | | | | |
| Vinyl chloride | 11D0079 | | | ug/kg wet | N/A | 734 | <734 | | | | | | | |
| Xylenes, total | 11D0079 | | | ug/kg wet | N/A | 734 | <734 | | | | | | | |
| *Surrogate: Dibromofluoromethane* | *11D0079* | | | ug/L | | | | | *105* | | *75-125* | | | |
| *Surrogate: Toluene-d8* | *11D0079* | | | ug/L | | | | | *85* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0079* | | | ug/L | | | | | *105* | | *80-120* | | | |
| Acetone | 11D0096 | | | ug/L | 1.79 | 10.0 | <1.79 | | | | | | | |
| Acrylonitrile | 11D0096 | | | ug/L | 0.190 | 10.0 | <0.190 | | | | | | | |
| Benzene | 11D0096 | | | ug/L | 0.110 | 0.500 | <0.110 | | | | | | | |
| Bromobenzene | 11D0096 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| Bromochloromethane | 11D0096 | | | ug/L | 0.120 | 5.00 | <0.120 | | | | | | | |
| Bromodichloromethane | 11D0096 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| Bromoform | 11D0096 | | | ug/L | 0.140 | 5.00 | <0.140 | | | | | | | |
| Bromomethane | 11D0096 | | | ug/L | 0.220 | 4.00 | <0.220 | | | | | | | |
| 2-Butanone (MEK) | 11D0096 | | | ug/L | 0.160 | 10.0 | <0.160 | | | | | | | |
| n-Butylbenzene | 11D0096 | | | ug/L | 0.370 | 1.00 | <0.370 | | | | | | | |
| sec-Butylbenzene | 11D0096 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| tert-Butylbenzene | 11D0096 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| Carbon disulfide | 11D0096 | | | ug/L | 0.150 | 1.00 | <0.150 | | | | | | | |
| Carbon Tetrachloride | 11D0096 | | | ug/L | 0.240 | 2.00 | <0.240 | | | | | | | |
| Chlorobenzene | 11D0096 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | |
| Chlorodibromomethane | 11D0096 | | | ug/L | 0.200 | 5.00 | <0.200 | | | | | | | |
| Chloroethane | 11D0096 | | | ug/L | 0.150 | 4.00 | <0.150 | | | | | | | |
| Chloroform | 11D0096 | | | ug/L | 0.280 | 1.00 | <0.280 | | | | | | | |
| Chloromethane | 11D0096 | | | ug/L | 0.310 | 3.00 | <0.310 | | | | | | | |
| 2-Chlorotoluene | 11D0096 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| 4-Chlorotoluene | 11D0096 | | | ug/L | 0.130 | 1.00 | <0.130 | | | | | | | CIN |
| 1,2-Dibromo-3-chloropropane | 11D0096 | | | ug/L | 0.120 | 10.0 | <0.120 | | | | | | | |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| 1,2-Dibromoethane (EDB) | 11D0096 | | | ug/L | 0.130 | 10.0 | <0.130 | | | | | | | |
| Dibromomethane | 11D0096 | | | ug/L | 0.180 | 1.00 | <0.180 | | | | | | | |
| 1,2-Dichlorobenzene | 11D0096 | | | ug/L | 0.140 | 1.00 | <0.140 | | | | | | | CIN |
| 1,3-Dichlorobenzene | 11D0096 | | | ug/L | 0.170 | 1.00 | <0.170 | | | | | | | |
| 1,4-Dichlorobenzene | 11D0096 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| Dichlorodifluoromethane | 11D0096 | | | ug/L | 0.200 | 3.00 | <0.200 | | | | | | | |
| 1,1-Dichloroethane | 11D0096 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| 1,2-Dichloroethane | 11D0096 | | | ug/L | 0.180 | 1.00 | <0.180 | | | | | | | |
| 1,1-Dichloroethene | 11D0096 | | | ug/L | 0.150 | 2.00 | <0.150 | | | | | | | |
| cis-1,2-Dichloroethene | 11D0096 | | | ug/L | 0.130 | 1.00 | <0.130 | | | | | | | |
| trans-1,2-Dichloroethene | 11D0096 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| 1,2-Dichloropropane | 11D0096 | | | ug/L | 0.110 | 1.00 | <0.110 | | | | | | | |
| 1,3-Dichloropropane | 11D0096 | | | ug/L | 0.160 | 1.00 | <0.160 | | | | | | | |
| 2,2-Dichloropropane | 11D0096 | | | ug/L | 0.180 | 4.00 | <0.180 | | | | | | | |
| 1,1-Dichloropropene | 11D0096 | | | ug/L | 0.150 | 1.00 | <0.150 | | | | | | | |
| cis-1,3-Dichloropropene | 11D0096 | | | ug/L | 0.150 | 5.00 | <0.150 | | | | | | | |
| trans-1,3-Dichloropropene | 11D0096 | | | ug/L | 0.220 | 5.00 | <0.220 | | | | | | | |
| Ethylbenzene | 11D0096 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | |
| Hexachlorobutadiene | 11D0096 | | | ug/L | 0.200 | 5.00 | <0.200 | | | | | | | |
| Hexane | 11D0096 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | CIN |
| Isopropylbenzene | 11D0096 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | |
| p-Isopropyltoluene | 11D0096 | | | ug/L | 0.140 | 1.00 | <0.140 | | | | | | | CIN |
| Methylene Chloride | 11D0096 | | | ug/L | 0.170 | 5.00 | 0.220 | | | | | | | J |
| Methyl tert-Butyl Ether | 11D0096 | | | ug/L | 0.160 | 1.00 | <0.160 | | | | | | | |
| Naphthalene | 11D0096 | | | ug/L | 0.370 | 5.00 | <0.370 | | | | | | | CIN |
| n-Propylbenzene | 11D0096 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | |
| Styrene | 11D0096 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | CIN |
| 1,1,1,2-Tetrachloroethane | 11D0096 | | | ug/L | 0.210 | 1.00 | <0.210 | | | | | | | CIN |
| 1,1,2,2-Tetrachloroethane | 11D0096 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | |
| Tetrachloroethene | 11D0096 | | | ug/L | 0.180 | 1.00 | <0.180 | | | | | | | |
| Toluene | 11D0096 | | | ug/L | 0.150 | 1.00 | <0.150 | | | | | | | |
| 1,2,3-Trichlorobenzene | 11D0096 | | | ug/L | 0.160 | 5.00 | <0.160 | | | | | | | |
| 1,2,4-Trichlorobenzene | 11D0096 | | | ug/L | 0.160 | 5.00 | <0.160 | | | | | | | |
| 1,1,1-Trichloroethane | 11D0096 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| 1,1,2-Trichloroethane | 11D0096 | | | ug/L | 0.120 | 1.00 | <0.120 | | | | | | | |
| Trichloroethene | 11D0096 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | |
| Trichlorofluoromethane | 11D0096 | | | ug/L | 0.170 | 4.00 | <0.170 | | | | | | | |
| 1,2,3-Trichloropropane | 11D0096 | | | ug/L | 0.190 | 1.00 | <0.190 | | | | | | | CIN |
| 1,2,4-Trimethylbenzene | 11D0096 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| 1,3,5-Trimethylbenzene | 11D0096 | | | ug/L | 0.200 | 1.00 | <0.200 | | | | | | | |
| Vinyl chloride | 11D0096 | | | ug/L | 0.100 | 1.00 | <0.100 | | | | | | | CIN |
| Xylenes, total | 11D0096 | | | ug/L | 0.130 | 3.00 | <0.130 | | | | | | | |
| *Surrogate: Dibromofluoromethane* | *11D0096* | | | ug/L | | | | | *93* | | *75-120* | | | |
| *Surrogate: Toluene-d8* | *11D0096* | | | ug/L | | | | | *100* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0096* | | | ug/L | | | | | *100* | | *75-110* | | | |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LABORATORY BLANK QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| **UST ANALYSIS PARAMETERS** | | | | | | | | | | | | | | |
| Diesel | 11C1428 | | | ug/L | N/A | 300 | <300 | | | | | | | |
| Gasoline | 11C1428 | | | ug/L | N/A | 300 | <300 | | | | | | | |
| Motor Oil | 11C1428 | | | ug/L | N/A | 300 | <300 | | | | | | | |
| *Surrogate: Octacosane* | *11C1428* | | | ug/L | | | | | *76* | | *55-150* | | | |
| Diesel | 11C1516 | | | mg/kg | N/A | 10.0 | <10.0 | | | | | | | |
| Gasoline | 11C1516 | | | mg/kg | N/A | 10.0 | <10.0 | | | | | | | |
| Motor Oil | 11C1516 | | | mg/kg | N/A | 10.0 | <10.0 | | | | | | | |
| *Surrogate: Octacosane* | *11C1516* | | | mg/kg | | | | | *83* | | *50-150* | | | |
| **Polychlorinated Biphenyls by EPA Method 8082** | | | | | | | | | | | | | | |
| PCB-1016 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1221 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1232 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1242 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1248 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1254 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1260 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| PCB-1268 | 11C1515 | | | mg/kg wet | N/A | 0.0500 | <0.0500 | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *11C1515* | | | mg/kg wet | | | | | *81* | | *55-120* | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *11C1515* | | | mg/kg wet | | | | | *70* | | *45-105* | | | |
| PCB-1016 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1221 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1232 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1242 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1248 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1254 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1260 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| PCB-1268 | 11D0057 | | | ug/L | N/A | 0.800 | <0.800 | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *11D0057* | | | ug/L | | | | | *68* | | *45-110* | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *11D0057* | | | ug/L | | | | | *52* | | *40-90* | | | |

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
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Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
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## LABORATORY DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry Parameters** | | | | | | | | | | | | | |
| **QC Source Sample: CUC1518-11** | | | | | | | | | | | | | |
| % Solids | 11C1441 | 89.1 | | % | N/A | 0.100 | 89.1 | | | | 0 | 10 | |
| **QC Source Sample: CUC1582-01** | | | | | | | | | | | | | |
| % Solids | 11C1441 | 80.9 | | % | N/A | 0.100 | 80.6 | | | | 0 | 10 | |
| **Total Metals by SW 846 Series Methods** | | | | | | | | | | | | | |
| **QC Source Sample: CUC1582-10** | | | | | | | | | | | | | |
| Barium | 11C1463 | 2.10 | | mg/L | N/A | 0.0100 | 2.05 | | | | 2 | 20 | |
| Chromium | 11C1463 | 0.148 | | mg/L | N/A | 0.0200 | 0.149 | | | | 1 | 20 | |
| Silver | 11C1463 | <0.0200 | | mg/L | N/A | 0.0200 | <0.0200 | | | | | 20 | |
| **QC Source Sample: CUC1582-05** | | | | | | | | | | | | | |
| Arsenic | 11C1466 | 0.327 | | mg/L | N/A | 0.0300 | 0.335 | | | | 3 | 20 | |
| Cadmium | 11C1466 | 0.00558 | | mg/L | N/A | 0.00150 | 0.00508 | | | | 9 | 20 | |
| Lead | 11C1466 | 0.0341 | | mg/L | N/A | 0.00400 | 0.0304 | | | | 12 | 20 | |
| Selenium | 11C1466 | 0.00382 | | mg/L | N/A | 0.00500 | 0.00347 | | | | 10 | 20 | |
| **QC Source Sample: CUC1539-37** | | | | | | | | | | | | | |
| Arsenic | 11D0019 | 5.35 | | mg/kg dry | N/A | 1.16 | 4.64 | | | | 14 | 20 | |

