CON: 12-15
Doc # 15829

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, South Dakota 57104
605-335-5512 • FAX 605-335-0773

June 19, 2007

Field Office #2
Iowa Department of Natural Resources
2300 15th Street SW
Mason City, IA 50401

Attn: Cindy Garza

Subj: Groundwater Sampling – Former Bulk Site
Lots 6, 7 & 8 of Marsh View First Subdivision
Ventura, Iowa
Geotek #06-594-7

Dear Ms. Garza:

This correspondence is provided on behalf of Hancock County Co-op Oil Company and presents the results of groundwater monitoring activities at the referenced site.

Background Information

The project site is located at the western edge of Ventura, Iowa, in Hancock County. A topographic site map is provided as Figure 1.

It is our understanding that petroleum contaminated soils were encountered in October 2005 during excavation activities for a basement on Lot 7. The Iowa Department of Natural Resources (IDNR) was contacted. A remedial excavation was completed to attempt to remove the most significant soil contamination. The IDNR directed the remedial excavation.

In February 2006, the IDNR completed Geoprobe sampling on Lots 6, 7 and 8. Based on the results of the Geoprobe sampling, the IDNR, in its May 1, 2006 correspondence, directed Hancock County Co-op to install two monitoring wells at the site and complete monthly sampling for one year.

Two soil borings were advanced and completed as monitoring wells on June 5, 2006. The locations of the monitoring wells are indicated on Figure 2. The boring logs/well construction diagrams for the monitoring wells are provided in Appendix A. The first groundwater sampling event was completed on June 20, 2006. The most recent report for the project site was submitted to the IDNR on April 17, 2007 and provided the results of monthly groundwater monitoring completed through March 2007.

Project Results

Groundwater samples were collected from MW-1 and MW-2 on April 24 and on May 23, 2007. Water levels were measured in the wells prior to purging and sampling. The groundwater table in April rose approximately 2.5 to 3 feet as compared to March 2007. From the April to the May sampling event, the water table dropped slightly, approximately 0.3 feet. Table 1 includes water level data. Similar to previous sampling events, free product was not present in either well in April or May.

The collected groundwater samples were submitted for analysis of BTEX (OA-1) and TEH-diesel (OA-2). Based on previous sampling, MTBE is not present at the site at concentrations above laboratory method detection limits. The laboratory analytical reports for the April and May 2007 sampling events are provided in Appendix B. The analytical data accumulated to date for each well is included in Table 1.

The BTEX concentrations resulting from the April and May sampling events are generally lower than previous results. Based on the analytical results, TEH-diesel was not present in the wells, similar to the results for previous months. The BTEX concentrations at MW-1 in April and May were noted to be the lowest to date for that well.

Conclusions/Recommendations

The May 2007 sampling event represents the completion of one year of monthly sampling of the monitoring wells. A review of the accumulated data indicates that the initial sampling event in June 2006 resulted in the highest BTEX concentrations at each monitoring well. BTEX concentrations at each well have generally decreased or stabilized over time. Free phase petroleum product has not been observed at the site.

Petroleum vapors have not been noted in the house constructed on Lot 6. A vapor recovery unit was installed in the basement of the house, as directed by the IDNR in its May 1, 2006 letter. Water is pumped from the sump in the basement of the house as it accumulates. Water from the sump was sampled in April 2007. BTEX was not present in the sump water.

Figure 3 is a cross section based on the boring logs. Based on the field screening data obtained using a photionization detector (PID), soil contamination is present from approximately 11 to 18 feet below the ground surface. The highest and lowest water levels for each monitoring well are indicated on the cross section. It can be noted that groundwater appears to generally be above the zone of contamination. Therefore, the lower groundwater contaminant concentrations from the recent sampling events appear reasonable.

It is our opinion that vapor concerns for the house on Lot 6 appear minimal. When the water table is shallow and water enters the sump in the house, dilution is occurring, resulting in the lower contaminant concentrations. This is evidenced by the April and May 2007 BTEX concentrations, when the water table was at its shallowest. If groundwater were to drop below 11 feet into the zone of identified soil contamination, groundwater contaminant concentrations

could be higher. However, the vapor concerns for the residence would be diminished because of the vertical distance separating the contamination and the house basement. Additionally, if the water table is 11 feet or greater below the ground surface, water would not be accumulating in the home's sump.

Lots 7 and 8 are to be used by the City of Ventura for a park, with playground equipment and grass areas. Significant petroleum contamination was not identified on Lot 8. Based on the future use of the lots, it does not appear that receptors will be present that could be impacted by the identified petroleum contamination.

