FLYING J INC
333 West Center • North Salt Lake, Utah 84054
Phone (801) 296-7700 • Fax (801) 296-7800

June 29, 2007

Mr. Jeff White
Iowa Department of Natural Resources
Underground Storage Tank Section
502 E. 9th Street/Wallace State Office Building
Des Moines, IA 50319

RE: Revised Tier 2 Site Cleanup Report
Flying J Travel Plaza, 11820 Hickman Road
Clive, IA UST Reg. No. 8811526 LUST No. 7LTJ18

Dear Mr. White,

Please find enclosed the revised Tier 2 report for the above referenced facility. Please review the submittal and feel free to contact me directly at (801) 296-7718 with any questions or concerns.

Thank you for your attention given to this matter.

Sincerely,

Molly Gray

Molly Gregersen, P.G.
Manager, Remediation and Water Resources Projects
Retail Environmental Operations
Flying J Incorporated

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MAREK INDUSTRIES, LLC
9588 NW 74th Place
Grimes, Iowa 50111
(515)-986-3466

June 25, 2007

Mr. Jeff White
Iowa Department of Natural Resources,
Wallace State Office Building
Des Moines, IA 50319

Subject: Revised Tier 2 Site Cleanup Report
Flying J Travel Plaza, 11820 Hickman Road
Clive, IA Registration No. 8811526 LUST No. 7LTJ18

Dear Mr. White,

Enclosed please find the revised Tier 2 report prepared based on your letter dated 4/13/2007 and the teleconference/meeting held at the IDNR on 6/13/2007. As requested, the revised report addresses the deficiencies listed in your 4/13/2007 letter. The report revisions are briefly described below in the order (1 through 11) listed on pages 1 and 2 of the IDNR letter dated 4/13/2007, as you requested.

1. Agreed.
2. See 3 below.
3. Groundwater analytical data from 2003, as well as data collected through 2005 have been included in the groundwater and soil data tables in the Tier 2 portion of the software.
4. The range of plume flow was changed back to its original setting of 70 degrees. A Groundwater to Plastic Water Line RID map and a GW Vapor to Confined Space Non-Residential RID map were reproduced.
5. The property is zoned non-residential. Property boundaries are provided on the enclosed maps for potential vapor receptors. Surrounding property is non-residential as provided on the city of Clive zoning map numbered 17.
6. Two separate groundwater flow direction maps were produced. One was produced using the well gauging data collected on 5/13/03 and the second map produced from the 5/14/2003 well gauging data. The maps and a groundwater elevation data table are provided as map number 22.
7. The tables (pp. 7A-8) were revised to NAR.
8. Acknowledged.
9. A new X-Y coordinates map was produced. X-Y coordinates for the capped and remaining plastic water lines are provided on the map.
10. A scaled map depicting the plastic water lines and soil and groundwater (benzene plume and TEH-D plume maps are provided) contamination locations in relationship to the plastic water lines are provided as maps numbered 20 and 21. Plume maps for the remaining contamination constituents (toluene, ethylbenzene, total xylenes, and TEH-WO) were not produced since these contaminants do not exceed site target levels in the Tier 2 software.
11. Severn Trent Laboratories was contacted; a copy of the chain of custody was obtained from the May 2003 groundwater sampling event, and a copy is provided in Appendix 26.

A monitoring plan and map are also included with the revised Tier 2. The monitoring wells that are designated for annual groundwater sampling are monitoring wells MW-2, 8, 15, and 17.

CONCLUSION

The corrective action measures taken by Flying J Inc previously (plastic water line abandonment and replacement) eliminated the high-risk plastic water line receptors from contaminants at the site and are now classified as NAR. Based on the revised Tier 2 and the non-residential property, the site is recommended for low risk classification for potential confined space at non-residential concentrations for benzene and with no Institutional Control in place.

A round of groundwater level measurements from all site related monitoring wells will be completed, and groundwater samples will be collected from the four monitoring wells (2, 8, 15, & 17) indicated in the revised Tier 2 report monitoring plan and from monitoring wells MW-1, 3 and 6 as discussed during the 6/13/2007 meeting/teleconference. The data will be used for production of a 2007 Site Monitoring Report for submittal to the IDNR by 7/30/2007. In addition, a plan for free product recovery will be provided to the IDNR by 7-30-07 as discussed during the 6/13/07 meeting/teleconference held at the IDNR.

Thank you for your consideration given to this matter. Please contact me with questions you may have at (515)-986-3466.

Sincerely,
Marek Industries, LLC
James Marek
James Marek, CPG, ICGP No. 1071
Principal Scientist

Cc Ms. Molly Gregersen – Flying J
Mr. Charles Furrey – IDNR F.O. #5

IDNR *Tier 2 Site Cleanup Report* IDNR

Leaking Underground Storage Tank Site Assessment
for the Iowa Department of Natural Resources

SITE IDENTIFICATION

LUST No.	7LTJ18	UST Registration No.	8811526

Site Name:	Flying J Travel Plaza
Site Address:	11820 Hickman Road
City:	Clive

RESPONSIBLE PARTY IDENTIFICATION

Name: Flying J Inc.		Phone #: 801-296-7718
Street: 333 West Center Street		
City: Salt Lake City	State: UT	Zip Code: 84054

Classification: ☐ High Risk ☒ Low Risk ☐ No Action Required

Recommend: ☐ Tier 3 ☐ Corrective Action   Is this a revised Tier 2 SCR? ☒ Yes ☐ No

STATEMENT OF CERTIFICATION

I, James Marek, Groundwater Professional Certification No. 1071, am familar with all applicable requirements of Iowa Code § 455B.474 and all rules and procedures adopted thereunder including, but not limited to, the Department of Natural Reources Tier 2 guidance. Based on my knowledge of those documents and information I have prepared and reviewed regarding this site, UST Registration No. 8811526, LUST No. 7LTJ18, I certify that this document is complete and accurate as provided in 567 IAC § 135.10(11) and meets the applicable requirements of the Tier 2 site assessment.

Print: Name/Address/Phone # of Certified Groundwater Professional

James Marek
Marek Industries, LLC
9588 NW 74th Place
Grimes, IA 50111 | 515-986-3466

Signature: James Marek

Date (Sent/Given to Responsible Party): 6/25/07

I certify that I have reviewed this document, appendices and attachments for submittal to the Iowa Department of Natural Resources. To the best of my knowledge, the site history and scaled site plan are accurate.

Flying J Inc.
Print: Name of Responsible Party

Signature - Responsible Party: Jeffrey W. Larsen

Date (Sent/Given to IDNR): 6-27-07

Official IDNR Use Only

Date Received:		Comment Letter Date:	
Reviewer:		Approved:	Y ☐ N ☐

TIER 2 REPORT CHECKLIST

🖫 Printed from the software

Summary Sheets:

Report Body:

🖫 **Pathway Assessment Attachments:**

Groundwater Pathways: If a receptor type must be evaluated, check the box at the left and include the Receptor ID (Identification) Map. If any potential or actual receptors are identified by the Receptor ID Map, the Receptor Evaluation Map (for each applicable chemical for each receptor) and SSTL Table (for each receptor) must be provided in the corresponding appendix. Check the boxes in the table for those items attached.

Pathway	Receptor ID Map	Receptor Evaluation Map						SSTL Tables
		B	T	E	X	D	WO	
[ ] 1a. GW Ingestion - Drinking Water Wells								
[ ] 1b. GW Ingestion - Nondrinking Water Wells								
[ ] 2. GW Ingestion - Protected GW Source								
[ ] 3a. GW Vapor - Confined Space Residential								
[X] 3b. GW Vapor - Confined Space Nonresidential	X	X				X		X
[ ] 4. GW Vapor - Potential Confined Space								
[ ] 5a. GW Vapor - Sanitary Sewer Residential								
[ ] 5b. GW Vapor - Sanitary Sewer Nonresidential								
[ ] 6. GW Vapor - Potential Sanitary Sewer								
[X] 7. GW to Plastic Water Line	X	X				X		NA
[ ] 8. Surface Water								

Soil Leaching Pathways: Check the box at the left if this receptor type must be evaluated. The Receptor ID (Identification) Map and Soil SSTL Table (for each receptor) must be provided in the corresponding appendix.

Pathway	Receptor ID Map	Soil SSTL Table
[ ] 9-1a. Soil Leaching to GW Ingestion - Drinking Water Wells		
[ ] 9-1b. Soil Leaching to GW Ingestion - Nondrinking Water Wells		
[ ] 9-2. Soil Leaching to GW Ingestion - Protected GW Source		
[ ] 9-3a. Soil Leaching to GW Vapor - Confined Space Residential		
[ ] 9-3b. Soil Leaching to GW Vapor - Confined Space Nonresidential		
[ ] 9-4. Soil Leaching to GW Vapor - Potential Confined Space		
[ ] 9-5a. Soil Leaching to GW Vapor - Sanitary Sewer Residential		
[ ] 9-5b. Soil Leaching to GW Vapor - Sanitary Sewer Nonresidential		
[ ] 9-6. Soil Leaching to GW Vapor - Potential Sanitary Sewer		
[ ] 9-7. Soil Leaching to GW to Plastic Water Line		
[ ] 9-8. Soil Leaching to Surface Water		

[ ] 10. 🖫 Soil Vapor to Enclosed Space. If this pathway must be evaluated, check the box at the left and provide the Soil Vapor Map.

[ ] 11. 🖫 Soil to Plastic Water Line. If this pathway must be evaluated, check the box at the left and provide the Soil to Plastic Water Line Map.

Bedrock Pathway Assessment Attachments:

[ ] A. Justification for Bedrock Type
[ ] B. Hydrogeologic Cross-section
[ ] C. 🖫 Hydraulic Conductivity and Total Dissolved Solids Table(s)

🖫 Pathway	B	T	E	X	TEH - D	TEH - WO
[ ] 1. GW Ingestion - Actual Map						
[ ] 2. GW Ingestion - Potential Map						
[ ] 3. Soil Gas Plume Map						
[ ] 7. GW to Plastic Water Line Map						
[ ] 8. Surface Water Map						
[ ] 9. Soil Leaching Map						
[ ] 10. Soil Vapor Map						
[ ] 11. Soil to Plastic Water Line Map						

Other Maps:

[ ] 12. 🖫 Groundwater Summary Corrective Action Map
[ ] 13. 🖫 Soil Summary Corrective Action Map
[X] 14. Monitoring Plan Map
[ ] 15. Landowner Map
[X] 16. X, Y Coordinates Map (on a Site Map)
[X] 17. Zoning Documentation
[ ] 18. 🖫 Groundwater Source Width/Length Map
[ ] 19. 🖫 Soil Source Width/Length Map
[X] 20. 🖫 Soil Contamination Plume Map
[X] 21. 🖫 Groundwater Contamination Plume Map
[X] 22. Groundwater Flow Direction Map
[X] 23. Well Survey Map (FROM IDNR DATA-BASE)
[ ] 24. Enclosed Space and Conduit Map
[ ] 25. Surface Water Map

Other Appendices:

[X] 26. Laboratory Data Sheets / Chromatograms (2003 CUSTODY CHAIN)
[ ] 27. Construction Diagrams for Soil Vapor Mon. Wells
[ ] 28. Soil Boring Logs/Mon. Well Construction Diagrams
[ ] 29. Well Logs (drinking and non-drinking water wells)
[ ] 30. Off-Site Contamination Source Support Data
[ ] 31. Tier 1 Selected Information
  [ ] Pages 5, 6 and 10 of the Report Body
  [ ] Appendix 1 - Topographic Site Map
  [ ] Appendix 4 - Field Screening Map
  [ ] App. 11 - Tank Tightness Test Results
  [ ] Appendix 14 - "K" Measurements

[ ] **32. Corrective Action Documentation** - ***optional***
  [ ] Declaration of Restrictive Covenants / Institutional Controls
  [ ] Abandoned Water Well Plugging Record(s)
  [ ] Water Supply (IDNR) / Designated County Agent Notification
  [ ] Report of Plastic Water Line Removal and / or Relocation
  [ ] Utility Company Notification
  [ ] Sanitary Sewer Notification
  [ ] Report of Excavation Activities and, if applicable, completed Land Application Notification Form.

[X] **Computer Disk** E-MAILED

TIER 2 DATA BEFORE MODELING

Free Product Present? Yes	Groundwater encountered? Yes	SCR conversion? Yes
TEH-diesel required? Yes	TEH-waste oil required? Yes	Bedrock: No,

Analytical Data							
Groundwater Maximums				Soil Maximums			
	Date	B/MW #	Concentration (ug/L)		Date	B/MW #	Concentration (mg/kg)
B	10/27/2004	MW2	9,140.	B	06/07/1995	SB-5 4-6'	<0.5
T	05/14/2003	MW1	2,800.	T	09/23/1999	SB200	1.15
E	12/21/2005	MW2	508.	E	09/23/1999	SB200	4.79
X	12/21/2005	MW2	3,910.	X	09/23/1999	SB200	204.
TEH d	12/20/2000	MW4	353,000.	TEH d	09/23/1999	SB200	9,200.
TEH wo	12/21/2005	MW2	8,590.	TEH wo	09/23/1999	SB200	<500.