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## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals by SW 846 Series Methods** | | | | | | | | | | | | | | |
| Mercury | 11C1420 | | 0.167 | mg/kg wet | N/A | 0.0200 | 0.157 | | 94 | | 80-120 | | | |
| Barium | 11C1463 | | 1.00 | mg/L | N/A | 0.0100 | 0.972 | | 97 | | 80-115 | | | |
| Chromium | 11C1463 | | 1.00 | mg/L | N/A | 0.0200 | 0.948 | | 95 | | 85-115 | | | |
| Silver | 11C1463 | | 1.00 | mg/L | N/A | 0.0200 | 0.947 | | 95 | | 80-110 | | | |
| Arsenic | 11C1466 | | 0.0400 | mg/L | N/A | 0.00200 | 0.0419 | | 105 | | 80-120 | | | |
| Cadmium | 11C1466 | | 0.0200 | mg/L | N/A | 0.00750 | 0.0162 | | 81 | | 80-120 | | | |
| Lead | 11C1466 | | 0.0400 | mg/L | N/A | 0.00400 | 0.0347 | | 87 | | 85-120 | | | |
| Selenium | 11C1466 | | 0.0800 | mg/L | N/A | 0.0100 | 0.0687 | | 86 | | 80-120 | | | |
| Mercury | 11C1495 | | 0.0016 | mg/L | N/A | 0.000200 | 0.00181 | | 109 | | 80-120 | | | |
| | | | 7 | | | | | | | | | | | |
| Arsenic | 11D0019 | | 1.86 | mg/kg wet | N/A | 1.00 | 1.54 | | 83 | | 80-120 | | | |
| Barium | 11D0126 | | 47.8 | mg/kg wet | N/A | 0.500 | 41.9 | | 88 | | 80-110 | | | |
| Cadmium | 11D0126 | | 47.8 | mg/kg wet | N/A | 1.00 | 42.3 | | 89 | | 80-115 | | | |
| Chromium | 11D0126 | | 47.8 | mg/kg wet | N/A | 1.00 | 42.3 | | 88 | | 85-110 | | | |
| Lead | 11D0126 | | 95.6 | mg/kg wet | N/A | 5.00 | 90.1 | | 94 | | 80-115 | | | |
| Selenium | 11D0126 | | 191 | mg/kg wet | N/A | 7.50 | 182 | | 95 | | 85-110 | | | |
| Silver | 11D0126 | | 47.8 | mg/kg wet | N/A | 1.00 | 43.1 | | 90 | | 80-120 | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Acetone | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.1 | | 111 | | 60-150 | | 20 | |
| Acrylonitrile | 11D0018 | | 20.0 | ug/L | N/A | N/A | 18.4 | | 92 | | 50-145 | | 25 | |
| Benzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.5 | | 117 | | 70-130 | | 25 | |
| Bromobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.2 | | 116 | | 75-130 | | 20 | |
| Bromochloromethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.0 | | 110 | | 65-145 | | 10 | |
| Bromodichloromethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.3 | | 102 | | 60-130 | | 15 | |
| Bromoform | 11D0018 | | 20.0 | ug/L | N/A | N/A | 16.7 | | 84 | | 30-125 | | 25 | |
| Bromomethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 19.8 | | 99 | | 35-130 | | 35 | |
| 2-Butanone (MEK) | 11D0018 | | 20.0 | ug/L | N/A | N/A | 19.2 | | 96 | | 55-140 | | 25 | |
| n-Butylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.1 | | 110 | | 55-135 | | 10 | |
| sec-Butylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.1 | | 116 | | 65-135 | | 15 | |
| tert-Butylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.9 | | 114 | | 60-135 | | 10 | |
| Carbon disulfide | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.1 | | 101 | | 40-130 | | 20 | |
| Carbon Tetrachloride | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.0 | | 100 | | 55-130 | | 25 | |
| Chlorobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.3 | | 117 | | 75-125 | | 15 | |
| Chlorodibromomethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.0 | | 100 | | 45-125 | | 20 | |
| Chloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 18.8 | | 94 | | 55-135 | | 20 | |
| Chloroform | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.7 | | 104 | | 70-125 | | 15 | |
| Chloromethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 16.1 | | 81 | | 30-125 | | 25 | |
| 2-Chlorotoluene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 24.0 | | 120 | | 75-135 | | 15 | |
| 4-Chlorotoluene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.5 | | 112 | | 70-140 | | 20 | CIN |
| 1,2-Dibromo-3-chloropropane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 17.3 | | 87 | | 35-130 | | 25 | |
| 1,2-Dibromoethane (EDB) | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.2 | | 116 | | 70-135 | | 25 | |
| Dibromomethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.9 | | 115 | | 75-130 | | 30 | |
| 1,2-Dichlorobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.3 | | 111 | | 65-135 | | 10 | CIN |
| 1,3-Dichlorobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.1 | | 110 | | 70-130 | | 10 | |
| 1,4-Dichlorobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.1 | | 106 | | 60-140 | | 10 | |

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| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 14.9 | | 75 | | 35-130 | | 25 | |
| 1,1-Dichloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.4 | | 102 | | 60-130 | | 15 | |
| 1,2-Dichloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.6 | | 103 | | 65-140 | | 15 | |
| 1,1-Dichloroethene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 19.6 | | 98 | | 60-135 | | 20 | |
| cis-1,2-Dichloroethene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.0 | | 115 | | 70-135 | | 15 | |
| trans-1,2-Dichloroethene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.9 | | 105 | | 60-145 | | 15 | |
| 1,2-Dichloropropane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.6 | | 113 | | 65-130 | | 15 | |
| 1,3-Dichloropropane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.1 | | 116 | | 75-125 | | 15 | |
| 2,2-Dichloropropane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 16.8 | | 84 | | 25-120 | | 35 | |
| 1,1-Dichloropropene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.7 | | 108 | | 60-140 | | 20 | |
| cis-1,3-Dichloropropene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.4 | | 102 | | 30-120 | | 20 | |
| trans-1,3-Dichloropropene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 19.7 | | 98 | | 35-120 | | 15 | |
| Ethylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.4 | | 117 | | 70-130 | | 35 | |
| Hexachlorobutadiene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.2 | | 116 | | 60-135 | | 15 | |
| Hexane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 15.3 | | 76 | | 40-135 | | 35 | CIN |
| Isopropylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.6 | | 108 | | 70-125 | | 15 | |
| p-Isopropyltoluene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.6 | | 113 | | 60-140 | | 10 | CIN |
| Methylene Chloride | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.3 | | 107 | | 55-145 | | 20 | |
| Methyl tert-Butyl Ether | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.5 | | 103 | | 50-135 | | 30 | |
| Naphthalene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 19.7 | | 98 | | 40-135 | | 35 | CIN |
| n-Propylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.1 | | 115 | | 70-135 | | 20 | |
| Styrene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.0 | | 115 | | 70-130 | | 15 | CIN |
| 1,1,1,2-Tetrachloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.7 | | 109 | | 65-120 | | 15 | CIN |
| 1,1,2,2-Tetrachloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 19.7 | | 98 | | 65-130 | | 20 | |
| Tetrachloroethene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.1 | | 115 | | 70-135 | | 15 | |
| Toluene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.6 | | 118 | | 70-135 | | 30 | |
| 1,2,3-Trichlorobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.5 | | 118 | | 55-130 | | 15 | |
| 1,2,4-Trichlorobenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.8 | | 109 | | 40-135 | | 15 | |
| 1,1,1-Trichloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.3 | | 112 | | 60-125 | | 15 | |
| 1,1,2-Trichloroethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.4 | | 102 | | 75-125 | | 15 | |
| Trichloroethene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.6 | | 108 | | 70-130 | | 20 | |
| Trichlorofluoromethane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 21.2 | | 106 | | 55-145 | | 20 | |
| 1,2,3-Trichloropropane | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.0 | | 110 | | 60-150 | | 20 | CIN |
| 1,2,4-Trimethylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 22.8 | | 114 | | 70-140 | | 15 | |
| 1,3,5-Trimethylbenzene | 11D0018 | | 20.0 | ug/L | N/A | N/A | 23.4 | | 117 | | 70-140 | | 15 | |
| Vinyl chloride | 11D0018 | | 20.0 | ug/L | N/A | N/A | 20.4 | | 102 | | 45-135 | | 20 | CIN |
| Xylenes, total | 11D0018 | | 60.0 | ug/L | N/A | N/A | 71.5 | | 119 | | 70-130 | | 35 | |
| *Surrogate: Dibromofluoromethane* | *11D0018* | | | ug/L | | | | | *93* | | *75-120* | | | |
| *Surrogate: Toluene-d8* | *11D0018* | | | ug/L | | | | | *99* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0018* | | | ug/L | | | | | *100* | | *80-120* | | | |

