

N83447.AR.000092
NAS FORT WORTH
5090.3a

LIMITED ENVIRONMENTAL INVESTIGATION AND ASSESSMENT OF PETROLEUM
HYDROCARBON IMPACTS NAS FORT WORTH TX
9/28/1992
MAXIM ENGINEERS



**NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS**

**ADMINISTRATIVE RECORD
COVER SHEET**

AR File Number 116

File: 17A22
D.B.

116

BSS

LIMITED ENVIRONMENTAL INVESTIGATION
and
Assessment of Petroleum
Hydrocarbon Impacts

MONITOR WELL INSTALLATION
Carswell Air Force Base
Fort Worth, Texas

Project Number:

2492001270

Prepared for:

UNITED STATES AIR FORCE
Carswell Air Force Base
Fort Worth, Texas

Prepared by:

MAXIM ENGINEERS, INC.
Environmental and Engineering Consultants
2301 East Loop 820 North
Fort Worth, Texas 76118
(817) 595-2288

September 28, 1992



MAXIM ENGINEERS, INC.
Engineering and Environmental Consultants

2301 E. Loop 820 N
Fort Worth, Texas 76118

(817) 595-2288
Metro (817) 589-2288
Fax (817) 589-2291

September 28, 1992

Lt. Erin Manning
Carswell Air Force Base
Fort Worth, Texas

RE: Monitor Well Installation
Northeast Corner of
Rogner Drive and Carswell Access Road
Carswell Air Force Base, Fort Worth, TX

Dear Lt. Manning:

We have completed our subsurface investigation and assessment of petroleum hydrocarbon impacts of the above referenced property. The findings of our work, together with conclusions and recommendations, are presented in the attached report.

We will be happy to answer any questions concerning the report. It has been a pleasure to work with you on this project, and we look forward to being of continued service.

Sincerely,

MAXIM ENGINEERS, INC.

Keva Ward
Environmental Scientist
Environmental Services

Gary D. Lambert
Senior Project Manager
Engineering & Environmental Services

KW/mfg

TABLE OF CONTENTS

SECTION I

1.0 Introduction 1

2.0 Background 2

3.0 Field Investigation 2

 Table I 5

4.0 Laboratory Analysis 6

5.0 Conclusions and Recommendations 6

6.0 Limitations 7

SECTION II

- Site Plan
- Log of Borings

SECTION III

Analytical Laboratory Reports and Chain of Custody Documentation

TABLE OF CONTENTS

LIMITED ENVIRONMENTAL INVESTIGATION
and
Assessment of Petroleum
Hydrocarbon Impacts

1.0 Introduction

The following is a report of the activities performed by Maxim Engineers, Inc., (Maxim) for the United States Air Force as part of a limited subsurface investigation at Carswell Air Force Base.

Maxim performed this investigation to determine the existence of subsurface contamination in the soil and groundwater of a parcel of vacant land located at the northeast corner of the intersection of Rogner Drive and Carswell access road (See Figure 1, Site Map, following page 6). The scope of work called for advancing two (2) subsurface borings, originally to 25 feet or bedrock, collecting soil samples and water samples to be analyzed for Total Petroleum Hydrocarbons, (TPH) and converting the borings to Monitor Wells. These activities were necessary also to facilitate subsequent testing to be performed by Magna Scan in an effort to more fully define a plume of contamination. Soil and groundwater samples from the borings were submitted for analysis of TPH only, per request by the client. EPA approved method 418.1 was used to evaluate TPH content. Results of the field investigation and laboratory analyses are discussed herein.

events and the auger flights were decontaminated between borings to prevent possible cross-contamination. Water samples were collected later using a hand-held PVC tube bailer. Wells were purged and allowed to recharge prior to extracting samples.

Soil samples were logged on-site by a field geologist and were placed into clean eight (8) ounce glass jars, sealed with teflon lined lids, and kept on ice prior to delivery to the laboratory for analysis. Copies of the analyses and chain of custody forms are included in Section II of this report.

