

IDNR

SN

Tier 2 Site Cleanup Report
Leaking Underground Storage Tank Site Assessment
for the Iowa Department of Natural Resources

IDNR**SITE IDENTIFICATION**

LUST No.

9LTP48

UST Registration No.

8606394

Site Name:	Butch's BP
Site Address:	100 E. Lincoln Way
City:	Ames

RESPONSIBLE PARTY IDENTIFICATION

Name: BUJI, LC Attn: Glen Hansen	Phone #: 515-290-5676
Street: 2176 Pintail Ridge Lane	
City: Ames	State: ia Zip Code: 50010

Classification: High Risk Low Risk No Action RequiredRecommend: Tier 3 Corrective Action Is this a revised Tier 2 SCR? Yes No**STATEMENT OF CERTIFICATION**

I, William Miner, Groundwater Professional Certification No. 1081, am familiar 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 Resources Tier 2 guidance. Based on my knowledge of those documents and information I have prepared and reviewed regarding this site, UST Registration No. 8606394, LUST No. 9LTP48, 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

William Miner

Signature:



W. E. Miner Env. Consultants, Inc.

P.O. Box 461

Date (Sent/Given to Responsible Party):

8-10-2012

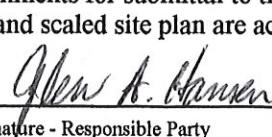
Ames, IA 50010

515-232-4957

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.

BUJI, LC Attn: Glen Hansen

Print: Name of Responsible Party


Signature - Responsible Party

Date (Sent/Given to IDNR)

Date Received:

08/17/12

Comment Letter Date:

Reviewer:

Approved:

Y N

W. E. Miner
Environmental Consultants, Inc.

P.O. Box 461
Ames, Iowa 50010
(515) 232-4957

August 10, 2012

Ms. Shelly Nellesen, Env. Specialist
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319-0034

Re: Butch's, 100 East Lincoln Way, Ames
Reg. No. 198606394 LUST No. 9LTP48

Dear Ms. Nellesen:

The items from your August 7, 2012, letter are addressed as follows:

1. The previous LUST file for the site is 7LTS72 (not 7LTS42). The head gradient of 0.0829 ft/ft you reference was calculated using one data set (MW6 902.84 to MW15 896.12 / 81 ft). Tier 2 guidance p. 20 for determining head gradient states "*an average of several gradient measurements will be used for modeling*". If you take another data set in the direction of the groundwater flow from their report such as MW2 902.77 to MW13 902.76 / 50 ft = 0.002 ft/ft. Therefore, the head gradient you reference as being over 3 times greater was not completed in accordance with guidance.

The calculations used to determine the head gradient of 0.025 ft/ft have been included on p. 5 that follows. No other revisions of the report are necessary as the correct value was used in the modeling.

2. Your email of January 4, 2012, states "*I have spoken to Verne about using older data from the previous LUST investigation at the site and we agreed that using the hydraulic conductivity from 7LTS72 could be allowed but other variables would need to be evaluated ...*" as referenced in the report. It is very frustrating to now have you say that using the previous k is unacceptable unless it is evaluated. The previous hydraulic conductivity calculations follow IDNR's March 5, 1997, guidance. Also, the site soil types are consistent so 0.04545 m/day is appropriate. As allowed by guidance I didn't recopy data that already exists in IDNR files but referenced where it can be found. No revisions of the report are necessary as the correct k value was used in the modeling.

3. A revised p. 5 follows that explains the range of plume spread was determined in accordance with guidance from the Iowa RBCA Tier 2/SMR Software for Windows

User's Manual, Figure 2. No other revisions of the report are necessary as the correct value was used in the modeling.

4. For the Soil Sw and W the p.5 modeling values are correct, but the TEH-diesel map to support the W value of 43 was not included in Appendix 19 (see map that follows). The Groundwater Sw and W values in the software and as shown in Appendix 18 are correct. I'm not sure why p. 5 printed with different values, but a revised P. 5 with the correct Sw and W values follows.

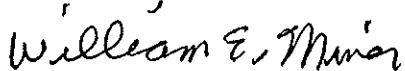
5. As previously directed by other reviewers I noted on the App. 22 well survey documentation the inaccuracies I found. I have map from the City of Ames from a past LUST investigation that more clearly shows their municipal well locations near the site (see map that follows). As shown on p. 14 of the report there is only one municipal well (City Well #13) within 1,000 ft. of site.

I believe that GSB's "test" well notation refers to an engineering methodology for determining the best location for installation of a production or municipal well by installing multiple smaller diameter wells to check geology and to pump test. These test wells would only be used for a few days before being plugged.

6. Revised notification forms have been completed and mailed as required.

The extensive sampling completed from three sides and downgradient of the former tank pit confirms that the actual extent of groundwater contamination is extremely limited (south half of former tank pit approximately 4 ft. wide by 3 ft. long). SB 100 completed in the center of the former tank pit did not show any contamination present and lean clays to prevent vertical migration. I believe that sufficient justification has been provided supporting a no action required status for this site.

Respectfully,



William E. Miner

Site HydrogeologyFlow/Migration

Head gradient (i, ft/ft)	0.0251
Hydraulic conductivity (K, m/day)	0.04545
MAIN PLUME/FLOW(degrees)	240
RANGE of Plume/FLOW (degrees)	40
Upgradient (fraction)	0.046

Source Dimensions

Groundwater Plume Source Width (Sw-GW) (ft)	39
Soil Plume Source Width (Sw-Soil) (ft)	47
Groundwater Plume Source Length (W-GW) (ft)	38
Soil Plume Source Length (W-Soil) (ft)	43

Soil Parameters

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

ATC completed a Phase II ESA in October 2011 prior to sale of the site. A soil sample (B-1) was taken of the sand backfill of the waste oil UST and it showed petroleum contamination present. The 560 gal. waste oil UST was then removed in November 2011. IDNR then required a RBCA assessment of the site (see emails about assessment activities that follow). Because the UST held waste motor oil, samples were analyzed for both volatile and extractable hydrocarbons. All available current analytical data including from ATC's Phase II ESA was used in the RBCA evaluation.

There was a short segment (approximately 3 ft.) of piping that went over the top of the tank through the foundation and up on the inside of the east wall of the building. No sampling could be done on the west side of the former tank pit because of the foundation and building. IDNR required sampling from the tank pit sidewalls (tank was only 4 ft. x 6 ft.) so the sampling locations were close together and IDNR's 8/24/1998 guidance on close sampling points had to be followed. To get the computer software to recognize all the data points, the XY coordinates of SB100 were adjusted slightly to the north to get 5 feet between the coordinates of SB100 and B-1. SB100 was drilled in the former UST area into the native clay soils below the bottom of the former tank. The 2/22/12 groundwater sample from MW104 was ignored as required by IDNR because it was 5 ft. from B1 that was sampled on 10/5/2011. MW104 was sampled again on 4/6/2012 to get 6 months between samples.

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.

August 2012 update-

The head gradient was calculated as follows: MW104 to MW101 $0.27/42=0.0064$, MW102 to MW101 $0.91/48=0.019$, MW102 to MW104 $0.64/17=0.037$, MW103 to MW14 $0.25/10=0.025$, MW102 to MW103 $0.39/10=0.039$ with the average of five data sets $0.0064 + 0.019 + 0.037 + 0.025 + 0.039 = 0.025 \text{ ft/ft}$

The range of plume spread was determined in accordance with guidance from the Iowa RBCA Tier 2/SMR Software for Windows User's Manual, Figure 2.

