CON: 12-15
Doc #35595

CEDAR RAPIDS
City of Five Seasons®

March 1, 2019

Mr. Dan Cook, Environmental Specialist Senior
Iowa Department of Natural Resources
Contaminated Sites Section
502 East 9th Street
Des Moines IA 50319

RE: Former Duchess Dry Cleaner – Site ID 1272
Groundwater Compliance Documentation

Dear Mr. Cook:

The purpose of this correspondence is to provide documentation demonstrating the remedial measures taken at the site (soil removal and off-site disposal) have achieved the intended purpose. The documentation contained within this letter report will demonstrate that for monitoring wells that exceed Statewide Standards (in more than 25% of the sampling events) for PCE and TCE the chlorinated solvent groundwater trends are decreasing or stable (no trend) as analyzed by the EPA's Statistical Analysis Tool.

If you have any questions regarding this groundwater compliance documentation, please do not hesitate to contact me at (319)286-5373.

Respectfully,

THE CITY OF CEDAR RAPIDS PUBLIC WORKS DEPARTMENT

Terry Tiedemann, P.E.
Project Engineer II

cc: Dave Wallace, PE (City of Cedar Rapids Sewer Utility Engineering Manager)

Table of Contents

Introduction

The purpose of this document is to provide documentation using historical groundwater analytical results and EPA's Groundwater Statistics Tool to demonstrate the remedial measures taken at the site (soil removal and off-site disposal) has resulted in decreasing or stable (no trend) chlorinated solvent groundwater trends in all Site monitoring wells.

Currently, the site is a vacant lot owned by the City of Cedar Rapids. A dry cleaners facility was located and operated on the site from 1966 until the 2008 Flood. The facility was heavily damaged during the flood and the structure was demolished by the City of Cedar Rapids. Figure 1 shows the location of the site with respect to the Cedar Rapids downtown and the Cedar River.

Remedial Action Background

Soil removal activities at the site began on September 2, 2014 and were completed on September 24, 2014. The area was excavated to a depth of approximately 15 feet below ground surface, and approximately 3,773 tons of soil was removed and hauled to the Cedar Rapids/Linn County Solid Waste Agency's Landfill located at 1954 County Home Road in Marion Iowa. According to the initial Risk Evaluation/Response Action Plan submitted to the IDNR (dated October 2, 2015)(CON: 12-15 Doc #31301) by the City's sub-consultant (Braun Intertec), *"the analytical results from the post-excavation soil sampling primarily indicate detections of PCE. No other VOC concentrations were detected in the soil samples. No soil samples exceeded the applicable Iowa Land Recycling Program soil objectives for PCE, TCE, cis-1,2-DCE, and VC."* Documentation obtained during the soil removal process such as; excavation soil sample analytical results, excavation/construction photos, excavation waste manifests, daily haul records, and land disposal records are located in the above referenced initial Risk Evaluation/Response Action Plan, dated October 2, 2015.

Groundwater Monitoring and Sampling

Per IAC 567 137.10(3)c, for statistical methods of compliance, groundwater data shall be based on eight consecutive quarters. The monitoring wells for the site were initially sampled on March 28-29, 2016 (the first quarter of 2016), the second sampling occurred on July 14-15, 2016 (15 days into the third quarter of 2016), in addition to these two sampling events the next seven consecutive quarters were sampled resulting in a total of nine sampling events. Based upon correspondence and conversations with the IDNR, the attached groundwater statistical analysis included all nine sampling events beginning with the initial event occurring on March 28-29, 2016 and ending with the sampling event conducted on June 25-26, 2018. A map of the groundwater monitoring well locations is provided in Figure 2.

Braun Intertec performed all nine of the groundwater monitoring and sampling events at the site. The Second Quarter 2018 Groundwater Monitoring Report is based upon the data collected from the last monitoring and sampling event, and was submitted to the Iowa DNR by Braun Intertec on December 21, 2018. The groundwater contour map and isoconcentration maps from that report have been included in Appendix A for your convenience;

- Figure 3 – Groundwater Contour Map (June 2018),

- Figure 4 – TCE Isoconcentration Map (June 2018),
- Figure 5 – PCE Isoconcentration Map (June 2018), and
- Figure 6 – CIS-1,2-Dichloroethylene Isoconcentration Map (June 2018).

Table 1 summarizes Historical groundwater analytical results from the monitoring wells since 2012, Table 1 is located in Appendix B. Analytical results printed in **bold** text identify sampling results that exceed Statewide Standards. Groundwater sampling dates and analytical results highlighted in light green were utilized within the EPA Groundwater Statistical Tool to evaluate groundwater trends. Groundwater samples were obtained in the field by Braun-Intertec and groundwater analytical reporting was performed by Test America Laboratories, Inc. in Cedar Falls Iowa.

Statistical Analysis

EPA's Groundwater Statistics Tool was utilized for determining PCE and TCE trends for monitoring wells when sampling results indicated Statewide Standards were exceeded in more than twenty-five percent of the sampling events. The presence of Cis-1,2-Dichloroethylene likely indicates the natural attenuation of TCE is occurring; therefore, EPA's Groundwater Statistical Tool was not utilized to evaluate the trends of Cis-1,2-Dichloroethylene even though Statewide Standards for this chemical were exceeded in monitoring wells MW-17D and MW-29 in more than 25% of the sampling events. The summary statistics from the EPA's Groundwater Analysis Tool are provided in Appendix C.

The following paragraphs provide a brief synopsis of the analytical results, as well as, the trend analysis (at the 95% confidence limit) as determined by the EPA Groundwater Statistical Tool. A synopsis has been provided for each of the following nineteen wells; MW-9, MW-16S, MW-16D, MW-17S, MW-17D, MW-18R, MW-19S, MW-19D, MW-20S, MW-21S, MW-22S, MW-22D, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, and MW-29.

MW-9 (Screened Interval 7-27 ft)

- PCE. Four sampling events exceeded detection limits. One sample on July 14, 2016 (0.03960 mg/L) exceeded Statewide Standard (0.005 mg/L). Five sampling events were below method of detection limit.
- TCE. Three sampling events exceeded detection limits. One sample on July 14, 2016 (0.00730 mg/L) exceeded Statewide Standard (0.005 mg/L). The remaining six sampling events were below method of detection limit.
- 75% of all samples were less than the statewide standards and no individual sample exceeded 10 times the Statewide Standard, as a result, EPA's Statistical Tool was not utilized.
- Cis-1,2-Dichloroethylene. All nine sampling events detected Cis-1,2-dichloroethylene below the Statewide Standard (0.07 mg/L). This is an indication the natural attenuation of the chlorinated solvent is likely occurring.

MW-16S (Screened Interval 8-12 ft)

- PCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.565 mg/L which exceeds the Statewide Standard (0.005 mg/L);

however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.

- TCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.0772 mg/L which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "No trend" trend. Since TCE is a daughter product of PCE it is not unexpected to see a stable trend in TCE concentrations during sampling events as the PCE naturally attenuates as it travels through soil away from the source.
- Cis-1,2-Dichloroethylene. All nine sampling events detected Cis-1,2-dichloroethylene below the Statewide Standard (0.07 mg/L). This is an indication the natural attenuation of the chlorinated solvent is likely occurring.

MW-16D (Screened Interval 15-20 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-17S (Screened Interval 4.5-14.5 ft)

- PCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.181 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.
- TCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.0208 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.
- Cis-1,2-Dichloroethylene. All nine sampling events detected Cis-1,2-dichloroethylene; only one exceeded the Statewide Standard (0.07 mg/L). This is an indication the natural attenuation of the chlorinated solvent is likely occurring.

MW-17D (Screened Interval 20-25 ft)

- PCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.0455 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.
- TCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.0438 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.
- Cis-1,2-Dichloroethylene. All nine sampling events detected Cis-1,2-dichloroethylene above the Statewide Standard (0.07 mg/L). This is an indication the natural attenuation of the chlorinated solvent is likely occurring.

MW-18R (Screened Interval 10-20 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-19S (Screened Interval 6.5-16.5 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-19D Screened Interval 30-50 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-20S (Screened Interval 4.5-14.5 ft)

- PCE. The monitoring well was dry or was unable to be sampled during four sampling events. The remaining five sampling events were below method of detection limit.
- TCE. The monitoring well was dry or was unable to be sampled during four sampling events. The remaining five sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-21S (Screened Interval 10-20 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. Two sampling events were below method of detection limit. The other seven sampling events were below Statewide Standards (0.005 mg/L).
- No statistical analysis was performed.

MW-22S (Screened Interval 15-25 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-22D (Screened Interval 62-72 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-23 (Screened Interval 108-113 ft)

- PCE. Seven sampling events were below method of detection limit. The other two sampling events were below Statewide Standard (0.005 mg/L).
- TCE. Six sampling events were below method of detection limit. The other three sampling events were below Statewide Standard (0.005 mg/L).
- No statistical analysis was performed.

MW-24 (Screened Interval 10-20 ft)

- PCE. The monitoring well was dry and was unable to be sampled during two sampling events. The remaining seven sampling events were below method of detection limit.