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| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Acetone | 11D0079 | | 995 | ug/kg wet | N/A | 2490 | 1090 | 1040 | 110 | 105 | 65-150 | 5 | 40 | |
| Acrylonitrile | 11D0079 | | 995 | ug/kg wet | N/A | 2490 | 1290 | 1280 | 129 | 129 | 45-140 | 0 | 35 | |
| Benzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1180 | 1170 | 118 | 118 | 55-135 | 1 | 25 | |
| Bromobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 991 | 979 | 100 | 98 | 65-125 | 1 | 35 | |
| Bromochloromethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1350 | 1390 | 136 | 140 | 65-130 | 3 | 35 | L |
| Bromodichloromethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1130 | 1130 | 114 | 114 | 65-130 | 0 | 30 | |
| Bromoform | 11D0079 | | 995 | ug/kg wet | N/A | 498 | 939 | 952 | 94 | 96 | 50-135 | 1 | 40 | |
| Bromomethane | 11D0079 | | 995 | ug/kg wet | N/A | 995 | 1230 | 1260 | 123 | 127 | 45-135 | 3 | 40 | |
| 2-Butanone (MEK) | 11D0079 | | 995 | ug/kg wet | N/A | 2490 | 1130 | 1110 | 114 | 112 | 50-145 | 2 | 40 | |
| n-Butylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 919 | 915 | 92 | 92 | 55-130 | 0 | 30 | |
| sec-Butylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 918 | 933 | 92 | 94 | 60-125 | 2 | 30 | |
| tert-Butylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 882 | 900 | 89 | 90 | 55-125 | 2 | 25 | |
| Carbon disulfide | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1160 | 1190 | 116 | 119 | 40-135 | 2 | 40 | |
| Carbon Tetrachloride | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1070 | 1090 | 107 | 109 | 55-130 | 2 | 30 | |
| Chlorobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 930 | 958 | 93 | 96 | 60-120 | 3 | 30 | |
| Chlorodibromomethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1080 | 1060 | 108 | 107 | 55-130 | 1 | 40 | |
| Chloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 995 | 1240 | 1290 | 125 | 129 | 50-145 | 3 | 40 | |
| Chloroform | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1270 | 1280 | 128 | 129 | 65-130 | 1 | 30 | |
| Chloromethane | 11D0079 | | 995 | ug/kg wet | N/A | 995 | 1280 | 1320 | 129 | 133 | 40-135 | 3 | 40 | |
| 2-Chlorotoluene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 982 | 974 | 99 | 98 | 60-125 | 1 | 35 | |
| 4-Chlorotoluene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 972 | 975 | 98 | 98 | 60-125 | 0 | 35 | |
| 1,2-Dibromo-3-chloropropane | 11D0079 | | 995 | ug/kg wet | N/A | 2490 | 781 | 830 | 78 | 83 | 50-140 | 6 | 35 | |
| 1,2-Dibromoethane (EDB) | 11D0079 | | 995 | ug/kg wet | N/A | 2490 | 964 | 982 | 97 | 99 | 55-140 | 2 | 30 | |
| Dibromomethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1180 | 1120 | 119 | 112 | 65-135 | 6 | 30 | |
| 1,2-Dichlorobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 905 | 895 | 91 | 90 | 65-120 | 1 | 30 | |
| 1,3-Dichlorobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 923 | 903 | 93 | 91 | 60-125 | 2 | 30 | |
| 1,4-Dichlorobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 912 | 916 | 92 | 92 | 60-125 | 1 | 30 | |
| Dichlorodifluoromethane | 11D0079 | | 995 | ug/kg wet | N/A | 746 | 1170 | 1210 | 118 | 121 | 40-135 | 3 | 35 | |
| 1,1-Dichloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1370 | 1290 | 138 | 130 | 55-135 | 6 | 40 | L |
| 1,2-Dichloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1200 | 1230 | 121 | 124 | 60-140 | 2 | 30 | |
| 1,1-Dichloroethene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1190 | 1180 | 119 | 118 | 50-145 | 1 | 40 | |
| cis-1,2-Dichloroethene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1290 | 1280 | 130 | 129 | 60-135 | 1 | 40 | |
| trans-1,2-Dichloroethene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1320 | 1330 | 132 | 134 | 55-135 | 1 | 40 | |
| 1,2-Dichloropropane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1170 | 1210 | 118 | 122 | 55-130 | 3 | 30 | |
| 1,3-Dichloropropane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1180 | 1150 | 118 | 116 | 55-140 | 2 | 30 | |
| 2,2-Dichloropropane | 11D0079 | | 995 | ug/kg wet | N/A | 995 | 1200 | 1190 | 120 | 120 | 40-135 | 0 | 45 | |
| 1,1-Dichloropropene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1210 | 1240 | 121 | 125 | 55-130 | 3 | 30 | |
| cis-1,3-Dichloropropene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1150 | 1140 | 116 | 115 | 50-115 | 1 | 35 | L |
| trans-1,3-Dichloropropene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1110 | 1120 | 111 | 113 | 55-130 | 1 | 30 | |
| Ethylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 976 | 971 | 98 | 98 | 60-125 | 1 | 30 | |
| Hexachlorobutadiene | 11D0079 | | 995 | ug/kg wet | N/A | 1240 | 880 | 867 | 88 | 87 | 40-135 | 2 | 35 | |
| Hexane | 11D0079 | | 995 | ug/kg wet | N/A | 1240 | 1200 | 1240 | 121 | 125 | 45-140 | 3 | 35 | |
| Isopropylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 936 | 935 | 94 | 94 | 60-125 | 0 | 35 | |
| p-Isopropyltoluene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 929 | 921 | 93 | 93 | 60-120 | 1 | 30 | |
| Methylene Chloride | 11D0079 | | 995 | ug/kg wet | N/A | 2490 | 1170 | 1170 | 118 | 117 | 55-145 | 1 | 40 | |

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| Methyl tert-Butyl Ether | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1250 | 1290 | 125 | 130 | 55-130 | 4 | 30 | |
| Naphthalene | 11D0079 | | 995 | ug/kg wet | N/A | 1240 | 897 | 914 | 90 | 92 | 50-130 | 2 | 30 | |
| n-Propylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 944 | 928 | 95 | 93 | 50-125 | 2 | 35 | |
| Styrene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 941 | 950 | 95 | 96 | 60-125 | 1 | 35 | |
| 1,1,1,2-Tetrachloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 938 | 945 | 94 | 95 | 65-125 | 1 | 30 | |
| 1,1,2,2-Tetrachloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1030 | 1020 | 103 | 103 | 60-125 | 1 | 35 | |
| Tetrachloroethene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 929 | 949 | 93 | 95 | 55-125 | 2 | 40 | |
| Toluene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 972 | 980 | 98 | 98 | 60-130 | 1 | 35 | |
| 1,2,3-Trichlorobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 1240 | 842 | 879 | 85 | 88 | 50-130 | 4 | 35 | |
| 1,2,4-Trichlorobenzene | 11D0079 | | 995 | ug/kg wet | N/A | 1240 | 921 | 904 | 93 | 91 | 45-135 | 2 | 35 | |
| 1,1,1-Trichloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1130 | 1140 | 113 | 115 | 60-125 | 1 | 30 | |
| 1,1,2-Trichloroethane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1180 | 1190 | 119 | 120 | 55-135 | 1 | 30 | |
| Trichloroethene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1160 | 1150 | 117 | 116 | 60-130 | 1 | 30 | |
| Trichlorofluoromethane | 11D0079 | | 995 | ug/kg wet | N/A | 995 | 1200 | 1220 | 120 | 123 | 50-145 | 2 | 40 | |
| 1,2,3-Trichloropropane | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 1000 | 988 | 101 | 99 | 50-145 | 1 | 35 | |
| 1,2,4-Trimethylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 995 | 985 | 100 | 99 | 55-125 | 1 | 35 | |
| 1,3,5-Trimethylbenzene | 11D0079 | | 995 | ug/kg wet | N/A | 249 | 976 | 959 | 98 | 96 | 50-130 | 2 | 35 | |
| Vinyl chloride | 11D0079 | | 995 | ug/kg wet | N/A | 746 | 1200 | 1240 | 120 | 125 | 45-140 | 4 | 40 | |
| Xylenes, total | 11D0079 | | 2990 | ug/kg wet | N/A | 746 | 2940 | 2980 | 98 | 100 | 50-130 | 1 | 30 | |
| *Surrogate: Dibromofluoromethane* | *11D0079* | | | ug/L | | | | | *107* | *109* | *75-125* | | | |
| *Surrogate: Toluene-d8* | *11D0079* | | | ug/L | | | | | *88* | *87* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0079* | | | ug/L | | | | | *106* | *107* | *80-120* | | | |
| Acetone | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.4 | | 97 | | 60-150 | | 20 | |
| Acrylonitrile | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.4 | | 92 | | 50-145 | | 25 | |
| Benzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.1 | | 100 | | 70-130 | | 25 | |
| Bromobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.5 | | 102 | | 75-130 | | 20 | |
| Bromochloromethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.7 | | 98 | | 65-145 | | 10 | |
| Bromodichloromethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.5 | | 87 | | 60-130 | | 15 | |
| Bromoform | 11D0096 | | 20.0 | ug/L | N/A | N/A | 14.6 | | 73 | | 30-125 | | 25 | |
| Bromomethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.0 | | 85 | | 35-130 | | 35 | |
| 2-Butanone (MEK) | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.5 | | 98 | | 55-140 | | 25 | |
| n-Butylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.6 | | 98 | | 55-135 | | 10 | |
| sec-Butylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.8 | | 104 | | 65-135 | | 15 | |
| tert-Butylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.2 | | 101 | | 60-135 | | 10 | |
| Carbon disulfide | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.3 | | 86 | | 40-130 | | 20 | |
| Carbon Tetrachloride | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.8 | | 94 | | 55-130 | | 25 | |
| Chlorobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.5 | | 103 | | 75-125 | | 15 | |
| Chlorodibromomethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.0 | | 85 | | 45-125 | | 20 | |
| Chloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.8 | | 89 | | 55-135 | | 20 | |
| Chloroform | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.8 | | 94 | | 70-125 | | 15 | |
| Chloromethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 13.6 | | 68 | | 30-125 | | 25 | |
| 2-Chlorotoluene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.8 | | 104 | | 75-135 | | 15 | |
| 4-Chlorotoluene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.5 | | 102 | | 70-140 | | 20 | CIN |
| 1,2-Dibromo-3-chloropropane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 14.2 | | 71 | | 35-130 | | 25 | |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| 1,2-Dibromoethane (EDB) | 11D0096 | | 20.0 | ug/L | N/A | N/A | 21.3 | | 107 | | 70-135 | | 25 | |
| Dibromomethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.1 | | 101 | | 75-130 | | 30 | |
| 1,2-Dichlorobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.6 | | 98 | | 65-135 | | 10 | CIN |
| 1,3-Dichlorobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.4 | | 97 | | 70-130 | | 10 | |
| 1,4-Dichlorobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.7 | | 93 | | 60-140 | | 10 | |
| Dichlorodifluoromethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 14.0 | | 70 | | 35-130 | | 25 | |
| 1,1-Dichloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.8 | | 89 | | 60-130 | | 15 | |
| 1,2-Dichloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.4 | | 97 | | 65-140 | | 15 | |
| 1,1-Dichloroethene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.7 | | 88 | | 60-135 | | 20 | |
| cis-1,2-Dichloroethene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.9 | | 94 | | 70-135 | | 15 | |
| trans-1,2-Dichloroethene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.6 | | 93 | | 60-145 | | 15 | |
| 1,2-Dichloropropane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.6 | | 93 | | 65-130 | | 15 | |
| 1,3-Dichloropropane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.7 | | 104 | | 75-125 | | 15 | |
| 2,2-Dichloropropane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.2 | | 91 | | 25-120 | | 35 | |
| 1,1-Dichloropropene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.1 | | 101 | | 60-140 | | 20 | |
| cis-1,3-Dichloropropene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.4 | | 87 | | 30-120 | | 20 | |
| trans-1,3-Dichloropropene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.6 | | 88 | | 35-120 | | 15 | |
| Ethylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 21.2 | | 106 | | 70-130 | | 35 | |
| Hexachlorobutadiene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.8 | | 99 | | 60-135 | | 15 | |
| Hexane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 15.8 | | 79 | | 40-135 | | 35 | CIN |
| Isopropylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.3 | | 96 | | 70-125 | | 15 | |
| p-Isopropyltoluene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.2 | | 101 | | 60-140 | | 10 | CIN |
| Methylene Chloride | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.8 | | 89 | | 55-145 | | 20 | |
| Methyl tert-Butyl Ether | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.4 | | 92 | | 50-135 | | 30 | |
| Naphthalene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 17.2 | | 86 | | 40-135 | | 35 | CIN |
| n-Propylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.9 | | 104 | | 70-135 | | 20 | |
| Styrene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.3 | | 102 | | 70-130 | | 15 | CIN |
| 1,1,1,2-Tetrachloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.9 | | 95 | | 65-120 | | 15 | CIN |
| 1,1,2,2-Tetrachloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.2 | | 91 | | 65-130 | | 20 | |
| Tetrachloroethene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 21.6 | | 108 | | 70-135 | | 15 | |
| Toluene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.3 | | 102 | | 70-135 | | 30 | |
| 1,2,3-Trichlorobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.1 | | 100 | | 55-130 | | 15 | |
| 1,2,4-Trichlorobenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.4 | | 92 | | 40-135 | | 15 | |
| 1,1,1-Trichloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.4 | | 102 | | 60-125 | | 15 | |
| 1,1,2-Trichloroethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.9 | | 95 | | 75-125 | | 15 | |
| Trichloroethene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 19.1 | | 96 | | 70-130 | | 20 | |
| Trichlorofluoromethane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.1 | | 101 | | 55-145 | | 20 | |
| 1,2,3-Trichloropropane | 11D0096 | | 20.0 | ug/L | N/A | N/A | 21.5 | | 107 | | 60-150 | | 20 | CIN |
| 1,2,4-Trimethylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 20.6 | | 103 | | 70-140 | | 15 | |
| 1,3,5-Trimethylbenzene | 11D0096 | | 20.0 | ug/L | N/A | N/A | 21.2 | | 106 | | 70-140 | | 15 | |
| Vinyl chloride | 11D0096 | | 20.0 | ug/L | N/A | N/A | 18.2 | | 91 | | 45-135 | | 20 | CIN |
| Xylenes, total | 11D0096 | | 60.0 | ug/L | N/A | N/A | 63.8 | | 106 | | 70-130 | | 35 | |
| *Surrogate: Dibromofluoromethane* | *11D0096* | | | ug/L | | | | | *97* | | *75-120* | | | |
| *Surrogate: Toluene-d8* | *11D0096* | | | ug/L | | | | | *99* | | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0096* | | | ug/L | | | | | *102* | | *80-120* | | | |