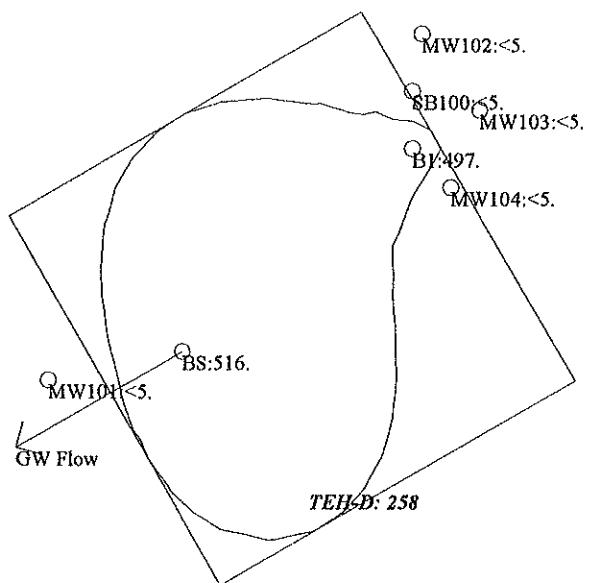
As approved by IDNR, the hydraulic conductivity value from the previous site assessment activities (7LTS72) of 0.04545 m/day was used in the modeling. No TDS testing was completed since the hydraulic conductivity values did not meet the requirements for a protected groundwater source. The groundwater flow direction is to the southwest, so a main plume flow

Site Hydrogeology Justification Section

direction of 240 degrees was used. A range of plume of 40 degrees was measured in accordance with guidance. The head gradient was calculated using an overall average value from all available data using all the monitoring wells and found to be 0.0251 ft/ft. No directional reversals have been noted and the historical groundwater flow from 7LTS72 is consistent with the current data. The calculated Sw and W values were used in the computer modeling in accordance with guidance.

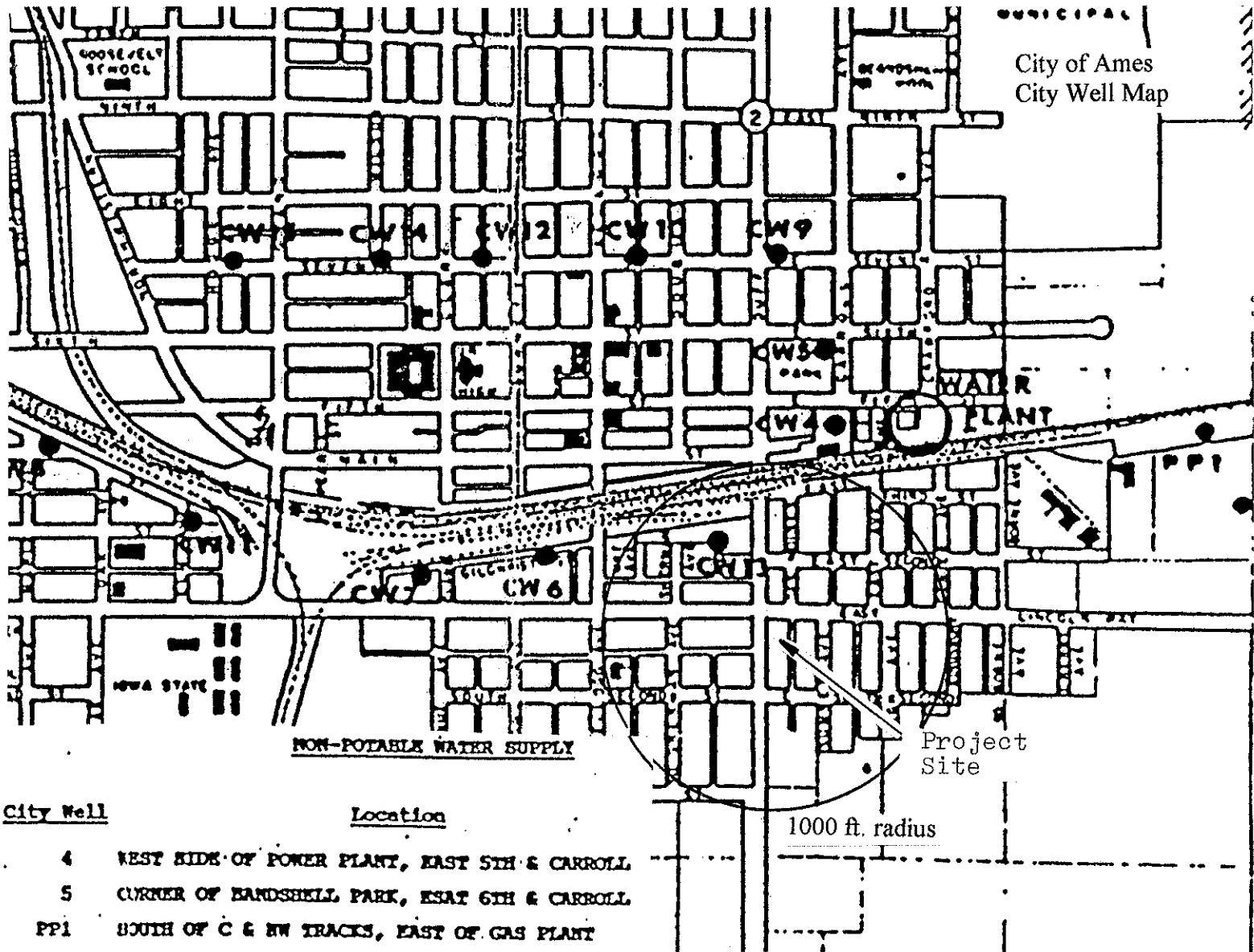
Soil: Source Width and Length Estimation: TEH-D

Source: Soil (mg/kg)
Maximum Concentration: 516
Contour Concentration: 258
Source Width (Sw): 44. feet
Source Length (W): 43. feet



1 inch = 20 feet [Scale Bar]

MUNICIPAL
City of Ames
City Well Map



City Well

Location

- 4 WEST SIDE OF POWER PLANT, EAST 5TH & CARROLL
- 5 CORNER OF BANDSTILL PARK, EAST 6TH & CARROLL
- PPI SOUTH OF C & NW TRACKS, EAST OF GAS PLANT
- PP2 SOUTH OF C & NW TRACKS, WEST OF SKUNK RIVER
- PP3 NORTH OF LINCOLN WAY, WEST OF SKUNK RIVER

City Well

Location

- 6 GILCHRIST, 1/2 BLOCK WEST OF KELLOGG
- 7 GILCHRIST, 1/2 BLOCK WEST OF CLARK
- 8 INTERSECTION OF MAPLE, 3RD, & 4TH STREETS
- 9 7TH STREET AT DUFF, NORTHEAST CORNER
- 10 7TH STREET, ALLEY BETWEEN KELLOGG AND DOUGLAS
- 11 2ND STREET & ELM, NORTHEAST CORNER
- 12 7TH STREET, ALLEY BETWEEN CLARK AND BURNETT
- 13 COMMERCE AVENUE, EAST OF SHERMAN
- 14 7TH STREET AT WILSON, NORTHEAST CORNER
- 15 7TH STREET, BETWEEN GRAND AND BOOGIE
- 16 SOUTH OF COLLEGE CREEK, WEST OF ELWOOD DRIVE
- 17 SOUTH OF COLLEGE CREEK, EAST OF WALLACE ROAD
- 18 FLOODPLAIN NORTHWEST OF SKUNK RIVER/SQUAW CREEK CONFLUENCE
- 19 FLOODPLAIN NORTHWEST OF SKUNK RIVER/SQUAW CREEK CONFLUENCE
- 20 FLOODPLAIN NORTHWEST OF SKUNK RIVER/SQUAW CREEK CONFLUENCE
- 21 FLOODPLAIN NORTHWEST OF SKUNK RIVER/SQUAW CREEK CONFLUENCE
- 22 FLOODPLAIN NORTHWEST OF SKUNK RIVER/SQUAW CREEK CONFLUENCE

1941 3000' 3000'

IOWA DEPARTMENT OF NATURAL RESOURCES
WATER SUPPLY NOTIFICATION

Revised 8/10/2012

Complete form and submit it to: WATER SUPPLY SECTION, IOWA DEPARTMENT OF NATURAL RESOURCES, 502 EAST NINTH STREET, DES MOINES, IA 50319-0034 and if a county has delegated authority, to the designated county authority responsible for issuing private water supply construction permits or regulating non-public water well construction, as provided in accordance with Chapter 567-38 and 49 of the Iowa Administrative Code.