A draft restrictive covenant was provided to the IDNR in January 2006. The draft restrictive covenant included use limitations on Lot 7 concerning the installation of water supply wells or the construction of structures with enclosed spaces. To date the IDNR has not commented on the draft restrictive covenant. The covenant may require modification if it is determined that a covenant is necessary to get the site to closure. It is our understanding that the Hancock County Co-op Oil Company will be deeding Lot 7 to the City of Ventura.

It is our opinion that the accumulated data is sufficient to demonstrate that the project site poses limited environmental, health or safety risks. Additional monitoring is not recommended. The monitoring wells should be properly abandoned. If well abandonment is approved by the IDNR, well abandonment forms will be provided after the work is completed.

Standard of Care

Recommendations contained in this report represent our professional opinions. These opinions are based on information currently available and arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

Remarks

If there are questions concerning this report or the project site, please contact our office at **605-335-5512** or **1-800-354-5512.**

Sincerely,

Geotek Engineering & Testing Services, Inc.

Keith DeLange
Project Manager

cc: Brad Frein, Hancock County Co-op Oil, 245 State Street, Garner, IA 50438
City of Ventura, P.O. Box 230, Ventura, IA 50482

TABLE 1
Groundwater Data
Former Bulk Plant
Ventura, Iowa

Well	Date	Benzene	Toluene	Ethylbenzene	Xylenes	TEH-Gas	TEH-Diesel	GW Elevation
MW-1	6/20/2006	3,340	12,000	2,600	12,100	144,000	<100	90.41
MW-1	7/18/2006	1,190	8,660	1,460	8,350	120,000	<100	88.84
MW-1	8/22/2006	1,950	10,200	1,400	10,600	103,000	30,700	87.57
MW-1	9/20/2006	2,290	9,720	2,200	12,300	234,000	<100	87.04
MW-1	10/19/2006	1,850	9,380	1,660	9,500	187,000	<100	86.66
MW-1	11/16/2006	2,300	10,100	2,210	9,870	290,000	<100	86.31
MW-1	12/7/2006	1,880	8,780	1,280	8,430	271,000	<200	86.42
MW-1	1/26/2007	1,440	5,570	1,590	8,080	215,000	<400	87.99
MW-1	2/20/2007	2,390	9,340	1,900	10,750	282,000	<200	87.66
MW-1	3/29/2007	360	2,140	680	4,160	74,100	<100	89.38
MW-1	4/24/2007	12	65	98	630	6,330	<200	92.33
MW-1	5/23/2007	107	150	275	1,140	9,930	<100	92.00
MW-2	6/20/2006	1,342	1,640	2,660	16,400	607,000	122,000	89.57
MW-2	7/18/2006	190	170	830	5,640	114,000	<100	88.01
MW-2	8/22/2006	24	402	698	7,320	58,100	36,000	86.78
MW-2	9/20/2006	<20	819	825	7,980	185,000	<100	86.27
MW-2	10/19/2006	234	887	874	7,190	132,000	<100	85.82
MW-2	11/16/2006	157	917	1020	8,320	21,800	<100	85.46
MW-2	12/7/2006	206	706	599	6,020	95,900	<200	85.59
MW-2	1/26/2007	152	105	340	1,550	24,000	<400	87.15
MW-2	2/20/2007	210	350	490	3,360	53,000	<200	86.71
MW-2	3/29/2007	100	690	490	4,510	34,800	<100	88.74
MW-2	4/24/2007	91	884	721	6,010	45,400	<100	91.31
MW-2	5/23/2007	196	964	704	6,060	71,900	<100	91.00

Notes: BTEX, TEH-Gas & TEH-Diesel concentrations in ug/L (parts per billion [ppb])
Groundwater elevations in feet, referenced to temporary benchmark set at 100 ft.