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Received: 03/30/11
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## LCS/LCS DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| **UST ANALYSIS PARAMETERS** | | | | | | | | | | | | | | |
| Diesel | 11C1428 | | 2000 | ug/L | N/A | 300 | 1570 | 1560 | 78 | 78 | 60-130 | 0 | 30 | |
| *Surrogate: Octacosane* | *11C1428* | | | ug/L | | | | | *83* | *86* | *45-140* | | | |
| Diesel | 11C1516 | | 66.7 | mg/kg | N/A | 10.0 | 65.8 | | 99 | | 65-125 | | | |
| *Surrogate: Octacosane* | *11C1516* | | | mg/kg | | | | | *100* | | *65-150* | | | |
| **Polychlorinated Biphenyls by EPA Method 8082** | | | | | | | | | | | | | | |
| PCB-1268 | 11C1515 | | 0.167 | mg/kg wet | N/A | 0.0500 | 0.128 | | 77 | | 45-120 | | | |
| *Surrogate: Decachlorobiphenyl* | *11C1515* | | | mg/kg wet | | | | | *83* | | *60-115* | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *11C1515* | | | mg/kg wet | | | | | *62* | | *45-100* | | | |
| PCB-1268 | 11D0057 | | 5.00 | ug/L | N/A | 0.800 | 3.11 | 3.36 | 62 | 67 | 35-105 | 8 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *11D0057* | | | ug/L | | | | | *69* | *74* | *45-110* | | | |
| *Surrogate: Tetrachloro-meta-xylene* | *11D0057* | | | ug/L | | | | | *63* | *70* | *35-90* | | | |

**TestAmerica Cedar Falls**
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Work Order: CUC1582
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Received: 03/30/11
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# MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals by SW 846 Series Methods** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1539-40** | | | | | | | | | | | | | | |
| Mercury | 11C1420 | 0.0251 | 0.187 | mg/kg dry | N/A | 0.0242 | 0.196 | 0.210 | 91 | 92 | 70-130 | 7 | 20 | |
| **QC Source Sample: CUC1553-02** | | | | | | | | | | | | | | |
| Barium | 11C1463 | 0.290 | 1.00 | mg/L | N/A | 0.0100 | 1.31 | 1.18 | 102 | 89 | 75-110 | 10 | 20 | |
| Chromium | 11C1463 | <0.0200 | 1.00 | mg/L | N/A | 0.0200 | 0.972 | 0.882 | 97 | 88 | 75-115 | 10 | 20 | |
| Silver | 11C1463 | <0.0200 | 1.00 | mg/L | N/A | 0.0200 | 0.989 | 0.894 | 99 | 89 | 75-110 | 10 | 15 | |
| **QC Source Sample: CUC1582-08** | | | | | | | | | | | | | | |
| Barium | 11C1463 | 3.61 | 1.00 | mg/L | N/A | 0.0100 | 4.56 | | 94 | | 75-110 | | | |
| Chromium | 11C1463 | 0.122 | 1.00 | mg/L | N/A | 0.0200 | 1.12 | | 99 | | 75-115 | | | |
| Silver | 11C1463 | <0.0200 | 1.00 | mg/L | N/A | 0.0200 | 1.04 | | 104 | | 75-110 | | | |
| **QC Source Sample: CUC1411-02** | | | | | | | | | | | | | | |
| Arsenic | 11C1466 | <0.00200 | 0.0400 | mg/L | N/A | 0.00200 | 0.0428 | 0.0457 | 107 | 114 | 75-125 | 7 | 20 | |
| Cadmium | 11C1466 | 0.000569 | 0.0200 | mg/L | N/A | 0.00750 | 0.0174 | 0.0196 | 84 | 95 | 75-125 | 12 | 20 | |
| Lead | 11C1466 | <0.00400 | 0.0400 | mg/L | N/A | 0.00400 | 0.00672 | 0.00789 | 17 | 20 | 75-125 | 16 | 20 | M1 |
| **QC Source Sample: CUC1582-03** | | | | | | | | | | | | | | |
| Arsenic | 11C1466 | 0.0821 | 0.0400 | mg/L | N/A | 0.0100 | 0.146 | | 160 | | 75-125 | | | M1 |
| Cadmium | 11C1466 | 0.00349 | 0.0200 | mg/L | N/A | 0.00750 | 0.0198 | | 82 | | 75-125 | | | |
| Lead | 11C1466 | 0.0175 | 0.0400 | mg/L | N/A | 0.00400 | 0.0279 | | 26 | | 75-125 | | | M1 |
| Selenium | 11C1466 | 0.00194 | 0.0800 | mg/L | N/A | 0.0100 | 0.0604 | | 73 | | 75-125 | | | M1 |
| **QC Source Sample: CUC1582-03** | | | | | | | | | | | | | | |
| Mercury | 11C1495 | 0.000355 | 0.00167 | mg/L | N/A | 0.000200 | 0.00215 | 0.00188 | 108 | 91 | 70-130 | 13 | 20 | |
| **QC Source Sample: CUC1406-01** | | | | | | | | | | | | | | |
| Arsenic | 11D0019 | 8.17 | 5.16 | mg/kg dry | N/A | 2.58 | 17.2 | 11.8 | 175 | 73 | 75-125 | 37 | 20 | M1,R |
| **QC Source Sample: CUC1539-36** | | | | | | | | | | | | | | |
| Arsenic | 11D0019 | 5.90 | 4.88 | mg/kg dry | N/A | 1.24 | 11.1 | | 107 | | 75-125 | | | |
| **QC Source Sample: CUC1554-09** | | | | | | | | | | | | | | |
| Barium | 11D0126 | 350 | 903 | mg/kg dry | N/A | 4.52 | 1210 | 1310 | 95 | 95 | 75-125 | 7 | 20 | |
| Cadmium | 11D0126 | 1.50 | 903 | mg/kg dry | N/A | 9.03 | 849 | 950 | 94 | 94 | 75-125 | 11 | 20 | |
| Chromium | 11D0126 | 25.1 | 903 | mg/kg dry | N/A | 9.03 | 862 | 958 | 93 | 93 | 75-120 | 11 | 20 | |
| Lead | 11D0126 | 28.9 | 1810 | mg/kg dry | N/A | 45.2 | 1890 | 2060 | 103 | 101 | 75-125 | 8 | 20 | |
| Selenium | 11D0126 | <67.7 | 3610 | mg/kg dry | N/A | 67.7 | 3820 | 4160 | 106 | 103 | 75-115 | 9 | 20 | |
| Silver | 11D0126 | 7.39 | 903 | mg/kg dry | N/A | 9.03 | 866 | 981 | 95 | 97 | 75-110 | 12 | 20 | |
| **QC Source Sample: CUC1675-02** | | | | | | | | | | | | | | |
| Barium | 11D0126 | 91.0 | 112 | mg/kg dry | N/A | 3.00 | 204 | | 101 | | 75-125 | | | |
| Cadmium | 11D0126 | <5.99 | 112 | mg/kg dry | N/A | 5.99 | 101 | | 91 | | 75-125 | | | |
| Chromium | 11D0126 | 12.8 | 112 | mg/kg dry | N/A | 5.99 | 115 | | 92 | | 75-120 | | | |
| Lead | 11D0126 | 73.0 | 223 | mg/kg dry | N/A | 30.0 | 299 | | 101 | | 75-125 | | | |
| Selenium | 11D0126 | <44.9 | 446 | mg/kg dry | N/A | 44.9 | 431 | | 96 | | 75-115 | | | |
| Silver | 11D0126 | <5.99 | 112 | mg/kg dry | N/A | 5.99 | 105 | | 94 | | 75-110 | | | |
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1567-01** | | | | | | | | | | | | | | |
| Acetone | 11D0018 | 0.710 | 20.0 | ug/L | N/A | N/A | 15.3 | 15.6 | 73 | 74 | 45-150 | 2 | 35 | |
| Acrylonitrile | 11D0018 | 0.0500 | 20.0 | ug/L | N/A | N/A | 16.3 | 15.2 | 81 | 76 | 45-145 | 7 | 35 | |
| Benzene | 11D0018 | 0.0100 | 20.0 | ug/L | N/A | N/A | 19.1 | 18.5 | 96 | 92 | 50-130 | 4 | 20 | |
| Bromobenzene | 11D0018 | 0.0200 | 20.0 | ug/L | N/A | N/A | 20.1 | 19.6 | 100 | 98 | 60-135 | 3 | 15 | |
| Bromochloromethane | 11D0018 | <0.12 | 20.0 | ug/L | N/A | N/A | 20.1 | 19.2 | 101 | 96 | 55-145 | 4 | 25 | |
| Bromodichloromethane | 11D0018 | <0.12 | 20.0 | ug/L | N/A | N/A | 16.8 | 15.9 | 84 | 79 | 50-130 | 5 | 15 | |
| Bromoform | 11D0018 | 0.0400 | 20.0 | ug/L | N/A | N/A | 14.2 | 14.1 | 71 | 70 | 30-125 | 0 | 25 | |
| Bromomethane | 11D0018 | 0.150 | 20.0 | ug/L | N/A | N/A | 16.3 | 16.5 | 81 | 82 | 30-130 | 2 | 35 | |