Boring one (1) was advanced approximately 100 feet east of Rogner Drive and 200 feet north of Carswell access road (See Site Map, figure 1). Mostly brown, silty clay loam with scarce limestone fragments and organic material was encountered to a depth of 13 feet. Some moisture became evident at 13 feet, and from 13 feet to 27 feet, the soil was predominantly brown to light brown clay and silty clay with significant moisture. At 30 feet, light grayish tan sand was encountered and continued to 37 feet, still very moist. From 37 feet, 6 inches to 48 feet, light grayish brown sand grading to medium gray sand and sandy clay with occasional limestone fragments was encountered. At 48 feet 6 inches, gray and tan limestone fragments, river gravel and some sandy, wet clay was recovered. Bedrock was encountered and the boring was terminated and converted to MW-1. Olfactory indications of petroleum contamination were evident at depths of 8-10 feet, 15 to 20 feet, 35 feet, and 45 to 48 feet, with the most significant odor occurring between 16 and 20 feet.

Boring two (2) was advanced approximately 150 feet south and slightly east of MW-1, just 50 feet or so north of the manned guardhouse on the Carswell access road. Similarly to MW-1, brown and dark brown silty clay loam with organic material and occasional limestone fragments was encountered to a depth of 14 feet. 14 to 16 feet revealed lighter brown, moderately stiff clay with some weathered limestone fragments. From ~~16 to 35 feet~~, **was predominantly very moist** tan sand and tan silty clay with scarce organic material and limestone fragments throughout. From 35 to 48 feet was dark grayish brown to medium gray sandy clay and clay sand. At 46 feet, a pocket of large compressed wood chips was discovered. At 48 to 49 feet was watery, dark gray silt and weathered gray to grayish white limestone with abundant gravel. Bedrock was encountered at 49 feet, and B-2 was converted to Monitor Well two (MW-2). Olfactory indications of contamination were present at depths of 16 to 22 feet, particularly between 18 and 20 feet.

On September 21, the monitor wells were purged and allowed to recharge. At that time, one sample was drawn from each well, placed in a one liter jar, sealed, and kept on ice during transport to the laboratory for analysis. Test results of the groundwater samples are not available for inclusion in this report, but will be submitted to Lt. Manning as an addendum immediately upon receipt by Maxim.

Soil test results are summarized in Table I on the following page.

Table I
Summary of Analytical Testing Results of Soil
Samples taken by Maxim Engineers on August 7 and 10, 1992
TPH only results are reported in parts per million (ppm)

Sample Location	Total Petroleum Results	Hydrocarbons Detection Limit
B-1, 8-10'	20.6	10.0
B-1, 15'	10.8	10.0
B-1, 18-20'	14.3	10.0
B-1, 25-27'	<10.0	10.0
B-1, 35-37 1/2'	15.0	10.0
B-1, 45'	13.4	10.0
B-1, 48 1/2'	16.6	10.0
B-2, 14-16'	10.0	10.0
B-2, 18-20'	14.3	10.0
B-2, 22 1/2-25'	<10.0	10.0
B-2, 45-48 1/2'	<10.0	10.0
B-2, 49'	<10.0	10.0

The Texas Water Commission (TWC) typically requires remedial action for soils if hydrocarbon contaminant levels exceed 100 parts per million (ppm) TPH and/or 30 ppm total BTEX (Benzene, Toluene, Ethylbenzene and Xylene). However, the TWC makes determinations on an individual case basis, and may authorize additional investigation and/or remediation of areas with concentrations lower than these, particularly if groundwater has been impacted or if an explosion or fire hazard exists.

Total petroleum hydrocarbon levels ranged from less than 10 ppm to 20.6 ppm in MW-1 and from less than 10 ppm to 14.3 ppm in MW-2. BTEX analyses were not requested to be performed in this investigation. These results indicate that TPH levels are well below the TWC recommended action levels requiring remediation.