Soil Gas	Benzene		Toluene		Ethylbenzene		TEH d	
	Sampled Soil Gas	Result	Sampled Soil Gas	Result	Sampled Soil Gas	Result	Sampled Soil Gas	Result
Soil Source	No		No		No		No	
Groundwater Source	No		No		No		No	

Initial Receptor Evaluation		
Ingestion-Actual	Water supply well survey within 1,000 ft? Yes	
	Drinking water wells within 1,000 ft? No	
	Non-drinking water wells within 1,000 ft? No	
Ingestion-Potential	Protected groundwater source? No	Maximum K: 0.1046 (0.1046) m/d
	Institutional control within 1,000 feet? No	Minimum TDS: 1 ( ) mg/L
Vapors	Explosive vapor levels within 500 ft? No	
	Institutional control within 500 feet? GW Sources: No Soil Sources: No	
Plastic water lines	Shallowest depth to groundwater? 1 (1.00) feet	
	Plastic water line within 200 feet of source? No	
Surface water	Designated use segment within 500 feet? No	Designation(s):
	Any surface water within 200 feet? No	Pass visual inspection? N/A

Site Hydrogeology

Flow/Migration

Head gradient (i, ft/ft)	0.039
Hydraulic conductivity (K, m/day)	0.1046
MAIN PLUME/FLOW(degrees)	135
RANGE of Plume/FLOW (degrees)	70
Upgradient (fraction)	0.021

Source Dimensions

Groundwater Plume Source Width (Sw-GW) (ft)	151
Soil Plume Source Width (Sw-Soil) (ft)	27
Groundwater Plume Source Length (W-GW) (ft)	80
Soil Plume Source Length (W-Soil) (ft)	34

Soil Parameters

		Default
Fraction organic carbon (foc) (g-C/g-Soil)	0.01	0.01
Total Porosity (Qt)(cm^3/cm^3-Soil)	0.3	0.3
Soil bulk density (ps)(g/cm^3-Soil)	1.86	1.86

Tier 2 Data Before Modeling Justification Section

Justification must be provided if diesel and/or waste oil was stored at the site and the answer given for the following question is "No": "TEH-diesel required?" and /or "TEH-waste oil required?". Justification must also be provided if the answer to "Groundwater encountered?" was answered "No" or anytime an answer given may not be obvious to the IDNR.

Free product has not been present in MW-6 or MW-4 for over 12 consecutive months. Therefore the SW - W was revised with the model to reflect current conditions at the site. No other adjustments were made to the data.

Site Hydrogeology Justification Section

Explain which points were used to determine the gradient at the site. If necessary for clarification, provide justification for the variables used in the Site Hydrogeology section here.

Head Gradient: Head gradient was estimated from three locations and averaged. The following are the estimated head gradients from each location: (1) MW12 to MW7 = 0.028 (2) MW10 to MW8 = 0.040 (3) MW11 to MW9 = 0.048
Estimated site gradient = 0.039.

Hydraulic Conductivity: Hydraulic conductivity measurements were collected from MW7, MW9, and MW12. The sampling locations are representative of the site because the wells are completed in native soil conditions; as opposed to tank basin or fuel island gravel backfills, or along utility conduits that may preferentially induce flow. The maximum resultant hydraulic conductivity value was taken from MW9 at 0.1046 m/day.

Total Dissolved Solids: There were no TDS samples collected at the site; consequently, a value of 1 was entered.

Main Plume / Flow Direction: The inferred flow is to the southeast. A value of 135 degrees was entered.

Range of Plume / Flow: The maximum angle was calculated from the GW: Source Width and Length Estimation: Free Product. An angle of +/- 35 degrees was entered in the model.

Sw - W: Model determined source width and length estimates were entered in the model. No adjustments were made to the data.

PRELIMINARY PATHWAY EVALUATION REQUIREMENTS

X=Evaluation Required *(A receptor identification plume must be generated.)*

Groundwater Pathways

Pathway	Receptor Type	B	T	E	X	TEHd	TEHwo
Groundwater Ingestion	Drinking Water Wells-DWW	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)
	Nondrinking Water Wells-NDWW	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)
	Protected Groundwater Source-PGWS	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)
Groundwater Vapor to Enclosed Space	Confined Space Residential-CSR	X	S<TL	S<TL	N/A	S<TL	N/A
	Confined Space Nonresidential-CSNR	X	S<TL	S<TL	N/A	S<TL	N/A
	Sanitary Sewer Residential-SSR	X	S<TL	S<TL	N/A	S<TL	N/A
	Sanitary Sewer Nonresidential-SSNR	S<TL	S<TL	N/A	N/A	S<TL	N/A
Groundwater to Plastic Water Line	Plastic Water Lines(PWL)	X	S<TL	S<TL	S<TL	X	S<TL
Surface Water	DU-Cold Water-B(CW)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Warm Water-B(WW)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Limited Resources-B(LR)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Lakes & Wetlands-B(LW)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Drinking Water-C	RNP	RNP	RNP	RNP	RNP	RNP
	DU-State-Owned Lake	RNP	RNP	RNP	RNP	RNP	RNP
	AT-All Surface Water	NGU	NGU	NGU	NGU	NGU	NGU
	AT-Ponds & Lakes	NGU	NGU	NGU	NGU	NGU	NGU

Soil Leaching Pathways

Pathway	Receptor Type	B	T	E	X	TEHd	TEHwo
Soil Leaching to Groundwater Ingestion	Drinking Water Wells-DWW	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)
	Nondrinking Water Wells-NDWW	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)
	Protected Groundwater Source-PGWS	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)	NAR(P1)
Soil Leaching to Groundwater Vapor to Enclosed Space	Confined Space Residential-CSR	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
	Confined Space Nonresidential-CSNR	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
	Sanitary Sewer Residential-SSR	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
	Sanitary Sewer Nonresidential-SSNR	SS<STL	SS<STL	N/A	N/A	SS<STL	N/A
Soil Leaching-GW to Plastic Water Line	Plastic Water Lines(PWL)	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
Soil Leaching to Surface Water	DU-Cold Water-B(CW)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Warm Water-B(WW)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Limited Resources-B(LR)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Lakes & Wetlands-B(LW)	RNP	RNP	RNP	RNP	RNP	RNP
	DU-Drinking Water-C	RNP	RNP	RNP	RNP	RNP	RNP
	DU-State-Owned Lake	RNP	RNP	RNP	RNP	RNP	RNP
	AT-All Surface Water	NGU	NGU	NGU	NGU	NGU	NGU
	AT-Ponds & Lakes	NGU	NGU	NGU	NGU	NGU	NGU

Other Soil Pathways

Pathway	Receptor Type	B	T	E	X	TEHd	TEHwo
Soil Vapor to Enclosed Space	Confined Space Residential-CSR	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
	Confined Space Nonresidential-CSNR	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
	Sanitary Sewer Residential-SSR	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A
	Sanitary Sewer Nonresidential-SSNR	SS<STL	SS<STL	N/A	N/A	SS<STL	N/A
Soil to Plastic Water Line	Plastic Water Lines(PWL)	SS<STL	SS<STL	SS<STL	N/A	SS<STL	N/A

Preliminary Pathway Evaluation Requirements Legend

X: Evaluation required. X (FSG): Evaluation required, failed soil gas at source.
NAR: No Action Required.
CNE: Can not evaluate, questions have not been answered for receptor type.
N/A: Chemical is not applicable.
NSC: No source concentration for the chemical.
S<TL: GW Source <= GW Target Level.
NAR(NP): Not a PGWS.
NAR(IC): IC for Enclosed Spaces within 500 feet of GW/Soil sources.
NAR(SG): Soil gas passed at GW/Soil source.
NAR(P1): Well survey done, no DWWs, no NDWWs, not a PGWS.
NAR(P2): Well survey, no DWWs, no NDWWs, PGWS, IC within 1000 feet.
NAR(P3): Well survey, no DWWs, NDWW plume(s) <= 1000 feet.
NAR(P4): Well survey, no NDWWs, NDWW plume(s) <= 1000 feet.
NAR(P5): PGWS, IC for PGWS, PGWS plume(s) <= 1000 feet.
NAR(P6): Depth to GW >= 20 feet.
NGU: There are no general use surface water bodies with 200 feet of the sources.
RNP: User has indicated (DU/GU) is not present within (500/200) feet.
VIP: Visual Inspection Passed.
SS<STL: Soil source <= Tier 2 soil default target level.
S<TL(GW): Modeled GW at Soil Source <= GW Target Level.

SOIL VAPOR/SOIL TO PLASTIC WATER LINE, TIER 2 RECEPTOR SUMMARY

		RISK							Corrective		
		Group1				TEH			Action(s)	Current	To
Type	Receptor	B	T	E	X	D	W	Conf.	Completed	Risk	Tier 3
PCSR	Source, SV	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	Source, SV	N	N	N	N/A	N	N/A	NO		N	NO
PSSR	Source, SV	N	N	N	N/A	N	N/A	NO		N	NO
PSSNR	Source, SV	N	N	N/A	N/A	N	N/A	NO		N	NO
PPWL	Source, Soil to PWL	N	N	N	N/A	N	N/A	NO		N	NO
PWL	PWL1, East - West Main	N	N	N	N/A	N	N/A	NO		N	NO
PWL	PWL2, Hydrant Main	N	N	N	N/A	N	N/A	NO		N	NO
PWL	PWL3, 12" West Main	N	N	N	N/A	N	N/A	NO	6,8	N	NO
PCSNR	North Border, North Prope	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	East Border 1, East Propert	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	East Border 2, East Propert	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	South Border, South Prope	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	West Border 1, North Part	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	West Border 2, W to E Part	N	N	N	N/A	N	N/A	NO		N	NO
PCSNR	West Border 3, South Part	N	N	N	N/A	N	N/A	NO		N	NO

Corrective Actions:
1. Plugged drinking water wells
2. Plugged non-drinking water wells
3. Notified IDNR Water Supply Section
4. Notified designated county authority
5. Notified sanitary sewer public authority
6. Notified utility company-plastic water line
7. Relocated plastic water lines
8. Replaced plastic water lines
9. Established institutional controls
10. Conducted soil excavation
11. Cleared with soil gas
12. Zoning
13. For actual PWL, GW > 3 feet

SOIL LEACHING, TIER 2 RECEPTOR SUMMARY

Type	Receptor	RISK						Conf.	Corrective Action(s) Completed	Current Risk	To Tier 3
		Group1				TEH					
		B	T	E	X	D	W				
PWL	PWL1, East - West Main	N(PE)	N(PE)	N(PE)	N/A	N(PE)	N/A	No		N	NO
PWL	PWL2, Hydrant Main	N(PE)	N(PE)	N(PE)	N/A	N(PE)	N/A	No		N	NO
PWL	PWL3, 12" West Main	N(PE)	N(PE)	N(PE)	N/A	N(PE)	N/A	No		N	NO
PGWS	No-IC	N(1)	N(1)	N(1)	N/A	N(PE)	N/A	No		N	NO
PGWS	IC	N	N	N	N	N	N	No		N	NO
PCS	No-IC	N	N	N	N	N	N	No		N	NO
PCS	IC	N	N	N	N	N	N	No		N	NO
PSS	No-IC	N	N	N	N	N	N	No		N	NO
PSS	IC	N	N	N	N	N	N	No		N	NO

Corrective Actions:
1. Plugged drinking water wells
2. Plugged non-drinking water wells
3. Notified IDNR Water Supply Section
4. Notified designated county authority
5. Notified sanitary sewer public authority
6. Notified utility company-plastic water line
7. Relocated plastic water lines
8. Replaced plastic water lines
9. Established institutional controls
10. Conducted soil excavation
11. Cleared with soil gas
12. Zoning
13. For actual PWL, GW > 3 feet

