

Site Name: VOC- Colby Westbrook Plaza

Extended Site Screening (ESS)

Project Manager: Matt Culp

Date: November 30, 2016

**CON 12-15
DOC# 31824**

Location: Latitude: 41.5713 Longitude: 93.7726
(Decimal Degree format)

County: Polk

USGS Quadrant: Commerce

Site Size: 1.83

Site Dimension: ☒ Acres ☐ Square Feet
☐ Feet ☐ Square Miles ☐ Mile

Site Alias Name(s): Crown Cleaners

Congressional District: Iowa 3rd

Grant Recipient Name, Address & Contact: NA

Current Owner & Address: Colby's Westbrook Plaza L.C. 6581 University Avenue, Windsor Heights, IA 50324

Responsible Party Name(s) & Address, if different from current owner: Same

Site Street Address or Tier, Range, Section & Subsections (if street address is unknown) 5000 EP True Parkway, West Des Moines, Iowa, 50265

Directions to site: From Des Moines take Interstate highway 235 west to 50th Street exit in West Des Moines. Turn south (left) on 50th Street. Take 50th Street to EP True Parkway and turn right on EP True Parkway. The site is located on the left on the south side of EP True Parkway.

Summarize the site history (past usages, past ownerships, wastes, known or suspected contamination pathways such as tanks, septic tank/tile field, lagoon, land applications, S.W. burial, etc)

The site was from developed from open rural ground. It consists of a 20,000 square foot slab-on-grade commercial building that has been subdivided into nine different businesses. The building is served by city water and sanitary sewer. One of the tenants (site) is Crown Cleaners. The drainage pathways included sanitary floor drains in bathrooms and slop sinks. There are no on-site storage tanks, septic tanks, tile lines or solid waste disposal areas. The location of the site is shown on Exhibit 1 and the site is shown on Exhibit 2.

Briefly describe the site assessment that was conducted (number of borings, monitoring wells, number of samples, depth of soil samples and monitoring wells, analysis, etc.)

Two soil borings MW-5S and MW-5D were advanced to depth of 15 feet and 50 feet respectively. Soil samples were field screened for volatile organic vapor (VOCs) with a Photoionization Detector (PID). One sample from MW-5S was collected at the depth of 9-10 feet and submitted for laboratory analysis for VOCs by EPA Method 8260B. No soil sample was collected from MW-5D as there was no elevated PID reading. The two soil borings were then converted to temporary monitoring wells (TMWs) to collect groundwater samples that were also tested for VOCs by EPA Method 8260B.

Three additional sub-slab soil vapor (SV) sample designated as SVP-1, SVP-2 and SVP-3 were collected. Two were located inside the dry cleaner and the third (SVP-3) was located in the adjoining business under the same floor slab. The SV sample was analyzed for VOCs by EPA Method TO-15. The soil vapor results were evaluated utilizing the EPA Vapor Intrusion Screening Level soil vapor model (VISL). These results were then passed through the Iowa Department of Natural Resources Cumulative Risk Calculator (DNR/RC) to determine the cancer and non-cancer risk for three exposure scenarios of site resident, site worker and site construction worker. The soil borings, monitoring wells and soil vapor sample locations are on Exhibit 3.

Summarize the findings and conclusions regarding the contaminants found and their extent and concentrations. Relate those values to known criteria such as statewide standards, MCLs, water quality standards, background levels or other benchmarks used to determine site priority.

Soil Findings:

The analytical results in soil for VOCs and metals from MW-5S were below method detection limits and Statewide Standards (SWS). Soil results are summarized on Table 1.

Groundwater:

The ESS analytical results for VOCs from MW-5s and MW-5D were below SWS. Groundwater results are summarized on Table 2.

Soil Vapor:

Results of the ESS soil vapor analysis (VISL and DNR/ RC) determined the site fails for site resident for cancer and non-cancer exposure risk to tetrachloroethylene (PCE) and trichloroethylene (TCE) but passes the cancer risk for site worker and construction worker but fails for the non-cancer exposure risk for both site worker and construction worker exposure scenarios. Results for sub-slab vapor results are summarized on Table 3. Considering the current site usage as a commercial building, the site worker scenario (both cancer and non-cancer) would be the most applicable going forward. The results of the Risk Calculator are attached.

Identify on-site or off-site potential and actual targets (e.g., municipal wells, private wells, drinking water intakes). What is known of the neighboring area, i.e., are there residences, businesses, public use areas, etc.? Are there utility lines that could be impacted by site contaminants? Identify any other use/location issues that deserve consideration.

The on-site actual and potential targets are as described in the initial ISS: These include employees of the dry cleaner and employees at the adjacent business to volatile organic vapor intrusion. These businesses share the slab on grade floor of the building and are separated from the dry cleaner business by an interior wall. In addition, there are buried utilities in the area that include a sanitary sewer line located on the north side of the building, three underground electrical lines and a communication line on the south side of the building. One off-site potential receptor is a residential apartment development located immediately west and south of the Colby Plaza development.

There is no apparent exposure risk to soil.

The additional assessment conducted under the ESS has adequately determined the extent of the chlorinated groundwater plume. There were no detections of VOCs at MW5-S and MW-5D in the downgradient direction from the source area. The extent of groundwater contamination was defined during the initial Phase II assessment to be limited to the subject property (See Exhibits 5 and 5A). The Phase II groundwater data are presented below.

"Only Cis-1, 2-DCE and vinyl chloride (VC) were detected in groundwater. Cis-1, 2-DCE was detected in TWMs P-2, P-3 and P-4. The maximum cis-1, 2-DCE concentration was 30.6ug/L in TMW P-2. The SWS for cis-1, 2-DCE in protected groundwater is 70ug/L. VC was detected in TMWs P-2 and P-3. The maximum concentration was 59.1ug/L in P-2 which exceeds the SWS for VC for protected groundwater of 2ug/L."