4.0 Laboratory Analysis

Selected soil samples were submitted to Maxim's analytical laboratory for analyses. The contaminant parameters included Total Petroleum Hydrocarbons only, for which EPA Method 418.1 was utilized.

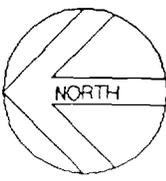
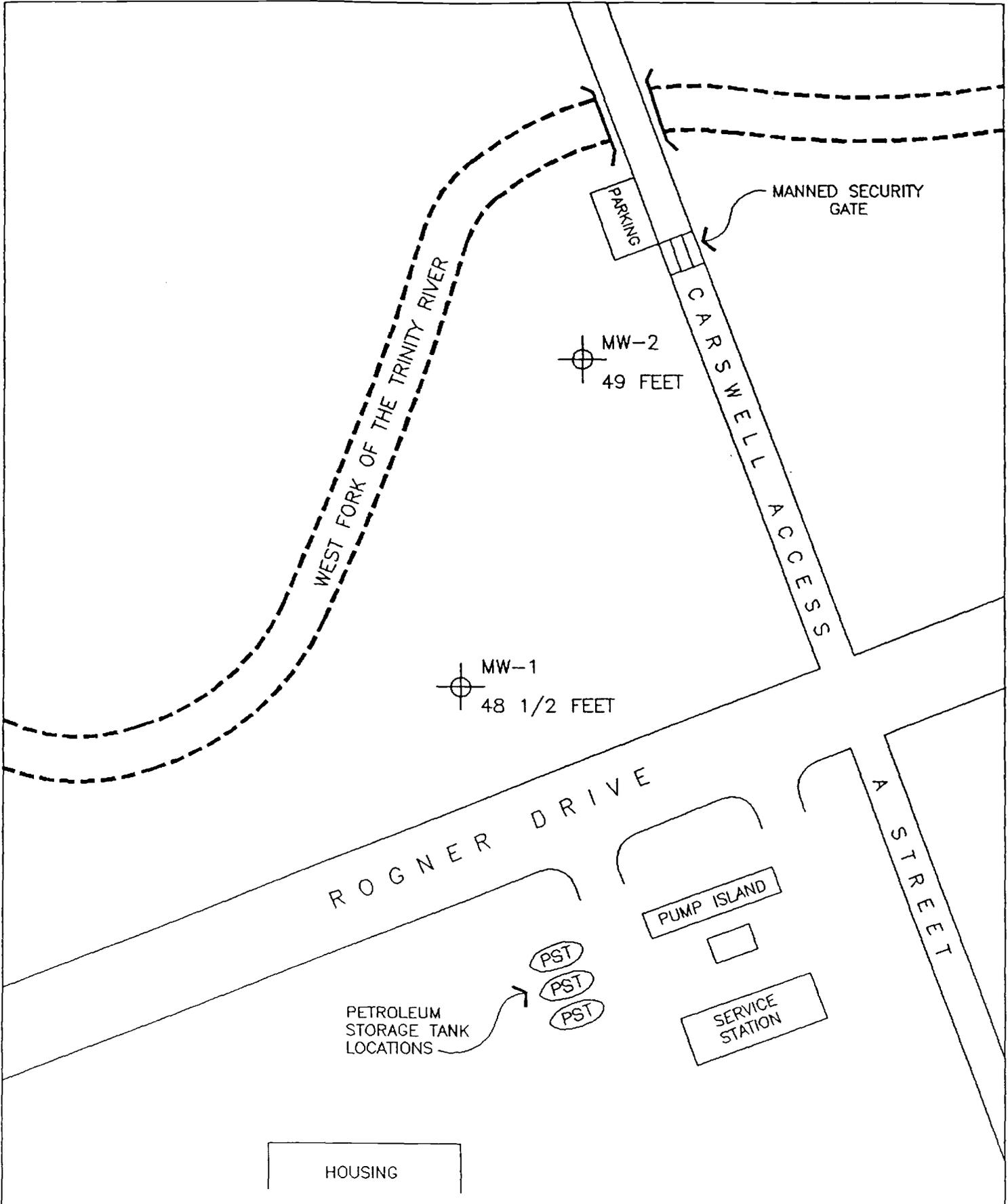
5.0 Conclusions and Recommendations