- TCE. The monitoring well was dry and was unable to be sampled during two sampling events. The remaining seven sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-25 (Screened Interval 10-20 ft)

- PCE. All nine sampling events exceeded the statewide standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.00853 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.
- TCE. Two sampling events were below method of detection limit. The other seven sampling events were below Statewide Standard (0.005 mg/L).
- Cis-1,2-Dichloroethylene. Eight of the nine sampling events detected Cis-1,2-dichloroethylene; all below the Statewide Standard (0.07 mg/L). This is an indication the natural attenuation of the chlorinated solvent is likely occurring.

MW-26 (Screened Interval 10-20 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-27 (Screened Interval 75-80 ft)

- PCE. All nine sampling events were below method of detection limit.
- TCE. All nine sampling events were below method of detection limit.
- No statistical analysis was performed.

MW-28 (Screened Interval 10-20 ft)

- PCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.0234 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "Decreasing" trend over the sampling period.
- TCE. Six of the nine samples collected (66%) were less than the statewide standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.00509 mg/L, which slightly exceeds Statewide Standard (0.005 mg/L); at a 95% confidence limit the statistical analysis indicates a "No trend" trend over the sampling period.
- Cis-1,2-Dichloroethylene. All nine sampling events detected Cis-1,2-dichloroethylene below the Statewide Standard (0.07 mg/L). The presence of this daughter product is an indication the natural attenuation of the chlorinated solvent is likely occurring.

MW-29 (Screened Interval 10-20 ft)

- PCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.485 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "No trend" trend over the sampling period.

- TCE. All nine sampling events exceeded the Statewide Standard. The EPA's Groundwater Statistical Analysis Tool was utilized. The mean concentration for the nine sampling events was 0.0885 mg/L, which exceeds Statewide Standard (0.005 mg/L); however, at a 95% confidence limit the statistical analysis indicates a "No trend" trend over the sampling period.
- Cis-1,2-Dichloroethylene. All nine sampling events detected Cis-1,2-dichloroethylene; four exceeded the Statewide Standard (0.07 mg/L). The presence of this daughter product is an indication the natural attenuation of the chlorinated solvent is likely occurring.

EVALUATION OF ANALYTICAL RESULTS

Impacts in the Shallow Groundwater

Shallow groundwater at the Former Duchess Cleaners Site and hydraulically down gradient is primarily affected by PCE and TCE. As the natural attenuation of these compounds occur; the formation of daughter product, Cis-1,2-Dichloroethylene is expected. The EPA's Groundwater Analysis Tool was utilized in six of the nineteen monitoring wells for evaluation of either PCE, TCE or both contaminants.

Six of the nineteen monitoring wells exceeded the Statewide Standard for PCE in more than 25% of the sampling events, as a result, the EPA's Statistical Analysis Tool evaluated the following monitoring wells; MW-16S, MW-17S, MW-17D, MW-25, MW-28, and MW-29. Five of the six monitoring wells (at a 95% confidence limit) indicated a "Decreasing" trend over the sampling period. One well (MW-29) indicated a "No trend" or a stable trend.

Five of the nineteen monitoring wells exceeded the Statewide Standard of TCE in more than 25% of the sampling events, as a result, the EPA's Statistical Analysis Tool evaluated the following monitoring wells; MW-16S, MW-17S, MW-17D, MW-28, and MW-29. Two of the five monitoring wells (at a 95% confidence limit) indicated a "Decreasing" trend over the sampling period. Three wells (MW-16S, MW-28 and MW-29) at a 95% confidence limit indicated a "No trend" or a stable trend.

Analytical sampling results indicate the presence of Cis-1,2-dichloroethylene at all six of the monitoring wells where statistical analysis was performed. The indication of this daughter product is likely the result of the natural attenuation process of the parent product.

Impacts in the Deep Groundwater

Two monitoring wells MW-23 and MW-27 were installed, pursuant to requests by the IDNR, to evaluate impacts to the groundwater within the bedrock.

MW-23 was cored 50 feet into the bedrock for a total completion depth of 113 feet below ground surface, the screened interval for MW-23 was 108-113 feet. PCE results from seven of the nine sampling events were below laboratory detection limits. The PCE analytical results for the two sampling events that recorded a level of PCE were 0.00489 mg/L and 0.00197 mg/L; both analytical results below the Statewide Standard of 0.005 mg/L. For TCE six of the nine

sampling events were below laboratory detection limits. The TCE analytical results for the three sampling events that detected TCE were 0.00152 mg/L, 0.00155 mg/L and 0.00155 mg/L; all three analytical results are below the Statewide Standard of 0.005 mg/L.

MW-27 was cored 10 feet into the bedrock for a total completion depth of 80 feet below ground surface, the screened interval for MW-27 was 75-80 feet. All analytical results for PCE and TCE over the nine sampling events for MW-27 were below laboratory detection limits.

At this time, the impacts of chlorinated solvents within the bedrock layer appears to be below Iowa DNR Statewide Standards. Based upon the sampling results there does not appear to be significant vertical or lateral mitigation of impacts within the bedrock material.

CONCLUSIONS

After removing and off-site disposal of soils containing source contaminates (remedial measures), nine groundwater sampling and monitoring events have been performed in accordance with the accepted Risk Evaluation / Response Action Plan. Based upon analytical sampling and statistical analysis using EPA's Statistical Analysis Tool all monitoring wells at the Site (that exceed Statewide Standards more than 25% of the sampling events) have either decreasing or stable trends for PCE and TCE at the 95% confidence limit, as a result, the City of Cedar Rapids is requesting that no further groundwater sampling be required at the Site.

Appendix A

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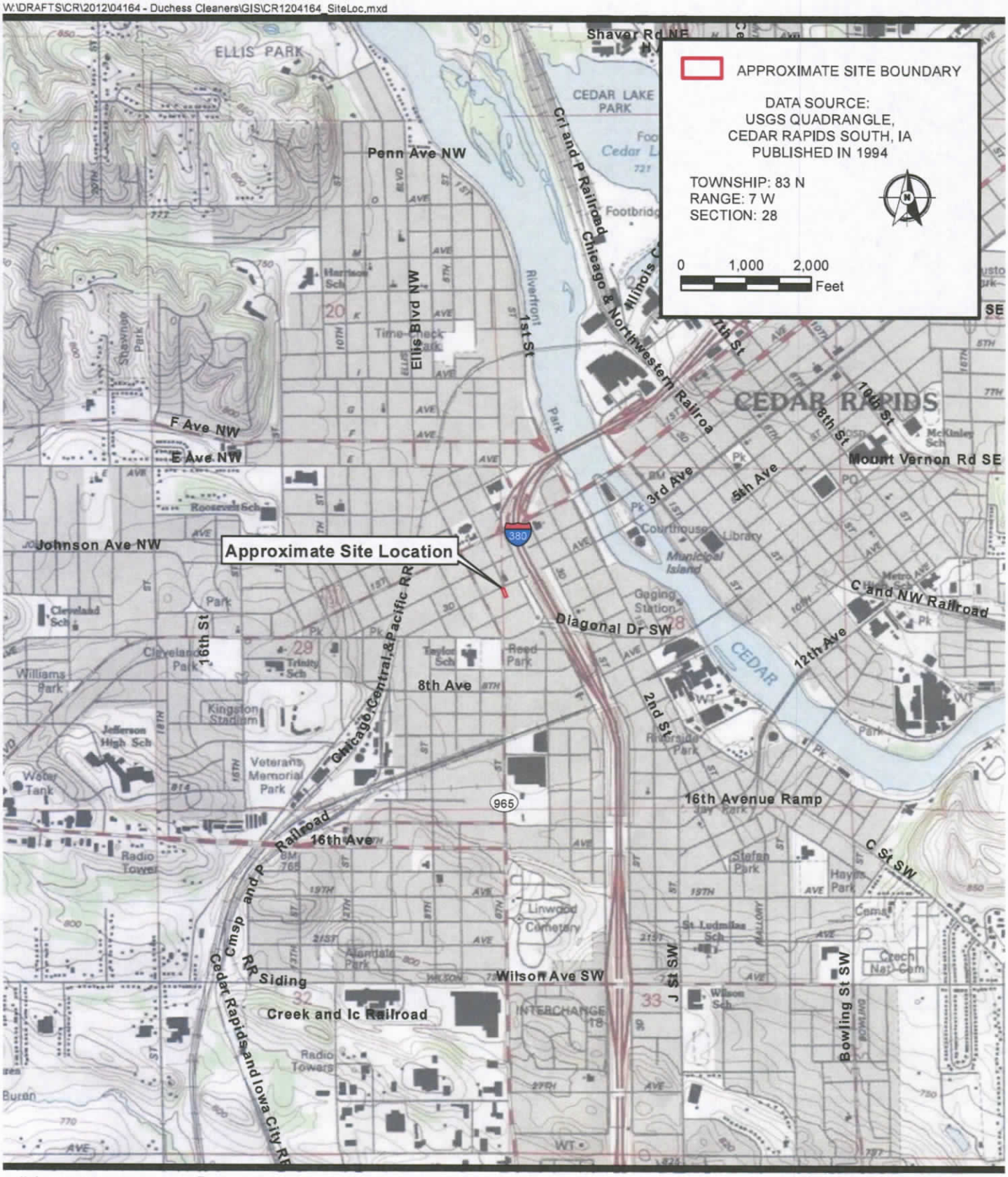

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Fig. 1

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Drawn By:	FER
Date Drawn:	1/25/13
Checked By:	AEP
Last Modified:	1/25/13