However, the additional ESS assessment has determined that there is an ongoing potential exposure risk to volatile organic vapors to site workers that will require oversight by the IDNR.

Summarize the reasoning, knowledge or any other information used in determining your response regarding your review of this site.

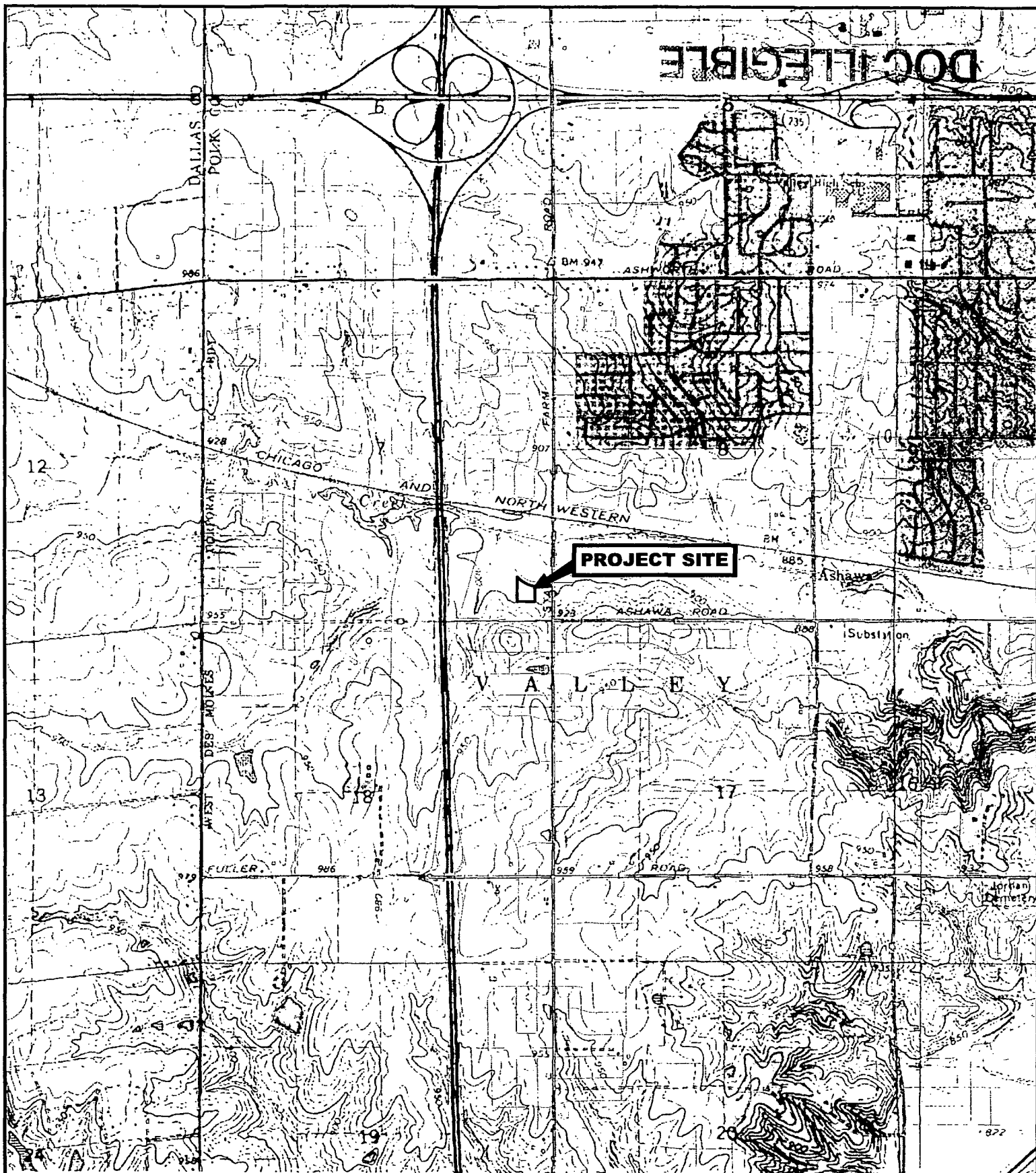
This site is considered a priority 2 due to the results of the soil vapor analyses and will continue to be monitored for indoor vapor conditions under state authority.

Site recommended for:

- ☒ No further action under CERCLA
- ☒ Additional investigation under state program (activity code 2824)
- ☐ Additional investigation under CERCLA (PA/SI, etc.)
- ☐ Transfer to LUST/UST

Form Reviewed: Amie Davidson Date Reviewed: 12-1-16

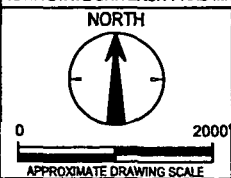
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LEGEND

--- BOUNDARY OF ASSESSED AREA

TOPOGRAPHIC IMAGE FROM IOWA GEOGRAPHIC MAP SERVER MAINTAINED BY IOWA STATE UNIVERSITY AND MIT - <http://calro.gis.iastate.edu/map.html>



Project No: 08167095
 Date: 11/2/2016
 Project Mgr: JMN
 Drawn By: KEK
 File Name: 08167095-02.dwg
 Layout Name: E1