Although TPH concentrations in the soil were slightly above detection limits, these levels are below the TWC action levels. Total BTEX levels were not established during this investigation. As it is most likely that the TWC may at some point require that results of analysis for BTEX content be presented to them for consideration of possible remedial action at this site, Maxim recommends that analyses of soils and groundwater be conducted to determine if BTEX concentrations above 30 ppm do exist on site.

Conclusions and recommendations pertaining to groundwater will be submitted to Lt. Manning together with the sample results.

6.0 Limitations

It should be noted that all subsurface investigations are inherently limited in the sense that conclusions are drawn and recommendations are developed from test borings which depict subsurface conditions at representative locations over relatively short periods of time. Subsurface conditions elsewhere may differ from those at sampling locations. In addition, subsurface conditions at sampling locations may vary over longer periods of time than can be observed in a study of this type. The conclusions, opinions, and recommendations in this report are based on the limited information obtained and discussed herein. This firm is not responsible for the conclusions, opinions, or recommendations made by others based on this information.



SITE PLAN - CARSWELL AFB
 N.E. INTERSECTION OF ROGNER DR., & A STREET, CARSWELL AFB, TX.

FOR: US AIRFORCE

SCALE: NTS	PROJECT NO. 2492001270	FIGURE 2	DATE: 9-23-92	DRAWN BY: DM	000 VENW
---------------	---------------------------	----------	------------------	-----------------	-------------



MAXIM ENGINEERS, INC.
 Engineering and Environmental Consultants
 FORT WORTH, TEXAS

10/1/92 10:00 AM

Log of Boring

Number

B-1

Location

SEE SITE PLAN

Page 1 of 2

2492001270

Project

CARSWELL AIR FORCE BASE,

FORT WORTH, TEXAS

Feet	Samples Symbol	Auger Type	Casing Elevation	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Xylene (ppm)	Ethyl Benzene (ppm)	Total BTXE (ppm)	T.P.H. (ppm)
		Hollow Stem/Split Spoon									
		Drilled By	Logged By								
		J. Logan	K. Ward								
STRATUM DESCRIPTION											
2.0		Brown SILTY CLAY, Tan Loam and sparse LIMESTONE fragments									
4.0		SILTY CLAY with sparse GRAVEL, organic material throughout									
5.0		SILTY, dark brown CLAY									
6.0		SILTY, dark brown CLAY									
8.0		Brown CLAY MARL with some organic material throughout			0.2					20.6	
10.0		Brown CLAY MARL									
12.0		Brown CLAY MARL, some moisture at 13 feet									
13.0		Brown and tan CLAY									
15.0		Brown CLAY MARL with slight hydrocarbon odor			3.5					10.8	
16.0		Light brown CLAY, very moist and very strong hydrocarbon odor									
18.0		Light brown CLAY, very moist and very strong hydrocarbon odor			8.7					14.3	
20.0		Light brown SILTY CLAY, quite moist, with slight hydrocarbon odor									
25.0		Light brownish tan SILTY			0.2					<10.0	

Completion Depth
48.5'