Tier 2 Groundwater Analytical Data (ug/L), V-2.51, 7LTJ18

Boring/ Well #	Date Sampled	Elevations(ASL)				Group 1				Group 2			FP	FP
		Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO	Naph.	Type	Default?
MW1	10/30/1990	880.90	N	880.70	N	3,100.	10,000.	3,100.	17,000.	N	N	N	N	N
MW1	07/30/1992	880.90	N	880.70	877.71	2,300.	150.	580.	1,300.	5,200.	<2,000.	N	N	N
MW1	04/19/1994	880.90	N	880.70	877.92	190.	<20.	210.	780.	N	N	N	D	N
MW1	07/11/1994	880.90	N	880.70	877.30	240.	200.	500.	2,000.	N	N	N	D	N
MW1	05/13/1996	880.90	N	880.70	N	140.	<100.	<100.	480.	N	N	N	D	N
MW1	04/30/1999	882.85	882.65	882.65	880.31	3,500.	170.	300.	480.	57,000.	<8,000.	N	D	N
MW1	12/20/2000	882.85	882.65	882.61	877.28	3,490.	16.	409.	535.	2,540,000.	<100,000.	N	D	N
MW1	12/20/2001	882.85	882.65	882.61	879.18	2,280.	31.	170.	237.	1,390,000.	<50,000.	N	D	N
MW1	05/14/2003	882.85	882.65	882.65	880.66	4,500.	2,800.	410.	2,100.	20,000.	<1,500.	N	U	N
MW2	10/30/1990	881.30	N	880.90	N	1,700.	1,400.	300.	1,400.	N	N	N	D	N
MW2	07/30/1992	881.30	N	880.90	877.76	270.	65.	230.	850.	4,700.	<2,000.	N	D	N
MW2	04/19/1994	881.30	N	880.90	878.03	31.	<20.	<20.	37.	N	N	N	D	N
MW2	07/11/1994	881.30	N	880.90	877.30	550.	260.	550.	3,700.	N	N	N	D	N
MW2	05/22/1995	881.30	N	880.90	N	N	N	N	N	200,000.	<40,000.	N	D	N
MW2	06/07/1995	881.30	N	880.90	875.53	200.	<20.	83.	420.	N	N	N	D	N
MW2	04/04/1996	881.30	N	880.90	879.13	230.	130.	50.4	240.	N	N	N	D	N
MW2	05/13/1996	881.30	N	880.90	N	18,000.	20,000.	2,300.	9,300.	N	N	N	D	N
MW2	04/25/1997	881.30	N	880.90	879.80	150.	<200.	<200.	770.	N	N	N	D	N
MW2	04/20/1998	881.30	N	880.90	879.20	11,000.	8,600.	900.	5,900.	N	N	N	D	N
MW2	04/20/1999	883.21	882.85	882.81	878.19	4,100.	490.	530.	3,900.	29,000.	<400.	N	D	N
MW2	10/28/1999	883.21	882.85	882.81	879.28	4,200.	1,100.	2,400.	49,000.	1,300,000.	<76,000.	N	D	N
MW2	12/20/2000	883.21	882.85	882.81	877.36	2,460.	56.	823.	2,060.	2,560,000.	<50,000.	N	D	N
MW2	12/20/2001	883.21	882.85	882.81	879.16	2,480.	3,140.	634.	2,720.	3,770,000.	<5,000.	N	D	N
MW2	05/14/2003	883.21	882.85	882.81	873.16	7,300.	3,100.	590.	2,000.	1,800.	<2,600.	N	U	N
MW2	10/27/2004	883.21	882.85	882.81	873.16	9,140.	287.	672.	1,200.	42,100.	3,320.	N	D	N
MW2	12/21/2005	883.21	882.85	882.81	878.44	7,510.	260.	508.	3,910.	83,400.	8,590.	N	D	N
MW3	10/30/1990	880.10	N	879.80	N	<200.	<200.	<200.	1,000.	340,000.	N	N	D	N
MW3	07/30/1992	880.10	N	879.80	877.35	1,300.	35.	82.	240.	71,000.	<20,000.	N	N	N
MW3	04/19/1994	880.10	N	879.80	877.70	120.	<20.	69.	160.	N	N	N	D	N
MW3	07/11/1994	880.10	N	879.80	877.01	190.	120.	230.	1,600.	N	N	N	D	N
MW3	05/13/1996	880.10	N	879.80	N	300.	12.	110.	170.	N	N	N	D	N
MW3	04/30/1999	882.64	882.05	882.34	880.26	1,700.	<20.	100.	180.	80,000.	<16,000.	N	D	N
MW3	12/20/2000	882.64	882.05	882.01	877.36	2,580.	13.	258.	322.	622,000.	<200.	N	D	N
MW3	12/20/2001	882.64	882.05	882.01	879.09	1,600.	4.	158.	60.	32,700.	<200.	N	D	N
MW3	05/13/2003	882.64	882.05	882.01	880.72	1,200.	12.	80.	110.	14,000.	1,400.	N	D	N
MW4	10/30/1990	880.30	N	879.80	N	13.	3.	<2.	17.	36,000.	N	N	N	N
MW4	07/30/1992	880.30	N	879.80	N	78.	27.	54.	67.	60,000.	<20,000.	N	N	N
MW4	04/19/1994	880.30	N	879.80	878.01	49.	<20.	23.	110.	N	N	N	N	N

Tier 2 Groundwater Analytical Data (ug/L), V-2.51, 7LTJ18

Boring/	Date	Elevations(ASL)				Group 1				Group 2			FP	FP
Well #	Sampled	Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO	Naph.	Type	Default?
MW4	07/11/1994	880.30	N	879.80	877.26	95.	74.	57.	210.	N	N	N	N	N
MW4	06/07/1995	880.30	N	879.80	876.66	40.	<20.	<20.	300.	N	N	N	N	N
MW4	04/04/1996	880.30	N	879.80	879.23	6.6	13.4	20.4	200.	N	N	N	N	N
MW4	05/13/1996	880.30	N	879.80	N	<4.	7.	12.	190.	N	N	N	N	N
MW4	04/25/1997	880.30	N	879.80	878.40	13,000.	14,000.	3,000.	17,000.	N	N	N	N	N
MW4	04/20/1998	880.30	N	879.80	879.30	230.	15.	35.	88.	N	N	N	N	N
MW4	04/20/1999	882.03	881.71	881.53	878.27	400.	4.	17.	36.	57,000.	<400.	N	N	N
MW4	12/20/2000	882.03	881.71	881.53	877.26	531.	31.	66.	154.	353,000.	<200.	N	N	N
MW4	05/14/2003	882.03	881.71	881.53	880.65	700.	9.1	26.	32.	13,000.	<2,700.	N	N	N
B-IA	01/16/1991	N	N	N	N	<4.	<4.	<4.	<4.	N	N	N	N	N
MW5	07/30/1992	879.90	N	869.90	N	2.3	<2.	<2.	<2.	<2,000.	<2,000.	N	N	N
MW5	04/19/1994	879.90	N	869.90	876.67	<2.	<2.	<2.	<2.	N	N	N	N	N
MW5	07/11/1994	879.90	N	869.90	874.92	<2.	33.	<2.	<2.	N	N	N	N	N
MW5A	06/07/1995	879.90	N	869.90	873.71	<2.	<2.	<2.	<2.	N	N	N	N	N
MW5A	04/04/1996	879.90	N	869.90	873.04	<2.	<2.	<2.	<2.	N	N	N	N	N
MW5A	05/13/1996	879.90	N	869.90	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW5A	04/25/1997	879.90	N	869.90	874.10	<2.	<2.	<2.	<3.	N	N	N	N	N
MW5A	04/20/1998	879.90	N	869.90	874.65	<2.	<2.	<2.	<3.	N	N	N	N	N
MW5A	04/20/1999	881.93	881.74	871.93	875.67	<2.	<2.	<2.	<2.	<1,000.	2,700.	N	N	N
MW5A	12/20/2000	881.93	881.74	871.93	875.25	<1.	<1.	<1.	5.	1,170.	<200.	N	N	N
MW5A	12/20/2001	881.93	881.44	871.93	875.89	<1.	<1.	<1.	<2.	63,500.	<200.	N	N	N
MW5A	05/14/2003	881.93	881.74	871.93	874.13	6.5	<1.	16.	24.	2,300.	<260.	N	N	N
MW6	07/30/1992	881.00	N	875.70	N	14.	35.	5.4	150.	3,900.	<2,000.	N	D	N
MW6	04/19/1994	881.00	N	875.70	873.28	6.6	2.4	15.	32.	N	N	N	D	N
MW6	07/11/1994	881.00	N	875.70	871.90	3.7	2.9	4.3	3.7	N	N	N	D	N
MW6	06/07/1995	881.00	N	875.70	864.09	16.	<10.	44.	140.	N	N	N	D	N
MW6	04/04/1996	881.00	N	875.70	869.88	N	N	N	N	N	N	N	D	N
MW6	05/13/1996	881.00	N	875.70	N	11.	14.	400.	3,300.	N	N	N	D	N
MW6	04/25/1997	881.00	N	875.70	876.20	25.	<20.	<20.	95.	N	N	N	D	N
MW6	04/20/1998	881.00	N	875.70	873.63	26.	4.2	7.8	41.	N	N	N	N	N
MW6	04/20/1999	882.85	882.81	877.55	873.79	4.	2.5	3.5	<4.5	200,000.	<400.	N	N	N
MW6	05/14/2003	882.85	882.81	877.55	870.51	530.	3.8	130.	8.	2,300.	260.	N	N	N
MW7	07/30/1992	880.90	N	875.70	N	<2.	13.	<2.	<2.	<2,000.	<2,000.	N	N	N
MW7	04/19/1994	880.90	N	875.70	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW7	07/11/1994	880.90	N	875.70	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW7	05/13/1996	880.90	N	875.70	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW7	04/30/1999	882.83	882.79	877.63	876.15	540.	23.	21.	17.	<800.	7,000.	N	N	N
MW7	05/13/2007	882.83	882.79	877.63	874.29	2,400.	73.	190.	750.	8,500.	1,500.	N	N	N

Tier 2 Groundwater Analytical Data (ug/L), V-2.51, 7LTJ18

Boring/	Date	Elevations(ASL)				Group 1				Group 2			FP	FP
Well #	Sampled	Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO	Naph.	Type	Default?
MW8	07/30/1992	881.10	N	871.40	863.78	<2.	6.8	<2.	<2.	<2,000.	<2,000.	N	N	N
MW8	04/19/1994	881.10	N	871.40	863.56	<2.	<2.	<2.	<2.	N	N	N	N	N
MW8	07/11/1994	881.10	N	871.40	864.15	<2.	<2.	<2.	<2.	N	N	N	N	N
MW8	05/13/1996	881.10	N	871.40	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW8	04/30/1999	882.97	882.75	873.27	866.40	1,150.	<2.	<2.	<3.	<400.	<400.	N	N	N
MW8	05/13/2007	882.97	882.75	873.27	866.40	1,300.	4.5	10.	10.	690.	250.	N	N	N
MW9	07/30/1992	875.20	N	865.10	862.52	<2.	<2.	<2.	<2.	<2,000.	<2,000.	N	N	N
MW9	04/19/1994	875.20	N	865.10	862.84	<2.	<2.	<2.	<2.	N	N	N	N	N
MW9	05/13/1996	875.20	N	865.10	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW9	04/30/1999	877.17	877.09	867.07	865.52	6.2	<2.	<2.	11.	<400.	1,100.	N	N	N
MW10	07/12/1994	891.70	N	876.70	876.95	2.3	<2.	<2.	<2.	N	N	N	N	N
MW10	05/13/1996	891.70	N	876.70	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW10	02/05/1999	893.67	893.10	878.67	877.47	<0.2	<0.2	<0.3	<0.9	16,000.	<100.	N	N	N
MW10	05/13/2003	893.67	893.10	878.67	877.52	1.	1.	1.	1.	340.	290.	N	N	N
MW11	07/12/1994	889.30	N	875.30	875.71	<2.	<2.	<2.	<2.	N	N	N	N	N
MW11	05/13/1996	889.30	N	875.30	N	14.	23.	<2.	10.	N	N	N	N	N
MW11	02/05/1999	890.71	890.16	876.71	876.12	<0.2	<0.2	<0.3	<0.9	<100.	<100.	N	N	N
MW12	07/12/1994	894.10	N	881.60	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW12	05/13/1996	894.10	N	881.60	N	<2.	<2.	<2.	<2.	N	N	N	N	N
MW12	02/05/1999	896.16	895.86	883.66	878.45	0.6	<0.2	1.1	1.5	800.	<100.	N	N	N
MW12	12/20/2000	896.16	895.86	883.66	877.69	<1.	<1.	<1.	<2.	<100.	<200.	N	N	N
MW12	12/20/2001	896.16	895.86	883.66	877.23	<1.	<1.	<1.	<2.	<100.	<200.	N	N	N
MW12	05/13/2003	896.16	895.86	883.66	882.12	<10.	<10.	<10.	<10.	<120.	<240.	N	N	N
MW13	05/03/1999	882.56	882.03	880.03	869.04	<2.	<2.	<2.	<3.	<400.	<400.	N	N	N
MW14	04/30/1999	881.89	881.42	879.42	874.20	<2.	<2.	<2.	<3.	<400.	<400.	N	N	N
MW15	05/03/1999	882.58	882.34	878.84	875.98	24.5	<2.	2.8	<3.	1,200.	<400.	N	N	N
MW15	12/20/2000	882.58	882.34	878.84	875.60	114.	4.	5.	20.	3,020.	<200.	N	N	N
MW15	12/20/2001	882.58	882.34	878.84	876.11	19.	<1.	<1.	<2.	38,100.	<200.	N	N	N
MW15	05/13/2003	882.58	882.34	878.84	876.83	<10.	<10.	<10.	<10.	5,200.	<1,300.	N	N	N
MW15	10/27/2004	882.58	882.34	878.84	876.83	81.4	3.2	<1.	3.5	<380.	<380.	N	N	N
MW15	12/21/2005	882.58	882.34	878.84	875.78	149.	1.06	<1.	<3.	772.	<655.	N	N	N
MW16	04/30/1999	872.61	870.99	868.99	858.02	<2.	<2.	<2.	<3.	<400.	<400.	N	N	N
MW17	06/11/1999	875.71	875.13	870.13	872.96	<2.	<2.	<2.	<3.	<380.	<380.	N	N	N
MW18	09/23/1999	893.68	893.22	883.68	878.66	<1.	<1.	<1.	<3.	730.	<380.	N	N	N
MW19	09/23/1999	891.96	891.58	881.96	876.35	<1.	<1.	<1.	<3.	<380.	<380.	N	N	N
MW21	09/23/1999	894.66	894.37	884.66	876.77	<1.	<1.	<1.	<3.	760.	<380.	N	N	N