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HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1567-01** | | | | | | | | | | | | | | |
| 2-Butanone (MEK) | 11D0018 | 0.190 | 20.0 | ug/L | N/A | N/A | 16.7 | 16.2 | 83 | 80 | 45-140 | 3 | 35 | |
| n-Butylbenzene | 11D0018 | 0.0800 | 20.0 | ug/L | N/A | N/A | 19.2 | 19.1 | 95 | 95 | 40-135 | 0 | 20 | |
| sec-Butylbenzene | 11D0018 | 0.0600 | 20.0 | ug/L | N/A | N/A | 19.3 | 19.2 | 96 | 96 | 40-135 | 0 | 20 | |
| tert-Butylbenzene | 11D0018 | 0.0200 | 20.0 | ug/L | N/A | N/A | 18.8 | 18.5 | 94 | 92 | 40-135 | 2 | 20 | |
| Carbon disulfide | 11D0018 | 0.110 | 20.0 | ug/L | N/A | N/A | 16.4 | 16.5 | 81 | 82 | 30-130 | 1 | 30 | |
| Carbon Tetrachloride | 11D0018 | 0.0200 | 20.0 | ug/L | N/A | N/A | 16.8 | 16.6 | 84 | 83 | 35-130 | 1 | 20 | |
| Chlorobenzene | 11D0018 | 0.0200 | 20.0 | ug/L | N/A | N/A | 19.6 | 19.2 | 98 | 96 | 60-130 | 2 | 15 | |
| Chlorodibromomethane | 11D0018 | <0.20 | 20.0 | ug/L | N/A | N/A | 16.6 | 17.4 | 83 | 87 | 35-130 | 4 | 20 | |
| Chloroethane | 11D0018 | <0.15 | 20.0 | ug/L | N/A | N/A | 16.8 | 16.6 | 84 | 83 | 40-135 | 1 | 20 | |
| Chloroform | 11D0018 | 0.0400 | 20.0 | ug/L | N/A | N/A | 18.4 | 18.2 | 92 | 91 | 55-125 | 1 | 15 | |
| Chloromethane | 11D0018 | 0.0600 | 20.0 | ug/L | N/A | N/A | 13.1 | 13.2 | 65 | 66 | 25-125 | 1 | 25 | |
| 2-Chlorotoluene | 11D0018 | 0.0800 | 20.0 | ug/L | N/A | N/A | 19.4 | 19.4 | 97 | 97 | 55-140 | 0 | 20 | |
| 4-Chlorotoluene | 11D0018 | 0.0700 | 20.0 | ug/L | N/A | N/A | 19.2 | 18.8 | 96 | 94 | 50-140 | 2 | 20 | CIN |
| 1,2-Dibromo-3-chloropropane | 11D0018 | <0.12 | 20.0 | ug/L | N/A | N/A | 15.6 | 16.7 | 78 | 83 | 35-130 | 6 | 30 | |
| 1,2-Dibromoethane (EDB) | 11D0018 | <0.13 | 20.0 | ug/L | N/A | N/A | 19.9 | 19.0 | 99 | 95 | 55-140 | 4 | 20 | |
| Dibromomethane | 11D0018 | <0.18 | 20.0 | ug/L | N/A | N/A | 19.7 | 19.8 | 98 | 99 | 60-135 | 1 | 15 | |
| 1,2-Dichlorobenzene | 11D0018 | 0.0600 | 20.0 | ug/L | N/A | N/A | 18.8 | 18.6 | 94 | 93 | 55-140 | 1 | 20 | CIN |
| 1,3-Dichlorobenzene | 11D0018 | 0.0900 | 20.0 | ug/L | N/A | N/A | 18.7 | 18.4 | 93 | 92 | 55-135 | 2 | 15 | |
| 1,4-Dichlorobenzene | 11D0018 | 0.0900 | 20.0 | ug/L | N/A | N/A | 18.4 | 18.1 | 91 | 90 | 55-140 | 2 | 15 | |
| Dichlorodifluoromethane | 11D0018 | <0.20 | 20.0 | ug/L | N/A | N/A | 13.5 | 12.6 | 67 | 63 | 15-130 | 6 | 25 | |
| 1,1-Dichloroethane | 11D0018 | 0.980 | 20.0 | ug/L | N/A | N/A | 17.6 | 18.0 | 83 | 85 | 50-130 | 3 | 25 | |
| 1,2-Dichloroethane | 11D0018 | 0.130 | 20.0 | ug/L | N/A | N/A | 18.9 | 18.8 | 94 | 93 | 55-140 | 1 | 15 | |
| 1,1-Dichloroethene | 11D0018 | 5.13 | 20.0 | ug/L | N/A | N/A | 21.5 | 21.5 | 82 | 82 | 35-135 | 0 | 30 | |
| cis-1,2-Dichloroethene | 11D0018 | 0.0200 | 20.0 | ug/L | N/A | N/A | 19.0 | 19.4 | 95 | 97 | 45-135 | 2 | 20 | |
| trans-1,2-Dichloroethene | 11D0018 | 0.0600 | 20.0 | ug/L | N/A | N/A | 17.8 | 17.5 | 89 | 87 | 45-145 | 2 | 35 | |
| 1,2-Dichloropropane | 11D0018 | <0.11 | 20.0 | ug/L | N/A | N/A | 17.9 | 17.6 | 89 | 88 | 55-130 | 2 | 15 | |
| 1,3-Dichloropropane | 11D0018 | <0.16 | 20.0 | ug/L | N/A | N/A | 20.4 | 20.1 | 102 | 100 | 60-135 | 2 | 15 | |
| 2,2-Dichloropropane | 11D0018 | 0.0100 | 20.0 | ug/L | N/A | N/A | 18.0 | 18.2 | 90 | 91 | 20-120 | 1 | 35 | |
| 1,1-Dichloropropene | 11D0018 | <0.15 | 20.0 | ug/L | N/A | N/A | 18.7 | 18.1 | 93 | 90 | 40-140 | 3 | 20 | |
| cis-1,3-Dichloropropene | 11D0018 | <0.15 | 20.0 | ug/L | N/A | N/A | 17.4 | 17.5 | 87 | 88 | 25-120 | 1 | 20 | |
| trans-1,3-Dichloropropene | 11D0018 | <0.22 | 20.0 | ug/L | N/A | N/A | 17.1 | 17.3 | 86 | 86 | 25-120 | 1 | 20 | |
| Ethylbenzene | 11D0018 | 0.0100 | 20.0 | ug/L | N/A | N/A | 19.4 | 18.6 | 97 | 93 | 45-135 | 4 | 20 | |
| Hexachlorobutadiene | 11D0018 | <0.20 | 20.0 | ug/L | N/A | N/A | 19.5 | 19.6 | 97 | 98 | 40-135 | 1 | 30 | |
| Hexane | 11D0018 | 0.0700 | 20.0 | ug/L | N/A | N/A | 17.5 | 16.5 | 87 | 82 | 25-135 | 6 | 35 | CIN |
| Isopropylbenzene | 11D0018 | 0.0300 | 20.0 | ug/L | N/A | N/A | 17.9 | 17.3 | 89 | 86 | 45-125 | 3 | 15 | |
| p-Isopropyltoluene | 11D0018 | 0.0600 | 20.0 | ug/L | N/A | N/A | 18.6 | 18.6 | 93 | 93 | 40-140 | 0 | 20 | CIN |
| Methylene Chloride | 11D0018 | 0.220 | 20.0 | ug/L | N/A | N/A | 17.3 | 18.4 | 86 | 91 | 45-145 | 6 | 30 | |
| Methyl tert-Butyl Ether | 11D0018 | <0.16 | 20.0 | ug/L | N/A | N/A | 17.9 | 18.0 | 90 | 90 | 40-135 | 1 | 25 | |
| Naphthalene | 11D0018 | 0.140 | 20.0 | ug/L | N/A | N/A | 17.4 | 18.1 | 87 | 90 | 40-135 | 4 | 20 | CIN |
| n-Propylbenzene | 11D0018 | 0.0400 | 20.0 | ug/L | N/A | N/A | 19.5 | 18.8 | 97 | 94 | 45-140 | 4 | 20 | |
| Styrene | 11D0018 | <0.10 | 20.0 | ug/L | N/A | N/A | 19.4 | 18.8 | 97 | 94 | 40-135 | 3 | 20 | CIN |
| 1,1,1,2-Tetrachloroethane | 11D0018 | <0.21 | 20.0 | ug/L | N/A | N/A | 18.8 | 18.6 | 94 | 93 | 50-130 | 1 | 20 | CIN |
| 1,1,2,2-Tetrachloroethane | 11D0018 | 0.0200 | 20.0 | ug/L | N/A | N/A | 18.1 | 18.1 | 90 | 90 | 55-140 | 0 | 20 | |
| Tetrachloroethene | 11D0018 | 3.01 | 20.0 | ug/L | N/A | N/A | 22.1 | 20.7 | 96 | 89 | 40-135 | 6 | 20 | |
| Toluene | 11D0018 | 0.0300 | 20.0 | ug/L | N/A | N/A | 19.4 | 18.7 | 97 | 93 | 45-135 | 4 | 20 | |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