(PLEASE TYPE OR PRINT)

Responsible Party Name: BUJI, LC Phone: (515) 290 - 5676

Tank Site Name: Butch's BP LUST No.: 9LTP48 Registration No.: 198606394

Address of Tank Site: 100 E. Lincoln Way City: Ames Zip Code: 50010
Story County

County: Story Contact Name: Health Dept. Phone: (515) 382 - 7240

Address: 900 6th Street City: Nevada State: IA Zip Code: 50201

LEGAL DESCRIPTION OF PROPERTY

NW	1/4	SW	1/4	SE	1/4	Section No.	2
Township No. <u>83N</u>		Range No. <u>24W</u>		E/W		County <u>Story</u>	

	Maximum Concentrations of Chemicals of Concern Remaining At the Site					
	Group 1				Group 2: Total Extractable Hydrocarbons	
	Benzene	Toluene	Ethylbenzene	Xylenes	Diesel	Waste Oil
Soil (ppm)	< 0.564	< 0.564	< 0.564		516	
Tier 1 levels - for actual and potential receptors	0.54	42	15		3,800	
Groundwater (ppb)	8.22	1.29	3.91	< 3	7,980	315,000
Tier 1 levels - actual - potential	5 290	1,000 7,300	700 3,700	10,000 73,000	1,200 75,000	400 40,000

Provide site maps showing soil and groundwater contamination. As described on the back of this form.

I certify that the foregoing information is true and correct to the best of my knowledge and agree to provide any additional information the department or county authority may need concerning this site.

Print Name, Address and Phone Number of Certified Groundwater Professional

William Miner IGWP#1081
PO Box 461
Ames, IA 50010
(515) 232-4957

Signature: W. Miner

Date: 8-10-2013



TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

LARRY J. WILSON, DIRECTOR

MEMORANDUM

TO: Iowa Department of Natural Resources Water Supply Section /
County Authorized to Issue Well Construction Permits

FROM: Iowa Department of Natural Resources

RE: Water Supply Notification - DNR Form 542-1530

An area contaminated with petroleum hydrocarbon compounds may exist within your present or future water distribution system. The petroleum-based chemicals of concern include benzene, toluene, ethylbenzene, xylenes and other compounds found in gasoline, diesel and waste oil. These chemicals were introduced into the subsurface from a release at the site referenced on the second line on DNR Form 542-1530. They are often transported in the direction of groundwater flow and away from their point of introduction.

The main concern is for water well installed within the inferred, defined or predicted contamination zone (see attached form and maps). Although existing wells have not been impacted, contamination remains which is above the allowable levels for drinking water. The groundwater at this site is considered a protected groundwater source. Caution and possible further evaluation should be used before allowing drinking water wells to be installed in this area. This information is sent to you in response to present regulations (Iowa Administrative Code 135).

A risk-based corrective action (RBCA) assessment has been done at the site—either a Tier 1 or a Tier 2. At Tier 1, only a few samples are taken to try to identify the maximum contamination. If more assessment is needed, a Tier 2 is done where several samples are taken to see how far soil and groundwater contamination has spread. Therefore, if the attached maps are from Tier 1, they probably will show only a few soil and groundwater samples. If these maps are from Tier 2, they will show how far the actual contamination plume(s) have spread and computer-simulated contamination plume(s).

A standard DNR utility notification form (DNR Form 542-1530) and site map(s) are enclosed. The data may prove useful in determining whether to permit the installation of drinking water well(s) in the vicinity of the referenced site.

The table on the front side of this form contains the maximum contamination levels found in the soil and groundwater at this site. Below these numbers are two rows containing the Iowa Department of Natural Resources' Tier 1 levels (the top row is for actual receptors and the bottom row is for potential receptors).