DELORME

XMap® 4.5

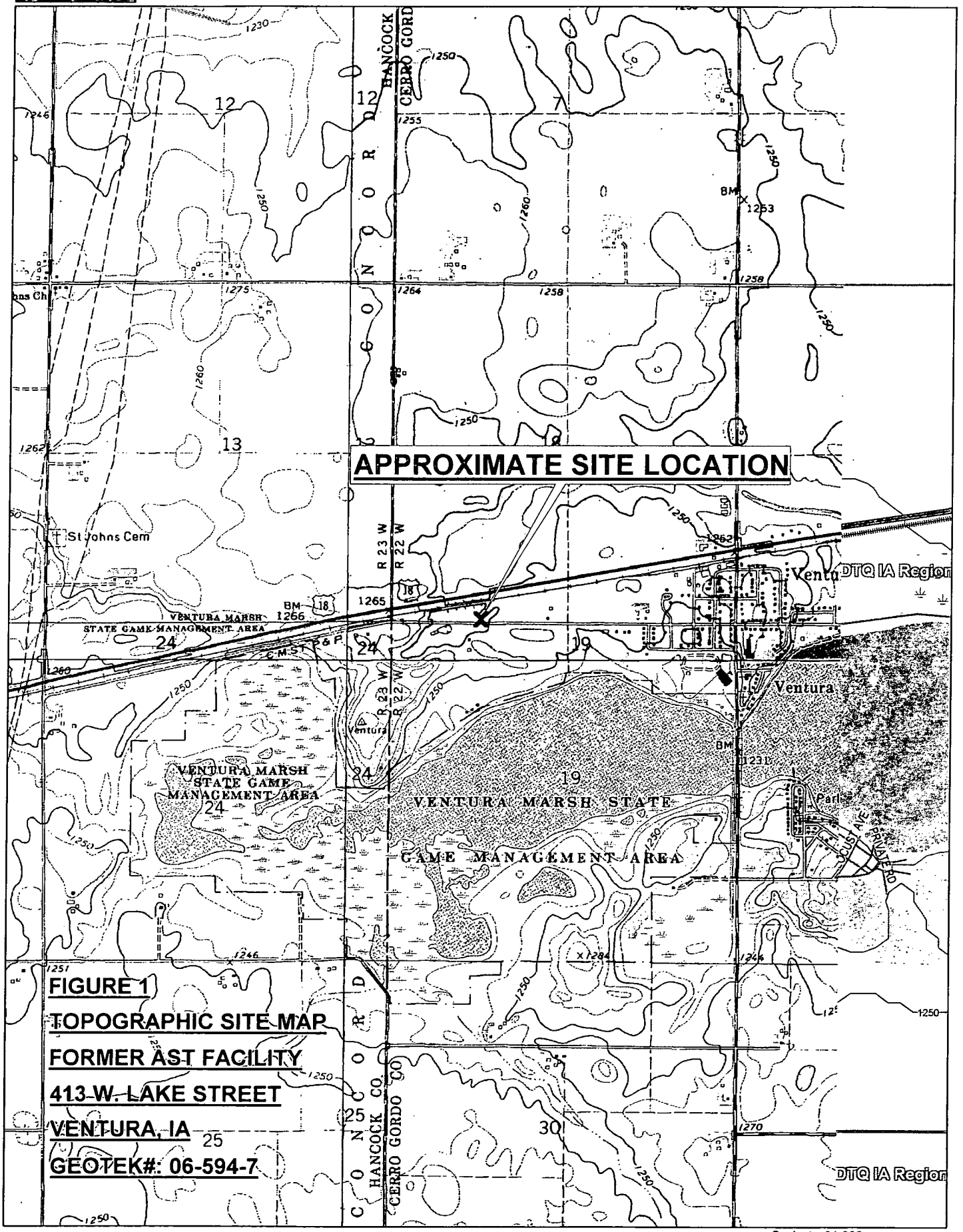


FIGURE 1

TOPOGRAPHIC SITE MAP

FORMER AST FACILITY

413 W. LAKE STREET

VENTURA, IA

GEOTEK#: 06-594-7

TN

MN (1.6°E)