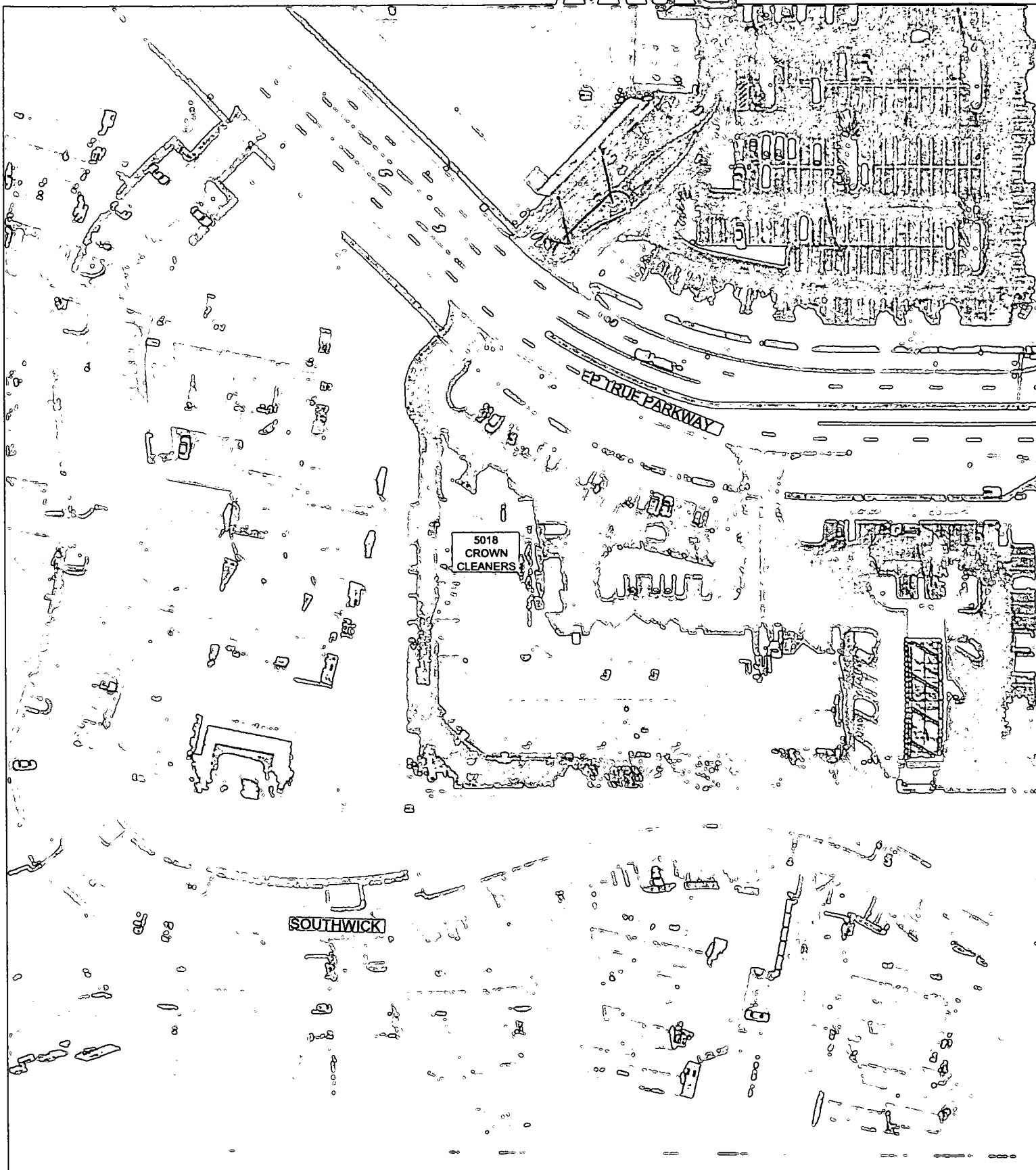
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 PH. (515) 244-3184 FAX. (515) 244-5249

TOPOGRAPHIC MAP
 SITE ASSESSMENT REPORT
 CROWN CLEANERS
 5018 EP TRUE PARKWAY
 WEST DES MOINES, IOWA

EXHIBIT

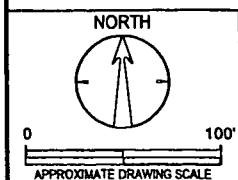
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AERIAL PHOTO FROM GOOGLE EARTH

LEGEND

----- - BOUNDARY OF ASSESSED AREA



Project No.	Date:
08167095	11/2/2016
Project Mgr:	Drawn By:
JMN	KEK
File Name:	
08167095-02.dwg	
Layout Name:	
E2	