**1a. GW Ingestion-Drinking Water Wells
Receptor ID Map**

V.3.00, 9LTP48

T: TL>= SC
E: TL>= SC
X: TL>= SC
N: TL>= SC
T: TL>= SC
E: TL>= SC
X: TL>= SC
N: TL>= SC

Water

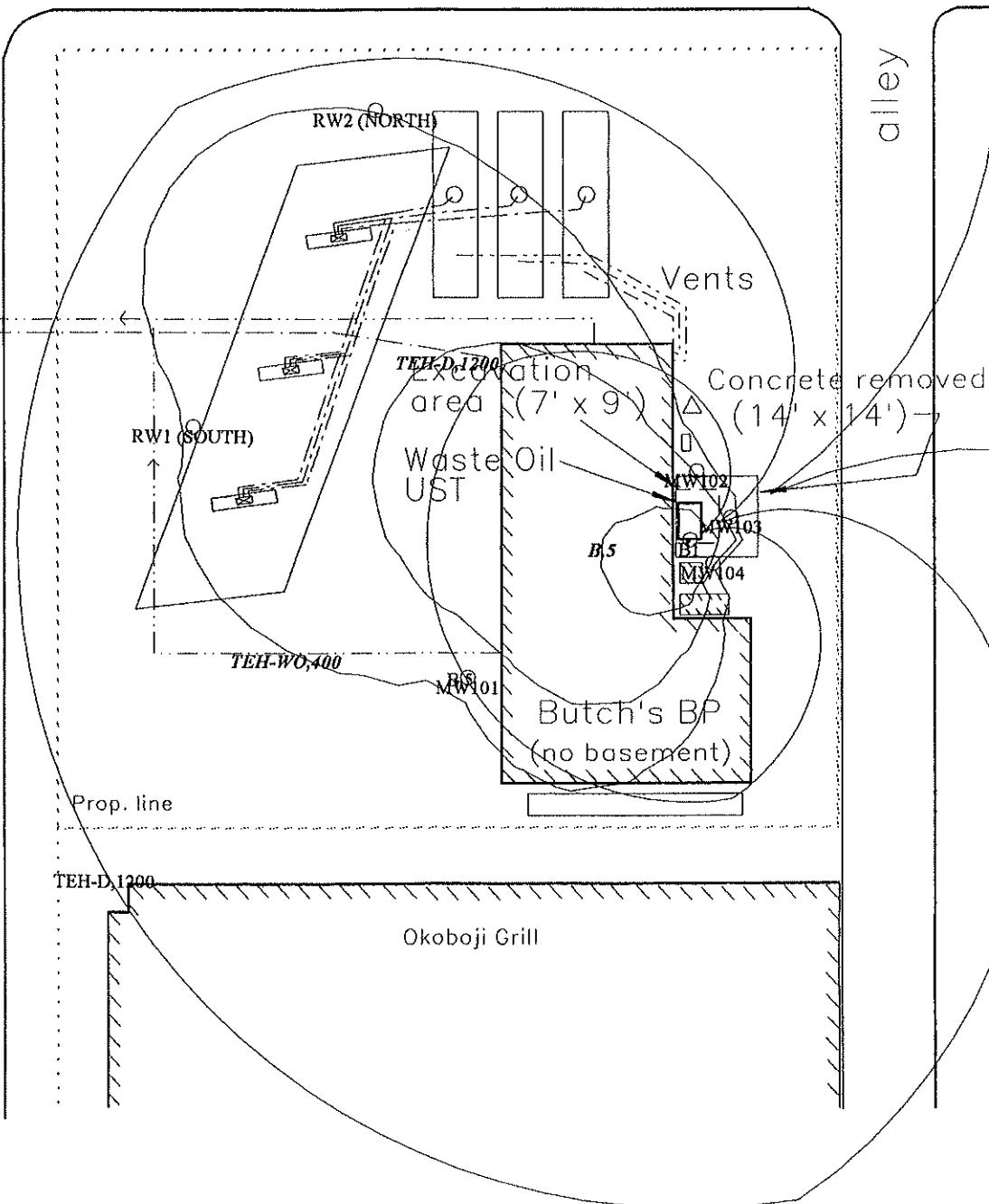
San. sewer

E. Lincoln Way

alley

S. Duff Ave.

San. sewer
Water



• - Soil boring

◎ - Monitoring well

X - Closure Soil Sample Location

560 gal. Waste Oil UST removed 11/11/2011. Overhead utilities not shown.

1" = 30'

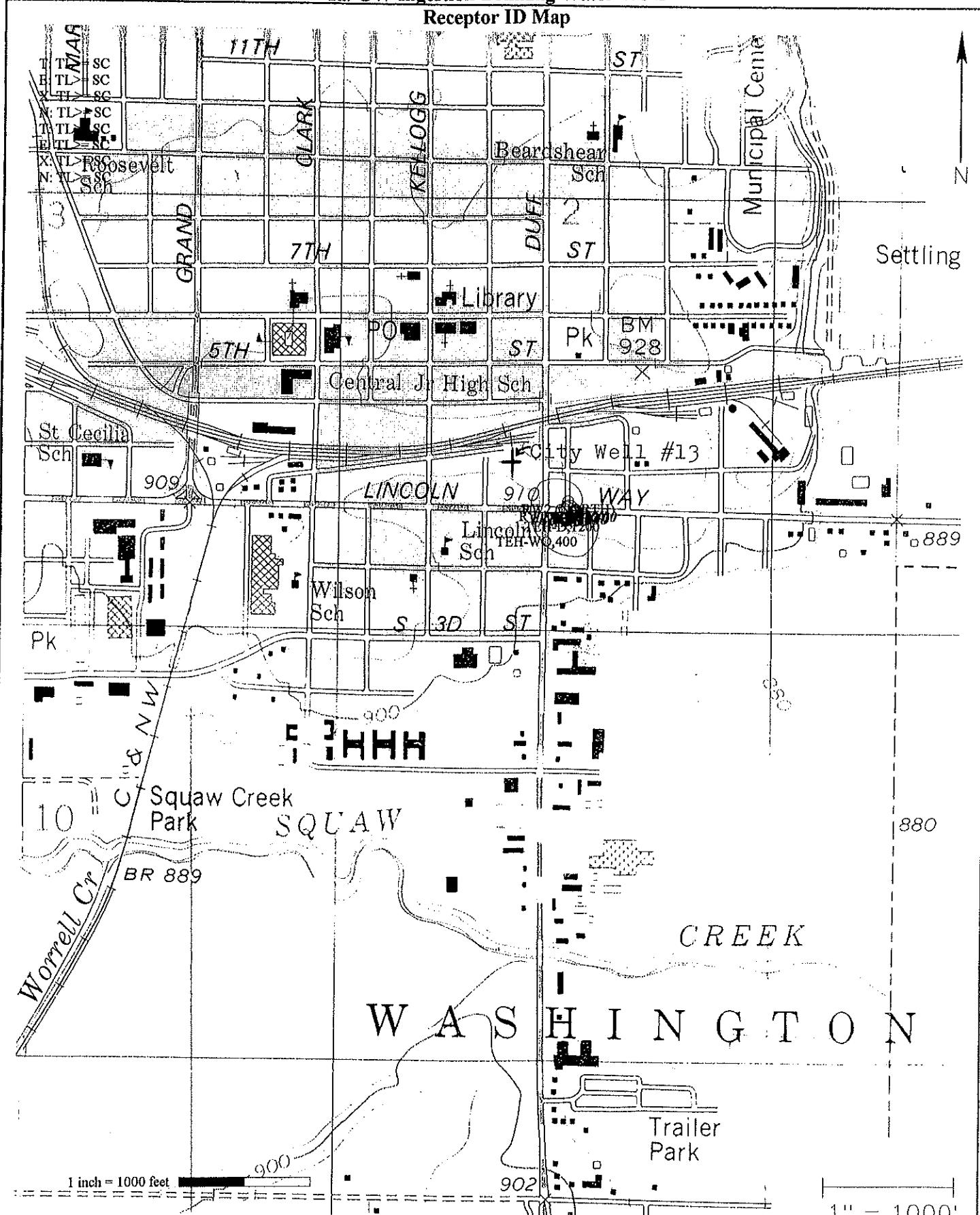
TITLE: Scaled Site Plan – Butch's BP
100 E. Lincoln Way, Ames 9LTP48