Scale 1 : 24,000

1" = 2,000.0 ft

Data Zoom 13-0

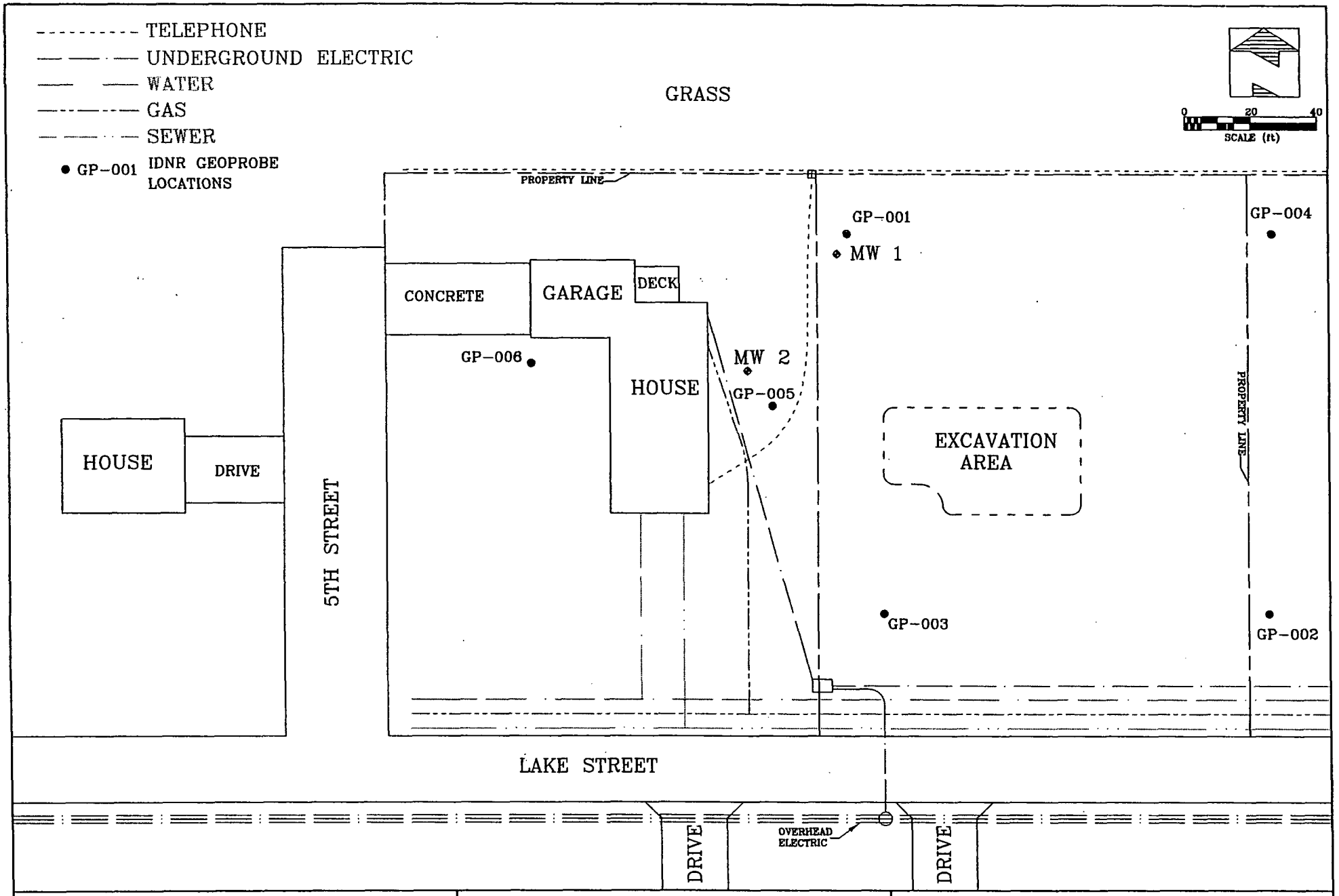


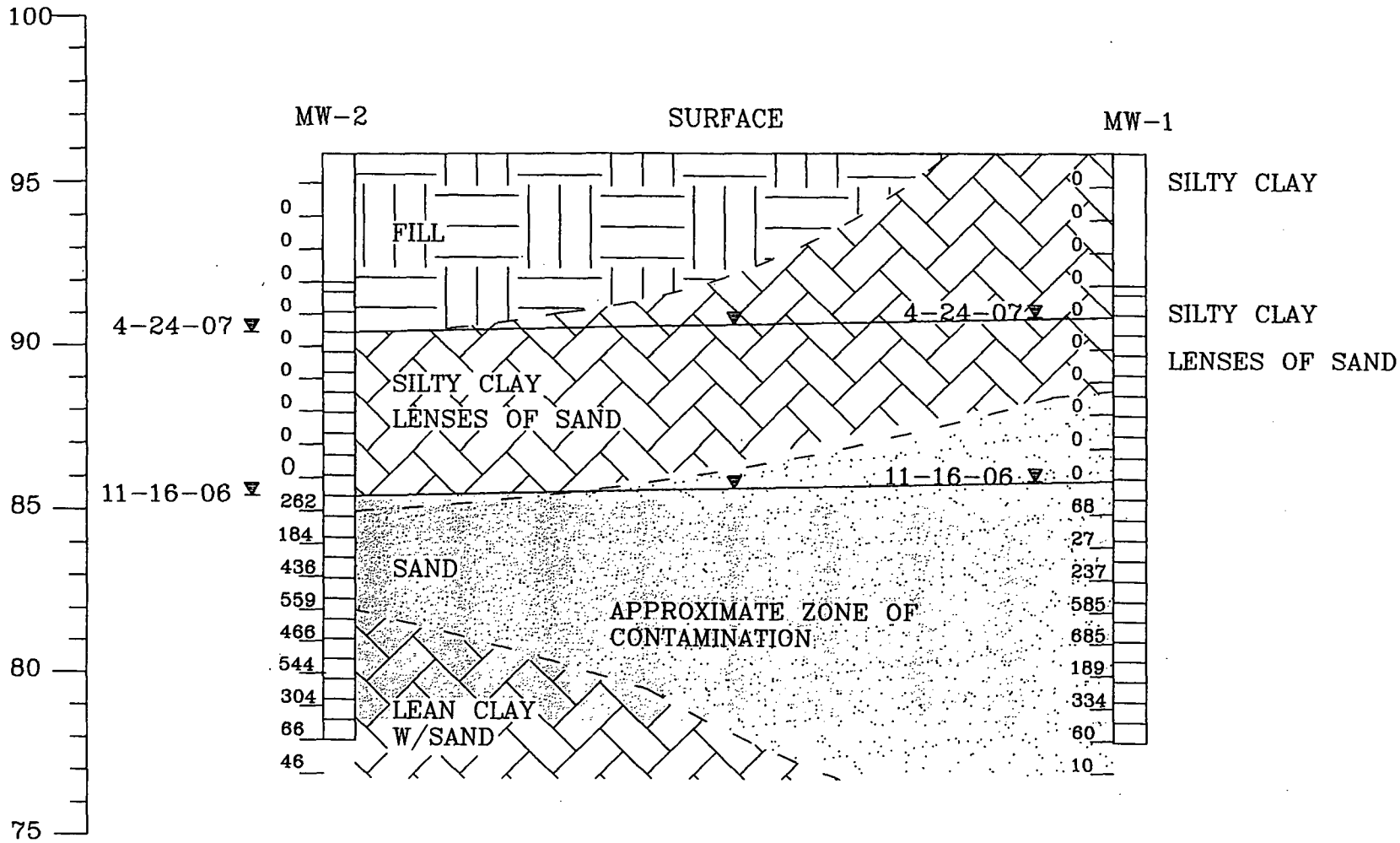
FIGURE 2
SITE MAP
FORMER AST FACILITY
VENTURA, IA

ACAD\GEOTEK\KEITH\06-594-7

PROJECT#: 06-594-7

DRAWN BY: JDM CHECKED BY:

GEOTEK ENGINEERING & TESTING SERVICES, INC.



▼ WATER TABLE