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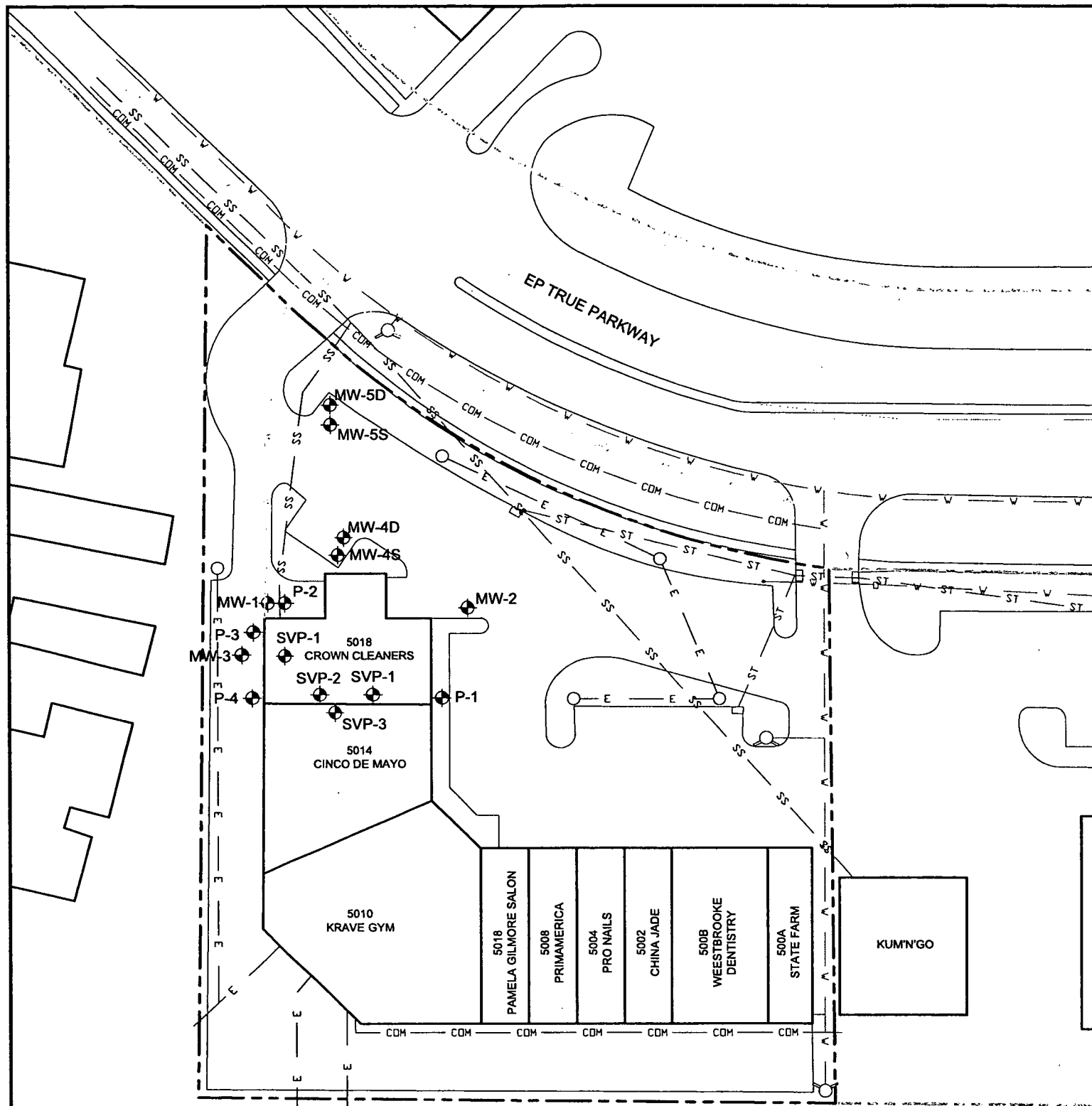
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SITE LOCATION DIAGRAM

SITE ASSESSMENT REPORT
CROWN CLEANERS
5018 EP TRUE PARKWAY
WEST DES MOINES, IOWA

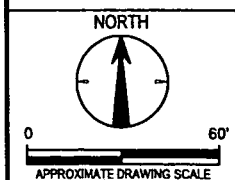
EXHIBIT

2



LEGEND

- | | |
|---|---|
| <ul style="list-style-type: none"> --- BOUNDARY OF ASSESSED AREA ● APPROXIMATE BORING/SAMPLE LOCATION BY OTHERS ● APPROXIMATE BORING/MONITORING WELL LOCATION ● APPROXIMATE VAPOR PIN LOCATION — E — POWER LINE — SS — STORM SEWER LINE — ST — SANITARY SEWER LINE | <ul style="list-style-type: none"> — CDM — COMMUNICATIONS LINE — W — WATER LINE — NG — NATURAL GAS LINE ○ FIRE HYDRANT □ STORM SEWER INLET ○ IRRIGATION HYDRANT ○ LIGHT POLE |
|---|---|