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Received: 03/30/11
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## MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1567-01** | | | | | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 11D0018 | 0.150 | 20.0 | ug/L | N/A | N/A | 20.8 | 19.8 | 103 | 98 | 50-140 | 5 | 25 | |
| 1,2,4-Trichlorobenzene | 11D0018 | 0.190 | 20.0 | ug/L | N/A | N/A | 17.9 | 18.1 | 88 | 90 | 40-135 | 1 | 25 | |
| 1,1,1-Trichloroethane | 11D0018 | 3.03 | 20.0 | ug/L | N/A | N/A | 21.2 | 20.9 | 91 | 90 | 40-125 | 1 | 20 | |
| 1,1,2-Trichloroethane | 11D0018 | 0.0400 | 20.0 | ug/L | N/A | N/A | 17.2 | 17.9 | 86 | 89 | 60-130 | 4 | 15 | |
| Trichloroethene | 11D0018 | 0.110 | 20.0 | ug/L | N/A | N/A | 17.6 | 17.8 | 87 | 88 | 50-130 | 1 | 20 | |
| Trichlorofluoromethane | 11D0018 | <0.17 | 20.0 | ug/L | N/A | N/A | 17.8 | 17.8 | 89 | 89 | 40-145 | 0 | 25 | |
| 1,2,3-Trichloropropane | 11D0018 | 0.0500 | 20.0 | ug/L | N/A | N/A | 18.9 | 19.7 | 94 | 98 | 55-150 | 4 | 20 | CIN |
| 1,2,4-Trimethylbenzene | 11D0018 | 0.0300 | 20.0 | ug/L | N/A | N/A | 19.7 | 18.7 | 98 | 94 | 45-140 | 5 | 20 | |
| 1,3,5-Trimethylbenzene | 11D0018 | 0.0100 | 20.0 | ug/L | N/A | N/A | 20.1 | 19.1 | 100 | 96 | 45-140 | 5 | 20 | |
| Vinyl chloride | 11D0018 | 0.0100 | 20.0 | ug/L | N/A | N/A | 17.4 | 16.3 | 87 | 81 | 30-135 | 7 | 20 | CIN |
| Xylenes, total | 11D0018 | <0.13 | 60.0 | ug/L | N/A | N/A | 60.4 | 58.5 | 101 | 98 | 40-135 | 3 | 20 | |
| *Surrogate: Dibromofluoromethane* | *11D0018* | | | ug/L | | | | | *98* | *99* | *75-120* | | | |
| *Surrogate: Toluene-d8* | *11D0018* | | | ug/L | | | | | *99* | *96* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0018* | | | ug/L | | | | | *102* | *101* | *80-120* | | | |
| **QC Source Sample: CUC1662-03** | | | | | | | | | | | | | | |
| Acetone | 11D0096 | 0.540 | 20.0 | ug/L | N/A | N/A | 13.7 | 14.5 | 66 | 70 | 45-150 | 6 | 35 | |
| Acrylonitrile | 11D0096 | 0.0600 | 20.0 | ug/L | N/A | N/A | 14.8 | 14.4 | 74 | 72 | 45-145 | 3 | 35 | |
| Benzene | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 16.7 | 16.0 | 83 | 80 | 50-130 | 4 | 20 | |
| Bromobenzene | 11D0096 | <0.21 | 20.0 | ug/L | N/A | N/A | 17.1 | 17.8 | 86 | 89 | 60-135 | 4 | 15 | |
| Bromochloromethane | 11D0096 | <0.12 | 20.0 | ug/L | N/A | N/A | 18.5 | 16.6 | 93 | 83 | 55-145 | 11 | 25 | |
| Bromodichloromethane | 11D0096 | <0.12 | 20.0 | ug/L | N/A | N/A | 14.4 | 14.7 | 72 | 73 | 50-130 | 2 | 15 | |
| Bromoform | 11D0096 | <0.14 | 20.0 | ug/L | N/A | N/A | 12.7 | 12.4 | 63 | 62 | 30-125 | 2 | 25 | |
| Bromomethane | 11D0096 | <0.22 | 20.0 | ug/L | N/A | N/A | 13.8 | 12.7 | 69 | 63 | 30-130 | 9 | 35 | |
| 2-Butanone (MEK) | 11D0096 | <0.16 | 20.0 | ug/L | N/A | N/A | 14.6 | 14.2 | 73 | 71 | 45-140 | 3 | 35 | |
| n-Butylbenzene | 11D0096 | <0.37 | 20.0 | ug/L | N/A | N/A | 15.2 | 14.7 | 76 | 74 | 40-135 | 3 | 20 | |
| sec-Butylbenzene | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 16.1 | 15.7 | 80 | 78 | 40-135 | 3 | 20 | |
| tert-Butylbenzene | 11D0096 | <0.12 | 20.0 | ug/L | N/A | N/A | 16.0 | 15.3 | 80 | 77 | 40-135 | 5 | 20 | |
| Carbon disulfide | 11D0096 | 0.0300 | 20.0 | ug/L | N/A | N/A | 14.2 | 12.8 | 71 | 64 | 30-130 | 11 | 30 | |
| Carbon Tetrachloride | 11D0096 | <0.24 | 20.0 | ug/L | N/A | N/A | 14.4 | 14.3 | 72 | 71 | 35-130 | 1 | 20 | |
| Chlorobenzene | 11D0096 | <0.19 | 20.0 | ug/L | N/A | N/A | 17.2 | 16.7 | 86 | 84 | 60-130 | 3 | 15 | |
| Chlorodibromomethane | 11D0096 | <0.20 | 20.0 | ug/L | N/A | N/A | 15.2 | 14.8 | 76 | 74 | 35-130 | 3 | 20 | |
| Chloroethane | 11D0096 | <0.15 | 20.0 | ug/L | N/A | N/A | 14.0 | 13.0 | 70 | 65 | 40-135 | 7 | 20 | |
| Chloroform | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 16.1 | 15.9 | 80 | 79 | 55-125 | 1 | 15 | |
| Chloromethane | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 12.0 | 10.5 | 60 | 52 | 25-125 | 13 | 25 | |
| 2-Chlorotoluene | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 16.9 | 16.5 | 84 | 83 | 55-140 | 2 | 20 | |
| 4-Chlorotoluene | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 16.6 | 16.6 | 83 | 83 | 50-140 | 0 | 20 | CIN |
| 1,2-Dibromo-3-chloropropane | 11D0096 | <0.12 | 20.0 | ug/L | N/A | N/A | 14.0 | 13.7 | 70 | 68 | 35-130 | 3 | 30 | |
| 1,2-Dibromoethane (EDB) | 11D0096 | <0.13 | 20.0 | ug/L | N/A | N/A | 17.7 | 17.3 | 88 | 86 | 55-140 | 2 | 20 | |
| Dibromomethane | 11D0096 | <0.18 | 20.0 | ug/L | N/A | N/A | 18.1 | 16.6 | 90 | 83 | 60-135 | 8 | 15 | |
| 1,2-Dichlorobenzene | 11D0096 | <0.14 | 20.0 | ug/L | N/A | N/A | 16.3 | 16.2 | 82 | 81 | 55-140 | 1 | 20 | CIN |
| 1,3-Dichlorobenzene | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 16.2 | 15.3 | 81 | 76 | 55-135 | 6 | 15 | |
| 1,4-Dichlorobenzene | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 16.2 | 15.7 | 81 | 78 | 55-140 | 3 | 15 | |
| Dichlorodifluoromethane | 11D0096 | <0.20 | 20.0 | ug/L | N/A | N/A | 10.8 | 10.1 | 54 | 50 | 15-130 | 7 | 25 | |
| 1,1-Dichloroethane | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 15.3 | 14.4 | 77 | 72 | 50-130 | 7 | 25 | |
| 1,2-Dichloroethane | 11D0096 | <0.18 | 20.0 | ug/L | N/A | N/A | 16.4 | 15.9 | 82 | 80 | 55-140 | 3 | 15 | |

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## MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1662-03** | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 13.8 | 12.3 | 69 | 61 | 35-135 | 11 | 30 | |
| cis-1,2-Dichloroethene | 11D0096 | <0.13 | 20.0 | ug/L | N/A | N/A | 16.3 | 16.4 | 82 | 82 | 45-135 | 1 | 20 | |
| trans-1,2-Dichloroethene | 11D0096 | 0.0400 | 20.0 | ug/L | N/A | N/A | 15.3 | 14.2 | 76 | 71 | 45-145 | 8 | 35 | |
| 1,2-Dichloropropane | 11D0096 | <0.11 | 20.0 | ug/L | N/A | N/A | 16.5 | 15.4 | 82 | 77 | 55-130 | 7 | 15 | |
| 1,3-Dichloropropane | 11D0096 | <0.16 | 20.0 | ug/L | N/A | N/A | 18.4 | 16.9 | 92 | 85 | 60-135 | 8 | 15 | |
| 2,2-Dichloropropane | 11D0096 | <0.18 | 20.0 | ug/L | N/A | N/A | 14.3 | 13.4 | 72 | 67 | 20-120 | 6 | 35 | |
| 1,1-Dichloropropene | 11D0096 | <0.15 | 20.0 | ug/L | N/A | N/A | 15.7 | 15.0 | 78 | 75 | 40-140 | 4 | 20 | |
| cis-1,3-Dichloropropene | 11D0096 | <0.15 | 20.0 | ug/L | N/A | N/A | 15.9 | 14.4 | 80 | 72 | 25-120 | 10 | 20 | |
| trans-1,3-Dichloropropene | 11D0096 | <0.22 | 20.0 | ug/L | N/A | N/A | 15.4 | 14.3 | 77 | 72 | 25-120 | 8 | 20 | |
| Ethylbenzene | 11D0096 | 0.0400 | 20.0 | ug/L | N/A | N/A | 16.3 | 16.4 | 81 | 82 | 45-135 | 1 | 20 | |
| Hexachlorobutadiene | 11D0096 | 0.0300 | 20.0 | ug/L | N/A | N/A | 16.1 | 14.3 | 80 | 72 | 40-135 | 12 | 30 | |
| Hexane | 11D0096 | 0.0300 | 20.0 | ug/L | N/A | N/A | 11.6 | 10.7 | 58 | 54 | 25-135 | 8 | 35 | CIN |
| Isopropylbenzene | 11D0096 | 0.0300 | 20.0 | ug/L | N/A | N/A | 15.0 | 14.9 | 75 | 74 | 45-125 | 1 | 15 | |
| p-Isopropyltoluene | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 15.5 | 15.0 | 77 | 75 | 40-140 | 3 | 20 | CIN |
| Methylene Chloride | 11D0096 | 0.240 | 20.0 | ug/L | N/A | N/A | 16.0 | 14.7 | 79 | 72 | 45-145 | 9 | 30 | |
| Methyl tert-Butyl Ether | 11D0096 | <0.16 | 20.0 | ug/L | N/A | N/A | 16.0 | 15.7 | 80 | 79 | 40-135 | 2 | 25 | |
| Naphthalene | 11D0096 | 0.0500 | 20.0 | ug/L | N/A | N/A | 15.6 | 15.4 | 78 | 77 | 40-135 | 2 | 20 | CIN |
| n-Propylbenzene | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 16.2 | 16.1 | 81 | 80 | 45-140 | 1 | 20 | |
| Styrene | 11D0096 | <0.10 | 20.0 | ug/L | N/A | N/A | 15.6 | 15.6 | 78 | 78 | 40-135 | 0 | 20 | CIN |
| 1,1,1,2-Tetrachloroethane | 11D0096 | <0.21 | 20.0 | ug/L | N/A | N/A | 16.5 | 16.4 | 82 | 82 | 50-130 | 0 | 20 | CIN |
| 1,1,2,2-Tetrachloroethane | 11D0096 | <0.10 | 20.0 | ug/L | N/A | N/A | 15.6 | 15.7 | 78 | 78 | 55-140 | 1 | 20 | |
| Tetrachloroethene | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 16.2 | 16.0 | 81 | 80 | 40-135 | 1 | 20 | |
| Toluene | 11D0096 | 0.0300 | 20.0 | ug/L | N/A | N/A | 16.5 | 16.1 | 82 | 80 | 45-135 | 3 | 20 | |
| 1,2,3-Trichlorobenzene | 11D0096 | 0.0500 | 20.0 | ug/L | N/A | N/A | 17.6 | 16.8 | 88 | 84 | 50-140 | 5 | 25 | |
| 1,2,4-Trichlorobenzene | 11D0096 | <0.16 | 20.0 | ug/L | N/A | N/A | 15.8 | 15.5 | 79 | 78 | 40-135 | 2 | 25 | |
| 1,1,1-Trichloroethane | 11D0096 | 0.0200 | 20.0 | ug/L | N/A | N/A | 15.8 | 15.4 | 79 | 77 | 40-125 | 2 | 20 | |
| 1,1,2-Trichloroethane | 11D0096 | 0.0300 | 20.0 | ug/L | N/A | N/A | 16.4 | 15.7 | 82 | 78 | 60-130 | 4 | 15 | |
| Trichloroethene | 11D0096 | <0.19 | 20.0 | ug/L | N/A | N/A | 16.1 | 14.7 | 81 | 74 | 50-130 | 9 | 20 | |
| Trichlorofluoromethane | 11D0096 | <0.17 | 20.0 | ug/L | N/A | N/A | 15.1 | 14.4 | 75 | 72 | 40-145 | 4 | 25 | |
| 1,2,3-Trichloropropane | 11D0096 | <0.19 | 20.0 | ug/L | N/A | N/A | 17.5 | 17.5 | 88 | 88 | 55-150 | 0 | 20 | CIN |
| 1,2,4-Trimethylbenzene | 11D0096 | 0.0400 | 20.0 | ug/L | N/A | N/A | 16.4 | 16.3 | 82 | 82 | 45-140 | 0 | 20 | |
| 1,3,5-Trimethylbenzene | 11D0096 | 0.0100 | 20.0 | ug/L | N/A | N/A | 16.7 | 16.5 | 84 | 82 | 45-140 | 2 | 20 | |
| Vinyl chloride | 11D0096 | <0.10 | 20.0 | ug/L | N/A | N/A | 13.9 | 13.4 | 70 | 67 | 30-135 | 4 | 20 | CIN |
| Xylenes, total | 11D0096 | <0.13 | 60.0 | ug/L | N/A | N/A | 52.1 | 50.1 | 87 | 83 | 40-135 | 4 | 20 | |
| *Surrogate: Dibromofluoromethane* | *11D0096* | | | ug/L | | | | | *95* | *96* | *75-120* | | | |
| *Surrogate: Toluene-d8* | *11D0096* | | | ug/L | | | | | *97* | *100* | *80-120* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *11D0096* | | | ug/L | | | | | *102* | *105* | *80-120* | | | |
| **UST ANALYSIS PARAMETERS** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1582-07** | | | | | | | | | | | | | | |
| Diesel | 11C1516 | 48.1 | 66.3 | mg/kg | N/A | 10.0 | 104 | 156 | 85 | 165 | 45-130 | 40 | 30 | M1,R |
| *Surrogate: Octacosane* | *11C1516* | | | mg/kg | | | | | *95* | *89* | *55-150* | | | |