FIELD SCREENING VALUES (PID) SHOWN AT THE LEFT OF EACH WELL

HORIZONTAL SCALE 1"=10'

VERTICAL SCALE 1"=5'

FIGURE 3
CROSS-SECTION
FORMER AST FACILITY
VENTURA, IA

ACAD\GEOTEK\KEITH\06-594

PROJECT#: 06-594-7

DRAWN BY: JDM CHECKED BY:

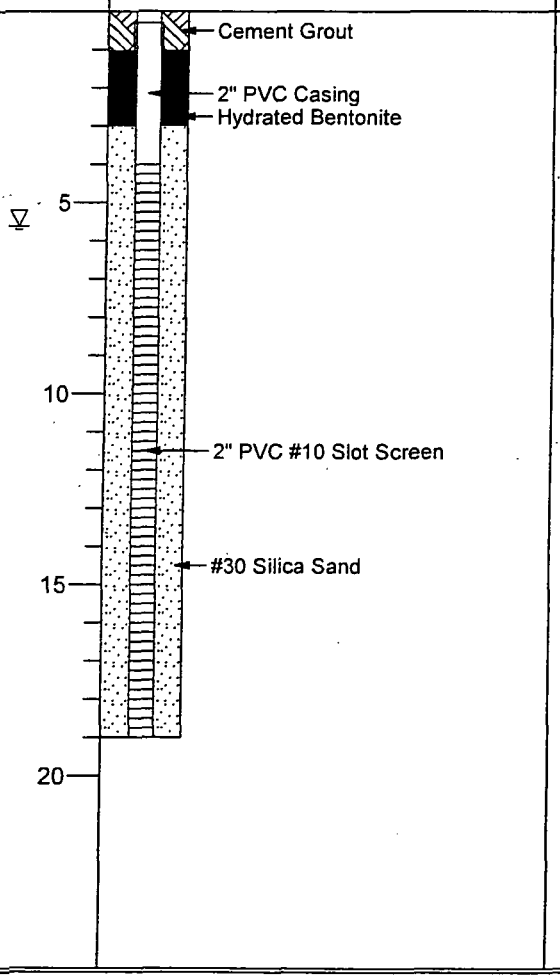
GEOTEK ENGINEERING & TESTING SERVICES, INC.