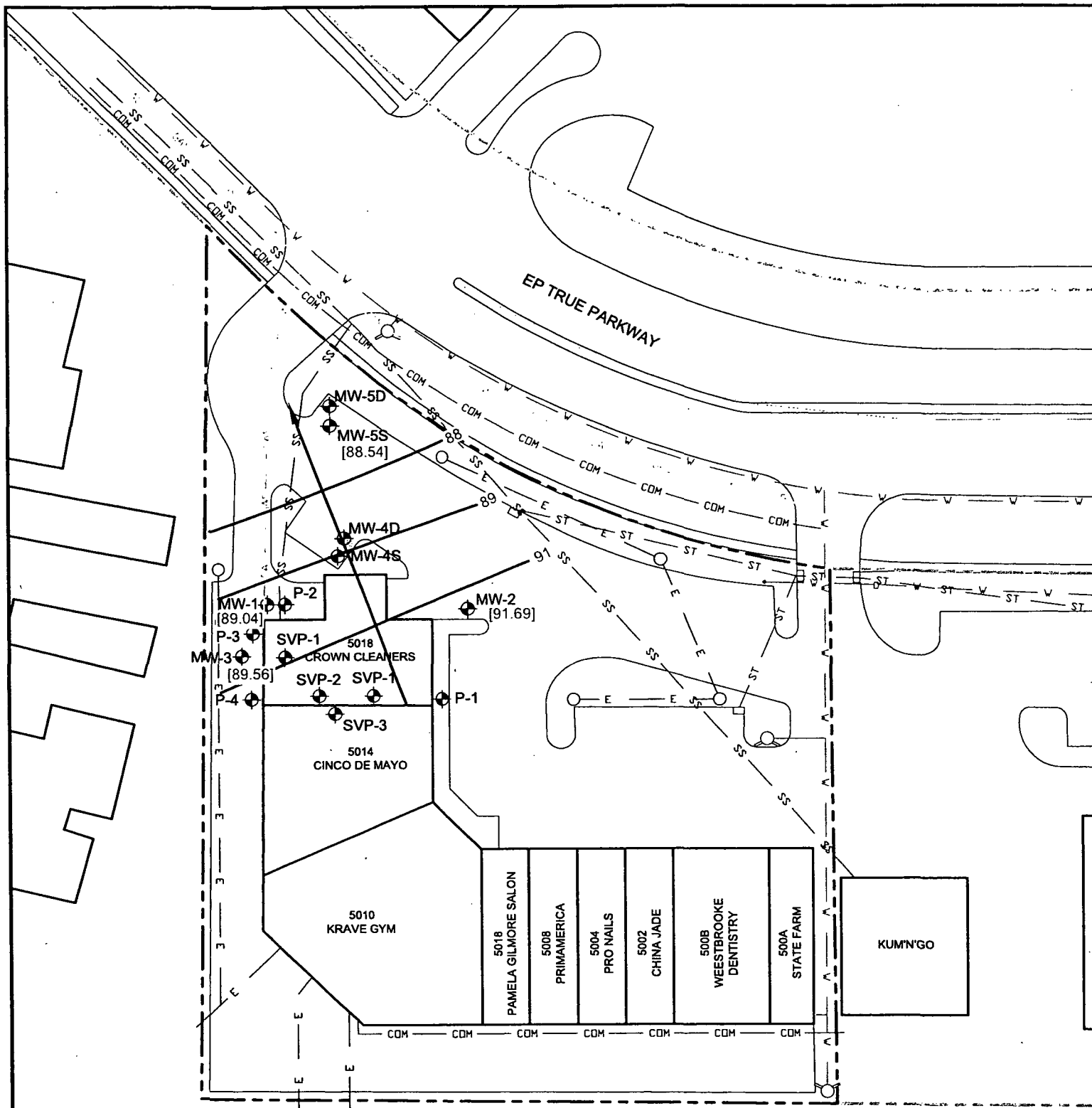


Project No.	Date:
08167095	11/2/2016
Project Mgr:	Drawn By:
JMN	KEK
File Name:	
08167095-02.dwg	
Layout Name:	
E3	

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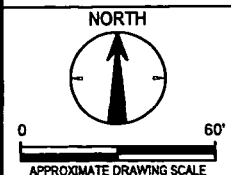
SITE PLAN MAP		EXHIBIT 3
SITE ASSESSMENT REPORT		
CROWN CLEANERS		
5018 EP TRUE PARKWAY WEST DES MOINES, IOWA		



NOTE:
THE GROUNDWATER CONTOUR INTERVALS ARE BASED ON
INTERPOLATION BETWEEN THE MEASURED MONITORING
WELLS. SUBSURFACE CONDITIONS MAY VARY

LEGEND

- | | |
|---|---|
| <ul style="list-style-type: none"> --- BOUNDARY OF ASSESSED AREA ● APPROXIMATE BORING/SAMPLE LOCATION BY OTHERS ○ APPROXIMATE BORING/MONITORING WELL LOCATION ● APPROXIMATE VAPOR PIN LOCATION — E — POWER LINE — SS — STORM SEWER LINE — ST — SANITARY SEWER LINE | <ul style="list-style-type: none"> — COM — COMMUNICATIONS LINE — W — WATER LINE — NG — NATURAL GAS LINE ● FIRE HYDRANT □ STORM SEWER INLET • IRRIGATION HYDRANT ○ LIGHT POLE |
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Project No.: 08167095
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Layout Name: E4

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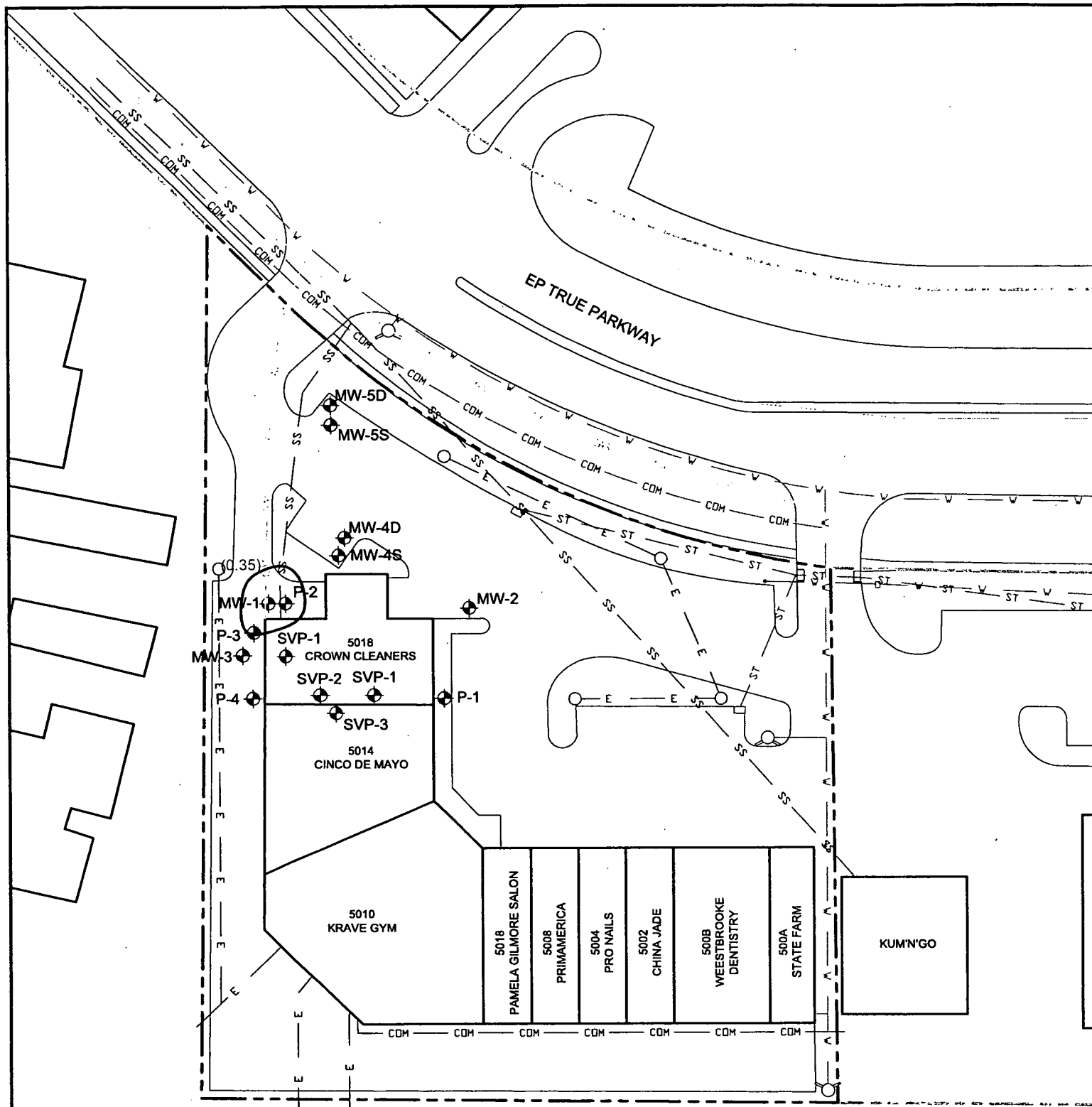
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GROUNDWATER FLOW DIRECTION MAP - 10/13/16