FIGURE: I

1a. GW Ingestion-Drinking Water Wells

V-3.00, 9LTP48

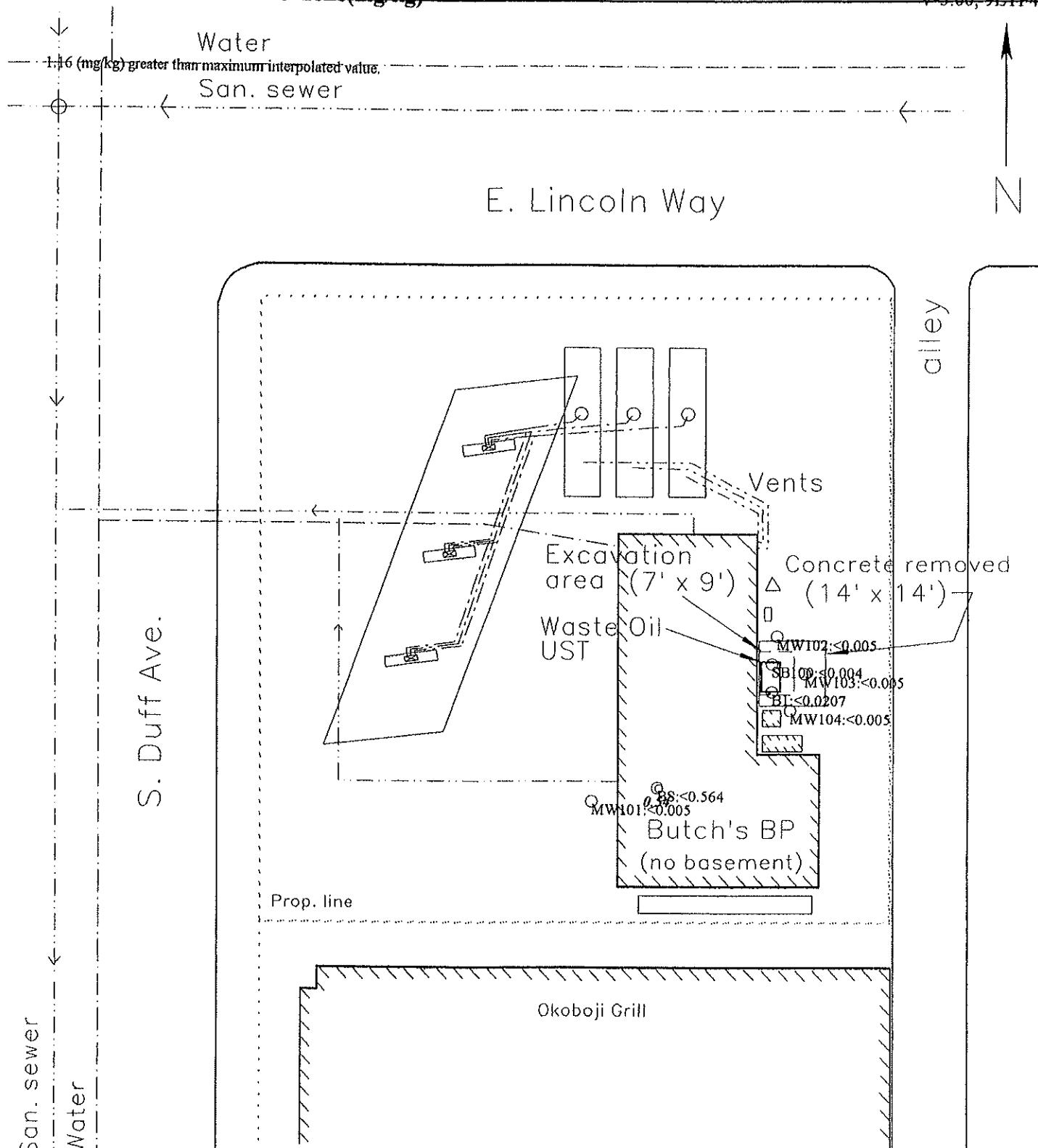
Receptor ID Map



Soil Plume Contours: Benzene(mg/kg)

App. 20

V-3.00, 9LTP48



• – Soil boring

○ – Monitoring well

X – Closure Soil Sample Location

560 gal. Waste Oil UST removed 11/11/2011. Overhead utilities not shown.

1" = 30'

MTBE Sampling Results

ANALYTICAL REPORT

April 17, 2012

Page 1 of 5

Work Order: 1D20395

Report To
Bill Miner W.E. Miner Env. Consultants, Inc. P.O. Box 461 Ames, IA 50010

Work Order Information
Date Received: 04/06/2012 10:10AM Collector: Phone: (515) 232-4957 PO Number: Butchs BP

Project : UST

Project Number: Butchs BP

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1D20395-01	MW 104 - Ground Water From MW			Matrix:Water		Collected:	04/06/12 07:50
Methyl-t-butyl Ether (MTBE)	<2.0 ug/L	2.0	IVD0282	EPA 8260B	TKD	04/12/12 21:54	
Benzene	<1.0 ug/L	1.0	IVD0282	EPA 8260B	TKD	04/12/12 21:54	
Toluene	<1.0 ug/L	1.0	IVD0282	EPA 8260B	TKD	04/12/12 21:54	
Ethylbenzene	<1.0 ug/L	1.0	IVD0282	EPA 8260B	TKD	04/12/12 21:54	
Xylenes, total	<2.0 ug/L	2.0	IVD0282	EPA 8260B	TKD	04/12/12 21:54	
Surrogate: Dibromoformmethane	107 %			85-123	TKD	04/12/12 21:54	
Surrogate: 1,2-Dichloroethane-d4	106 %			76-122	TKD	04/12/12 21:54	
Surrogate: Toluene-d8	104 %			86-117	TKD	04/12/12 21:54	
Surrogate: 4-Bromofluorobenzene	120 %			78-125	TKD	04/12/12 21:54	
TEH, as gasoline	<0.1 mg/L	0.1	IVD0311	Iowa OA-2	SMG	04/14/12 6:20	
TEH, as #2 diesel fuel	<0.1 mg/L	0.1	IVD0311	Iowa OA-2	SMG	04/14/12 6:20	
TEH, as waste oil	<0.1 mg/L	0.1	IVD0311	Iowa OA-2	SMG	04/14/12 6:20	
Total Extractable Hydrocarbons	<0.1 mg/L	0.1	IVD0311	Iowa OA-2	SMG	04/14/12 6:20	
Surrogate: Pentacosane	90.6 %			48-136	SMG	04/14/12 6:20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

ANALYTICAL REPORT

March 01, 2012

Work Order: 1B21219

Page 1 of 7

Report To
Bill Miner W.E. Miner Env. Consultants, Inc. P.O. Box 461 Ames, IA 50010

Work Order Information
Date Received: 02/23/2012 10:05AM
Collector: Miner, W.
Phone: (515) 232-4957
PO Number: Butchs BP

Project : UST

Project Number: Butchs BP

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1B21219-01 MW 101				Matrix: Water		Collected: 02/22/12 13:45	
Methyl-t-butyl Ether (MTBE)	2.8 ug/L	2.0	IVB0753	EPA 8260B	TKD	02/25/12 17:32	
Benzene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 17:32	
Toluene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 17:32	
Ethylbenzene	1.9 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 17:32	
Xylenes, total	<2.0 ug/L	2.0	IVB0753	EPA 8260B	TKD	02/25/12 17:32	
Surrogate: Dibromoformmethane	94.7 %			85-123	TKD	02/25/12 17:32	
Surrogate: 1,2-Dichloroethane-d4	102 %			76-122	TKD	02/25/12 17:32	
Surrogate: Toluene-d8	102 %			86-117	TKD	02/25/12 17:32	
Surrogate: 4-Bromofluorobenzene	115 %			78-125	TKD	02/25/12 17:32	
TEH, as gasoline	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 20:27	
TEH, as #2 diesel fuel	0.4 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 20:27	D-06
TEH, as waste oil	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 20:27	
Total Extractable Hydrocarbons	0.4 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 20:27	
Surrogate: Pentacosane	115 %			48-136	SMG	02/28/12 20:27	
1B21219-02 MW 102				Matrix: Water		Collected: 02/22/12 14:00	
Methyl-t-butyl Ether (MTBE)	<2.0 ug/L	2.0	IVB0753	EPA 8260B	TKD	02/25/12 18:13	
Benzene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 18:13	
Toluene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 18:13	
Ethylbenzene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 18:13	
Xylenes, total	<2.0 ug/L	2.0	IVB0753	EPA 8260B	TKD	02/25/12 18:13	
Surrogate: Dibromoformmethane	93.5 %			85-123	TKD	02/25/12 18:13	
Surrogate: 1,2-Dichloroethane-d4	103 %			76-122	TKD	02/25/12 18:13	
Surrogate: Toluene-d8	104 %			86-117	TKD	02/25/12 18:13	
Surrogate: 4-Bromofluorobenzene	113 %			78-125	TKD	02/25/12 18:13	
TEH, as gasoline	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 21:16	
TEH, as #2 diesel fuel	0.3 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 21:16	D-06
TEH, as waste oil	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 21:16	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