SITE LOCATION MAP

FORMER DUCHESS CLEANERS
501 AND 503 3RD AVENUE SOUTHWEST
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH. (952) 995-2000
FAX (952) 995-2020

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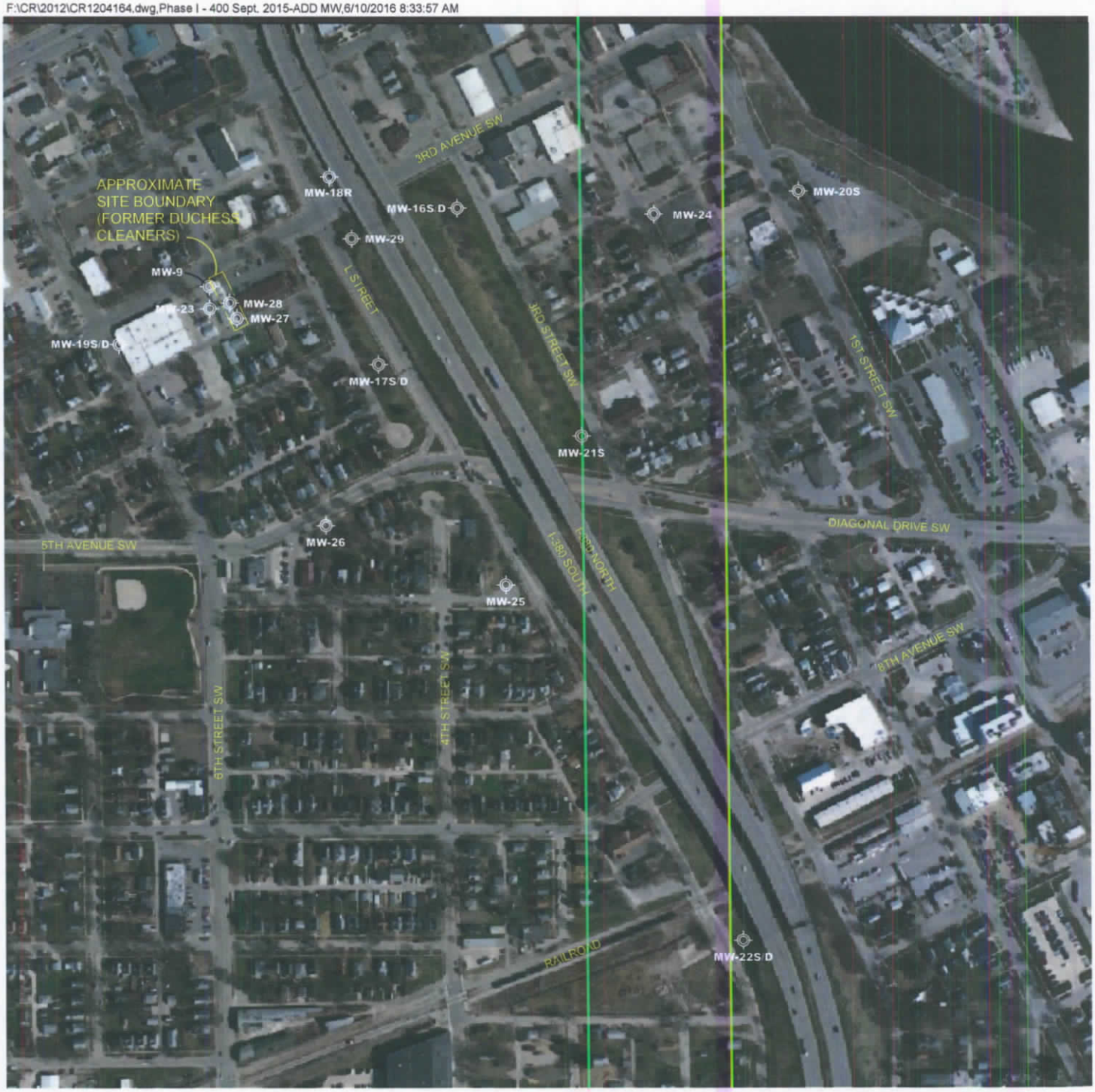

GROUNDWATER MONITORING WELL

N

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Fig:

Project No: B1511175

Drawing No: CR1204164

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Date Drawn:	9/7/12
Checked By:	AEP

SITE PLAN
FORMER DUCHESS CLEANERS
501 AND 503 3RD AVENUE SW
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue
Minneapolis, MN 5543[illegible]
PH. (952) 995-2000
FAX (952) 995-2020

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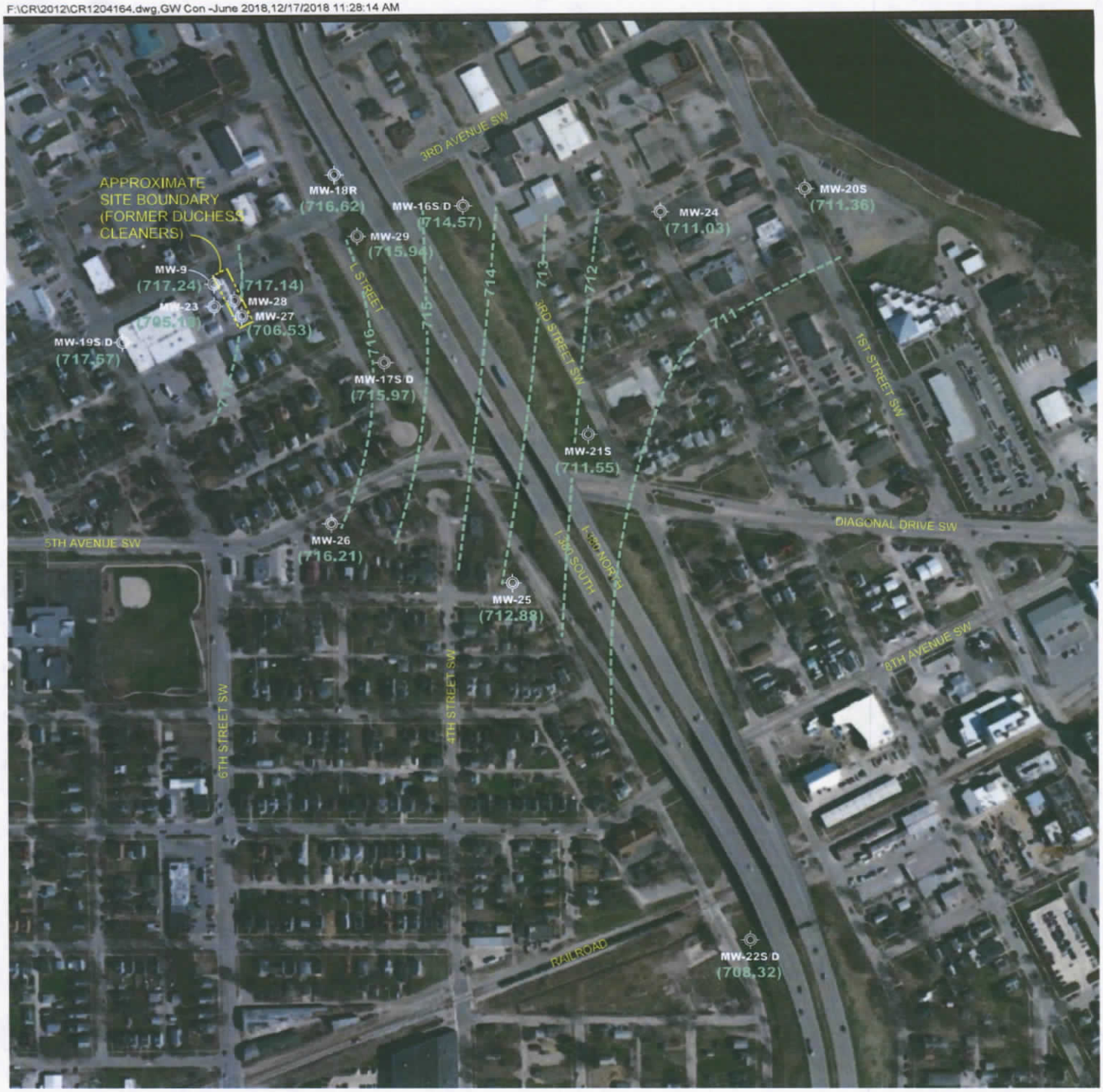

* MW-16D,MW-17D,MW-19D,MW-22D,M-23 AND MW-27 ARE NOT INCLUDED IN CONTOURS

NOTES: NS = NOT SAMPLED

(708.42) GROUNDWATER ELEVATION (FT.)

GROUNDWATER CONTOUR ELEVATION (FT.)