SITE ASSESSMENT REPORT
CROWN CLEANERS
5018 EP TRUE PARKWAY
WEST DES MOINES, IOWA

EXHIBIT

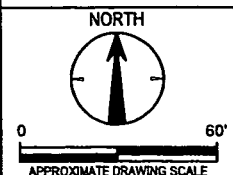
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NOTE:
THE GROUNDWATER CONTOUR INTERVALS ARE BASED ON INTERPOLATION BETWEEN THE MEASURED MONITORING WELLS. SUBSURFACE CONDITIONS MAY VARY

LEGEND

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|--|---------------------------------|
| --- BOUNDARY OF ASSESSED AREA | --- CDM --- COMMUNICATIONS LINE |
| ⊙ APPROXIMATE BORING/SAMPLE LOCATION BY OTHERS | --- W --- WATER LINE |
| ⊙ APPROXIMATE BORING/MONITORING WELL LOCATION | --- NG --- NATURAL GAS LINE |
| ⊙ APPROXIMATE VAPOR PIN LOCATION | ⊙ FIRE HYDRANT |
| --- E --- POWER LINE | ⊙ STORM SEWER INLET |
| --- SS --- STORM SEWER LINE | ⊙ IRRIGATION HYDRANT |
| --- ST --- SANITARY SEWER LINE | ⊙ LIGHT POLE |



Project No: 08167095
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Drawn By: KEK
File Name: 08167095-02.dwg
Layout Name: E5

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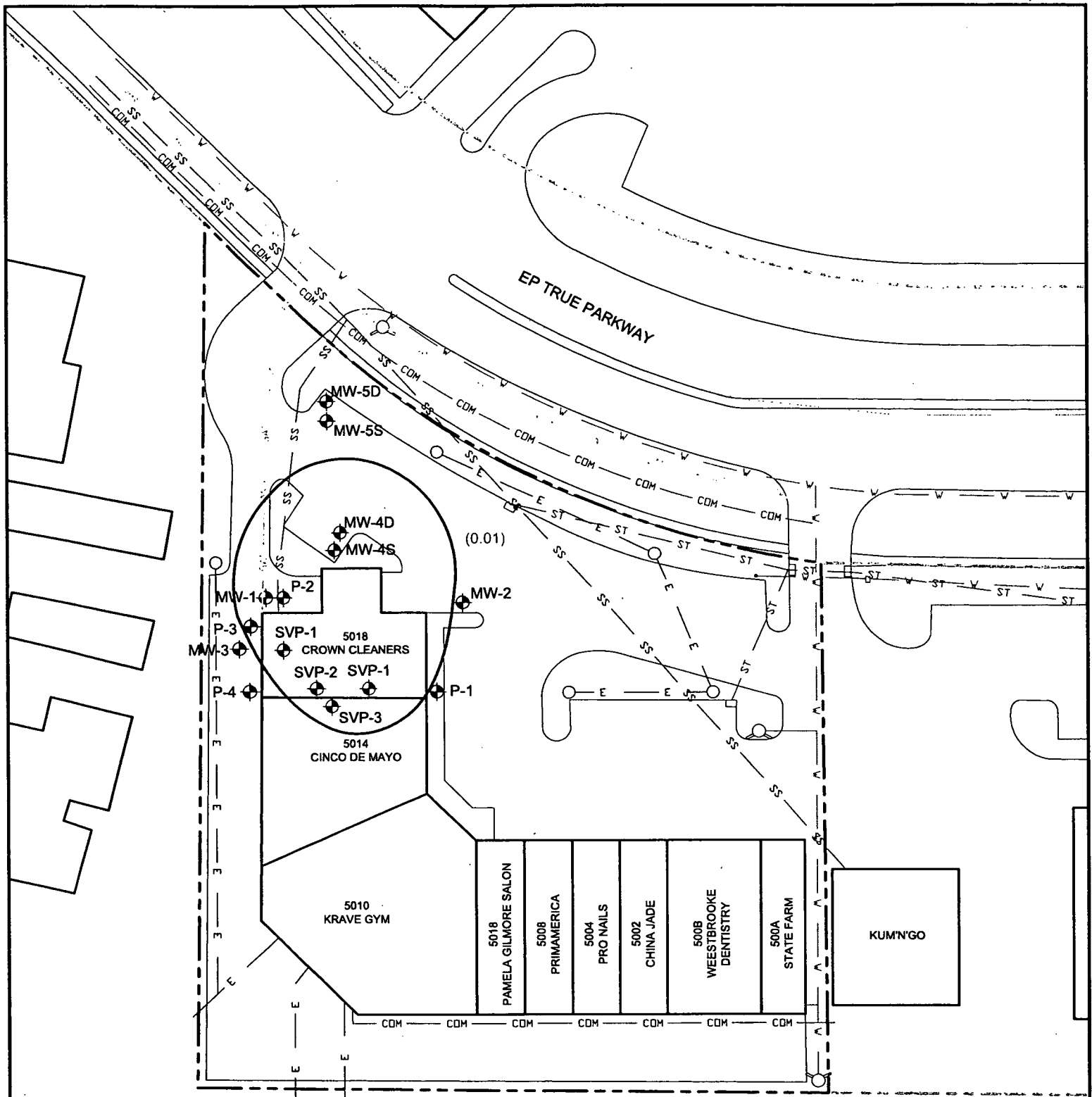
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GROUNDWATER ISOCONCENTRATION MAP - CIS-DCE