Tier 2 Groundwater Analytical Data (ug/L), V-2.51, 7LTJ18

Boring/	Date	Elevations(ASL)				Group 1				Group 2			FP	FP
Well #	Sampled	Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO	Naph.	Type	Default?
MW20	10/13/1999	884.19	883.79	882.19	880.25	<1.	<1.	<1.	<3.	<380.	<380.	N	N	N

Groundwater Monitoring Plan Summary Table: Benzene **V-2.51, 7LTJ18**

MW Location	Actual (ug/L)	SSTL (ug/L)	Institutional Control	Receptor Label	Description	Type	Risk	Minimum Frequency
MW2	9,140.							
		4,780.	No	North Border	North Propert	S	L	Annual
MW15	81.							
		4,780.	No	PCS	PCS	TG-Down Gra	L	Annual
MW8	1,300.							
		4,780.	No	North Border	North Propert	T-ML	L	Annual
MW17	2.							
		4,780.	No	PCS	PCS	G-Down Grad	L	Annual

Groundwater Monitoring Plan Summary Table: TEH-D **V-2.51, 7LTJ18**

MW Location	Actual (ug/L)	SSTL (ug/L)	Institutional Control	Receptor Label	Description	Type	Risk	Minimum Frequency

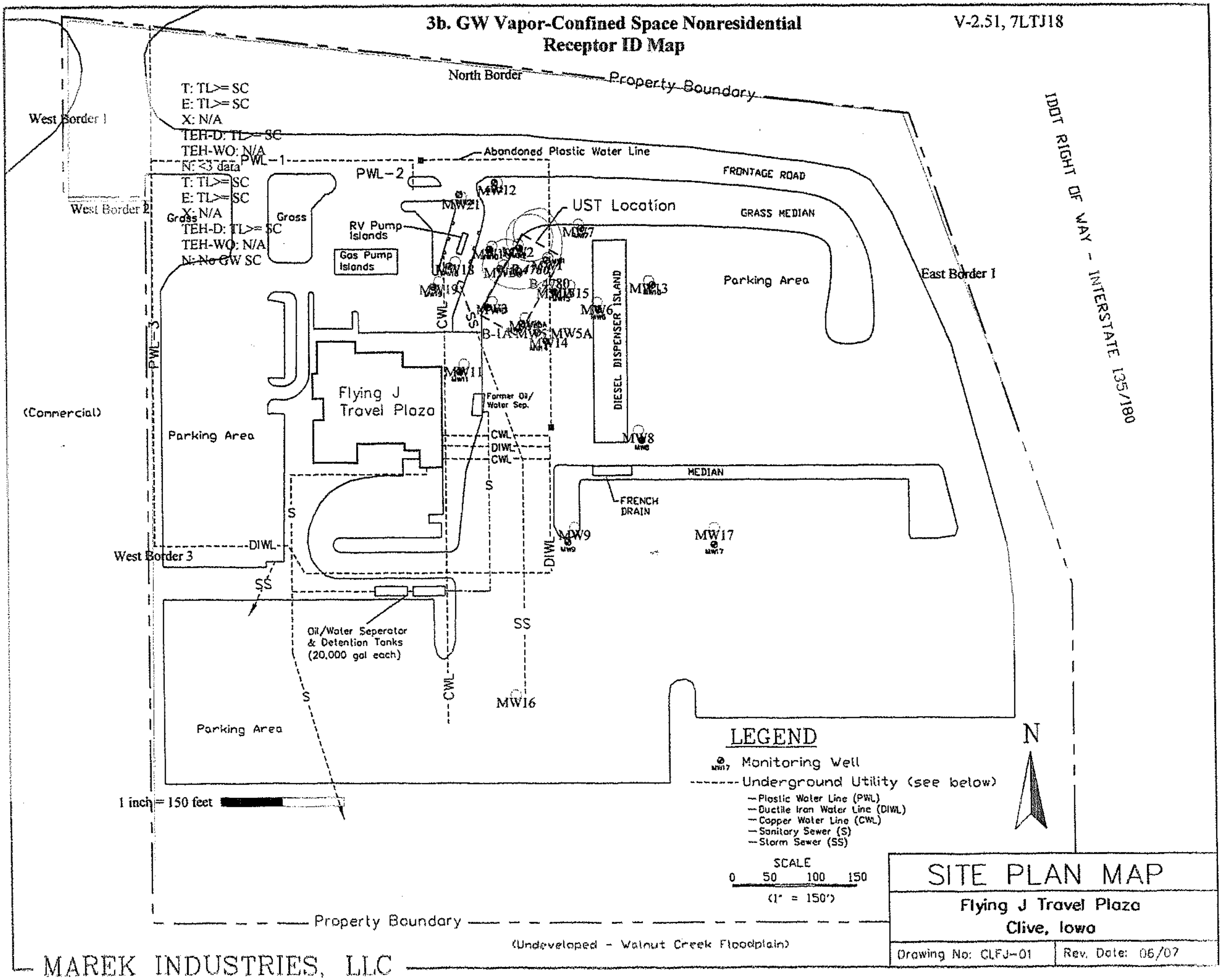
Tier 2, Groundwater Monitoring Plan Comments/Justification **V-2.51, 7LTJ18**

Monitoring Wells MW-2, 8, 15, and 17 will be sampled as determined to be appropriate for annual SMR monitoring at this site. The samples will be analyzed by Iowa Methods OA-1 and OA-2 even though the software only indicates that benzene needs to be monitored, as free product (mainly diesel) exists in the UST Basin .

3b. GW Vapor–Confined Space Non-Residential RID Map

3b. GW Vapor-Confined Space Nonresidential Receptor ID Map

V-2.51, 7LTJ18



GW Source, Potential Confined Space, Benzene

Risk Classification Summary

	Benzene	Toluene	EthylBen.	Xylenes	TEH-D	TEH-WO	Naph.
NIC	L	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)
IC	N	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)

Monitoring Summary for Benzene

well	Actual	Criteria	NIC-SSTL	IC-SSTL	Receptor
MW2	9,140.	S	4,780.	85,828.	North Border
MW15	81.4	TG-Down Gradient	4,780.	NA	PCS
MW17	<2.	G-Down Gradient	4,780.	NA	PCS
MW8	1,300.	T-ML	4,780.	Out of Range	North Border

GW Source, Potential Confined Space, TEH-D

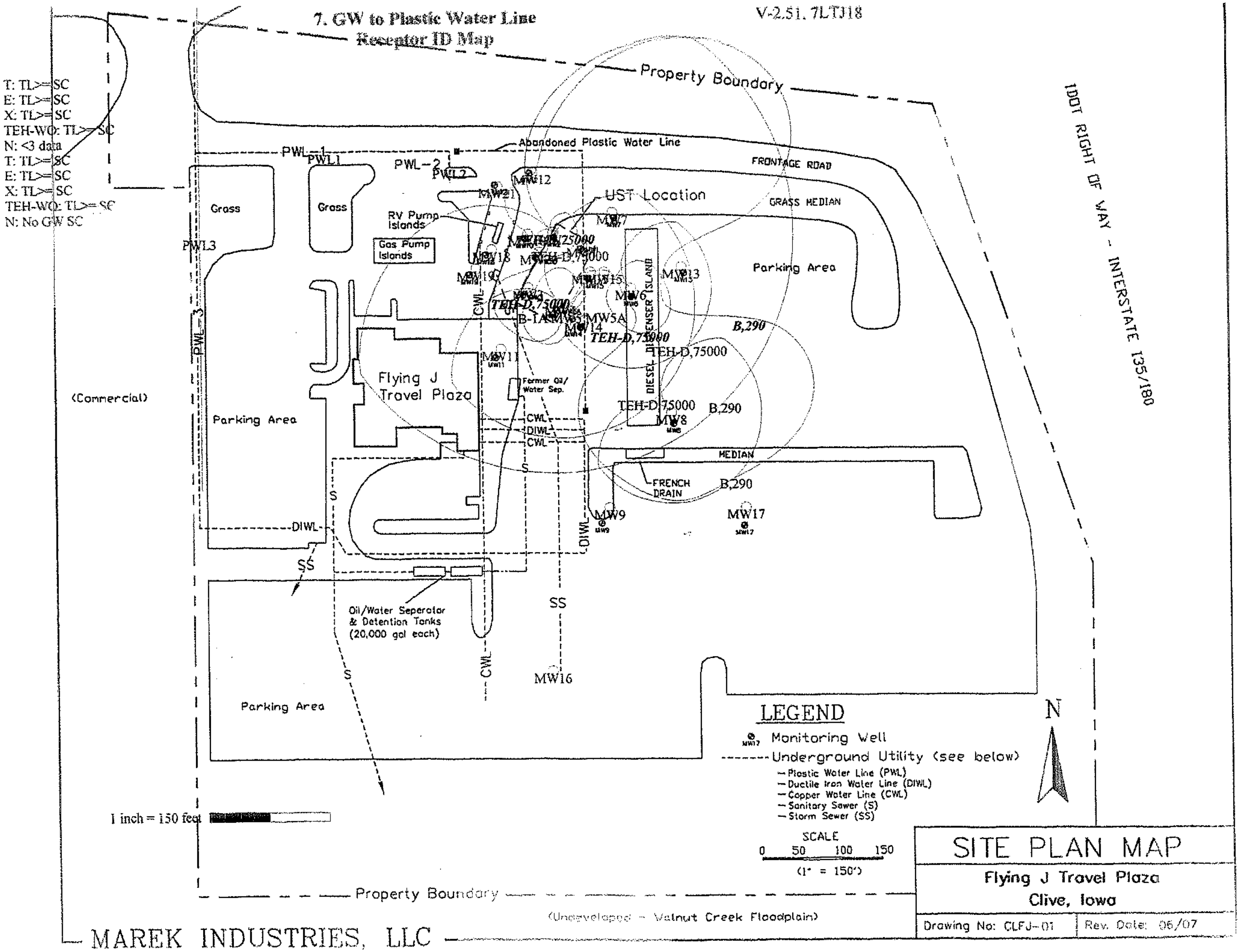
Risk Classification Summary

	Benzene	Toluene	EthylBen.	Xylenes	TEH-D	TEH-WO	Naph.
NIC	L	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)
IC	N	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)	N(PE)

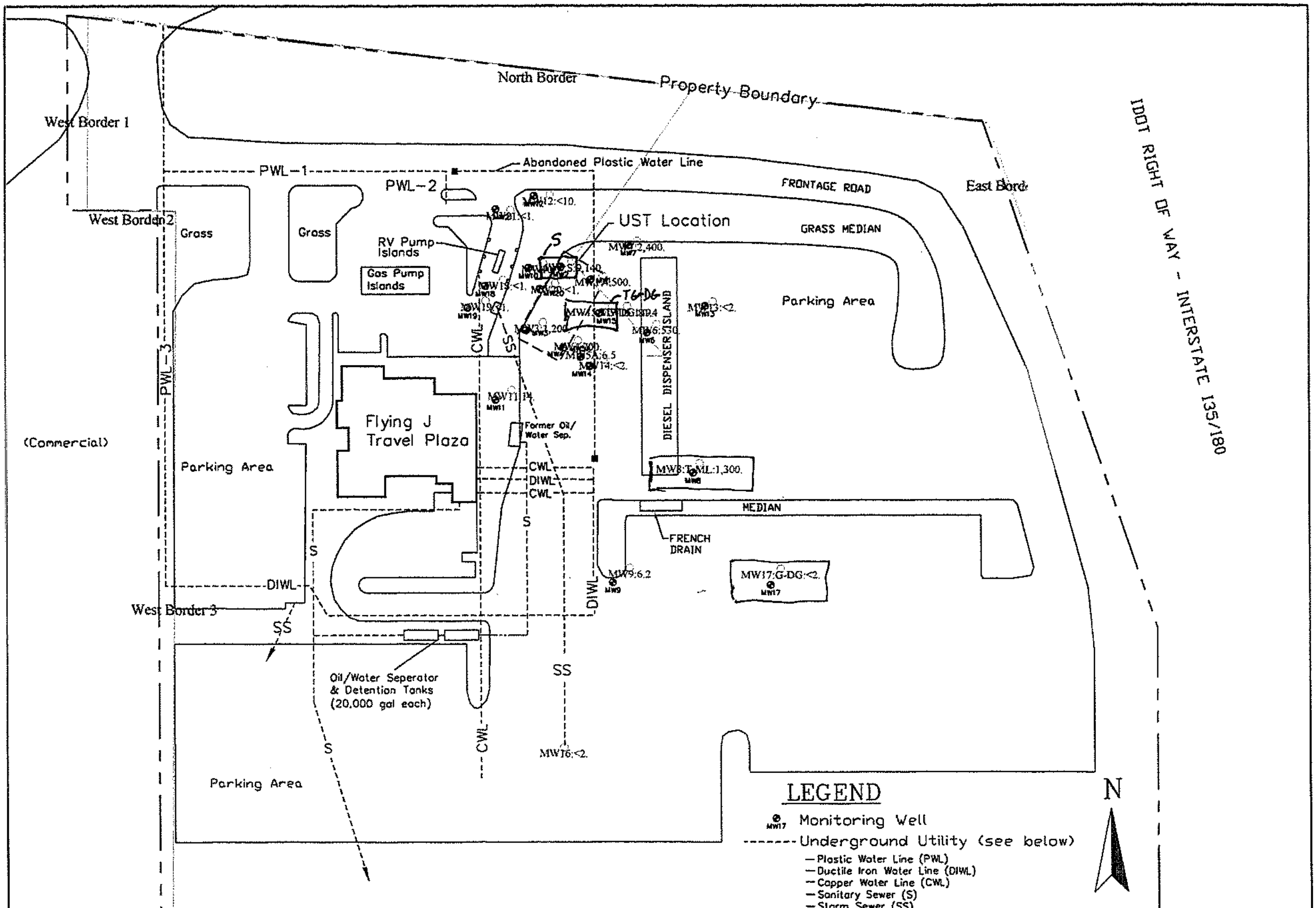
Monitoring Summary for TEH-D

well	Actual	Criteria	NIC-SSTL	IC-SSTL	Receptor
MW4	353,000.	S	5,726,460.	80,791,810.	North Border