APPENDIX A

GEOTEK Number: 06-594

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	Facility Name:	Facility Street Address:
MW-1 1 of 1	**Former AST Facility**	**Ventura, IA**
Boring Depth (ft) X Diameter (in): **20.0 x 7.25**		Drilling Method: **3.25" ID Hollow Stem Auger**
Well Contractor Name: **Keith DeLange**		Logged by: **Keith DeLange**
Registration Number: **6662**		
Ground Surface Elevation (ASL): **96.92**		Top of Casing Elevation (ASL): **96.58**
Date: **6/5/06** Start Time: **1:03 pm**	Date: **6/5/06** End Time: **2:35 pm**	UST Number: **NA**	LUST Number: **NA**



Depth (feet)	Blow Count if applicable	Sample No.	Sample Type*	PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
		1	SS	0	CL-ML SILTY CLAY: dark brown, dry to moist, (CL-ML)
		2	SS	0	
		3	SS	0	CL-ML SILTY CLAY: brown, moist, lenses of sand (CL-ML)
		4	SS	0	
		5	SS	0	
		6	SS	0	
		7	SS	0	
		8	SS	0	SP SAND: with gravel, poorly graded fine to coarse grained, brown, moist to waterbearing, lenses of clay (SP)
		9	SS	0	
		10	SS	0	
		11	SS	0	
		12	SS	68	
		13	SS	27	
		14	SS	237	
		15	SS	585	
		16	SS	685*	
		17	SS	189	
		18	SS	334	
		19	SS	60	
		20	SS	10	
					Bottom of borehole at 20 feet.
					*Lab soil sample

* SS (split spoon) HS (hollow stem auger) FA (flight auger) NSR (no sample recovered) ** ND (non-detect)

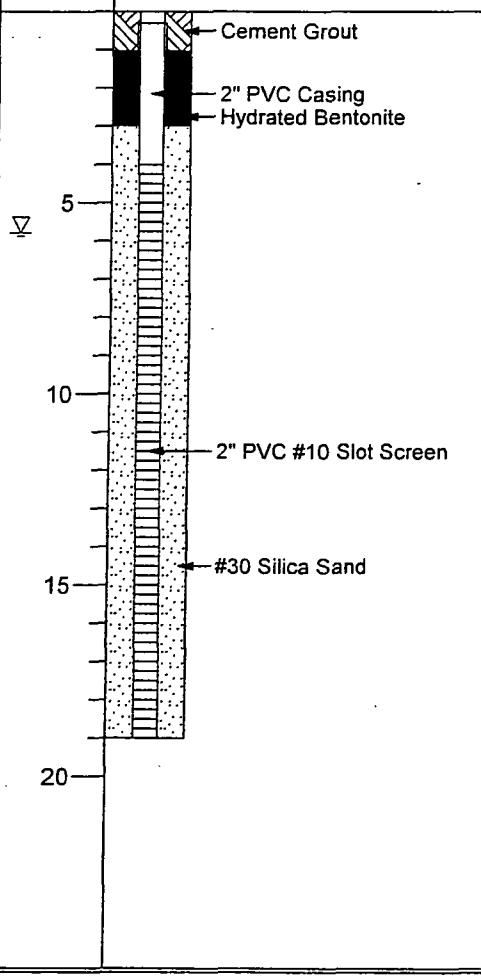
Observations	Date:	6/5/06	6/20/06			
Water Levels (ASL)	Level:	▽ 91.30	90.41			
Static Water Level Symbol	Time:	4:00 pm	4:30 pm			

DNR FORM 542-1392

GEOTEK Number: 06-594

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	Facility Name:	Facility Street Address:
MW-2 1 of 1	**Former AST Facility**	**Ventura, IA**
Boring Depth (ft) X Diameter (in): **20.0 x 7.25**		Drilling Method: **3.25" ID Hollow Stem Auger**
Well Contractor Name: **Keith DeLange**		Logged by: **Keith DeLange**
Registration Number: **6662**		
Ground Surface Elevation (ASL): **96.55**		Top of Casing Elevation (ASL): **96.28**
Date: **6/5/06**	Date: **6/5/06**	UST Number: **NA**	LUST Number: **NA**
Start Time: **2:41 pm**	End Time: **4:02 pm**		