W.E. Miner Env. Consultants, Inc.
P.O. Box 461
Ames, IA 50010

March 01, 2012
Page 2 of 7

Work Order: 1B21219

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1B21219-02 MW 102				Matrix: Water		Collected: 02/22/12 14:00	
Total Extractable Hydrocarbons	0.3 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 21:16	
Surrogate: Pentacosane	119 %			48-136	SMG	02/28/12 21:16	
1B21219-03 MW 103				Matrix: Water		Collected: 02/22/12 14:15	
Methyl-t-butyl Ether (MTBE)	<2.0 ug/L	2.0	IVB0753	EPA 8260B	TKD	02/25/12 18:54	
Benzene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 18:54	
Toluene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 18:54	
Ethylbenzene	<1.0 ug/L	1.0	IVB0753	EPA 8260B	TKD	02/25/12 18:54	
Xylenes, total	<2.0 ug/L	2.0	IVB0753	EPA 8260B	TKD	02/25/12 18:54	
Surrogate: Dibromoformmethane	95.8 %			85-123	TKD	02/25/12 18:54	
Surrogate: 1,2-Dichloroethane-d4	103 %			76-122	TKD	02/25/12 18:54	
Surrogate: Toluene-d8	104 %			86-117	TKD	02/25/12 18:54	
Surrogate: 4-Bromofluorobenzene	115 %			78-125	TKD	02/25/12 18:54	
TEH, as gasoline	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:05	
TEH, as #2 diesel fuel	0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:05	D-06
TEH, as waste oil	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:05	
Total Extractable Hydrocarbons	0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:05	
Surrogate: Pentacosane	119 %			48-136	SMG	02/28/12 22:05	
1B21219-04 MW 104				Matrix: Water		Collected: 02/22/12 14:30	
Methyl-t-butyl Ether (MTBE)	<2.0 ug/L	2.0	IVB0718	EPA 8260B	TKD	02/28/12 9:41	
Benzene	4.3 ug/L	1.0	IVB0718	EPA 8260B	TKD	02/28/12 9:41	
Toluene	<1.0 ug/L	1.0	IVB0718	EPA 8260B	TKD	02/28/12 9:41	
Ethylbenzene	2.3 ug/L	1.0	IVB0718	EPA 8260B	TKD	02/28/12 9:41	
Xylenes, total	<2.0 ug/L	2.0	IVB0718	EPA 8260B	TKD	02/28/12 9:41	
Surrogate: Dibromoformmethane	93.0 %			85-123	TKD	02/28/12 9:41	
Surrogate: 1,2-Dichloroethane-d4	103 %			76-122	TKD	02/28/12 9:41	
Surrogate: Toluene-d8	105 %			86-117	TKD	02/28/12 9:41	
Surrogate: 4-Bromofluorobenzene	110 %			78-125	TKD	02/28/12 9:41	
TEH, as gasoline	0.4 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:54	
TEH, as #2 diesel fuel	<0.1 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:54	
TEH, as waste oil	0.9 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:54	
Total Extractable Hydrocarbons	1.3 mg/L	0.1	IVB0776	Iowa OA-2	SMG	02/28/12 22:54	
Surrogate: Pentacosane	118 %			48-136	SMG	02/28/12 22:54	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

ANALYTICAL REPORT

February 24, 2012

Work Order: 1B20998

Page 1 of 7

Report To
Bill Miner W.E. Miner Env. Consultants, Inc. P.O. Box 461 Ames, IA 50010

Work Order Information
Date Received: 02/20/2012 11:00AM Collector: Miner, W. Phone: (515) 232-4957 PO Number: Butchs BP

Project : DOT MG

Project Number: Butchs BP

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1B20998-01 SB 100				Matrix:Soil		Collected: 02/17/12 09:35	
Methyl-t-butyl Ether (MTBE)	<0.009 mg/kg	0.009	IVB0633	EPA 8260B	TKD	02/22/12 11:58	
Benzene	<0.004 mg/kg	0.004	IVB0633	EPA 8260B	TKD	02/22/12 11:58	
Toluene	<0.004 mg/kg	0.004	IVB0633	EPA 8260B	TKD	02/22/12 11:58	
Ethylbenzene	<0.004 mg/kg	0.004	IVB0633	EPA 8260B	TKD	02/22/12 11:58	
Xylenes, total	<0.009 mg/kg	0.009	IVB0633	EPA 8260B	TKD	02/22/12 11:58	
Surrogate: Dibromoformmethane	99.4 %			76-132	TKD	02/22/12 11:58	
Surrogate: 1,2-Dichloroethane-d4	102 %			71-131	TKD	02/22/12 11:58	
Surrogate: Toluene-d8	99.4 %			87-115	TKD	02/22/12 11:58	
Surrogate: 4-Bromofluorobenzene	117 %			78-120	TKD	02/22/12 11:58	
TEH, as gasoline	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 18:49	
TEH, as #2 diesel fuel	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 18:49	
TEH, as waste oil	136 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 18:49	
Total Extractable Hydrocarbons	136 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 18:49	
Surrogate: Pentacosane	92.5 %			50-124	SMG	02/23/12 18:49	
1B20998-02 MW 101				Matrix:Soil		Collected: 02/17/12 10:45	
Methyl-t-butyl Ether (MTBE)	<0.010 mg/kg	0.010	IVB0633	EPA 8260B	TKD	02/22/12 12:39	
Benzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 12:39	
Toluene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 12:39	
Ethylbenzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 12:39	
Xylenes, total	<0.010 mg/kg	0.010	IVB0633	EPA 8260B	TKD	02/22/12 12:39	
Surrogate: Dibromoformmethane	101 %			76-132	TKD	02/22/12 12:39	
Surrogate: 1,2-Dichloroethane-d4	104 %			71-131	TKD	02/22/12 12:39	
Surrogate: Toluene-d8	98.7 %			87-115	TKD	02/22/12 12:39	
Surrogate: 4-Bromofluorobenzene	116 %			78-120	TKD	02/22/12 12:39	
TEH, as gasoline	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 19:38	
TEH, as #2 diesel fuel	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 19:38	

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W.E. Miner Env. Consultants, Inc.
 P.O. Box 461
 Ames, IA 50010

February 24, 2012
 Page 2 of 7

Work Order: 1B20998

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1B20998-02 MW 101				Matrix:Soil		Collected:	02/17/12 10:45
TEH, as waste oil	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 19:38	
Total Extractable Hydrocarbons	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 19:38	
<i>Surrogate: Pentacosane</i>	81.3 %			50-124	SMG	02/23/12 19:38	
1B20998-03 MW 102				Matrix:Soil		Collected:	02/17/12 12:35
Methyl-t-butyl Ether (MTBE)	<0.009 mg/kg	0.009	IVB0633	EPA 8260B	TKD	02/22/12 13:20	
Benzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 13:20	
Toluene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 13:20	
Ethylbenzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 13:20	
Xylenes, total	<0.009 mg/kg	0.009	IVB0633	EPA 8260B	TKD	02/22/12 13:20	
<i>Surrogate: Dibromoiodomethane</i>	103 %			76-132	TKD	02/22/12 13:20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	108 %			71-131	TKD	02/22/12 13:20	
<i>Surrogate: Toluene-d8</i>	100 %			87-115	TKD	02/22/12 13:20	
<i>Surrogate: 4-Bromofluorobenzene</i>	117 %			78-120	TKD	02/22/12 13:20	
TEH, as gasoline	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 20:27	
TEH, as #2 diesel fuel	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 20:27	
TEH, as waste oil	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 20:27	
Total Extractable Hydrocarbons	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 20:27	
<i>Surrogate: Pentacosane</i>	76.3 %			50-124	SMG	02/23/12 20:27	
1B20998-04 MW 103				Matrix:Soil		Collected:	02/17/12 13:20
Methyl-t-butyl Ether (MTBE)	<0.010 mg/kg	0.010	IVB0633	EPA 8260B	TKD	02/23/12 11:44	
Benzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/23/12 11:44	
Toluene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/23/12 11:44	
Ethylbenzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/23/12 11:44	
Xylenes, total	<0.010 mg/kg	0.010	IVB0633	EPA 8260B	TKD	02/23/12 11:44	
<i>Surrogate: Dibromoiodomethane</i>	106 %			76-132	TKD	02/23/12 11:44	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	106 %			71-131	TKD	02/23/12 11:44	
<i>Surrogate: Toluene-d8</i>	98.1 %			87-115	TKD	02/23/12 11:44	
<i>Surrogate: 4-Bromofluorobenzene</i>	118 %			78-120	TKD	02/23/12 11:44	
TEH, as gasoline	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 21:16	
TEH, as #2 diesel fuel	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 21:16	
TEH, as waste oil	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 21:16	
Total Extractable Hydrocarbons	<5 mg/kg	5	IVB0639	Iowa OA-2	SMG	02/23/12 21:16	
<i>Surrogate: Pentacosane</i>	81.3 %			50-124	SMG	02/23/12 21:16	
1B20998-05 MW 104				Matrix:Soil		Collected:	02/17/12 14:10
Methyl-t-butyl Ether (MTBE)	<0.010 mg/kg	0.010	IVB0633	EPA 8260B	TKD	02/22/12 14:42	
Benzene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 14:42	
Toluene	<0.005 mg/kg	0.005	IVB0633	EPA 8260B	TKD	02/22/12 14:42	