200' 0 400'

SCALE: 1"= 400'

Sheet of

Fig:

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Drawing No:	CR1204164
Scale:	1"= 400'
Drawn By:	LAO
Date Drawn:	11/20/18
Checked By:	JM
Last Modified:	12/5/18

GROUNDWATER CONTOUR MAP (JUNE 2018)
FORMER DUCHESS CLEANERS
501 AND 503 3RD AVENUE SW
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH. (952) 995-2000
FAX (952) 995-2020

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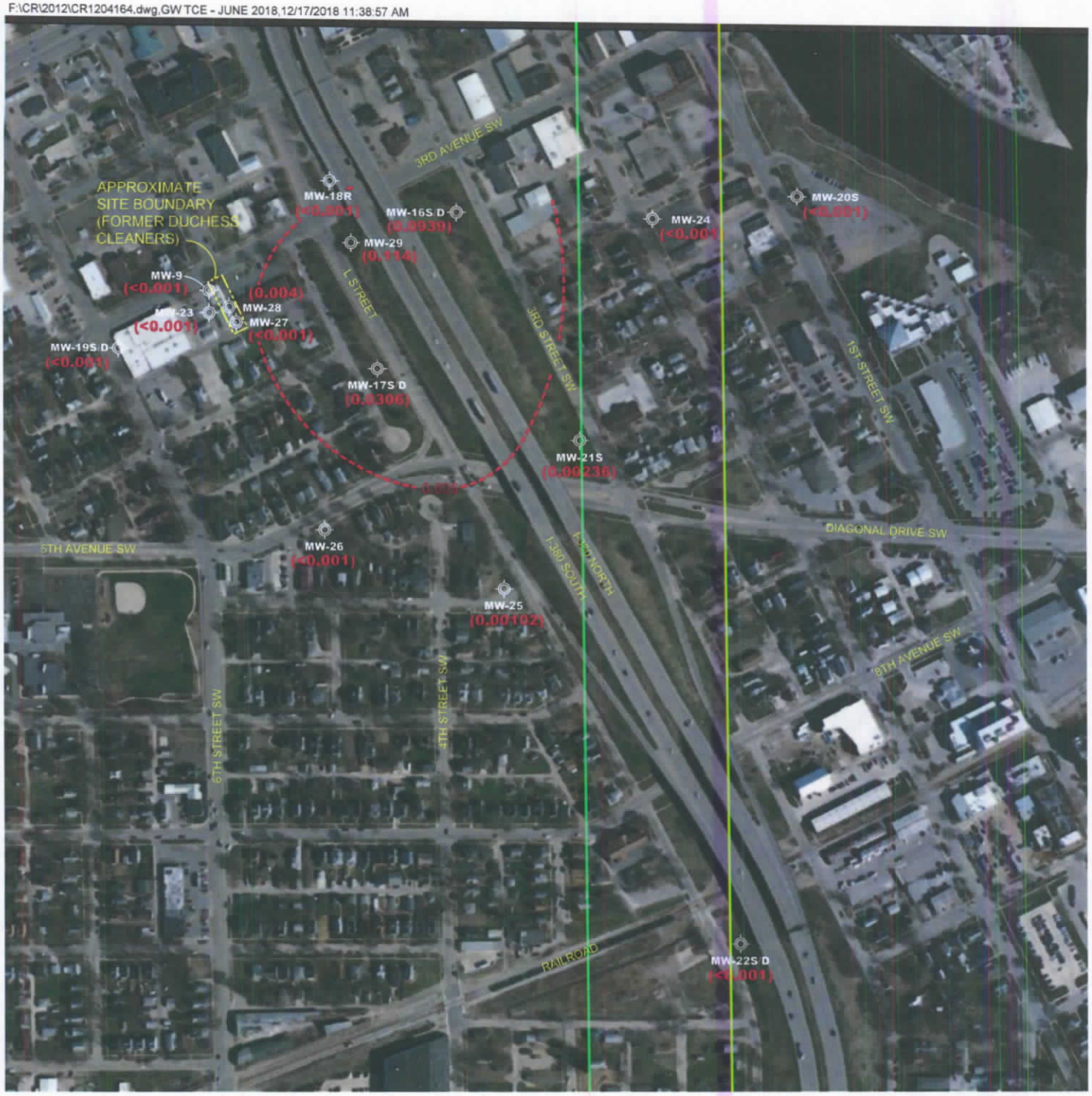

NOTES:
TCE = TRICHLOROETHENE
mg/L = MILLIGRAMS PER LITER
NS = NOT SAMPLED
(0.327) TCE CONCENTRATION (mg/L)
------- IDNR TARGET LEVEL 0.005 mg/L

N

200' 0 400'

SCALE: 1"= 400'

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Date Drawn:	11/20/18
Checked By:	AP
Last Modified:	12/17/18

TCE ISOCONCENTRATION MAP (JUNE 2018)

FORMER DUCHESS CLEANERS
501 AND 503 3RD AVENUE SW
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH. (952) 995-2000
FAX (952) 995-2020

F:\CR\2012\CR1204164.dwg,GW PCE - JUNE 2018,12/17/2018 11:34:41 AM

NOTES:
PCE = TETRACHLOROETHENE
mg/L = MILLIGRAMS PER LITER
NS = NOT SAMPLED

(0.327) PCE CONCENTRATION (mg/L)

IDNR TARGET LEVEL 0.005 mg/L

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SCALE: 1"= 400'

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Fig:

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Drawing No: CR1204164

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Date Drawn:	11/20/18
Checked By:	AP
Last Modified:	12/17/18

PCE ISOCONCENTRATION MAP (JUNE 2018)

FORMER DUCHESS CLEANERS
501 AND 503 3RD AVENUE SW
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH, (952) 995-2000
FAX (952) 995-2020

F:\CR\2012\CR1204164.dwg,GW DCE - JUNE 2018,12/18/2018 10:20:33 AM

NOTES:
mg/L = MILLIGRAMS PER LITER
NS = NOT SAMPLED
(0.327) CIS-1,2-DICHLOROETHYLENE CONCENTRATION (mg/L)
-------- IDNR TARGET LEVEL 0.07 mg/L

200' 0 400'
SCALE: 1"= 400'

Sheet: of
Fig:

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Drawing No:	CR1204164
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Drawn By:	LAO
Date Drawn:	11/20/18
Checked By:	AEP
Last Modified:	12/17/18

CIS-1,2-DICHLOROETHYLENE ISOCONCENTRATION MAP (JUNE, 2018)

FORMER DUCHESS CLEANERS
501 AND 503 3RD AVENUE SW
CEDAR RAPIDS, IOWA

BRAUN INTERTEC
11001 Hampshire Avenue So.
Minneapolis, MN 55438
PH. (952) 995-2000
FAX (952) 995-2020

Appendix B

Table 1
Historical Groundwater Levels and Chemical Analysis Results
Former Duchess Cleaners
501 and 505 3rd Avenue SW, Cedar Rapids, Iowa

Well ID	Elevation	Date	DTW	Groundwater Elevation	Cis-1,2-Dichloroethylene	PCE	TCE	Chlorobenzene	1,2,4-Trimethylbenzene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	MTBE	Vinyl Chloride	Xylenes
			(feet)*	(feet)**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
IDNR Statewide Standard			-	-	**0.07**	**0.005**	**0.005**	**0.1**	**0.35**	**0.1**	**0.005**	**0.021**	**0.002**	**10**
MW-9	725.66	07/25/13	9.72	715.94	0.00443	**0.00726**	0.00272	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0030
		06/16/15	9.42	716.66	0.00659	**0.00368**	0.00166	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0030
		03/29/16	8.35	719.31	0.00376	0.00307	0.00142	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		07/14/16	8.65	717.01	0.01030	**0.03960**	**0.00730**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	8.01	719.65	0.00347	0.00228	0.00101	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/17	8.15	719.51	0.00250	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		08/30/17	7.52	718.14	0.00295	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		09/28/17	8.71	716.95	0.00243	0.00109	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	9.27	716.39	0.00381	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/18	9.54	716.12	0.00218	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/28/18	8.42	717.24	0.00277	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
MW-16S	724.19	10/31/12	10.36	713.83	0.00272	**0.171**	**0.039**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	9.15	715.04	0.00382	**0.2730**	**0.0332**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		06/17/15	9.42	714.77	0.01340	**0.6220**	**0.04590**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/16	9.61	714.58	0.02750	**0.557**	**0.0819**	<0.0010	<0.0010	0.00103	<0.0010	<0.0010	<0.0010	< 0.0030
		07/14/16	9.53	714.66	0.02320	**0.986**	**0.0843**	<0.0010	<0.0010	0.00103	<0.0010	<0.0010	<0.0010	< 0.0030
		11/08/16	9.17	715.02	0.0374	**0.683**	**0.100**	<0.0010	<0.0010	0.00128	<0.0010	<0.0010	<0.0010	< 0.0030
		03/27/17	9.46	714.74	0.0284	**0.576**	**0.066**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		06/29/17	9.22	714.97	0.0409	**0.637**	**0.0896**	<0.0010	<0.0010	0.00104	<0.0010	<0.0010	<0.0010	< 0.0030
		09/27/17	9.59	714.60	0.0483	**0.499**	**0.0854**	< 0.0010	< 0.0010	0.00126	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	9.90	714.29	0.0385	**0.414**	**0.0746**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	8.82	715.37	0.00327	**0.210**	**0.0194**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	9.62	714.57	0.0333	**0.526**	**0.0939**	< 0.0010	< 0.0010	0.00117	< 0.0010	< 0.0010	< 0.0010	< 0.0030
MW-16D	724.19	10/31/12	16.41	707.78	0.00148	0.00263	0.00152	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	13.60	710.59	0.00235	0.00119	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/17/15	14.25	709.94	0.00106	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/16	14.23	709.96	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/14/16	13.88	710.31	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/08/16	13.98	710.21	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	13.85	710.34	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		08/29/17	14.25	709.94	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	13.93	710.26	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	17.26	706.93	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	13.81	710.38	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	12.77	711.42	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
MW-17S	725.12	10/31/12	10.71	714.41	0.0478	**0.419**	**0.0301**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	8.89	716.23	0.03010	**0.18400**	**0.01880**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/17/15	9.15	715.97	0.04390	**0.26100**	**0.03030**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/16	9.69	715.43	0.06420	**0.327**	**0.0317**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/14/16	8.89	716.06	0.0571	**0.293**	**0.0228**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	8.45	716.67	**0.0964**	**0.243**	**0.0382**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	9.43	715.69	0.0522	**0.189**	**0.0222**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	8.73	716.39	0.0334	**0.143**	**0.0184**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	8.99	716.13	0.0302	**0.116**	**0.0152**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	9.50	715.62	0.0224	**0.122**	**0.0110**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	10.06	715.06	0.0195	**0.107**	**0.0130**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	9.15	715.97	0.0302	**0.092**	**0.0151**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030