7. GW to Plastic Water Line RID Map


7. GW to Plastic Water Line
Receptor ID Map
V-2.51, 7LTJ18
T: TL>=SC
E: TL>=SC
X: TL>=SC
TEH-WO: TL>=SC
N: <3 data
T: TL>=SC
E: TL>=SC
X: TL>=SC
TEH-WO: TL>=SC
N: No GW SC
Property Boundary
IDOT RIGHT OF WAY - INTERSTATE 135/180
Abandoned Plastic Water Line
FRONTAGE ROAD
GRASS MEDIAN
UST Location
Parking Area
Grass
RV Pump Islands
Gas Pump Islands
DIESEL DISPENSER ISLAND
Flying J Travel Plaza
Former Oil/Water Sep.
(Commercial)
MEDIAN
FRENCH DRAIN
Oil/Water Seperator & Detention Tanks (20,000 gal each)
MW9
MW17
MW16
MW8
MW11
MW12
MW13
MW14
MW5A
MW6
MW18
MW21
TEH-D,75000
B,290
PWL-1
PWL-2
PWL-3
PWL1
PWL2
PWL3
CWL
DIWL
S
SS
1 inch = 150 feet
LEGEND
Monitoring Well
Underground Utility (see below)
— Plastic Water Line (PWL)
— Ductile Iron Water Line (DIWL)
— Copper Water Line (CWL)
— Sanitary Sewer (S)
— Storm Sewer (SS)
SCALE
0 50 100 150
(1" = 150')
N
SITE PLAN MAP
Flying J Travel Plaza
Clive, Iowa
Drawing No: CLFJ-01
Rev. Date: 06/07
(Undeveloped - Walnut Creek Floodplain)
MAREK INDUSTRIES, LLC

14. Monitoring Plan Map



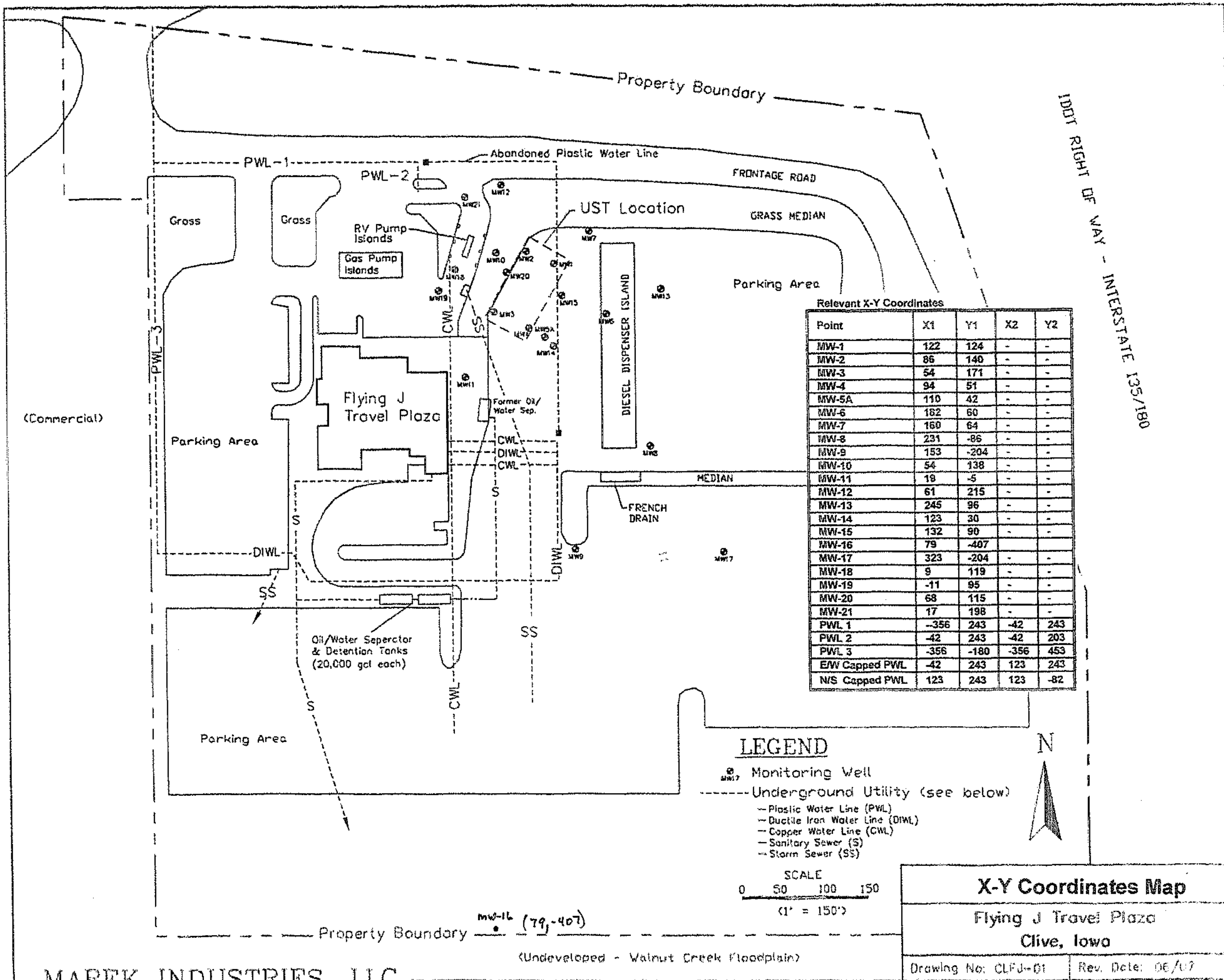
MONITORING PLAN MAP

Flying J Travel Plaza
Clive, Iowa

Drawing No: CLFJ-01 | Rev. Date: 06/07

MAREK INDUSTRIES, LLC

16. X-Y Coordinates Map



Relevant X-Y Coordinates

Point	X1	Y1	X2	Y2
MW-1	122	124	-	-
MW-2	86	140	-	-
MW-3	54	171	-	-
MW-4	94	51	-	-
MW-5A	110	42	-	-
MW-6	162	60	-	-
MW-7	160	64	-	-
MW-8	231	-86	-	-
MW-9	153	-204	-	-
MW-10	54	138	-	-
MW-11	19	-5	-	-
MW-12	61	215	-	-
MW-13	245	96	-	-
MW-14	123	30	-	-
MW-15	132	90	-	-
MW-16	79	-407		
MW-17	323	-204	-	-
MW-18	9	119	-	-
MW-19	-11	95	-	-
MW-20	68	115	-	-
MW-21	17	198	-	-
PWL 1	-356	243	-42	243
PWL 2	-42	243	-42	203
PWL 3	-356	-180	-356	453
E/W Capped PWL	-42	243	123	243
N/S Capped PWL	123	243	123	-82

X-Y Coordinates Map

Flying J Travel Plaza
Clive, Iowa

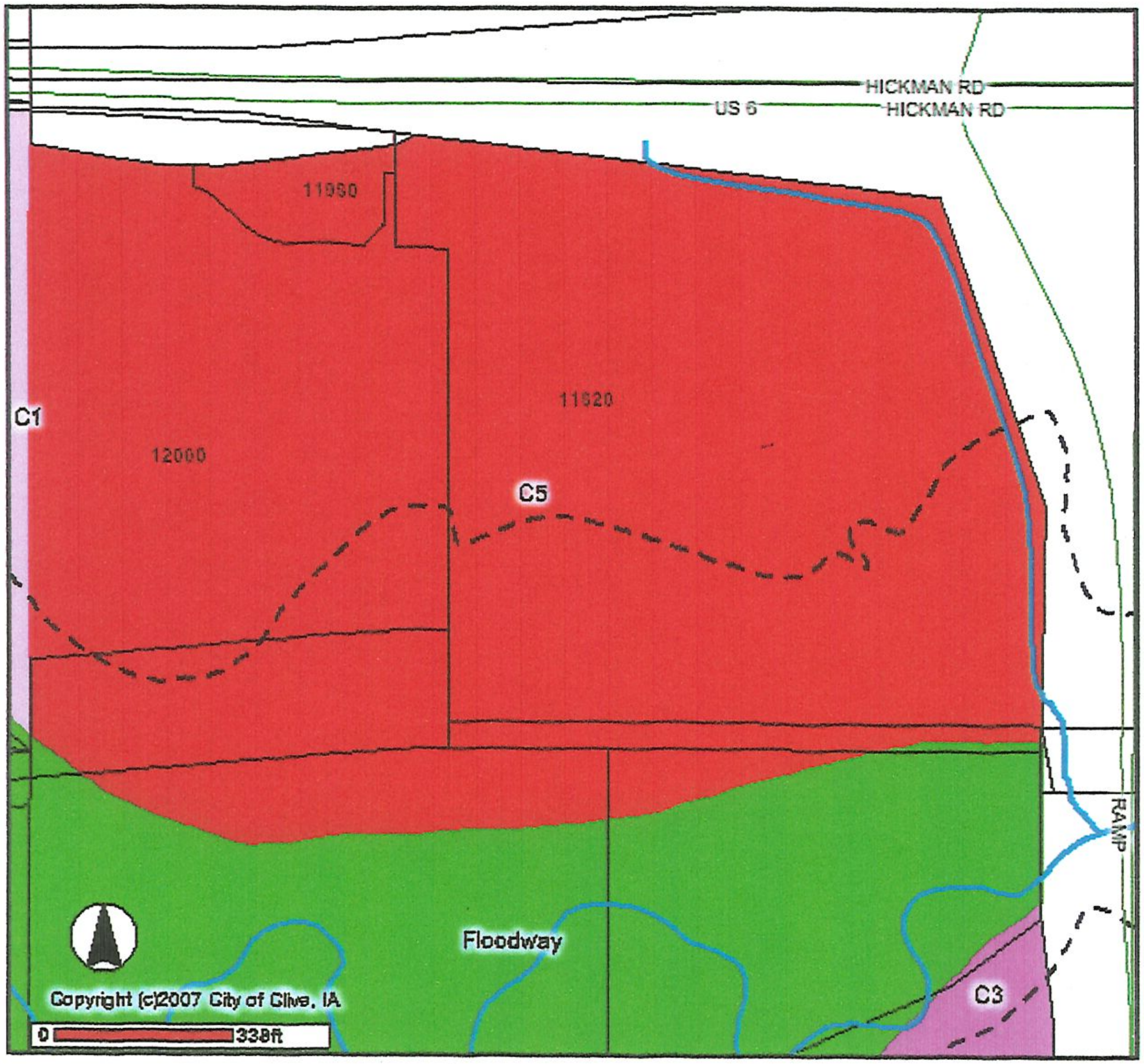
Drawing No: CLFJ-01 | Rev. Date: 06/07

MAREK INDUSTRIES, LLC

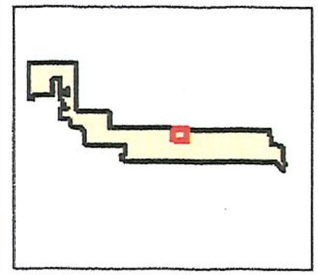
17. Zoning Documentation

City of Clive Zoning Map

Print Close



Clive Address Points
Creeks
Streets
Parcels
Railroads
Flood Fringe
Zoning and Floodway
C1
C2
C3
C4
C5
Floodway
M1