Depth (feet)	Well Construction Details	Blow Count if applicable	Sample No.	Sample Type*	PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
			1	SS	0	FILL, MOSTLY CLAY: dark brown, dry to moist
			2	SS	0	
			3	SS	0	
			4	SS	0	
			5	SS	0	
			6	SS	0	CL-ML SILTY CLAY: brown, moist, lenses of sand (CL-ML)
			7	SS	0	
			8	SS	0	
			9	SS	0	
			10	SS	0	
			11	SS	0	
			12	SS	262	
			13	SS	184	SP SAND: a little gravel, poorly graded fine to coarse grained, brown, moist to waterbearing, (SP)
			14	SS	436	
			15	SS	559*	
			16	SS	466	CL LEAN CLAY WITH SAND: a little gravel, dark gray, moist, lenses of sand (CL)
			17	SS	544	
			18	SS	304	
			19	SS	66	
			20	SS	46	
						Bottom of borehole at 20 feet.
						*Lab soil sample

* SS (split spoon) HS (hollow stem auger) FA (flight auger) NSR (no sample recovered) ** ND (non-detect)

Observations	Date:	6/5/06	6/20/06			
Water Levels (ASL)	Level:	▽ 90.76	89.57			
Static Water Level Symbol	Time:	4:30 pm	4:15 pm			

DNR FORM 542-1392

APPENDIX B

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, SD 57104
605-335-5512 Fax 605-335-0773

REPORT OF ANALYTICAL RESULTS

PROJECT # : 06-594

PROJECT:
Former AST Facility
Ventura, IA

CLIENT:
Hancock County Coop Oil
Garner, IA 50438

PHONE:

CHAIN OF CUSTODY 20651

DATE: June 01, 2007

SAMPLE MEDIUM: WATER

DATE SAMPLED: May 23, 2007

DATE RECEIVED: May 24, 2007

SAMPLER: Jeff Thorsheim 605-335-5512

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
MW #1	1334-07					
	5/24/2007	OA-1	Benzene	107	ug/L	2 ug/L
	5/24/2007	OA-1	Toluene	150	ug/L	2 ug/L
	5/24/2007	OA-1	Ethylbenzene	275	ug/L	2 ug/L
	5/24/2007	OA-1	Xylenes	1140	ug/L	50 ug/L
	5/29/2007	OA-2	TEH as Gasoline	9930	ug/L	200 ug/L
	5/29/2007	OA-2	TEH as Diesel	<100	ug/L	200 ug/L
Comments: Sample pH <2.			Surrogate	107 %		
MW #2	1335-07					
	5/24/2007	OA-1	Benzene	196	ug/L	2 ug/L
	5/24/2007	OA-1	Toluene	964	ug/L	20 ug/L
	5/24/2007	OA-1	Ethylbenzene	704	ug/L	20 ug/L
	5/24/2007	OA-1	Xylenes	6060	ug/L	50 ug/L
	5/30/2007	OA-2	TEH as Gasoline	71900	ug/L	2000 ug/L
	5/29/2007	OA-2	TEH as Diesel	<100	ug/L	200 ug/L
Comments: Sample pH <2.			Surrogate	108 %		

Temperature at Receipt: 10 C

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

Reviewed by: 6/1/07

SN: 20651

GEOTEK ENGINEERING & TESTING SERVICES, INC.

909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD

Analytical Request

LAB: Geotek

GEOTEK PROJECT NAME Fmr AST Facility
Address 413 W. Luke Street
Ventura, Iowa

Geotek Project # 06-5947
Geotek Project Manager Keith D.L
P.O. #/Billing Reference
Bill To Geotek

TRANSMITTAL OF RESULTS
Report To
Fax?
Express Mail?
Standard Mail?

Sampled by (PRINT) Red Phone#
Sampler Signature Date Sampled 5-23-07

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency) BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	n-Hexane	Speed of Analysis No. days if other than standard turnaround	Remarks
1334	mw1	H2O	1L-1 Vm		X			X						Strong
1335	mw2	X	X		X			X						Slight

ANALYSIS REQUESTED

Relinquished by Sampler: (Signature)	DATE/TIME	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
	5-24-07			
Delivered by Shipper: (Signature)	DATE/TIME	Received by Laboratory: (Signature)	DATE/TIME	
			5/24/07 7:19	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials ___

(10°C)

Form 13682

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, SD 57104
605-335-5512 Fax 605-335-0773

REPORT OF ANALYTICAL RESULTS

PROJECT # : 06-594

PROJECT:
Former AST Facility
Ventura, IA

CLIENT:
Hancock County Coop Oil
Garner, IA 50438

PHONE:

CHAIN OF CUSTODY . 20619

DATE: May 01, 2007

SAMPLE MEDIUM: WATER

DATE SAMPLED: April 24, 2007

DATE RECEIVED: April 25, 2007

SAMPLER: Jeff Thorsheim 605-335-5512

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit
MW #1	1271-07					
	4/26/2007	OA-1	Benzene	12	ug/L	2 ug/L
	4/26/2007	OA-1	Toluene	65	ug/L	2 ug/L
	4/26/2007	OA-1	Ethylbenzene	98	ug/L	2 ug/L
	4/26/2007	OA-1	Xylenes	630	ug/L	5 ug/L
	4/26/2007	OA-1	TPH as Gasoline	6330	ug/L	100 ug/L
	4/30/2007	OA-2	TEH as Diesel	<200	ug/L	200 ug/L
Comments: Sample pH <2.			Surrogate	90.4 %		
MW #2	1272-07					
	4/26/2007	OA-1	Benzene	91	ug/L	2 ug/L
	4/30/2007	OA-1	Toluene	884	ug/L	20 ug/L
	4/30/2007	OA-1	Ethylbenzene	721	ug/L	20 ug/L
	4/30/2007	OA-1	Xylenes	6010	ug/L	50 ug/L
	4/30/2007	OA-1	TPH as Gasoline	45400	ug/L	1000 ug/L
	4/30/2007	OA-2	TEH as Diesel	<100	ug/L	200 ug/L
Comments: Sample pH <2.			Surrogate	105 %		
SUMP	1273-07					
	4/26/2007	OA-1	Benzene	<2	ug/L	2 ug/L
	4/26/2007	OA-1	Toluene	<2	ug/L	2 ug/L
	4/26/2007	OA-1	Ethylbenzene	<2	ug/L	2 ug/L
	4/26/2007	OA-1	Xylenes	<5	ug/L	5 ug/L
Comments: Sample pH <2.			Surrogate	89.3 %		

GEOTEK ENGINEERING
& TESTING SERVICES, INC.
909 East 50th Street North
Sioux Falls, SD 57104
605-335-5512 Fax 605-335-0773

REPORT OF ANALYTICAL RESULTS

PROJECT # : 06-594

PROJECT:
Former AST Facility
Ventura, IA

CLIENT:
Hancock County Coop Oil
Garner, IA 50438

PHONE:

CHAIN OF CUSTODY 20619

DATE: May 01, 2007

SAMPLE MEDIUM: WATER

DATE SAMPLED: April 24, 2007

DATE RECEIVED: April 25, 2007

SAMPLER: Jeff Thorsheim 605-335-5512

Site	Lab ID#	Method	Compound Analyzed	Test Results	Units	Method Detection Limit

Temperature at Receipt: 6 C

Analysts: Katherine Howard and Jason Cook

Respectfully submitted

Katherine Howard, Laboratory Supervisor

Reviewed by: 5/2/07

SN: 20619

GEOTEK ENGINEERING
& TESTING SERVICES. INC.
909 East 50th Street North
Sioux Falls, SD 57104
Telephone (605) 335-5512 • Fax (605) 335-0773

CHAIN OF CUSTODY RECORD
Analytical Request

LAB: Geotek

GEOTEK PROJECT NAME Fmr Ast Facility
Address 413 W. Lake St
Ventura Iowa

Geotek Project # 06-5941(7)
Geotek Project Manager Keith D.L.
P.O. #/Billing Reference
Bill To Geotek

TRANSMITTAL OF RESULTS
Report To
Fax?
Express Mail?
Standard Mail?

Sampled by (PRINT) Red Phone#
Sampler Signature Date Sampled 4-24-07

ANALYSIS REQUESTED

Sample No.	Sample Description	Sample Type	No. of Contain.	PID Reading	LABORATORY METHODS (State Regulatory Agency)	BTEX	TH as Gasoline	Naphthalene	TH as Fuel Oil/Diesel	TH as Waste Oil	Benzene Toluene	MTBE	n-Hexane	Speed of Analysis No. days if other than standard turnaround	Remarks
1271	mw 1	H2O	1 L + 3 vm			X			X						Slight
1272	mw 2	X	X			X			X						Slight
1273	Sump	X	3 vm			X									

Relinquished by Sampler: (Signature)	DATE/TIME 4-25-07	Received by Shipper: (Signature)	DATE/TIME	Method of Shipment:
Delivered by Shipper: (Signature)	DATE/TIME	Received by Laboratory: (Signature)	DATE/TIME 4/26/07 13:22	

LABORATORY: Was cooler received with Chain of Custody Seal intact? ___ Yes ___ No Initials ___

Form 13682