Table 1
Historical Groundwater Levels and Chemical Analysis Results
Former Duchess Cleaners
501 and 505 3rd Avenue SW, Cedar Rapids, Iowa

Well ID	Elevation	Date	DTW	Groundwater Elevation	Cis-1,2-Dichloroethylene	PCE	TCE	Chlorobenzene	1,2,4-Trimethylbenzene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	MTBE	Vinyl Chloride	Xylenes
			(feet)*	(feet)**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
IDNR Statewide Standard			-	-	**0.07**	**0.005**	**0.005**	**0.1**	**0.35**	**0.1**	**0.005**	**0.021**	**0.002**	**10**
MW-17D	725.12	10/31/12	10.37	714.75	**0.079**	**0.419**	**0.0453**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	9.06	716.06	**0.137**	**0.06340**	**0.03740**	<0.0010	<0.0010	0.00111	<0.0010	<0.0010	<0.0010	< 0.0030
		06/17/15	9.32	715.80	**0.0974**	**0.07680**	**0.04440**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/16	9.88	715.24	**0.196**	**0.110**	**0.057**	< 0.0010	< 0.0010	0.00189	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/14/16	9.06	716.06	**0.125**	**0.0779**	**0.0494**	< 0.0010	< 0.0010	0.00189	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	8.65	716.47	**0.152**	**0.0578**	**0.0638**	< 0.0010	< 0.0010	0.00189	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	9.55	715.57	**0.197**	**0.0697**	**0.0494**	< 0.0010	< 0.0010	0.00117	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	8.93	716.19	**0.120**	**0.0280**	**0.0416**	< 0.0010	< 0.0010	0.00117	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	9.18	715.94	**0.114**	**0.0219**	**0.0436**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/29/17	9.69	715.43	**0.114**	**0.0147**	**0.0308**	< 0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/18	10.22	714.90	**0.104**	**0.0188**	**0.0280**	< 0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		06/25/18	9.35	715.77	**0.0731**	**0.0123**	**0.0306**	< 0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
MW-18S	724.29	10/31/12	9.03	715.28	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0050	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	7.88	716.41	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	<0.0050	<0.0010	<0.0010	<0.0010	< 0.0030
		*6/16/2015	-	-	-	-	-	-	-	-	-	-	-	-
MW-18D	724.29	10/31/12	19.18	705.11	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0050	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	-	-	-	-	-	-	-	-	-	-	-	-
		*6/16/2015	-	-	-	-	-	-	-	-	-	-	-	-
MW-18R	724.58	03/29/16	8.00	716.58	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/14/16	7.63	716.95	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/08/16	7.30	717.28	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/27/17	8.10	716.48	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	7.69	716.89	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	7.70	716.88	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	8.39	716.19	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	8.39	716.19	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	7.96	716.62	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
MW-19S	725.70	10/31/12	9.65	716.05	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	8.22	717.48	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/17/15	8.39	717.31	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/16	8.80	716.90	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/13/16	8.11	717.59	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	7.50	718.20	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/17	8.60	717.10	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	8.00	717.70	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/28/17	8.19	717.51	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	8.75	716.95	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/18	8.91	716.79	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	8.13	717.57	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-19D	725.70	10/31/12	15.40	710.30	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/25/13	11.92	713.78	<0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/17/15	11.45	714.25	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/16	11.10	714.60	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/14/16	10.44	715.26	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	9.15	716.55	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/17	10.75	714.95	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	10.40	715.30	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/28/17	10.53	715.17	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	12.75	712.95	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/18	9.79	715.91	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/26/18	8.97	716.73	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030

Table 1
Historical Groundwater Levels and Chemical Analysis Results
Former Duchess Cleaners
501 and 505 3rd Avenue SW, Cedar Rapids, Iowa

Well ID	Elevation	Date	DTW	Groundwater Elevation	Cis-1,2-Dichloroethylene	PCE	TCE	Chlorobenzene	1,2,4-Trimethylbenzene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	MTBE	Vinyl Chloride	Xylenes
			(feet)*	(feet)**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
IDNR Statewide Standard			-	-	**0.07**	**0.005**	**0.005**	**0.1**	**0.35**	**0.1**	**0.005**	**0.021**	**0.002**	**10**
MW-20S	721.66	07/25/13	11.70	709.96	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/16/15	11.35	710.31	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/16	11.85	709.81	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/15/16	11.72	709.94	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	10.86	702.80	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	12.00	709.66	-	-	-	-	-	-	-	-	-	-
		06/29/17	12.83	709.03	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	DRY	-	-	-	-	-	-	-	-	-	-	-
		12/28/17	DRY	-	-	-	-	-	-	-	-	-	-	-
		03/28/18	DRY	-	-	-	-	-	-	-	-	-	-	-
		06/25/18	10.30	711.36	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-21S	725.86	07/25/13	15.35	710.51	0.00102	<0.0010	0.00148	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		06/17/15	15.05	710.81	0.00108	<0.0010	0.00224	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/16	15.50	710.36	< 0.0010	< 0.0010	0.00168	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		07/14/16	15.30	710.56	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	16.03	709.83	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	15.14	710.72	<0.0010	<0.0010	0.00170	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	15.17	710.69	<0.0010	<0.0010	0.00130	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	15.39	710.47	0.00213	< 0.0010	0.00396	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	16.67	709.19	0.00279	< 0.0010	0.00421	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	15.60	710.26	0.00155	< 0.0010	0.00275	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	14.31	711.55	0.00112	< 0.0010	0.00236	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-22S	728.52	07/25/13	19.64	709.88	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		06/16/15	21.16	708.36	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/16	21.10	708.42	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/15/16	20.56	708.96	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	18.68	710.84	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	20.71	708.81	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	20.03	709.49	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	21.07	708.45	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	21.83	707.69	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	21.26	708.26	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	21.20	708.32	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
MW-22D	728.99	07/25/13	18.61	710.38	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	**0.00608**	< 0.0010	< 0.0010	< 0.0030
		06/16/15	20.55	708.44	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/16	20.03	708.96	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/15/16	19.57	709.42	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		11/07/16	17.79	711.20	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	19.87	709.12	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	**0.00595**	< 0.0010	< 0.0010	< 0.0030
		06/29/17	19.04	709.95	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	20.01	708.98	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	20.91	708.08	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	21.30	707.69	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	**0.00513**	< 0.0010	< 0.0010	< 0.0030
		06/26/18	22.20	706.79	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	**0.00208**	< 0.0010	< 0.0010	< 0.0030
MW-23	726.48	06/16/15	28.30	698.18	< 0.0010	0.0041	< 0.0010	0.0011	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/29/16	25.74	700.72	< 0.0010	0.00489	< 0.0010	0.0011	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/14/16	23.90	702.56	< 0.0010	< 0.0010	< 0.0010	0.0011	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/07/16	23.00	703.46	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/17	21.38	705.08	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/30/17	22.26	704.20	<0.0010	0.00197	0.00152	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/28/17	24.02	702.44	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	25.67	700.79	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/18	29.14	697.32	< 0.0010	< 0.0010	0.00155	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030
		06/26/18	21.28	705.18	< 0.0010	< 0.0010	0.00155	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0030

Table 1
Historical Groundwater Levels and Chemical Analysis Results
Former Duchess Cleaners
501 and 505 3rd Avenue SW, Cedar Rapids, Iowa