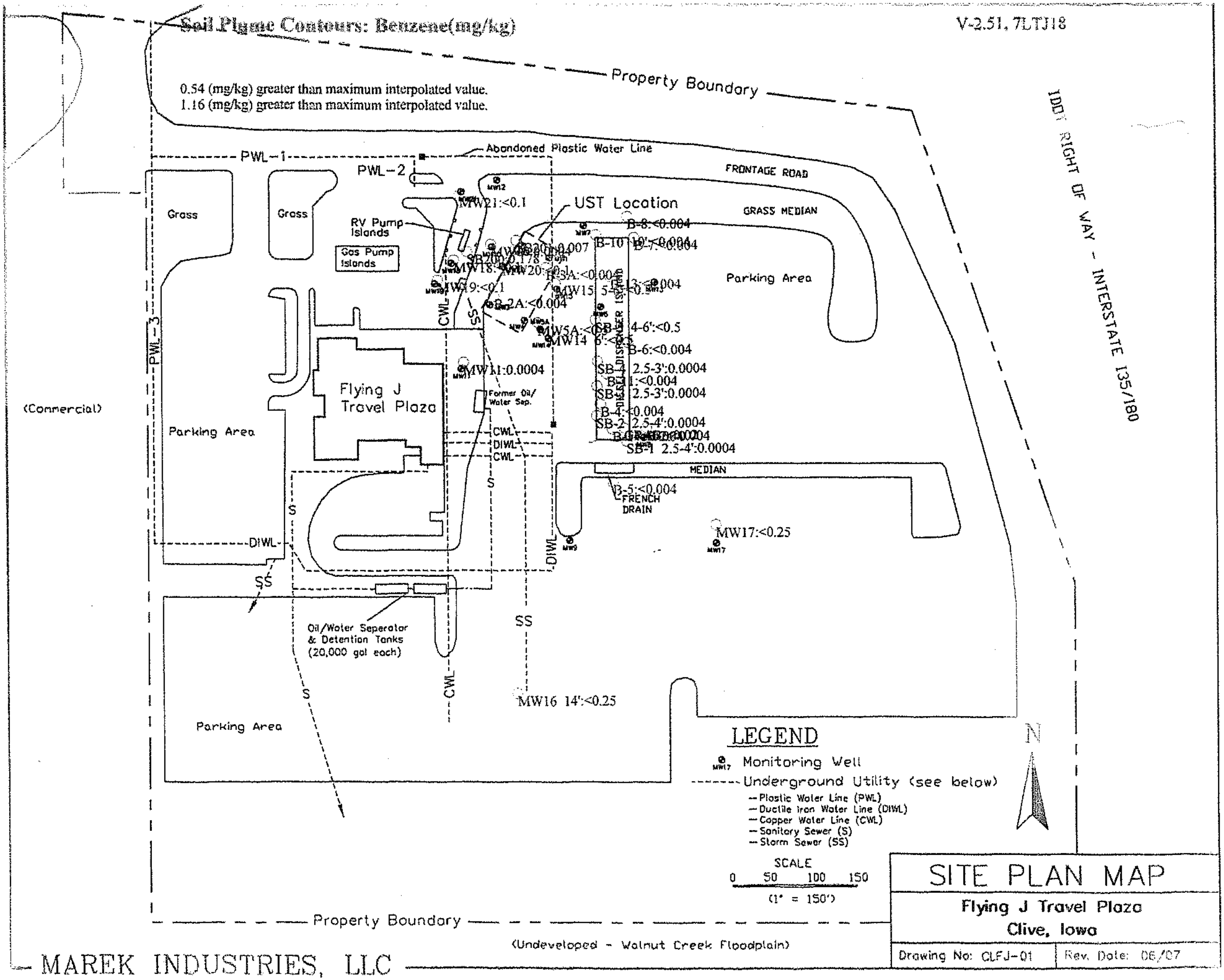


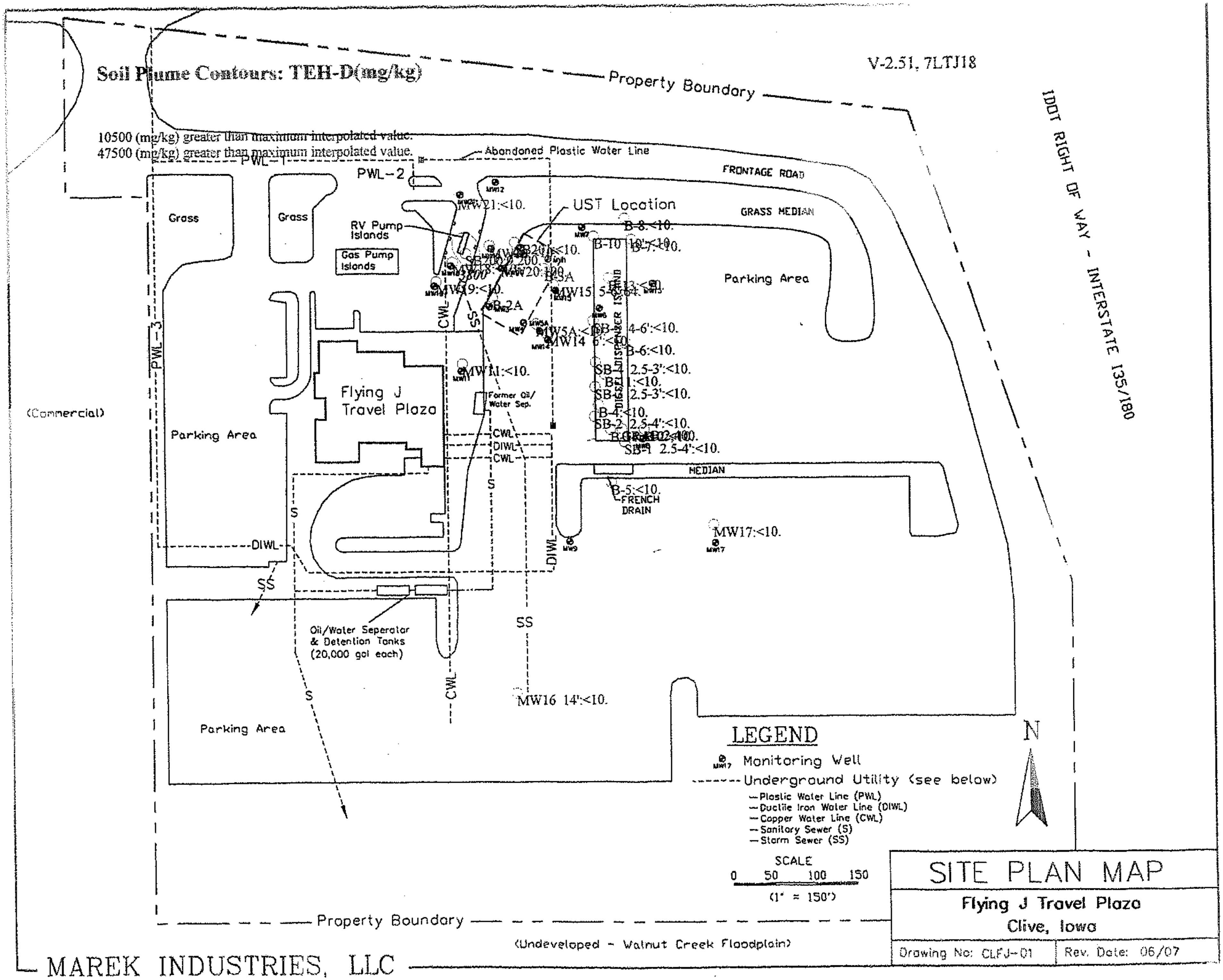
Clive iMap

DISCLAIMER
This map was prepared using the City of Clive geographic information system. All information is believed accurate but is NOT guaranteed to be without error. This map and its underlying data is intended to be used as a general index to land related information and is not intended for detailed, site-specific analysis.

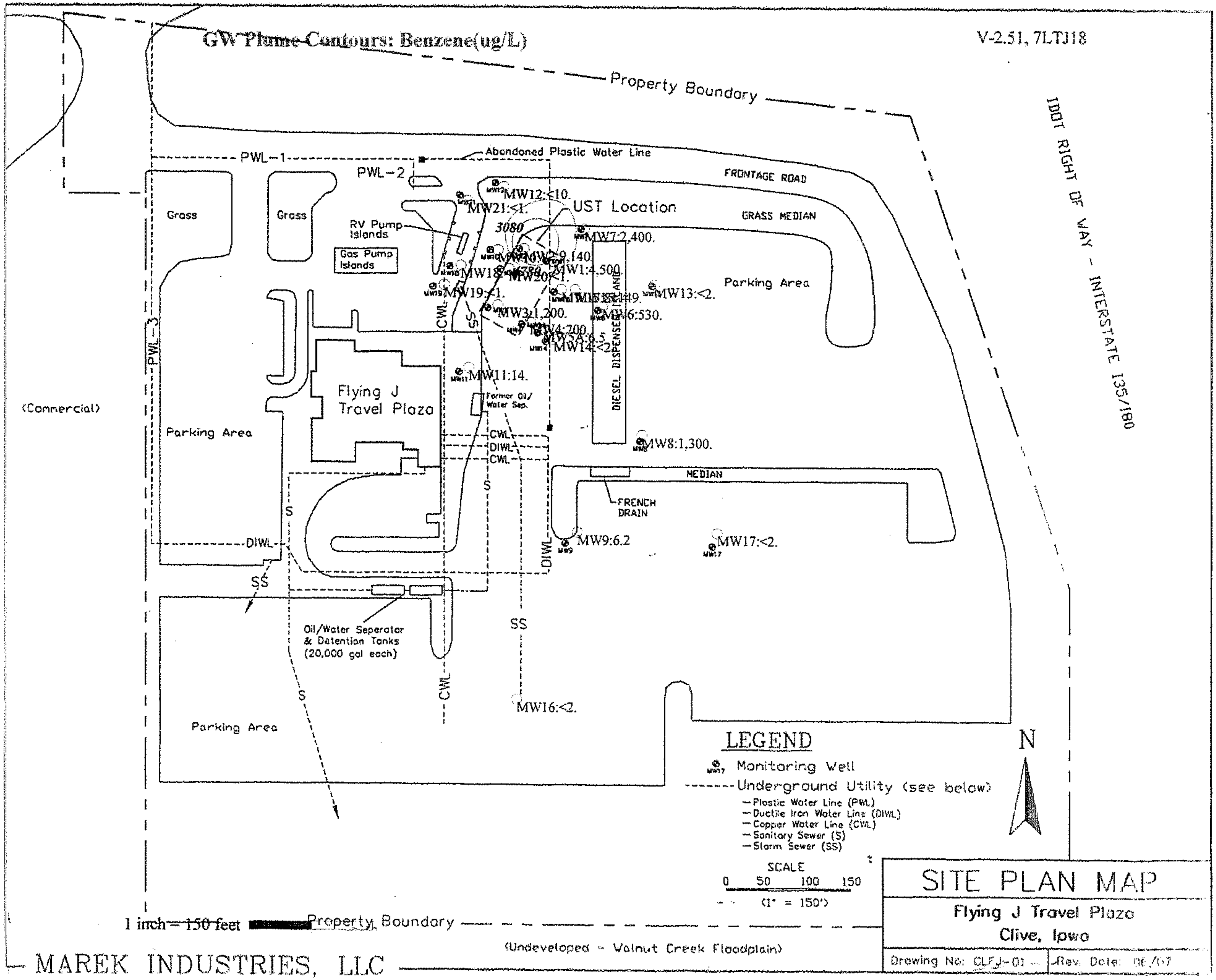
Printed: 06/18/2007 02:45:10 PM

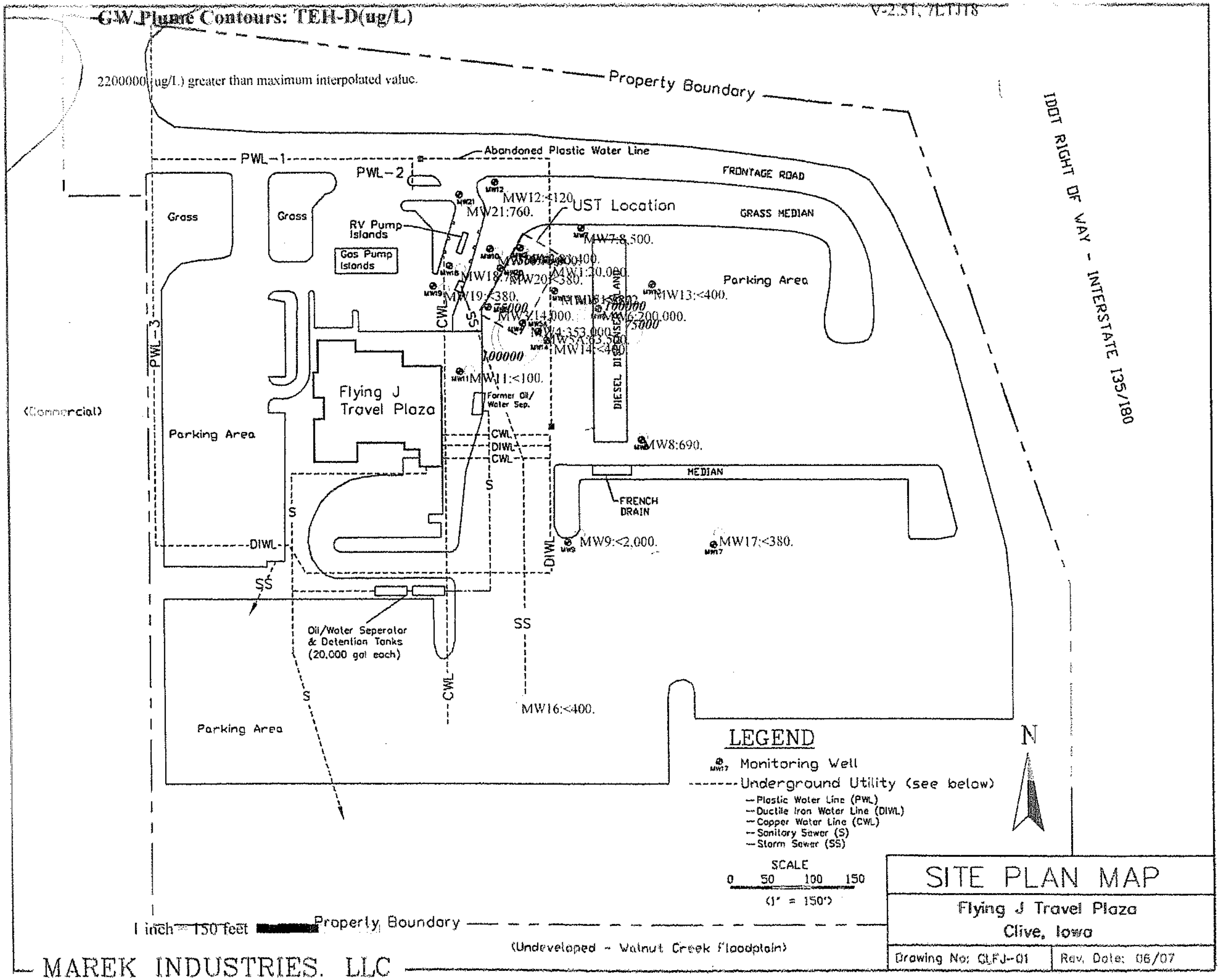
20. Soil Contamination Maps (Benzene, TEH-D)