Date
8/10/92

Water Observations

WATER ENCOUNTERED AT 13 FEET

Log of Boring

Number

B-1

Location

SEE SITE PLAN

Page 2 of 2

2492001270

Project

CARSWELL AIR FORCE BASE,

FORT WORTH, TEXAS

Depth Feet	Samples Symbol	Auger Type	Casing Elevation	Well Construction Details	Photo- ionization Reading	Benzene [ppm]	Toluene [ppm]	Xylene [ppm]	Ethyl Benzene [ppm]	Total BTXE [ppm]	T.P.H. [ppm]
		Hollow Stem/Split Spoon									
		STRATUM DESCRIPTION									
		27.0	CLAY with very faint hydrocarbon odor								
			Light brown SILTY CLAY, very moist, no hydrocarbon odor								
30		30.0	Light grayish tan SAND with significant moisture								
		32.5	Light grayish tan, wet SAND								
35		35.0	Light grayish tan, wet SAND with very faint hydrocarbon odor		6.0						15.0
		37.5	NO SAMPLE RECOVERY								
40		40.0	Light grayish brown, wet SAND with streaks of gray weathered LIMESTONE								
		42.5	Light grayish brown SAND with occasional LIMESTONE fragments								
45		45.0	Medium gray SAND and SANDY CLAY with few LIMESTONE fragments		2.8						13.4
		48.5	Gray and tan LIMESTONE fragments, river GRAVEL, and some SANDY CLAY BORING TERMINATED AT 48.5 FEET, CONVERTED TO MW-1		1.7						16.6

Completion Depth
48.5'

Date
8/10/92

Water Observations

WATER ENCOUNTERED AT 13 FEET

Log of Boring

Number **B-2** Location **SEE SITE PLAN**

Page 1 of 2
2492001270

Project

CARSWELL AIR FORCE BASE,

FORT WORTH, TEXAS

Depth Feet	Samples Symbol	Auger Type	Casing Elevation	Well Construction Details	Photo- ionization Reading	Benzene (ppm)	Toluene (ppm)	Xylene (ppm)	Ethyl Benzene (ppm)	Total BTXE (ppm)	T.P.H. (ppm)
		Hollow Stem									
STRATUM DESCRIPTION											
		Brown, dry, SILTY TOPSOIL									
2.0		Brown to dark brown SILTY SOIL									
4.0		Dark brown SILTY LOAM									
6.0		Dark brown SILTY CLAY MARL									
8.0		Medium brown CLAY LOAM									
10.0		Brown CLAY with gray mottles and LIMESTONE fragments									
12.0		Brown CLAY LOAM with some calcareous material									
14.0		Light brown CLAY LOAM with gray weathered LIMESTONE throughout			0.5						10.0
16.0		Quite moist Tan SILT - very moist with some weathered LIMESTONE fragments									
18.0		Tan SILT with definite hydrocarbon odor			3.5						14.3
20.0		Tan SILT with slightly less odor									
22.5		Tan SAND grading to tan SILTY CLAY			0.5						<10
25.0											

Completion Depth
49.0'

Date
8/10/92

Water Observations

WATER ENCOUNTERED AT 16 FEET

Log of Boring

Number **B-2**

Location **SEE SITE PLAN**

Page 2 of 2
2492001270

Project

CARSWELL AIR FORCE BASE,

FORT WORTH, TEXAS

Feet	Samples Symbol	Auger Type		Construction Details	Photo-ionization Reading	Benzene (ppm)	Toluene (ppm)	Xylene (ppm)	Ethyl Benzene (ppm)	Total BTXE (ppm)	T.P.H. (ppm)
		Hollow Stem	Casing Elevation								
		Drilled By	Logged By								
		J. Logan	K. Ward								
STRATUM DESCRIPTION											
27.5		Tan SILTY CLAY and CLAY-SAND with grayish mottles throughout									
30.0		Tan SAND and CLAY-SAND with pockets of grayish LIMESTONE									
35.0		Tan, SILTY, wet CLAY with occasional gray mottles									
40.0		Dark grayish brown, wet SAND and SANDY CLAY with grayish brown mottles									
45.0		Medium gray SAND grading to gray SANDY CLAY Significant moisture									
48.0		Medium gray SANDY CLAY with abundant large wood chips throughout			0.4						<10
49.0		Dark gray watery SILT with LIMESTONE and abundant GRAVEL throughout			0.3						<10
		BEDROCK at 49 feet BORING TERMINATED AT 49 FT, CONVERTED TO MW-2									

Completion Depth
49.0'