Well ID	Elevation	Date	DTW	Groundwater Elevation	Cis-1,2-Dichloroethylene	PCE	TCE	Chlorobenzene	1,2,4-Trimethylbenzene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	MTBE	Vinyl Chloride	Xylenes
			(feet)*	(feet)**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
IDNR Statewide Standard			-	-	**0.07**	**0.005**	**0.005**	**0.1**	**0.35**	**0.1**	**0.005**	**0.021**	**0.002**	**10**
MW-24	723.05	06/16/15	12.87	710.18	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/16	13.55	709.50	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/15/16	13.43	709.62	< 0.0010	< 0.0010	< 0.0010	0.0011	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/07/16	12.50	710.55	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	13.61	709.44	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	13.76	709.29	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	DRY	-	-	-	-	-	-	-	-	-	-	-
		12/28/17	DRY	-	-	-	-	-	-	-	-	-	-	-
		03/28/18	13.91	712.55	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/23/18	12.02	711.03	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-25	725.42	06/16/15	12.50	712.92	0.0023	**0.0079**	< 0.0017	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/29/16	12.58	712.84	0.00265	**0.0113**	0.00144	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/15/16	12.10	713.32	0.00170	**0.0105**	0.00111	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/08/16	11.13	714.29	< 0.0010	**0.00655**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/27/17	12.20	713.22	0.00208	**0.00882**	0.00106	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	11.75	713.67	0.00216	**0.00907**	0.00144	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	12.32	713.10	0.00218	**0.00937**	0.00111	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	12.84	712.58	0.00152	**0.00853**	0.00118	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	13.20	712.22	0.00109	**0.00623**	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	12.54	712.88	0.00149	**0.00639**	0.00102	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-26	727.00	06/16/15	10.91	716.09	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/29/16	11.21	715.79	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/15/16	10.66	716.34	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/08/16	10.31	716.69	< 0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/17	10.88	716.12	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/29/17	11.30	715.70	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/27/17	10.84	716.16	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	11.23	715.77	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	11.60	715.40	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	10.79	716.21	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-27	726.25	03/29/16	21.96	704.29	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/14/16	21.95	704.30	0.00123	<0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/07/16	22.40	703.85	0.00128	<0.0010	< 0.0010	<0.0010	<0.0010	<0.1000	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/17	18.80	707.45	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/30/17	19.67	706.58	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		09/28/17	21.95	704.30	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	21.64	704.61	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/18	21.81	704.64	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/26/18	19.72	706.53	<0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
MW-28	726.37	03/29/16	9.91	716.46	0.00227	**0.0141**	0.00189	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/14/16	9.20	717.17	0.0277	**0.0734**	**0.00921**	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/07/16	8.93	717.44	0.0435	**0.0582**	**0.01040**	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		03/28/17	9.71	716.66	0.00561	**0.00885**	0.00310	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		06/30/17	9.07	717.30	0.01630	**0.01080**	0.00271	<0.0010	<0.0010	< 0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		09/28/17	9.27	717.10	0.0320	**0.02250**	**0.00761**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/28/17	9.78	716.59	0.0126	**0.00685**	0.00198	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/29/18	10.08	716.29	0.0217	**0.0120**	0.00491	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/26/18	9.23	717.14	0.0135	**0.00616**	0.004	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030

Table 1
Historical Groundwater Levels and Chemical Analysis Results
Former Duchess Cleaners
501 and 505 3rd Avenue SW, Cedar Rapids, Iowa

Well ID	Elevation	Date	DTW	Groundwater Elevation	Cis-1,2-Dichloroethylene	PCE	TCE	Chlorobenzene	1,2,4-Trimethylbenzene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	MTBE	Vinyl Chloride	Xylenes
			(feet)*	(feet)**	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
IDNR Statewide Standard			-	-	**0.07**	**0.005**	**0.005**	**0.1**	**0.35**	**0.1**	**0.005**	**0.021**	**0.002**	**10**
MW-29	725.50	03/29/16	9.34	716.16	0.0462	**0.223**	**0.0627**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		07/14/16	9.25	716.25	**0.0797**	**0.583**	**0.1040**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	< 0.0030
		11/07/16	8.93	716.57	**0.0861**	**0.458**	**0.0878**	<0.0010	<0.0010	0.00127	<0.0010	<0.0010	<0.0010	<0.0010
		03/28/17	9.75	715.75	0.0564	**0.346**	**0.0634**	<0.0010	<0.0010	0.00111	<0.0010	<0.0010	<0.0010	< 0.0030
		06/29/17	9.15	716.35	0.0679	**0.827**	**0.111**	<0.0010	<0.0010	0.00111	<0.0010	<0.0010	<0.0010	< 0.0030
		09/27/17	9.37	716.13	0.0566	**0.649**	**0.084**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		12/29/17	9.76	715.74	0.0534	**0.480**	**0.0502**	< 0.0010	< 0.0010	<0.0010	<0.0010	< 0.0010	< 0.0010	< 0.0030
		03/28/18	9.96	715.54	**0.106**	**0.607**	**0.119**	< 0.0010	< 0.0010	0.00135	<0.0010	< 0.0010	< 0.0010	< 0.0030
		06/25/18	9.56	715.94	**0.138**	**0.395**	**0.114**	< 0.0010	< 0.0010	0.00155	<0.0010	< 0.0010	< 0.0010	< 0.0030

Notes: Analyzed by EPA method 8260B.

Definitions:
* = Feet below top of well casing, ** = Feet above mean sea level
DTW = Depth to Water
PCE = Tetracholoethylene
TCE = Tricholoethylene
MTBE = Methyl tert-Butyl Ether
mg/L = milligrams per liter
- = not sampled, measured or recorded
< = less than the method detection limit
0.07 = concentrations formated in bold are above the IDNR Statewide Standard for a Protected Groundwater Source (mg/L)
= data was evaluated using EPA's Groundwater Statistical Analysis Tool

Appendix C

MW-16S - PCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

General Information

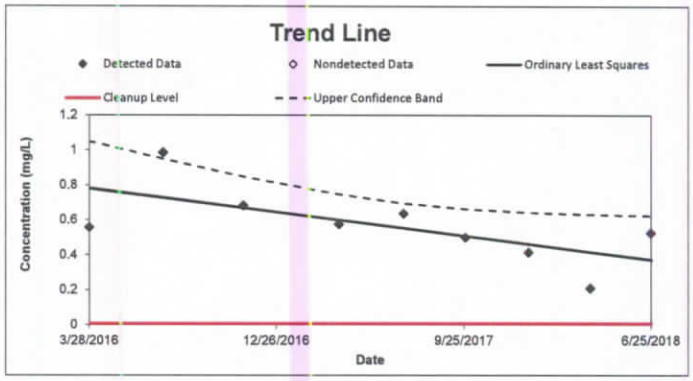
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-16S
Chemical of Concern	PCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

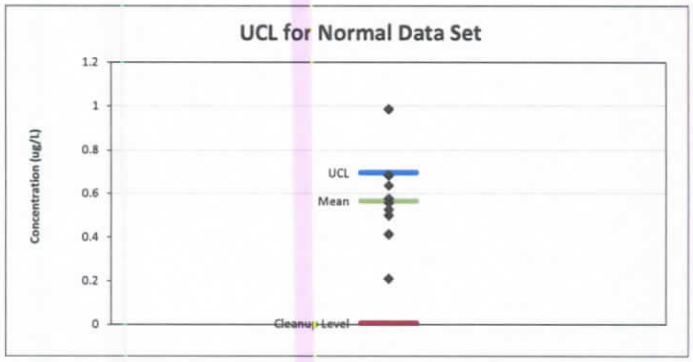
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.000498
Intercept	21.9
R^2	0.4482
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	7/2/2020
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.565
95% UCL	0.695
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

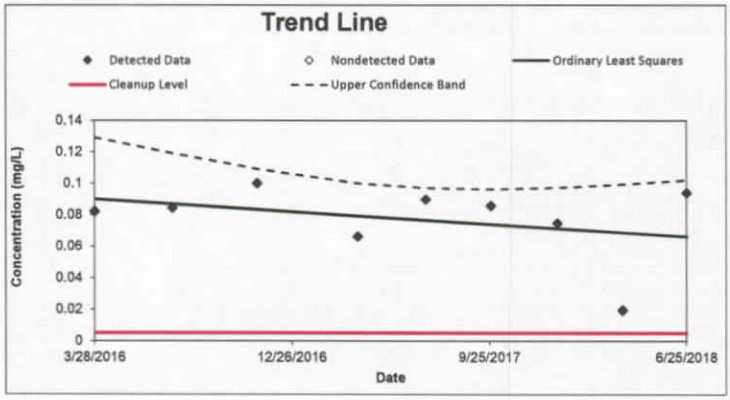
MW-16S - TCE

Groundwater Statistics Tool

Site & Summary Statistics for Nonparametric Data Sets with Normal Residuals

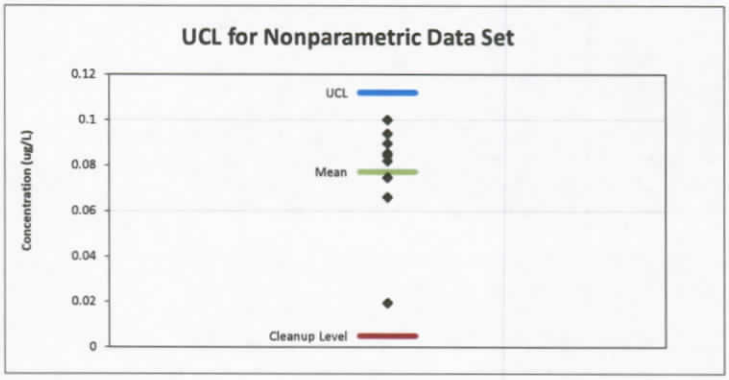
General Information

Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-16S
Chemical of Concern	TCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0



Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.0000288
Intercept	1.31
R^2	0.1157
Test Result	No trend
When concentration is predicted to achieve the cleanup level	4/11/2024
When concentration is predicted to exceed the cleanup level	NA



UCL Analysis

Distribution Type	Nonparametric
Test	Chebyshev UCL
Mean	0.0772
95% UCL	0.112
Is the 95% UCL greater than the cleanup level?	Yes

Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

MW-17S - PCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

General Information

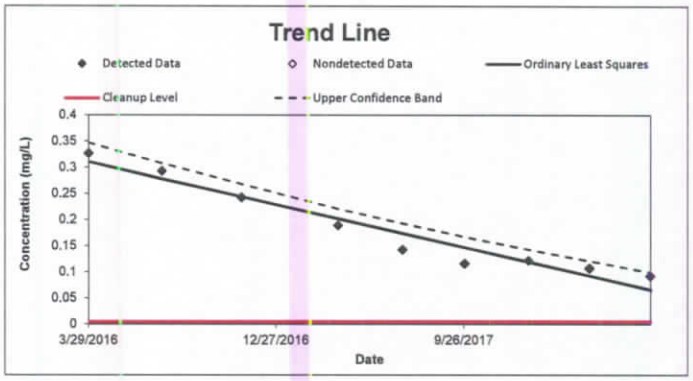
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-17S
Chemical of Concern	PCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

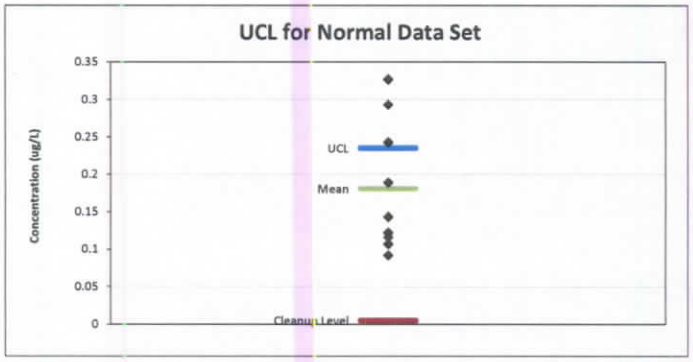
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.000299
Intercept	13
R^2	0.9430
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	1/13/2019
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.181
95% UCL	0.235
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

MW-17S - TCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

General Information

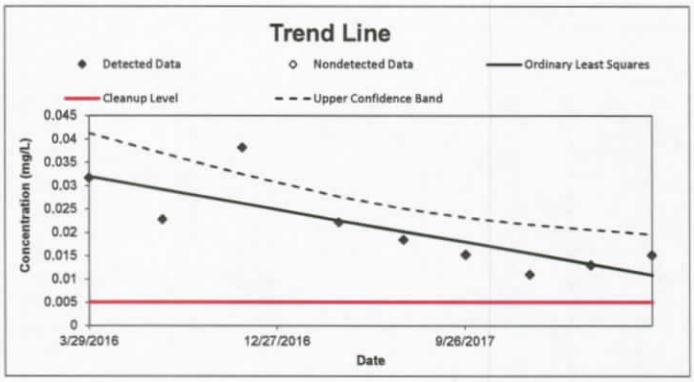
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-17S
Chemical of Concern	TCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

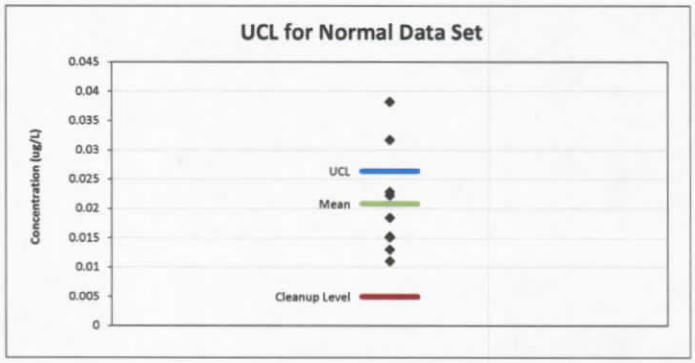
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.0000257
Intercept	1.13
R^2	0.6438
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	2/8/2019
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.0208
95% UCL	0.0264
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

MW-17D - PCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

General Information

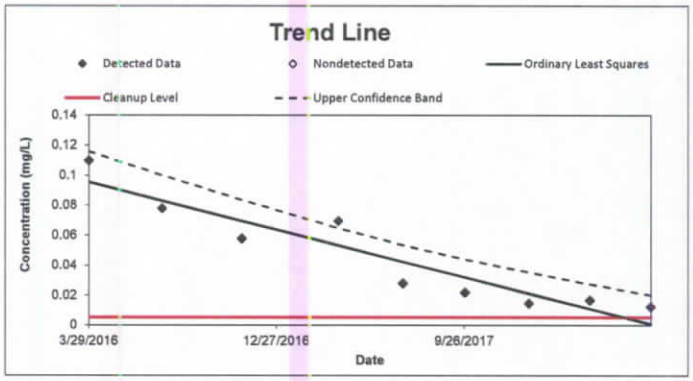
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-17D
Chemical of Concern	PCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

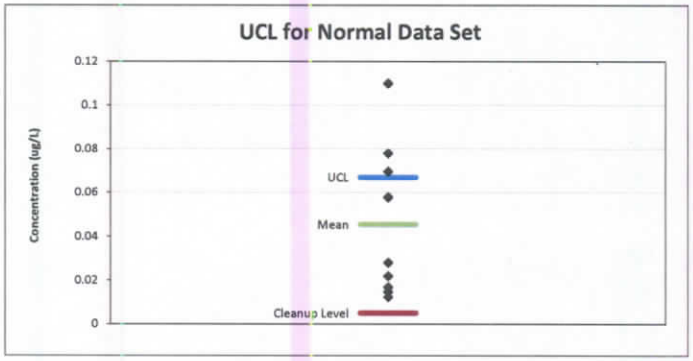
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.000116
Intercept	5.01
R^2	0.8792
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	NA
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.0455
95% UCL	0.0671
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

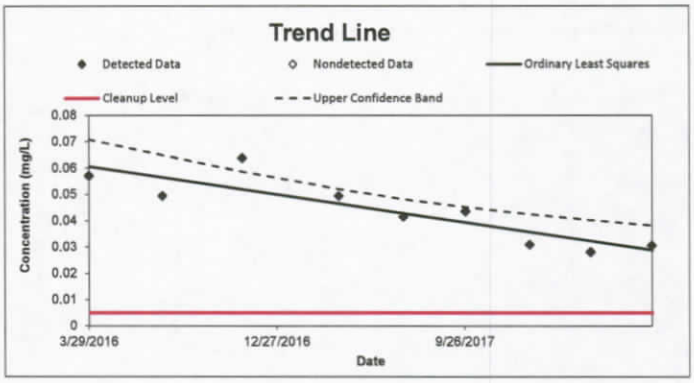
MW-17D - TCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

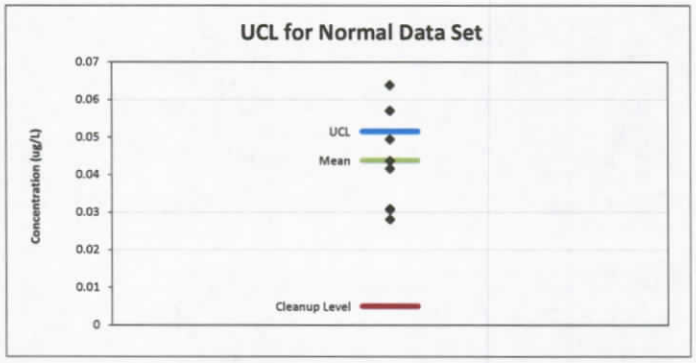
General Information

Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-17D
Chemical of Concern	TCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0



Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.0000388
Intercept	1.71
R^2	0.7755
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	2/27/2020
When concentration is predicted to exceed the cleanup level	NA



UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.0438
95% UCL	0.0615
Is the 95% UCL greater than the cleanup level?	Yes

Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

MW-25 - PCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

General Information

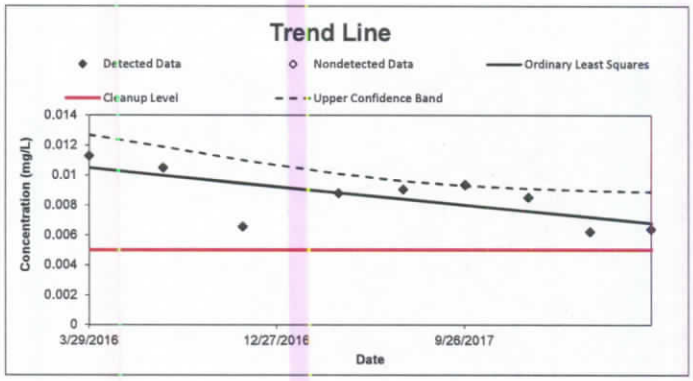
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-25
Chemical of Concern	PCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

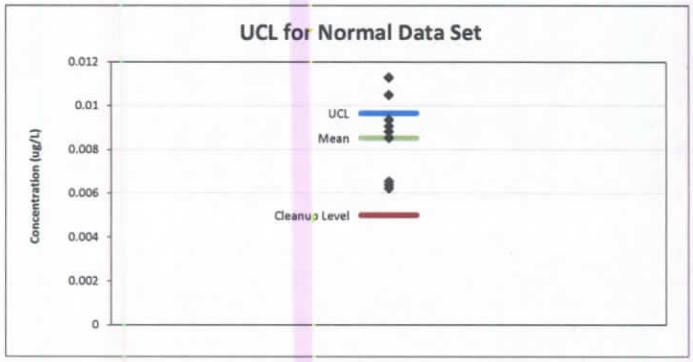
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.00000449
Intercept	0.201
R^2	0.4839
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	7/29/2019
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.00853
95% UCL	0.00966
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