Soil Plume Contours: Benzene(mg/kg)
V-2.51, 7LTJ18
0.54 (mg/kg) greater than maximum interpolated value.
1.16 (mg/kg) greater than maximum interpolated value.
Property Boundary
IDOT RIGHT OF WAY - INTERSTATE I35/I80
Abandoned Plastic Water Line
PWL-1
PWL-2
PWL-3
FRONTAGE ROAD
GRASS MEDIAN
UST Location
Grass
Grass
RV Pump Islands
Gas Pump Islands
Parking Area
MW21:<0.1
MW19:<0.1
B-2A:<0.004
MW15
B-8:<0.004
B-4-6':<0.5
B-6:<0.004
SB-4 2.5-3':0.0004
B-11:<0.004
2.5-3':0.0004
B-4:<0.004
SB-2 2.5-4':0.0004
SB-1 2.5-4':0.0004
MW11:0.0004
Former Oil/Water Sep.
Flying J Travel Plaza
(Commercial)
Parking Area
CWL
DIWL
CWL
MEDIAN
B-5:<0.004
FRENCH DRAIN
MW17:<0.25
DIWL
SS
S
Oil/Water Seperator & Detention Tanks (20,000 gal each)
SS
MW16 14':<0.25
Parking Area
LEGEND
Monitoring Well
Underground Utility (see below)
— Plastic Water Line (PWL)
— Ductile Iron Water Line (DIWL)
— Copper Water Line (CWL)
— Sanitary Sewer (S)
— Storm Sewer (SS)
N
SCALE
0 50 100 150
(1" = 150')
SITE PLAN MAP
Flying J Travel Plaza
Clive, Iowa
Drawing No: CLFJ-01
Rev. Date: 06/07
(Undeveloped - Walnut Creek Floodplain)
MAREK INDUSTRIES, LLC

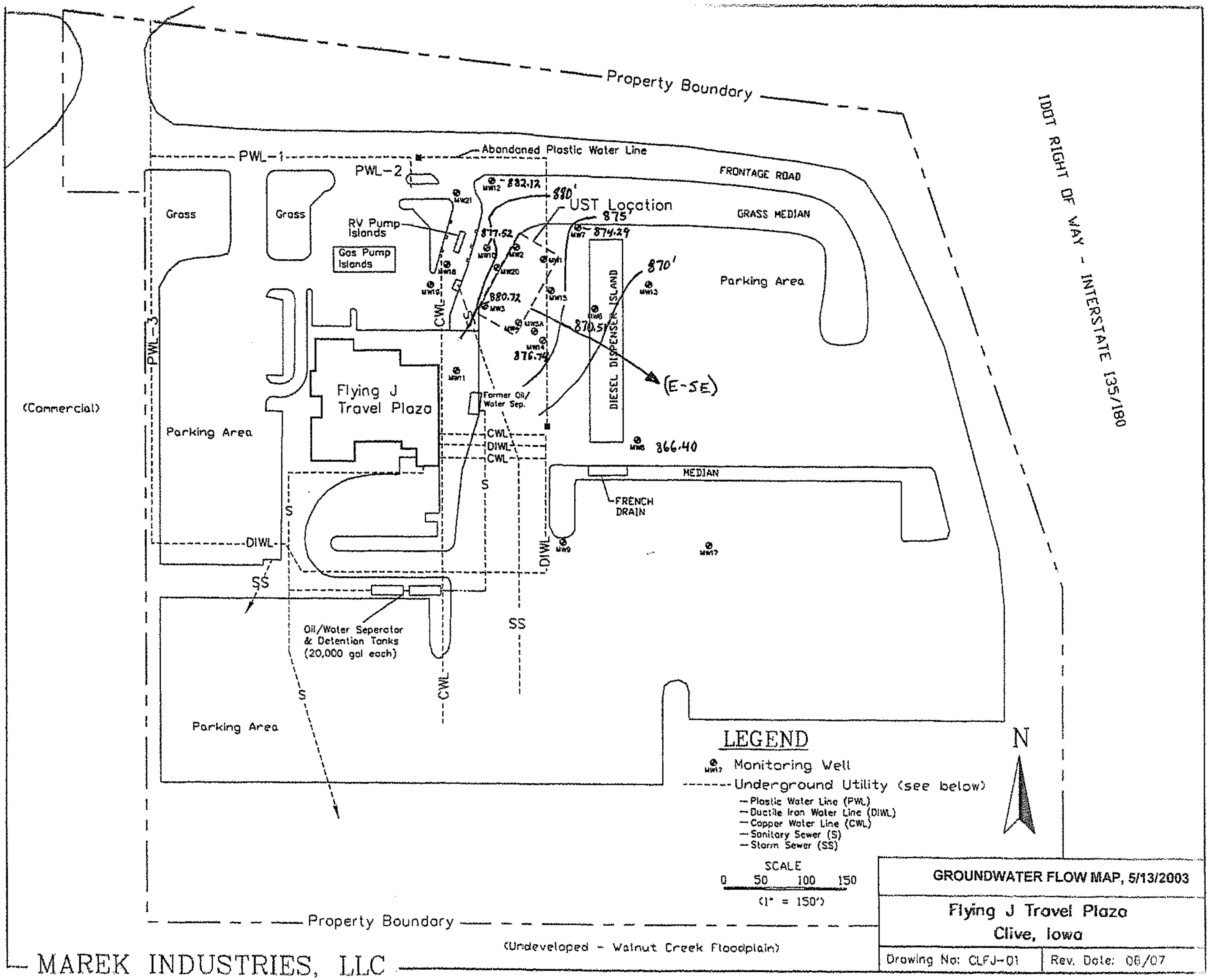

Soil Plume Contours: TEH-D(mg/kg)
10500 (mg/kg) greater than maximum interpolated value.
47500 (mg/kg) greater than maximum interpolated value.
V-2.51, 7LTJ18
Property Boundary
IDOT RIGHT OF WAY - INTERSTATE I35/I80
Abandoned Plastic Water Line
PWL-1
PWL-2
PWL-3
FRONTAGE ROAD
GRASS MEDIAN
UST Location
Grass
Grass
RV Pump Islands
Gas Pump Islands
Parking Area
MW21:<10.
B-8:<10.
B-7:<10.
MW15
B-3A
B-2A
MW19:<10.
MW5A
MW14
B-6:<10.
SB-1 2.5-3':<10.
B-1:<10.
B-4:<10.
SB-2 2.5-4':<10.
SB-1 2.5-4':<10.
MW11:<10.
Former Oil/ Water Sep.
Flying J Travel Plaza
(Commercial)
Parking Area
CWL
DIWL
CWL
MEDIAN
B-5:<10.
FRENCH DRAIN
MW17:<10.
DIWL
S
SS
SS
Oil/Water Seperator & Detention Tanks (20,000 gal each)
CWL
MW16 14':<10.
Parking Area
LEGEND
Monitoring Well
Underground Utility (see below)
—Plastic Water Line (PWL)
—Ductile Iron Water Line (DIWL)
—Copper Water Line (CWL)
—Sanitary Sewer (S)
—Storm Sewer (SS)
N
SCALE
0 50 100 150
(1" = 150')
Property Boundary
(Undeveloped - Walnut Creek Floodplain)
SITE PLAN MAP
Flying J Travel Plaza
Clive, Iowa
Drawing No: CLFJ-01
Rev. Date: 06/07
MAREK INDUSTRIES, LLC

21. Groundwater Contamination Plume Maps (Benzene, TEH-D)

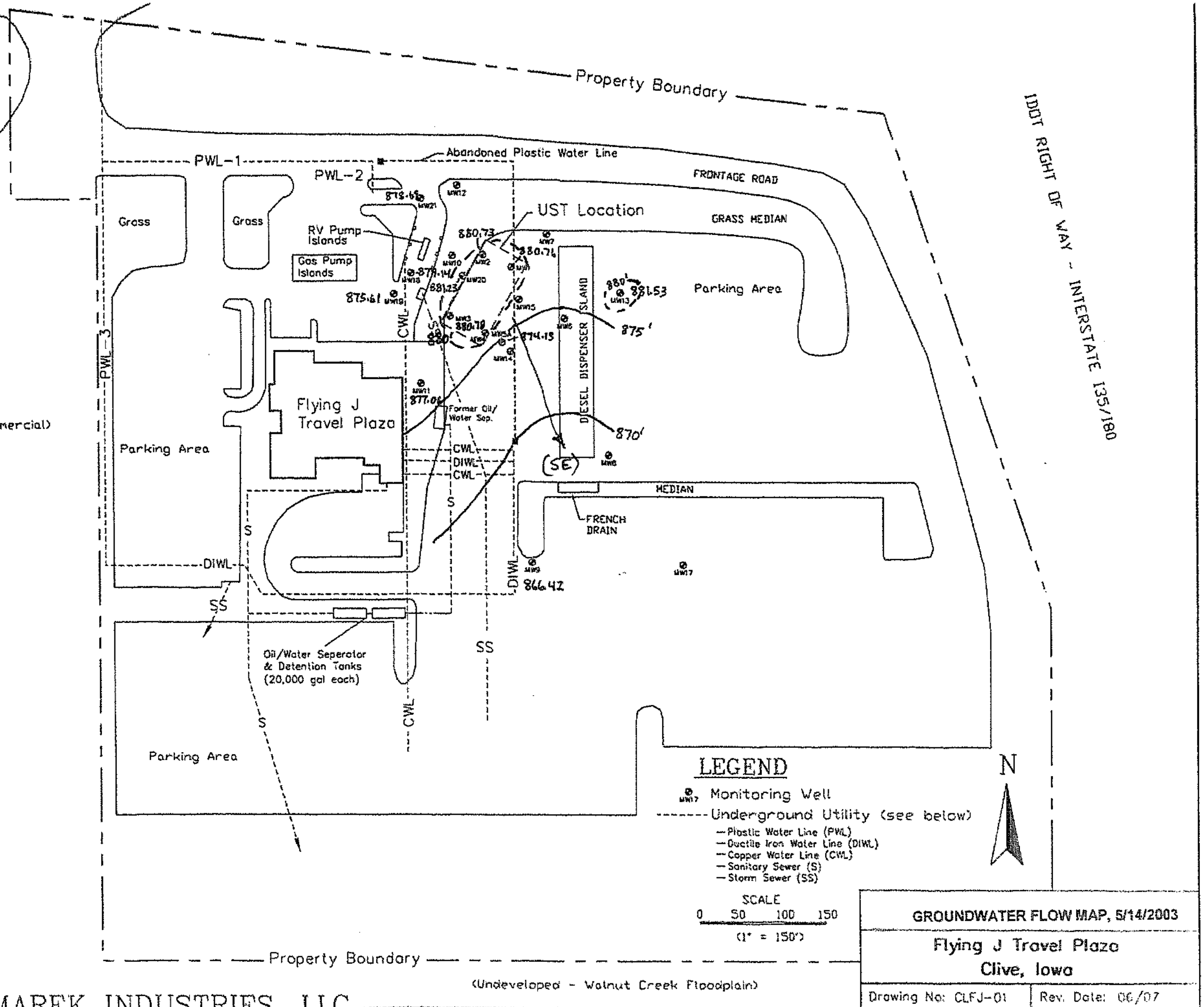

GW Plume Contours: Benzene(ug/L)
V-2.51, 7LTJ18
Property Boundary
IDOT RIGHT OF WAY - INTERSTATE I35/I80
PWL-1
Abandoned Plastic Water Line
PWL-2
PWL-3
FRONTAGE ROAD
GRASS MEDIAN
Grass
Grass
RV Pump Islands
Gas Pump Islands
MW12:<10.
MW21:<1.
UST Location
3080
MW7:2,400.
MW1:4,500.
MW18
MW20:<1.
MW19:<1.
MW13:<2.
MW6:530.
MW3:1,200.
MW4:700.
MW14:<2
MW11:14.
Parking Area
Flying J Travel Plaza
Former Oil/ Water Sep.
DIESEL DISPENSER ISLAND
MW8:1,300.
(Commercial)
Parking Area
CWL
DIWL
CWL
MEDIAN
FRENCH DRAIN
MW9:6.2
MW17:<2.
DIWL
SS
S
Oil/Water Seperator & Detention Tanks (20,000 gal each)
SS
S
CWL
MW16:<2.
Parking Area
LEGEND
Monitoring Well
Underground Utility (see below)
— Plastic Water Line (PWL)
— Ductile Iron Water Line (DIWL)
— Copper Water Line (CWL)
— Sanitary Sewer (S)
— Storm Sewer (SS)
SCALE
0 50 100 150
(1" = 150')
N
1 inch = 150 feet
Property Boundary
(Undeveloped - Walnut Creek Floodplain)
MAREK INDUSTRIES, LLC
SITE PLAN MAP
Flying J Travel Plaza
Clive, Iowa
Drawing No: CLFJ-01
Rev. Date: 06/07