Date
8/10/92

Water Observations

WATER ENCOUNTERED AT 16 FEET



MAXIM ENGINEERS, INC.
Engineering and Environmental Consultants

2342 Fabens, P.O. Box 59902
Dallas, Texas 75229

(800) 886-2946
(214) 247-7575
Metro (214) 263-2548
Fax (214) 484-5804

Client: UNITED STATES AIR FORCE

Date of Extraction: 08/14/92

Project #: 2492001270

Date of Analysis: 08/15/92

Sample Date: 08/07/92

Matrix: Soil

Date Received: 08/11/92

TOTAL PETROLEUM HYDROCARBONS (EPA Method 418.1)

SAMPLE #	LAB #	FIELD ID	RESULTS (ug/g)	DETECTION LIMIT (ug/g)
92135050	92515580	MW-1; 10 FEET	20.6	10.0
92135051	92515581	MW-1; 15 FEET	10.8	10.0
92135052	92515582	MW-1; 20 FEET	14.3	10.0
92135053	92515583	MW-1; 25-27 FEET	<10.0	10.0
DATE OF EXTRACTION: 08/18/92				
DATE OF ANALYSIS: 08/19/92				
92135055	92515585	MW-1; 35-37.5 FEET	15.0	10.0
92135057	92515587	MW-1; 45-48 FEET	13.4	10.0
92135058	92515588	MW-1; 48.5 FEET	16.6	10.0

ANALYST:

Charles R. Fusco



MAXIM ENGINEERS, INC.
Engineering and Environmental Consultants

2342 Fabens, P.O. Box 59902
Dallas, Texas 75229

(800) 886-2946
(214) 247-7575
Metro (214) 263-2548
Fax (214) 484-5804

Client: UNITED STATES AIR FORCE

Date of Extraction: 08/21/92

Project #: 2492001270

Date of Analysis: 08/24/92

Sample Date: 08/10/92

Matrix: Soil

Date Received: 08/11/92

TOTAL PETROLEUM HYDROCARBONS (EPA Method 418.1)

SAMPLE #	LAB #	FIELD ID	RESULTS (ug/g)	DETECTION LIMIT (ug/g)
92135061	92515591	MW-2; 15'	10.0	10.0
92135062	92515592	MW-2; 17.5'-20'	14.3	10.0
92135063	92515593	MW-2; 22.5'-25'	<10.0	10.0
92135067	92515593	MW-2; 45'-48'	<10.0	10.0
92135068	92515598	MW-2; 49'	<10.0	10.0

ANALYST:

Charles R. Frasco



MAXIM ENGINEERS, INC.
Engineering and Environmental Consultants

2342 Fabens, P.O. Box 59902
Dallas, Texas 75229

(800) 886-2946
(214) 247-7575
Metro (214) 263-2548
Fax (214) 484-5804

Client: UNITED STATES AIR FORCE

Date of Extraction: 09/28/92

Project #: 24920011270

Date of Analysis: 09/29/92

Sample Date: 09/21/92

Matrix: Liquid

Date Received: 09/22/92

TOTAL PETROLEUM HYDROCARBONS (EPA Method 418.1)

SAMPLE #	LAB #	FIELD ID	RESULTS (mg/l)	DETECTION LIMIT (mg/l)
92135355	92515360	MW1	15.2	1.0
92135356	92515361	MW2	4.0	1.0

ANALYST:

Charles R. Fiasse

State of Texas

REPORT OF
UNDESIRABLE WATER OR CONSTITUENTS

To be completed by Well Driller. (Type or print.)