SITE ASSESSMENT REPORT
CROWN CLEANERS
5018 EP TRUE PARKWAY
WEST DES MOINES, IOWA

EXHIBIT

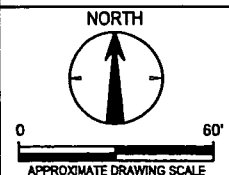
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NOTE:
THE GROUNDWATER CONTOUR INTERVALS ARE BASED ON
INTERPOLATION BETWEEN THE MEASURED MONITORING
WELLS. SUBSURFACE CONDITIONS MAY VARY

LEGEND

- | | | | |
|-----------|--|---------|-----------------------|
| — — — — — | - BOUNDARY OF ASSESSED AREA | — CDM — | - COMMUNICATIONS LINE |
| ● | - APPROXIMATE BORING/SAMPLE LOCATION BY OTHERS | — W — | - WATER LINE |
| ● | - APPROXIMATE BORING/MONITORING WELL LOCATION | — N — | - NATURAL GAS LINE |
| ● | - APPROXIMATE VAPOR PIN LOCATION | — F — | - FIRE HYDRANT |
| — E — | - POWER LINE | — S — | - STORM SEWER INLET |
| — SS — | - STORM SEWER LINE | — I — | - IRRIGATION HYDRANT |
| — ST — | - SANITARY SEWER LINE | — L — | - LIGHT POLE |



Project No. 08167095 Date: 11/2/2016
Project Mgr: JMN Drawn By: KEK
File Name: 08167095-02.dwg
Layout Name: E5A

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GROUNDWATER ISOCONCENTRATION MAP - VINYL CHLORIDE

SITE ASSESSMENT REPORT
CROWN CLEANERS
5018 EP TRUE PARKWAY
WEST DES MOINES, IOWA

EXHIBIT

5A

Table 1 - Soil Analytical Results (mg/kg)
Crown Cleaners
West Des Moines, Iowa
Terracon Project No. 08167095

Parameter	Statewide Standards (mg/kg)	MW-1	MW-2	MW-3	MW-4S	MW-5S	Drill Cuttings
Field Observations							
Depth of Sample	NA	4-5 feet	4-5 feet	4-5 feet	3-4 feet	9-10 feet	NA
PID - PPM	NA	103.5	0.8	0.0	8.1	0.0	NA
VOCs - EPA Method 8260							
Acetone	68,000	0.240	0.155	<0.126	<0.131	<0.161	<0.133
cis-1,2-Dichloroethene	150.00	0.101	<0.0140	<0.0126	<0.0131	<0.0161	<0.0133
trans-1,2-Dichloroethene	1,500	<0.0130	<0.0140	<0.0126	<0.0131	<0.0161	<0.0133
Tetrachloroethene	1,500	<0.0130	<0.0140	<0.0126	<0.0131	<0.0161	<0.0133
Trichloroethene	67	<0.0130	<0.0140	<0.0126	<0.0131	<0.0161	<0.0133
Vinyl Chloride	2.1	<0.0391	<0.0420	<0.0378	<0.0392	<0.0484	<0.0400
RCRA Metals - EPA Method 6010/7471							
Arsenic	17	NS	NS	NS	NS	NS	5.56
Barium	15,000	NS	NS	NS	NS	NS	123
Cadmium	70	NS	NS	NS	NS	NS	<0.995
Chromium	190	NS	NS	NS	NS	NS	13.8
Lead	400	NS	NS	NS	NS	NS	11.3
Mercury	23.0	NS	NS	NS	NS	NS	<0.0251
Selenium	390	NS	NS	NS	NS	NS	<7.46
Silver	370	NS	NS	NS	NS	NS	<0.995

Notes

PID - photoionization detector

PPM - parts per million

mg/kg - milligrams per kilogram

VOCs - Volatile Organic Compounds

EPA - Environmental Protection Agency

Statewide Standards - Iowa Land Recycling Program Chapter 137

RCRA - Resource Conservation and Recovery Act

NA - Not Applicable, Statewide Standard not established

NS - Sample not submitted for laboratory analysis

Table 2 - Groundwater Analytical Results (mg/L)
Crown Cleaners
West Des Moines, Iowa
Terracon Project No. 08167095

Parameter	Statewide Standards - NPGWS (mg/L)	MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5S	MW-5D	Blind Duplicate (MW-3)	Blind Duplicate (MW-5S)	Trip Blank (7/11/16)	Trip Blank (10/13/16)	IDW Water-1 (7/11/16)	IDW Water-1 (10/14/16)
VOCs - EPA Method 8260														
Acetone	32	0.0127	<0.0100	<0.0100	0.0114	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0234J	<0.0100
Bromomethane	0.05	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.001	<0.004	0.00396JB	<0.004
Chloroform	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00241	<0.001	<0.00280	<0.001
cis-1,2-Dichloroethene	0.35	0.588	<0.001	0.0111	0.0705	0.307	0.00514	0.0109	<0.001	0.00518	<0.001	<0.001	0.0943	<0.001
trans-1,2-Dichloroethene	0.7	0.00889	<0.001	<0.001	<0.001	0.00328	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00210	<0.001
Methylene Chloride	1.8	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0707	<0.005
Tetrachloroethene	1.7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00180	<0.001
Toluene	5	0.00118	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00150	<0.001
Trichloroethene	0.076	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00190	<0.001
Vinyl Chloride	0.01	0.804	<0.001	<0.001	0.0556	0.0402	0.00139	<0.001	<0.001	0.00134	<0.001	<0.001	0.0596	<0.001