GW Plume Contours: TEH-D(ug/L)
V-2.51, 7LTJT8
2200000 (ug/L) greater than maximum interpolated value.
Property Boundary
IDOT RIGHT OF WAY - INTERSTATE I35/I80
Abandoned Plastic Water Line
PWL-1
PWL-2
PWL-3
FRONTAGE ROAD
GRASS MEDIAN
UST Location
Grass
Grass
RV Pump Islands
Gas Pump Islands
MW12:<120
MW21:760.
MW7:8,500.
MW1:30,000.
MW18:7
MW20:<380.
MW19:<380.
MW13:<400.
MW6:200,000.
MW4:353,000.
MW14:<400
100000
75000
Parking Area
DIESEL DISPENSER ISLAND
Flying J Travel Plaza
MW11:<100.
Former Oil/ Water Sep.
(Commercial)
Parking Area
CWL
DIWL
CWL
MW8:690.
MEDIAN
FRENCH DRAIN
MW9:<2,000.
MW17:<380.
DIWL
S
SS
Oil/Water Seperator & Detention Tanks (20,000 gal each)
MW16:<400.
Parking Area
LEGEND
Monitoring Well
Underground Utility (see below)
—Plastic Water Line (PWL)
—Ductile Iron Water Line (DIWL)
—Copper Water Line (CWL)
—Sanitary Sewer (S)
—Storm Sewer (SS)
SCALE
0 50 100 150
(1" = 150')
N
1 inch = 150 feet
Property Boundary
(Undeveloped - Walnut Creek Floodplain)
MAREK INDUSTRIES, LLC
SITE PLAN MAP
Flying J Travel Plaza
Clive, Iowa
Drawing No: CLFJ-01
Rev. Date: 06/07

22. Groundwater Flow Direction Maps (5/13/03, 5/14/03)



Property Boundary
IDOT RIGHT OF WAY - INTERSTATE I35/I80
Abandoned Plastic Water Line
PWL-1
PWL-2
PWL-3
FRONTAGE ROAD
GRASS MEDIAN
Grass
Grass
RV Pump Islands
Gas Pump Islands
UST Location
882.12
880'
875'
874.29
877.52
880.72
870'
870.51
876.74
866.40
(E-SE)
DIESEL DISPENSER ISLAND
Parking Area
Flying J Travel Plaza
Former Oil/ Water Sep.
CWL
DIWL
CWL
MEDIAN
FRENCH DRAIN
(Commercial)
Parking Area
S
SS
Oil/Water Seperator & Detention Tanks (20,000 gal each)
Parking Area
LEGEND
Monitoring Well
Underground Utility (see below)
— Plastic Water Line (PWL)
— Ductile Iron Water Line (DIWL)
— Copper Water Line (CWL)
— Sanitary Sewer (S)
— Storm Sewer (SS)
SCALE
0 50 100 150
(1" = 150')
N
Property Boundary
(Undeveloped - Walnut Creek Floodplain)
MAREK INDUSTRIES, LLC
GROUNDWATER FLOW MAP, 5/13/2003
Flying J Travel Plaza
Clive, Iowa
Drawing No: CLFJ-01
Rev. Date: 06/07



GROUNDWATER FLOW MAP, 5/14/2003

Flying J Travel Plaza
Clive, Iowa

Drawing No: CLFJ-01 | Rev. Date: 06/07

MAREK INDUSTRIES, LLC

TABLE 1

GROUNDWATER AND FREE PRODUCT ELEVATION DATA

CLIVE IOWA, FLYING J TRAVEL PLAZA

May 13 and 14, 2003

Well No.	Top of Casing Elevation (MSL)	Date Measured	Depth to Free Product (TOC)	Depth to Groundwater (TOC)	Free Product Thickness (ft)	Groundwater Elevation (MSL)	Adjusted Groundwater Elevation (MSL)
MW-1	882.65	05/14/03	1.87	1.99	0.12	880.66	880.76
MW-2	882.85	05/14/03	NA	2.12	NA	880.73	NA
MW-3	882.05	05/13/03	1.29	1.51	0.22	880.54	880.72
MW-4	881.71	05/14/03	0.9	1.06	0.16	880.65	880.78
MW-5A	881.74	05/14/03	NA	7.61	NA	874.13	NA
MW-6	882.81	05/13/03	12.26	12.51	0.25	870.3	870.51
MW-7	882.79	05/13/03	NA	8.5	NA	874.29	NA
MW-8	882.75	05/13/03	NA	16.35	NA	866.4	NA
MW-9	877.09	05/14/03	NA	10.67	NA	866.42	NA
MW-10	893.1	05/13/03	NA	15.58	NA	877.52	NA
MW-11	890.16	05/14/03	NA	13.1	NA	877.06	NA
MW-12	895.86	05/13/03	NA	13.74	NA	882.12	NA
MW-13	882.03	05/14/03	NA	0.5	NA	881.53	NA
MW-14	881.42	05/13/03	NA	4.68	NA	876.74	NA
MW-15	882.34	05/13/03	NA	5.51	NA	876.83	NA
MW-16	870.99	NA	NA	NA	NA	NA	NA
MW-17	875.13	NA	NA	NA	NA	NA	NA
MW-18	893.22	05/14/03	NA	14.08	NA	879.14	NA
MW-19	891.58	05/14/03	NA	15.97	NA	875.61	NA
MW-20	883.79	05/14/03	NA	2.56	NA	881.23	NA
MW-21	894.37	05/14/03	NA	15.68	NA	878.69	NA

23. Well Survey Map (From IDNR Web Data Base)

Re-Start **Well Search** Print | Help |

Well Search Report ?

Search Method: LUST/UST

For: James Marek
Marek Industries
9588 NW 74th Place
Grimes, IA 50111

Subject: LUST ID: 7LTJ18
Site Name: FLYING J TRUCK PLAZA
Address: 11820 HICKMAN RD CLIVE IA, 503250000
XY UTM Coordinates: 434995/4607190
Search Radius(ft.): 1000

Date: 6/23/2007

Prepared By: jsmmjsmm

Included in search	No. of wells	Database
X	0	IGS well database General well database maintained by IGS, location accuracy varies 3,730 to 25 ft., last updated 8/2005.
X	0	Public wells Muncipal and nonmunicipal public well databases maintained by IGS, location varies 3,73(to 25 ft., under development.
X	0	SDWIS public wells Public well database developed from the Safe Drinking Water Information System database maintained by IDNR, estimated locational accuracy varies from 15m. to 3300m. Created from 5/2005 data.
X	0	Private well tracking system IDNR database management system for Grants-to-counties-covered wells. Locational accuracy unknown, assumed to be +/- 17 m., Last update 7/2005.
X	0	Wells registered for testing Wells tested under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m. Last update 9/2001, no future updates planned.
X	0	Permitted private wells Wells permitted under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	2	Registered abandoned wells Wells abandoned under Grant-to-Counties program. Locational accuracy varies 1150 to 150 m.; Last update 9/2001, no future updates planned.
X	0	Water use facilities Wells used by facilities permitted to withdraw >25,000 gallons per day, locational accuracy is +/-20m to 1150 m. Created from 7/2005 data.
X	0	Municipal wells and intakes Locational accuracy 220 m., last updated 8/96.
X	0	Ag drainage wells Locational accuracy 100 m., last updated 4/98.

Well Search Detail

Subject: LUST ID: 7LTJ18
XY UTM Coordinates: 434995/4607190
Search Radius (ft.): 1000

IGS Well Database

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information

No records found from this data source

Public Wells

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information

No records found from this data source

SDWIS public wells

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information

No records found from this data source

Private Well Tracking System

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information

No records found from this data source

Wells Registered For Testing

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information

No records found from this data source

Permitted Private Wells

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information

No records found from this data source

Abandoned Wells (plugged)

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
34269	T. 79 N., R. 25 W., Sec. 29, SE, SW, SE	Calc. +/- 140m.	244 (m)	55	n.a.	Stew Hansens Dodge City	Well plugged: 5/30/1998; Well type: < 18" dia.
34268	T. 79 N., R. 25 W., Sec. 29, SE, SW, SE	Calc. +/- 140m.	240 (m)	60	n.a.	Stew Hansen Dodge City	Well plugged: 5/30/1998; Well type: > 18" dia.

Water Use Facilities

Well No.	Location	Accuracy	Dist. From	Well	Construction/	Owner/Permittees	Other Information

			Point	Depth	Permit Date		
		No records found from this data source					

Municipal Wells And Intakes

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
		No records found from this data source					

Ag Drainage Wells

Well No.	Location	Accuracy	Dist. From Point	Well Depth	Construction/ Permit Date	Owner/Permittees	Other Information
		No records found from this data source					

Well Search Buffered Map

Subject: LUST ID: 7LTJ18
XY UTM Coordinates: 434995/4607190
Search Radius (ft.): 1000

Map Notes:

- UST
- LUST
- Please refer to the Accuracy column in Well Search Detail.
- Since multiple points can be at the same spot (as those located to the center of a quarter section), points were randomly dispersed within 10 meters around that spot so all points can be seen.
- Aerial photos were flown in 2002.

Search by Interactive M

26. Laboratory Data Sheets (2003 Chain of Custody)

Shaded Areas For Internal Use Only ____ of ____

SEVERN TRENT **STL**

STL Chicago
2417 Bond Street
University Park, IL 60466
Phone: 708-534-5200
Fax: 708-534-5211

Report To:
Contact: M. McPhee
Company: Brown & Caldwell
Address: 1697 Cole Blvd.
Golden, CO 80401
Phone: 303-239-5470
Fax: 303-239-5454
E-Mail: MMCPHEE@BRWNCALD.COM

Bill To:
Contact: Same
Company:
Address: ←
Phone:
Fax:
PO#: Quote:

Lab Lot#

Package Sealed	Samples Sealed
Yes No	Yes No
Received on Ice	**Samples Intact**
Yes No	Yes No

Temperature °C of Cooler

Sampler Name: Matthew McPhee
Signature:
Project Name: Flying J Clive, IA
Project Number: 24139 OC 2
Project Location: Clive, IA
Date Required Hard Copy: / /
Fax: / /
Lab PM:

Refrg # / # / Cont. / Volume / Preserv

Within Hold Time	Preserv. Indicated
Yes No	Yes No NA
pH Check OK	**Res Cl_2 Check OK**
Yes No NA	Yes No NA

Sample Labels and COC Agree
Yes No COC not present

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	Comp/Grab	Iowa OA-1	Iowa OA-2	Additional Analyses / Remarks
		MW-1	5/14/03	1230	W	G			
		MW-2	5/14/03	1100					
		MW-3	5/13/03	1805					
		MW-4	5/14/03	900					
		MW-5A	5/14/03	1000					
		MW-6	5/14/03	1330					
		MW-7	5/13/03	1130					
		MW-8	5/13/03	1600					
		MW-10	5/13/03	1645					
		MW-12	5/13/03	1818					
		MW-15	5/13/03	1445					
		IT-Main	5/14/03	1510					

RELINQUISHED BY	COMPANY BC	DATE 5/14/03	TIME 1730	RECEIVED BY	COMPANY	DATE	TIME
RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME

Matrix Key
WW = Wastewater
W = Water
S = Soil
SL = Sludge
MS = Miscellaneous
OL = Oil
A = Air
SE = Sediment
SO = Solid
DS = Drum Solid
DL = Drum Liquid
L = Leachate
WI = Wipe
O = ______

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

Preservative Key
1. HCl, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. Cool to 4°
7. None

COMMENTS

Date Received / /
Courier:
Hand Delivered ☐
Bill of Lading