**TestAmerica Cedar Falls**
Angela Muehling
Project Coordinator

HOWARD R. GREEN CO. - CEDAR RAPIDS <
8710 Earhart Lane SW
Cedar Rapids, IA 52404
Mike Goalen

Work Order: CUC1582
Project: Baker Properties - Council Bluffs, IA
Project Number: 728500J02

Received: 03/30/11
Reported: 04/08/11 11:15

## MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

| Analyte | Seq/ Batch | Source Result | Spike Level | Units | MDL | MRL | Result | Dup Result | % REC | Dup %REC | % REC Limits | RPD | RPD Limit | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Polychlorinated Biphenyls by EPA Method 8082** | | | | | | | | | | | | | | |
| **QC Source Sample: CUC1322-01** | | | | | | | | | | | | | | |
| PCB-1268 | 11C1515 | <0.256 | 0.853 | mg/kg wet | N/A | 0.256 | 0.480 | 0.288 | 56 | 32 | 25-120 | 50 | 35 | R |
| *Surrogate: Decachlorobiphenyl* | *11C1515* | | | mg/kg wet | | | | | *32* | *27* | *55-120* | | | Z6 |
| *Surrogate: Tetrachloro-meta-xylene* | *11C1515* | | | mg/kg wet | | | | | *28* | *26* | *45-105* | | | Z6 |

# SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

| | | |
|---|---|---|
| Boring/Well Number: Baker-7 | Facility: Baker Properties | Facility Street Address: Council Bluffs |
| Boring Depth (ft) X Diameter (in): 5 X 3 | | Drilling Method: Geoprobe |
| Well contractor Name: PSA Environmental<br>Registration Number: 7524 | | Logged By: Bridget Wolfe |
| Ground Surface Elevation (ASL): | Top of Casing Elevation (ASL): | |
| Date: 3/28/2011<br>Start Time: 16:17 | Date: 3/28/2011<br>End Time: 16:18 | UST Number: NA<br>LUST Number: NA |

| Depth (feet) | Well Construction Details | Recovery (feet) | Sample No. | Sample Type | PID/FID Reading | USCS Class. | Soil Classification |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 1 | | 4.5/5 | | | 1.0 | SM | 0-2': Lt. brown silty sand, moist |
| 2 | | | | | | | |
| 3 | | | | | 0.8 | GP | 2-5': Fill (gravel, cinders, brick) |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | T.D. = 5' |
| 29 | | | | | | | |
| 30 | | | | | | | |

* Soil sample taken for analysis

| | | | | | | |
|---|---|---|---|---|---|---|
| Observations | Date: | 3/28/2011 | | | | |
| Water Levels (ASL) | Level: | | | | | |
| Static Water Level v | Time: | | | | | |

# SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

| | | |
|---|---|---|
| Boring/Well Number: Baker-8 | Facility: Baker Properties | Facility Street Address: Council Bluffs |
| Boring Depth (ft) X Diameter (in): 5 X 3 | | Drilling Method: Geoprobe |
| Well contractor Name: PSA Environmental<br>Registration Number: 7524 | | Logged By: Bridget Wolfe |
| Ground Surface Elevation (ASL): | Top of Casing Elevation (ASL): | |
| Date: 3/28/2011<br>Start Time: 16:29 | Date: 3/28/2011<br>End Time: 16:30 | UST Number: NA<br>LUST Number: NA |

| Depth (feet) | Well Construction Details | Recovery (feet) | Sample No. | Sample Type | PID/FID Reading | USCS Class. | Soil Classification |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 1 | | 4.5/5 | | | 1.0 | SM | 0-5': Brown-dk brown silty sand |
| 2 | | | | | | | |
| 3 | | | | | 0.3 | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
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| 21 | | | | | | | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | T.D. = 5' |
| 29 | | | | | | | |
| 30 | | | | | | | |

* Soil sample taken for analysis

| | | | | | | |
|---|---|---|---|---|---|---|
| Observations | Date: | 3/28/2011 | | | | |
| Water Levels (ASL) | Level: | | | | | |
| Static Water Level v | Time: | | | | | |

# SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

| | | |
|---|---|---|
| Boring/Well Number: Baker-9 | Facility: Baker Properties | Facility Street Address: Council Bluffs |
| Boring Depth (ft) X Diameter (in): 5 X 3 | | Drilling Method: Geoprobe |
| Well contractor Name: PSA Environmental<br>Registration Number: 7524 | | Logged By: Bridget Wolfe |
| Ground Surface Elevation (ASL): | Top of Casing Elevation (ASL): | |
| Date: 3/28/2011<br>Start Time: 16:37 | Date: 3/28/2011<br>End Time: 16:37 | UST Number: NA<br>LUST Number: NA |

| Depth (feet) | Well Construction Details | Recovery (feet) | Sample No. | Sample Type | PID/FID Reading | USCS Class. | Soil Classification |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 1 | | 4/5 | | | 0.1 | SM | 0-2': Silty sand, dk brown |
| 2 | | | | | | | |
| 3 | | | | | 0.0 | GP | 2-5': Fill (cinders, brick, gravel) |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
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| 12 | | | | | | | |
| 13 | | | | | | | |
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| 16 | | | | | | | |
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| 25 | | | | | | | |
| 26 | | | | | | | |
| 27 | | | | | | | |
| 28 | | | | | | | T.D. = 5' |
| 29 | | | | | | | |
| 30 | | | | | | | |

* Soil sample taken for analysis

| | | | | | | |
|---|---|---|---|---|---|---|
| Observations | Date: | 3/28/2011 | | | | |
| Water Levels (ASL) | Level: | | | | | |
| Static Water Level v | Time: | | | | | |

# APPENDIX E

# RISK CALCULATOR SUMMARY

# Cumulative Risk Results

Cumulative Risk Calculator



**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #1
**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.01 | | | 0.01 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Lead and Compounds | 007439-92-1 | Soil | 0.08 | | 0.08 | 0.08 | | | | | 0.08 | 0.08 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.44** | **0.35** | **0.43** | **0.44** | **0.35** | **0.35** | **0.35** | **0.35** | **0.43** | **0.43** | **0.35** | **0.35** | **0.35** | **0.35** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 |
| Lead and Compounds | 007439-92-1 | Soil | 0.036 | | 0.036 | 0.036 | | | | | 0.036 | 0.036 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.106** | **0.07** | **0.106** | **0.106** | **0.07** | **0.07** | **0.07** | **0.07** | **0.106** | **0.106** | **0.07** | **0.07** | **0.07** | **0.07** |

**Interpretation of Results Summary**?
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #2 Range 1

**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0.49 | 0.11 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0.49** | **0.11** |

**Cummulative Cancer Risk Site Resident: 0.49** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0.11**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0.88 | | 0.88 | | 0.88 | | | | | | | | | 0.88 |
| Barium | 007440-39-3 | Soil | 0 | | | | 0 | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | | 0 | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | | 0 | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 | 0.72 |
| Lead and Compounds | 007439-92-1 | Soil | 0.47 | | 0.47 | 0.47 | | | | | 0.47 | 0.47 | | | | |
| Mercury | 007439-97-6 | Soil | | | | | 0 | | | | 0 | | | 0 | | |
| | | **Sum:** | **2.07** | **0.72** | **2.07** | **1.19** | **1.6** | **0.72** | **0.72** | **0.72** | **1.19** | **1.19** | **0.72** | **0.72** | **0.72** | **1.6** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0.17 | | 0.17 | | 0.17 | | | | | | | | | 0.17 |
| Barium | 007440-39-3 | Soil | 0 | | | | 0 | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | | 0 | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | | 0 | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| Lead and Compounds | 007439-92-1 | Soil | 0.162 | | 0.162 | 0.162 | | | | | 0.162 | 0.162 | | | | |
| Mercury | 007439-97-6 | Soil | | | | | 0 | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.472** | **0.14** | **0.472** | **0.302** | **0.31** | **0.14** | **0.14** | **0.14** | **0.302** | **0.302** | **0.14** | **0.14** | **0.14** | **0.31** |

**Interpretation of Results Summary?**
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

# Cumulative Risk Results

Cumulative Risk Calculator



**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #2 Range 2
**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0.67 | 0.15 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0.67** | **0.15** |

**Cummulative Cancer Risk Site Resident: 0.67** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0.15**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 1.2 | | 1.2 | | 1.2 | | | | | | | | | 1.2 |
| Barium | 007440-39-3 | Soil | 0.11 | | | 0.11 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 | 0.71 |
| Lead and Compounds | 007439-92-1 | Soil | 1.1 | | 1.1 | 1.1 | | | | | 1.1 | 1.1 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 1.03 | | | | | 1.03 | | | 1.03 | | |
| | | **Sum:** | **3.12** | **0.71** | **3.01** | **2.95** | **1.91** | **0.71** | **0.71** | **0.71** | **2.84** | **1.81** | **0.71** | **1.74** | **0.71** | **1.91** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0.24 | | 0.24 | | 0.24 | | | | | | | | | 0.24 |
| Barium | 007440-39-3 | Soil | 0.02 | | | 0.02 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 |
| Lead and Compounds | 007439-92-1 | Soil | 0.396 | | 0.396 | 0.396 | | | | | 0.396 | 0.396 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0.21 | | | | | 0.21 | | | 0.21 | | |
| | | **Sum:** | **0.796** | **0.14** | **0.776** | **0.766** | **0.38** | **0.14** | **0.14** | **0.14** | **0.746** | **0.536** | **0.14** | **0.35** | **0.14** | **0.38** |