1. Well Driller: JAMES R LOGAN
Company Name: MAXIM ENGINEERS
Address: 2842 FABENS DALLAS TX 75229
(Street or RFD) (City) (State)

2. Landowner or Person Having Well Drilled: OPERATION CONTRACTOR
Address: BLD 1330 CARSWELL AFB FTWORTH TX 76127
(Street or RFD) (City) (State)

3. Location of Well: County TARRANT See attached map
League _____ Abstract No. _____
NW⁴, NE⁴, SW⁴, SE⁴, of Section _____ Block _____
Survey _____
5 miles in W TO NW direction.
(NE, SW, etc.)
from FT WORTH
(Town)

4. Reason why Report was submitted:
 Naturally-occurring, poor-quality groundwater encountered;
 Hydrocarbon contamination encountered (includes gasoline, diesel, etc.);
 Hazardous material/hazardous waste contamination encountered;
 Other; describe _____

5. Date Well Drilled: SEPT 7-10-92 Type Well: MONITOR
MW-1-2

6. Has a Water Well Report form relating to this well been forwarded to the Texas Water Commission?
 Yes No Date 9-28-92

7. I do hereby certify that in drilling, deepening, or otherwise altering the above described well, undesirable water or constituents has been encountered and the landowner or person having the well drilled has been informed by certified mail that such well must be completed or plugged in such a manner as to avoid injury or pollution.

Date 9-28-92
Reg. No. 2945 M (Signed) James R Logan
(Well Driller)

Send White Copy by Certified Mail to: TEXAS WATER COMMISSION, P.O. Box 13087, Austin, Texas 78711

Send Yellow Copy by Certified Mail to: LANDOWNER or PERSON HAVING WELL DRILLED

Pink Copy to be retained by: WELL DRILLER

ATTENTION OWNER: Confidentiality
Privilege Notice on Reverse Side

State of Texas
WELL REPORT

Texas Water Well Drillers Board
P.O. Box 13087
Austin, Texas 78711

1) OWNER OPERATION CONTRACTOR ADDRESS BLD 1330 CARSWELL AFB FT WORTH
(Name) (Street or RFD) (City) (State) (Zip)
2) LOCATION OF WELL:
County TARRANT. APPROX 5 miles in W TON W direction from FT WORTH
(NE, SW, etc.) (Town)

Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____

Distance and direction from two intersecting section or survey lines _____

SEE ATTACHED MAP MAPS CO PAGE 60 TARRANT

3) TYPE OF WORK (Check):
 New Well Deepening
 Reconditioning Plugging

4) PROPOSED USE (Check):
 Domestic Industrial Monitor Public Supply
 Irrigation Test Well Injection De-Watering

5) DRILLING METHOD (Check): Driven
 Mud Rotary Air Hammer Jetted Bored
 Air Rotary Cable Tool Other AUGER

6) WELL LOG:
Date Drilling:
Started 8-7-92
Completed 8-7-92

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
<u>12</u>	<u>Surface</u>	<u>48.6</u>

7) BOREHOLE COMPLETION:
 Open Hole Straight Wall Underreamed
 Gravel Packed Other SAND
If Gravel Packed give interval ... from 6 ft. to 48.6 ft.

From (ft.)	To (ft.)	Description and color of formation material
<u>0 - 2</u>		<u>BROWN SILTY CLAY</u>
<u>2 - 4</u>		<u>GREY SILTY CLAY</u>
<u>4 - 48.6</u>		<u>SILTY SANDY CLAY</u>
<u>48.6</u>		<u>BEDROCK</u>

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.)		Gage Casting Screen
			From	To	
<u>4</u>	<u>N</u>	<u>SOLID</u>	<u>0</u>	<u>8.6</u>	<u>40</u>
<u>4</u>	<u>N</u>	<u>SCREENS</u>	<u>8.6</u>	<u>48.6</u>	<u>40</u>

(Use reverse side if necessary)

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 0 ft. to 4 ft. No. of Sacks Used 4
BENONITE 4 ft. to 6 ft. No. of Sacks Used 10
Method used BY HAND GAL
Cemented by DRILLER

13) TYPE PUMP:
 Turbine Jet Submersible Cylinder
 Other X
Depth to pump bowls, cylinder, jet, etc., _____ ft.