MW-28 - PCE

Groundwater Statistics Tool

Site & Summary Statistics for Nonparametric Data Sets with Normal Residuals

General Information

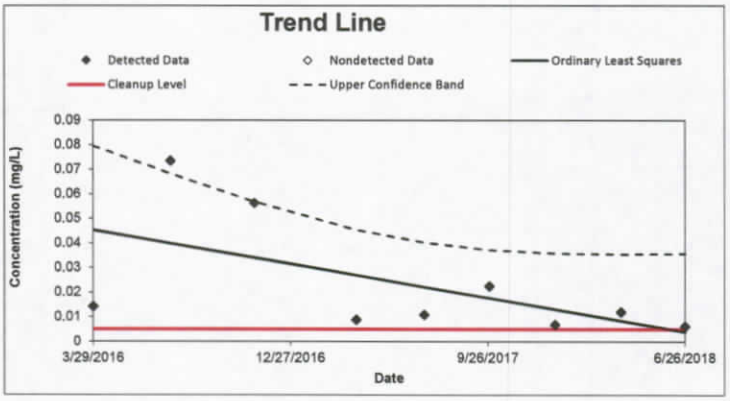
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-28
Chemical of Concern	PCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

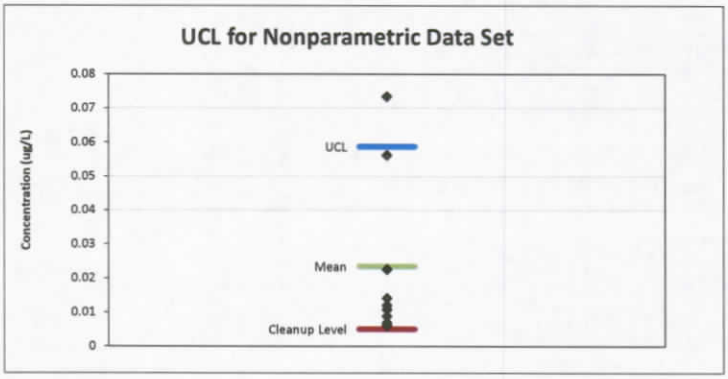
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.0000503
Intercept	2.18
R^2	0.3405
Test Result	Decreasing
When concentration is predicted to achieve the cleanup level	NA
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Nonparametric
Test	Chebyshev UCL
Mean	0.0234
95% UCL	0.0587
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

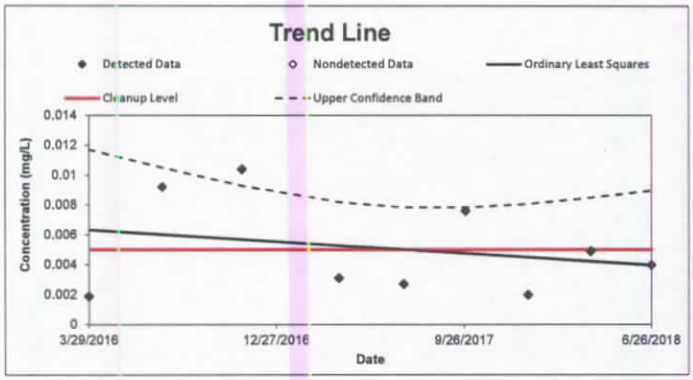
MW-28 - TCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

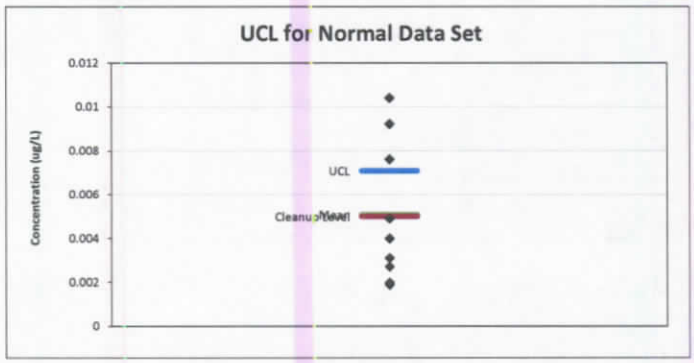
General Information

Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-28
Chemical of Concern	TCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0



Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	-0.00000286
Intercept	0.128
R^2	0.0633
Test Result	No trend
When concentration is predicted to achieve the cleanup level	NA
When concentration is predicted to exceed the cleanup level	NA



UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.00509
95% UCL	0.00708
Is the 95% UCL greater than the cleanup level?	Yes

Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

MW-29 - PCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

General Information

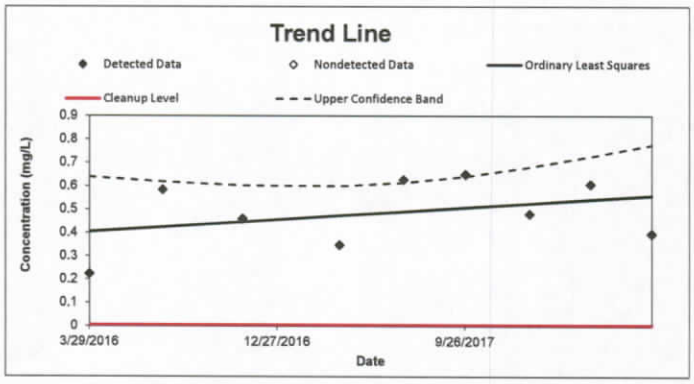
Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-29
Chemical of Concern	PCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0

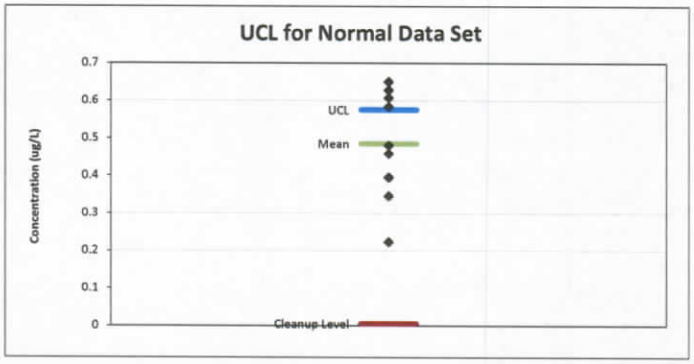
Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	0.000188
Intercept	-7.57
R^2	0.1331
Test Result	No trend
When concentration is predicted to achieve the cleanup level	NA
When concentration is predicted to exceed the cleanup level	NA

UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.485
95% UCL	0.575
Is the 95% UCL greater than the cleanup level?	Yes





Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen

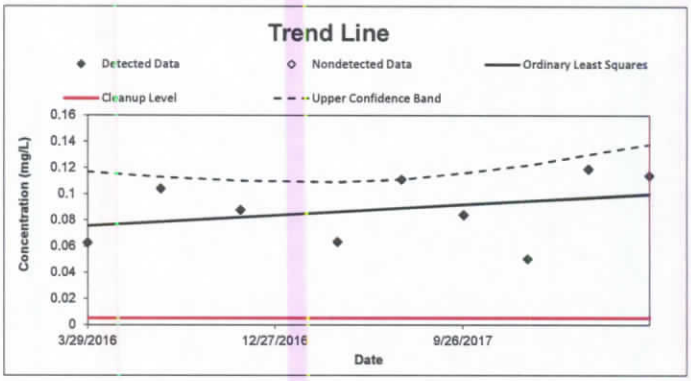
MW-29 - TCE

Groundwater Statistics Tool

Site & Summary Statistics for Normal Data Sets with Normal Residuals

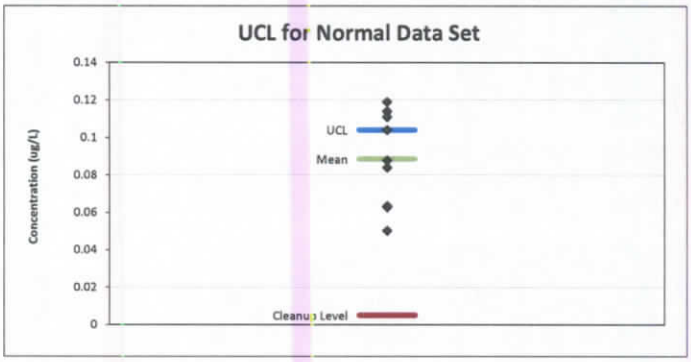
General Information

Analyst	TT
Date of Evaluation	3/1/2019
Site Name	Duchess
Operable Unit	0
Type of Evaluation	Attainment
Well Name/Number	MW-29
Chemical of Concern	TCE
Concentration Units	mg/L
Cleanup Level	0.005
Source of Cleanup Level	MCL
Confidence Level	95%
Risk of False Outlier Rejection	1%
Number of Results	9
Outliers present?	No
Number of Non-Detects	0



Trend Analysis

Trend Type	Normal
Method	Ordinary Least Squares
Is the Upper Confidence Band above the cleanup level?	NA
Slope	0.0000298
Intercept	-1.19
R^2	0.1106
Test Result	No trend
When concentration is predicted to achieve the cleanup level	NA
When concentration is predicted to exceed the cleanup level	NA



UCL Analysis

Distribution Type	Normal
Test	Student's t UCL
Mean	0.0885
95% UCL	0.104
Is the 95% UCL greater than the cleanup level?	Yes

Previous Step: Trend Screen | Previous Step: UCL Screen | Restart: Data Input Screen