**Interpretation of Results Summary**?
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

# Cumulative Risk Results

Cumulative Risk Calculator



**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| Naphthalene | 000091-20-3 | | |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.11 | | | 0.11 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 | 0.45 |
| Lead and Compounds | 007439-92-1 | Soil | 0.05 | | 0.05 | 0.05 | | | | | 0.05 | 0.05 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| Butylbenzene, n- | 000104-51-8 | Soil | | | | | | | | | | | | 0 | | |
| Cumene (Isopropylbenzene) | 000098-82-8 | Soil | | | | 0 | | | | | | | | | | |
| Ethylbenzene | 000100-41-4 | Soil | | 0 | | 0 | | | | | | | | | | |
| Hexane, N- | 000110-54-3 | Soil | | | | | | | | | 0 | 0 | | | | |
| Naphthalene | 000091-20-3 | Soil | | | 0 | | | | | | 0 | | | 0 | | |
| Propylbenzene, N- | 103-65-1 | Soil | | | | | | | | | 0 | | | | | |
| Trimethylbenzene, 1,2,4- | 000095-63-6 | Soil | | | | | | | | | | | | 0 | | |
| Trimethylbenzene, 1,3,5- | 000108-67-8 | Soil | | | | | | | | | | | | 0 | | |
| Xylene, Mixture | 001330-20-7 | Soil | | | | | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.61** | **0.45** | **0.5** | **0.61** | **0.45** | **0.45** | **0.45** | **0.45** | **0.5** | **0.5** | **0.45** | **0.45** | **0.45** | **0.45** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.02 | | | 0.02 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Lead and Compounds | 007439-92-1 | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 007439-97-6 | Soil | 0.018 | | 0.018 | 0.018 | | | | | 0.018 | 0.018 | | | |
| Butylbenzene, n- | 000104-51-8 | Soil | | | | 0 | | | | | 0 | | | 0 | |
| Cumene (Isopropylbenzene) | 000098-82-8 | Soil | | | | | | | | | | | | 0 | |
| Ethylbenzene | 000100-41-4 | Soil | | | | 0 | | | | | | | | | |
| Hexane, N- | 000110-54-3 | Soil | | 0 | | 0 | | | | | | | | | |
| Naphthalene | 000091-20-3 | Soil | | | | | | | | | 0 | 0 | | | |
| Propylbenzene, N- | 103-65-1 | Soil | | | 0 | | | | | | 0 | | | 0 | |
| Trimethylbenzene, 1,2,4- | 000095-63-6 | Soil | | | | | | | | | 0 | | | | |
| Trimethylbenzene, 1,3,5- | 000108-67-8 | Soil | | | | | | | | | | | | 0 | |
| Xylene, Mixture | 001330-20-7 | Soil | | | | | | | | | | | | 0 | |
| | | Soil | | | | | | | | | 0 | | | 0 | |
| | | Sum: | 0.128 | 0.09 | 0.108 | 0.128 | 0.09 | 0.09 | 0.09 | 0.09 | 0.108 | 0.108 | 0.09 | 0.09 | 0.09 | 0.09 |

**Interpretation of Results Summary?**
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

# Cumulative Risk Results

Cumulative Risk Calculator

Calculator | Statewide Standards | Chemical Specific Info. | Related Links | Help | Print

**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #3 Range 2

**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| Naphthalene | 000091-20-3 | NQ | NQ |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.15 | | | 0.15 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Lead and Compounds | 007439-92-1 | Soil | 3.79 | | 3.79 | 3.79 | | | | | 3.79 | 3.79 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| Butylbenzene, n- | 000104-51-8 | Soil | | | | | | | | | | | | 0 | | |
| Cumene (Isopropylbenzene) | 000098-82-8 | Soil | | | | 0 | | | | | | | | | | |
| Ethylbenzene | 000100-41-4 | Soil | | 0 | | 0 | | | | | | | | | | |
| Hexane, N- | 000110-54-3 | Soil | | | | | | | | | 0 | 0 | | | | |
| Naphthalene | 000091-20-3 | Soil | | | 0.01 | | | | | | 0.01 | | | 0.01 | | |
| Propylbenzene, N- | 103-65-1 | Soil | | | | | | | | | 0 | | | | | |
| Trimethylbenzene, 1,2,4- | 000095-63-6 | Soil | | | | | | | | | | | | 0.01 | | |
| Trimethylbenzene, 1,3,5- | 000108-67-8 | Soil | | | | | | | | | | | | 0 | | |
| Xylene, Mixture | 001330-20-7 | Soil | | | | | | | | | 0 | | | 0 | | |
| | | **Sum:** | **4.91** | **0.97** | **4.77** | **4.91** | **0.97** | **0.97** | **0.97** | **0.97** | **4.77** | **4.76** | **0.97** | **0.99** | **0.97** | **0.97** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.03 | | | 0.03 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Soil | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Lead and Compounds | 007439-92-1 | | | | | | | | | | | | | | | |
| | | Soil | 1.368 | | 1.368 | 1.368 | | | | | 1.368 | 1.368 | | | | |
| Mercury | 007439-97-6 | | | | | | | | | | | | | | | |
| | | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| Butylbenzene, n- | 000104-51-8 | | | | | | | | | | | | | | | |
| | | Soil | | | | | | | | | | | | 0 | | |
| Cumene (Isopropylbenzene) | 000098-82-8 | | | | | | | | | | | | | | | |
| | | Soil | | | | 0 | | | | | | | | | | |
| Ethylbenzene | 000100-41-4 | | | | | | | | | | | | | | | |
| | | Soil | | 0 | | 0 | | | | | | | | | | |
| Hexane, N- | 000110-54-3 | | | | | | | | | | | | | | | |
| | | Soil | | | | | | | | | 0 | 0 | | | | |
| Naphthalene | 000091-20-3 | | | | | | | | | | | | | | | |
| | | Soil | | | 0 | | | | | | 0 | | | 0 | | |
| Propylbenzene, N- | 103-65-1 | | | | | | | | | | | | | | | |
| | | Soil | | | | | | | | | 0 | | | | | |
| Trimethylbenzene, 1,2,4- | 000095-63-6 | | | | | | | | | | | | | | | |
| | | Soil | | | | | | | | | | | | 0 | | |
| Trimethylbenzene, 1,3,5- | 000108-67-8 | | | | | | | | | | | | | | | |
| | | Soil | | | | | | | | | | | | 0 | | |
| Xylene, Mixture | 001330-20-7 | | | | | | | | | | | | | | | |
| | | Soil | | | | | | | | | 0 | | | 0 | | |
| | | **Sum:** | **1.598** | **0.2** | **1.568** | **1.598** | **0.2** | **0.2** | **0.2** | **0.2** | **1.568** | **1.568** | **0.2** | **0.2** | **0.2** | **0.2** |

**Interpretation of Results Summary?**
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

# Cumulative Risk Results

Cumulative Risk Calculator



**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #4 Range 1

**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | Soil | 0.1 | | 0.1 | 0.1 | | | | | 0.1 | 0.1 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.1** | **0** | **0.1** | **0.1** | **0** | **0** | **0** | **0** | **0.1** | **0.1** | **0** | **0** | **0** | **0** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | Soil | 0.036 | | 0.036 | 0.036 | | | | | 0.036 | 0.036 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.036** | **0** | **0.036** | **0.036** | **0** | **0** | **0** | **0** | **0.036** | **0.036** | **0** | **0** | **0** | **0** |

**Interpretation of Results Summary**?
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

# Cumulative Risk Results

Cumulative Risk Calculator



**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #4 Range 2
**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| Lead and Compounds | 007439-92-1 | Soil | 0.06 | | 0.06 | 0.06 | | | | | 0.06 | 0.06 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.5** | **0.44** | **0.5** | **0.5** | **0.44** | **0.44** | **0.44** | **0.44** | **0.5** | **0.5** | **0.44** | **0.44** | **0.44** | **0.44** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Lead and Compounds | 007439-92-1 | Soil | 0.018 | | 0.018 | 0.018 | | | | | 0.018 | 0.018 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.108** | **0.09** | **0.108** | **0.108** | **0.09** | **0.09** | **0.09** | **0.09** | **0.108** | **0.108** | **0.09** | **0.09** | **0.09** | **0.09** |

**Interpretation of Results Summary?**
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

# Cumulative Risk Results

Cumulative Risk Calculator



**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #5 Range 1

**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-6}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.13 | | | 0.13 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 | 0.46 |
| Lead and Compounds | 007439-92-1 | Soil | 0.04 | | 0.04 | 0.04 | | | | | 0.04 | 0.04 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.63** | **0.46** | **0.5** | **0.63** | **0.46** | **0.46** | **0.46** | **0.46** | **0.5** | **0.5** | **0.46** | **0.46** | **0.46** | **0.46** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | Soil | 0.03 | | | 0.03 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | Soil | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 |
| Lead and Compounds | 007439-92-1 | Soil | 0.018 | | 0.018 | 0.018 | | | | | 0.018 | 0.018 | | | | |
| Mercury | 007439-97-6 | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **0.138** | **0.09** | **0.108** | **0.138** | **0.09** | **0.09** | **0.09** | **0.09** | **0.108** | **0.108** | **0.09** | **0.09** | **0.09** | **0.09** |

**Interpretation of Results Summary**
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**

**For:** Mike Goalen
Former Baker Properties
Council Bluffs IA Property #5 Range 2
**Date:** 2/17/2012

**Cancer Risk Output**

| Chemical Name | CASRN | Resident Soil | Site Worker Soil |
|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | 0 | 0 |
| Lead and Compounds | 007439-92-1 | NQ | NQ |
| **TOTALS:** | | **0** | **0** |

**Cummulative Cancer Risk Site Resident: 0** **(All cancer risk values are x $10^{-4}$)**
**Cummulative Cancer Risk Site Worker: 0**

**Site Resident-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | | | | | | | | | | | | | | | |
| | | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | | | | | | | | | | | | | | | |
| | | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | | | | | | | | | | | | | | | |
| | | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | | | | | | | | | | | | | | | |
| | | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | | | | | | | | | | | | | | | |
| | | Soil | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| Lead and Compounds | 007439-92-1 | | | | | | | | | | | | | | | |
| | | Soil | 2.32 | | 2.32 | 2.32 | | | | | 2.32 | 2.32 | | | | |
| Mercury | 007439-97-6 | | | | | | | | | | | | | | | |
| | | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **3.72** | **1.4** | **3.72** | **3.72** | **1.4** | **1.4** | **1.4** | **1.4** | **3.72** | **3.72** | **1.4** | **1.4** | **1.4** | **1.4** |

**Site Worker-Non Cancer Risk Output by target organ**

| Chemical Name | CASRN | Media | Heart | Liver | Blood | Kidney | Skin | Endoc | Eye | Immu | Nerve | GenUr | Respi | Other | Devel | Gastro |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic, Inorganic | 007440-38-2 | | | | | | | | | | | | | | | |
| | | Soil | 0 | | 0 | | 0 | | | | | | | | | 0 |
| Barium | 007440-39-3 | | | | | | | | | | | | | | | |
| | | Soil | 0 | | | 0 | | | | | | | | | | |
| Cadmium (soil) | 007440-43-9 | | | | | | | | | | | | | | | |
| | | Soil | | | | 0 | | | | | | | | | | |
| Chromium III (soil) | 016065-83-1 | | | | | | | | | | | | | | | |
| | | Soil | | | | | 0 | | | | | | | | | |
| Cobalt | 007440-48-4 | | | | | | | | | | | | | | | |
| | | Soil | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |
| Lead and Compounds | 007439-92-1 | | | | | | | | | | | | | | | |
| | | Soil | 0.846 | | 0.846 | 0.846 | | | | | 0.846 | 0.846 | | | | |
| Mercury | 007439-97-6 | | | | | | | | | | | | | | | |
| | | Soil | | | | 0 | | | | | 0 | | | 0 | | |
| | | **Sum:** | **1.126** | **0.28** | **1.126** | **1.126** | **0.28** | **0.28** | **0.28** | **0.28** | **1.126** | **1.126** | **0.28** | **0.28** | **0.28** | **0.28** |

**Interpretation of Results Summary?**
**Values associated with "Cumulative Cancer Risk" and non-cancer "Sum" that are less than or equal to 1.00 are within acceptable cumulative risk levels.**
**NQ means not quantifiable due to lack of a cancer slope factor.**