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ATC ASSOCIATES - OMAHA
 3609 Kingman Blvd
 Des Moines, IA 50311
 Brian Lenz

Work Order: CUJ0239

 Received: 10/05/11
 Reported: 10/17/11 13:55

 Project: Butch's Auto - Ames, IA
 Project Number: 353.42243.0001

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/Batch	Method
Sample ID: CUJ0239-01 (North - Ground Water) - cont. RWI									
Volatile Organic Compounds - cont.									
Isopropylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
p-Isopropyltoluene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Methylene Chloride	<5.00		ug/L	5.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Methyl tert-Butyl Ether	7.50		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Naphthalene	<5.00		ug/L	5.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
n-Propylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Styrene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,1,1,2-Tetrachloroethane	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,1,2,2-Tetrachloroethane	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Tetrachloroethene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Toluene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,2,3-Trichlorobenzene	<5.00		ug/L	5.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,2,4-Trichlorobenzene	<5.00		ug/L	5.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,1,1-Trichloroethane	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,1,2-Trichloroethane	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Trichloroethene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Trichlorofluoromethane	<4.00	C9	ug/L	4.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,2,3-Trichloropropene	<1.00	CIN	ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,2,4-Trimethylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
1,3,5-Trimethylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Vinyl chloride	<1.00	CIN	ug/L	1.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Xylenes, total	<3.00		ug/L	3.00	1	10/07/11 21:28	sjn	11J0462	SW 8260B
Surr: Dibromofluoromethane (75-120%)	97 %								
Surr: Toluene-d8 (80-120%)	97 %								
Surr: 4-Bromofluorobenzene (75-110%)	99 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	10/11/11 13:51	funk	11J0497	SW
UST ANALYSIS PARAMETERS									
Total Extractable Hydrocarbons	<300		ug/L	300	1	10/08/11 14:09	jdb	[CALC]	OA-2 - 8015B
Diesel	<300		ug/L	300	1.03	10/08/11 14:09	jdb	11J0238	OA-2 - 8015B
Gasoline	<300		ug/L	300	1.03	10/08/11 14:09	jdb	11J0238	OA-2 - 8015B
Motor Oil	<300		ug/L	300	1.03	10/08/11 14:09	jdb	11J0238	OA-2 - 8015B
Surr: Octacosane (55-150%)	112 %								
Polychlorinated Biphenyls by EPA Method 8082									
PCB-1016	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1221	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1232	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1242	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1248	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1254	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1260	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
PCB-1268	<0.800		ug/L	0.800	1.01	10/10/11 17:35	jar	11J0343	SW 8082
Surr: Decachlorobiphenyl (45-110%)	75 %								

ATC ASSOCIATES - OMAHA
 3609 Kingman Blvd
 Des Moines, IA 50311
 Brian Lenz

Work Order: CUJ0239

 Received: 10/05/11
 Reported: 10/17/11 13:55

 Project: Butch's Auto - Ames, IA
 Project Number: 353.42243.0001

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/Batch	Method
Sample ID: CUJ0239-02 (South - Ground Water) - cont. RWI									
Volatile Organic Compounds - cont.									
Ethylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Hexachlorobutadiene	<5.00		ug/L	5.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Hexane	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Isopropylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
p-Isopropyltoluene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Methylene Chloride	<5.00		ug/L	5.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Methyl tert-Butyl Ether	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Naphthalene	<5.00		ug/L	5.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
n-Propylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Styrene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,1,1,2-Tetrachloroethane	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,1,2,2-Tetrachloroethane	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Tetrachloroethene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Toluene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,2,3-Trichlorobenzene	<5.00		ug/L	5.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,2,4-Trichlorobenzene	<5.00		ug/L	5.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,1,1-Trichloroethane	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,1,2-Trichloroethane	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Trichloroethylene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Trichlorofluoromethane	<4.00	C9	ug/L	4.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,2,3-Trichloropropane	<1.00	CIN	ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,2,4-Trimethylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
1,3,5-Trimethylbenzene	<1.00		ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Vinyl chloride	<1.00	CIN	ug/L	1.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Xylenes, total	<3.00		ug/L	3.00	1	10/07/11 21:53	sjn	IIJ0462	SW 8260B
Surr: DibromoFluoromethane (75-120%)	92 %								
Surr: Toluene-d8 (80-120%)	97 %								
Surr: 4-Bromofluorobenzene (75-110%)	100 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	10/11/11 13:51	fmk	IIJ0497	SW
UST ANALYSIS PARAMETERS									
Total Extractable Hydrocarbons	<300		ug/L	300	1	10/08/11 14:51	jdb	{CALC}	OA-2 - 8015B
Diesel	<300		ug/L	300	1.03	10/08/11 14:51	jdb	IIJ0238	OA-2 - 8015B
Gasoline	<300		ug/L	300	1.03	10/08/11 14:51	jdb	IIJ0238	OA-2 - 8015B
Motor Oil	<300		ug/L	300	1.03	10/08/11 14:51	jdb	IIJ0238	OA-2 - 8015B
Surr: Octacosane (55-150%)	105 %								
Polychlorinated Biphenyls by EPA Method 8082									
PCB-1016	<0.800		ug/L	0.800	1.03	10/10/11 17:46	jar	IIJ0343	SW 8082
PCB-1221	<0.800		ug/L	0.800	1.03	10/10/11 17:46	jar	IIJ0343	SW 8082
PCB-1232	<0.800		ug/L	0.800	1.03	10/10/11 17:46	jar	IIJ0343	SW 8082
PCB-1242	<0.800		ug/L	0.800	1.03	10/10/11 17:46	jar	IIJ0343	SW 8082
PCB-1248	<0.800		ug/L	0.800	1.03	10/10/11 17:46	jar	IIJ0343	SW 8082