Notes
mg/L - milligrams per liter
VOCs - Volatile Organic Compounds
EPA - Environmental Protection Agency
Statewide Standards - Iowa Land Recycling Program Chapter 137
NPGWS - Non-Protected Groundwater Source
NA - Not Applicable, Statewide Standard not established
J - Result is less than the RL, but greater than or equal to the MDL and the concentration is an approximate value
B - Compound was found in the blank and the sample
Bold - SWS exceeded

Table 3 - Sub-Slab Vapor Results (mg/m³)
Crown Cleaners
West Des Moines, Iowa
Terracon Project No. 08167095

Parameter	EPA OSWER Screening Level	SVP-1	SVP-2	SVP-3	Ambient Air (6/24/16)	Ambient Air (10/21/16)
VOCs - EPA Method TO-15						
cis-1,2-Dichloroethene	0.35	<0.130	0.013J	0.23	<0.00079	<0.00079
trans-1,2-Dichloroethene	0.700	<0.130	<0.017	<0.130	<0.00079	<0.00079
Tetrachloroethene	0.810	24.0	3.40	29.0	0.016	0.0018
Trichloroethene	0.022	0.310	0.065	1.2	0.00038J	<0.0011
Vinyl Chloride	0.280	<0.083	<0.011	<0.084	<0.00051	<0.00051

Notes
mg/m3 - milligrams per cubic meter
VOCs - Volatile Organic Compounds
EPA - Environmental Protection Agency
EPA OSWER Screening Level - Table 2a: Generic Screening Levels for Target Shallow Soil Gas Concentration
J - Result is less than the RL, but greater than or equal to the MDL and the concentration is an approximate value
Bold - EPA OSWER Screening Level exceeded



CUMULATIVE RISK CALCULATOR

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[Statewide Standards](#)
[Chemical Specific Info.](#)
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Sign In

Cumulative Risk Results

For: Jesse Nelson
 Crown Cleaners
 5018 EP True Parkway
 West Des Moines IA Air Site Resident

Date: 10/31/2016

Chemical	CASRN	¹ Exposure Point Concentration for Air (mg/m ³) ²	² Site-Specific Background Air Level* (mg/m ³) ²
Dichloroethylene, 1,2-cis-	000156-59-2	0.069	
Tetrachloroethylene	000127-18-4	0.870	
Trichloroethylene	000079-01-6	0.036	

Cancer Risk Output

Chemical Name	CASRN	Resident Air
Tetrachloroethylene	000127-18-4	0.97
Trichloroethylene	000079-01-6	0.63
TOTALS:		1.6

Cumulative Cancer Risk Site Resident: 1.6 (All cancer risk values are x 10⁻⁴)

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
Dichloroethylene, 1,2-cis-	000156-59-2	Air														
Tetrachloroethylene	000127-18-4	Air									21.75					
Trichloroethylene	000079-01-6	Air	18							18					18	
Sum:			18	0	0	0	0	0	0	18	21.75	0	0	0	18	0

Interpretation of Results Summary²

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.

DNR Home | Site Policy |



2.2.3581

Leading Iowans in caring for our natural resources.



CUMULATIVE RISK CALCULATOR

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A button with a small icon of a person and the text "Sign In".

Cumulative Risk Results

For: Jesse Nelson
Crown Cleaners
5018 EP True Parkway
West Des Moines IA Air Site Worker

Date: 10/31/2016

Chemical	CASRN	¹ Exposure Point Concentration for Air (mg/m ³) ²	² Site-Specific Background Air Level* (mg/m ³) ²
Dichloroethylene, 1,2-cis-	000156-59-2	0.069	
Tetrachloroethylene	000127-18-4	0.870	
Trichloroethylene	000079-01-6	0.036	

Cancer Risk Output

Chemical Name	CASRN	Site Worker Air
Tetrachloroethylene	000127-18-4	0.17
Trichloroethylene	000079-01-6	0.11
TOTALS:		0.28

Cummulative Cancer Risk Site Worker: 0.28 (All cancer risk values are x 10⁻⁴)

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
Dichloroethylene, 1,2-cis-	000156-59-2	Air														
Tetrachloroethylene	000127-18-4	Air									4.47					
Trichloroethylene	000079-01-6	Air	3.7							3.7					3.7	
Sum:			3.7	0	0	0	0	0	0	3.7	4.47	0	0	0	3.7	0

Interpretation of Results Summary²
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 CALCULATOR

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Cumulative Risk Results

For: Jesse Nelson
 Crown Cleaners
 5018 EP True Parkway
 West Des Moines IA Air Construction Worker

Date: 10/31/2016

Chemical	CASRN	¹ Exposure Point Concentration for Air (mg/m ³) ¹	² Site-Specific Background Air Level* (mg/m ³) ²
Dichloroethylene, 1,2-cis-	000156-59-2	0.069	
Tetrachloroethylene	000127-18-4	0.870	
Trichloroethylene	000079-01-6	0.036	

Cancer Risk Output

Chemical Name	CASRN	Construction Worker Air
Tetrachloroethylene	000127-18-4	0.01
Trichloroethylene	000079-01-6	0
TOTALS:		0.01

Cummulative Cancer Risk Construction Worker: 0.01 (All cancer risk values are x 10⁻⁴)

Construction 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
Dichloroethylene, 1,2-cis-	000156-59-2	Air														
Tetrachloroethylene	000127-18-4	Air														
Trichloroethylene	000079-01-6	Air														
			3.29							3.29					3.29	
		Sum:	3.29	0	0	0	0	0	0	3.29	3.97	0	0	0	3.29	0

Interpretation of Results Summary²
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.