ATC ASSOCIATES - OMAHA
 3609 Kingman Blvd
 Des Moines, IA 50311
 Brian Lenz

Work Order: CUJ0239

 Received: 10/05/11
 Reported: 10/17/11 13:55

 Project: Butch's Auto - Ames, IA
 Project Number: 353.42243.0001

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/Batch	Method
Sample ID: CUJ0239-03 (B-1 - Ground Water) - cont.									
Volatile Organic Compounds - cont.									
2,2-Dichloropropane	<4.00		ug/L	4.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,1-Dichloropropene	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
cis-1,3-Dichloropropene	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
trans-1,3-Dichloropropene	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Ethylbenzene	3.91		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Hexachlorobutadiene	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Hexane	5.70		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Isopropylbenzene	1.60		ug/L	1.00	1	10/07/11 22:19	sja	1IJ0462	SW 8260B
p-Isopropyltoluene	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Methylene Chloride	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Methyl tert-Butyl Ether	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Naphthalene	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
n-Propylbenzene	3.52		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Styrene	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,1,1,2-Tetrachloroethane	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,1,2,2-Tetrachloroethane	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Tetrachloroethene	2.43		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Toluene	1.29		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,2,3-Trichlorobenzene	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,2,4-Trichlorobenzene	<5.00		ug/L	5.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,1,1-Trichloroethane	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,1,2-Trichloroethane	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Trichloroethene	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Trichlorofluoromethane	<4.00	C9	ug/L	4.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,2,3-Trichloropropane	<1.00	C1N	ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,2,4-Trimethylbenzene	7.29		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
1,3,5-Trimethylbenzene	<1.00		ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Vinyl chloride	<1.00	C1N	ug/L	1.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Xylenes, total	<3.00		ug/L	3.00	1	10/07/11 22:19	sjn	1IJ0462	SW 8260B
Surr: DibromoFluoromethane (75-120%)	93 %								
Surr: Toluene-d8 (80-120%)	96 %								
Surr: 4-BromoFluorobenzene (75-110%)	100 %								
VOC Preservation Check									
pH	<2.00		units	2.00	1	10/11/11 13:51	fmk	1IJ0497	SW
UST ANALYSIS PARAMETERS									
Total Extractable Hydrocarbons	328000		ug/L	7500	25	10/12/11 07:39	mag	[CAJC]	OA-2 - 8015B
Diesel	7980	Q	ug/L	300	1.1	10/08/11 15:33	jdb	1IJ0238	OA-2 - 8015B
Gasoline	4790		ug/L	300	1.1	10/08/11 15:33	jdb	1IJ0238	OA-2 - 8015B
Motor Oil	315000		ug/L	7500	27.5	10/12/11 07:39	mag	1IJ0238	OA-2 - 8015B
Surr: Octacosane (55-150%)	5460 %	ZX							
Polychlorinated Biphenyls by EPA Method 8082									
PCB-1016	<0.800		ug/L	0.800	0.962	10/10/11 17:56	jar	1IJ0343	SW 8082

ATC ASSOCIATES - OMAHA
 3609 Kingman Blvd
 Des Moines, IA 50311
 Brian Lenz

Work Order: CUJ0239

 Received: 10/05/11
 Reported: 10/17/11 13:55

 Project: Butch's Auto - Ames, IA
 Project Number: 353.42243.0001

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/Batch	Method
Sample ID: CUJ0239-04 (B-1 - Soil) - cont.					Sampled: 10/05/11			Recv: 10/05/11 15:00
Volatile Organic Compounds - cont.								
1,2-Dichloroethane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,1-Dichloroethene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
cis-1,2-Dichloroethene	46.5		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
trans-1,2-Dichloroethene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,2-Dichloropropane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,3-Dichloropropane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
2,2-Dichloropropane	<82.7		ug/kg dry	82.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,1-Dichloropropene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
cis-1,3-Dichloropropene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
trans-1,3-Dichloropropene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Ethylbenzene	43.2		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Hexachlorobutadiene	<103		ug/kg dry	103	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Hexane	111	M1	ug/kg dry	103	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Isopropylbenzene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
p-Isopropyltoluene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Methylene Chloride	<207		ug/kg dry	207	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Methyl tert-Butyl Ether	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Naphthalene	<103		ug/kg dry	103	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
n-Propylbenzene	43.2		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Styrene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,1,1,2-Tetrachloroethane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,1,2,2-Tetrachloroethane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Tetrachloroethene	222	M1	ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Toluene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,2,3-Trichlorobenzene	<103		ug/kg dry	103	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,2,4-Trichlorobenzene	<103		ug/kg dry	103	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,1,1-Trichloroethane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,1,2-Trichloroethane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Trichloroethene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Trichlorofluoromethane	<82.7		ug/kg dry	82.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,2,3-Trichloropropane	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,2,4-Trimethylbenzene	151		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
1,3,5-Trimethylbenzene	<20.7		ug/kg dry	20.7	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Vinyl chloride	<62.0		ug/kg dry	62.0	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Xylenes, total	<62.0		ug/kg dry	62.0	4.14	10/06/11 22:06	ZTB	IIJ0377 SW 8260B
Sur: Dibromofluoromethane (75-125%)	97 %							
Sur: Toluene-d8 (80-120%)	106 %							
Sur: 4-Bromofluorobenzene (80-120%)	88 %							
UST ANALYSIS PARAMETERS								
Total Extractable Hydrocarbons	4600		mg/kg	116	10	10/12/11 08:25		
Diesel	497		mg/kg	11.6	1.16	10/08/11 11:29		
Gasoline	48.1		mg/kg	11.6	1.16	10/08/11 11:29		

ATC ASSOCIATES - OMAHA
 3609 Kingman Blvd
 Des Moines, IA 50311
 Brian Lenz

Work Order: CUJ0239

 Received: 10/05/11
 Reported: 10/17/11 13:55

 Project: Butch's Auto - Ames, IA
 Project Number: 353.42243.0001

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Quan. Limit	Dilution Factor	Date Analyzed	Analyst	Seq/Batch	Method
Sample ID: CUJ0239-05 (B-S - Soil) - cont.	B-S					Sampled: 10/05/11			Revd: 10/05/11 15:00
Volatile Organic Compounds - cont.									
1,3-Dichlorobenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,4-Dichlorobenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Dichlorodifluoromethane	<1690	RL1,L1	ug/kg dry	1690	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1-Dichloroethane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,2-Dichloroethane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1-Dichloroethylene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
cis-1,2-Dichloroethylene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
trans-1,2-Dichloroethylene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,2-Dichloropropane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,3-Dichloropropane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
2,2-Dichloropropane	<2260	RL1	ug/kg dry	2260	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1-Dichloropropene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
cis-1,3-Dichloropropene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
trans-1,3-Dichloropropene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Ethylbenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Hexachlorobutadiene	<2820	RL1	ug/kg dry	2820	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Hexane	<2820	RL1	ug/kg dry	2820	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Isopropylbenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
p-Isopropyltoluene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Methylene Chloride	<5640	RL1	ug/kg dry	5640	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Methyl tert-Butyl Ether	<564	RL1,L	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Naphthalene	<2820	RL1	ug/kg dry	2820	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
n-Propylbenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Styrene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1,1,2-Tetrachloroethane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1,2,2-Tetrachloroethane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Tetrachloroethylene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Toluene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,2,3-Trichlorobenzene	<2820	RL1	ug/kg dry	2820	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,2,4-Trichlorobenzene	<2820	RL1	ug/kg dry	2820	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1,1-Trichloroethane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,1,2-Trichloroethane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Trichloroethylene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Trichlorofluoromethane	<2260	RL1	ug/kg dry	2260	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,2,3-Trichloropropane	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,2,4-Trimethylbenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
1,3,5-Trimethylbenzene	<564	RL1	ug/kg dry	564	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Vinyl chloride	<1690	RL1	ug/kg dry	1690	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Xylenes, total	<1690	RL1	ug/kg dry	1690	95.8	10/11/11 21:52	ZTB	11J0595	SW 8260B
Surr: Dibromoiodomethane (75-125%)	103 %	RL1							
Surr: Toluene-d8 (80-120%)	100 %	RL1							
Surr: 4-Bromofluorobenzene (80-120%)	100 %	RL1							