10) SURFACE COMPLETION
 Specified Surface Slab Installed [Rule 287.44(2)(A)]
 Specified Steel Sleeve Installed [Rule 287.44(3)(A)]
 Pitless Adapter Used [Rule 287.44(3)(B)]
 Approved Alternative Procedure Used [Rule 287.71] FLUSH MOUNT

14) WELL TESTS: NA
Type Test: Pump Baller Jetted Estimated
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

11) WATER LEVEL:
Static level 10' ft. below land surface Date 8-7-92
Artesian flow _____ gpm. Date _____

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
 Yes No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? OODR Depth of strata 20
Was a chemical analysis made? Yes No NA

12) PACKERS: Type _____ Depth _____
NA

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME MAXIM ENGINEERS WELL DRILLER'S LICENSE NO. 2945 M
(Type or print)
ADDRESS 2342 FABENS DALLAS TX 75229
(Street or RFD) (City) (State) (Zip)
(Signed) James R. Logan (Signed) _____
(Licensed Well Driller) (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available. For TWC use only: Well No. _____ Located on map _____

ATTENTION OWNER: Confidentiality
Privilege Notice on Reverse Side

State of Texas
WELL REPORT

Texas Water Well Drillers Board
P.O. Box 13087
Austin, Texas 78711

1) OWNER OPERATION CONTRACTOR ADDRESS BLD 1330 CARSWELL AFB FT WORTH 7612
(Name) (Street or RFD) (City) (State) (Zip)

2) LOCATION OF WELL:
County TARRANT . APPROX 5 miles in W T O N W direction from FT WORTH
(NE, SW, etc.) (Town)

Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

LEGAL DESCRIPTION:

Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____
Distance and direction from two intersecting section or survey lines _____

SEE ATTACHED MAP MAPSCD PAGE 60 @ TARRANT

3) TYPE OF WORK (Check):
 New Well Deepening
 Reconditioning Plugging

4) PROPOSED USE (Check):
 Domestic Industrial Monitor Public Supply
 Irrigation Test Well Injection De-Watering

5) DRILLING METHOD (Check): Drive
 Mud Rotary Air Hammer Jetted Bored
 Air Rotary Cable Tool Other AUGER

6) WELL LOG:
Date Drilling: 8-10 1992
Started 8-10 1992
Completed 8-10 1992

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
<u>12</u>	Surface	<u>49</u>

7) BOREHOLE COMPLETION:
 Open Hole Straight Wall Underreamed
 Gravel Packed Other SAND
If Gravel Packed give interval ... from 7 ft. to 49 ft.

From (ft.)	To (ft.)	Description and color of formation material
<u>0</u>	<u>4</u>	<u>BROWN SILTY CLAY</u>
<u>4</u>	<u>22</u>	<u>CLAY SILTY</u>
<u>22</u>	<u>49</u>	<u>SILTY SANDY CLAY</u>

(Use reverse side if necessary)

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.)		Gage Casing Screen
			From	To	
<u>4</u>	<u>N</u>	<u>SOLID</u>	<u>0</u>	<u>9</u>	<u>40</u>
<u>4</u>	<u>N</u>	<u>SCREENS</u>	<u>4</u>	<u>49</u>	<u>40</u>

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 5 ft. to 0 ft. No. of Sacks Used 4
BENONITE 5 ft. to 7 ft. No. of Sacks Used 10
Method used BY HAND GRK
Cemented by DRILLER

13) TYPE PUMP:
 Turbine Jet Submersible Cylinder
 Other NA
Depth to pump bowls, cylinder, jet, etc., _____ ft.

10) SURFACE COMPLETION
 Specified Surface Slab Installed [Rule 287.44(2)(A)]
 Specified Steel Sleeve Installed [Rule 287.44(3)(A)]
 Pitless Adapter Used [Rule 287.44(3)(B)]
 Approved Alternative Procedure Used [Rule 287.71] FLUSH
MAJOU

14) WELL TESTS: NA
Type Test: Pump Baller Jetted Estimated
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.

11) WATER LEVEL:
Static level NA ft. below land surface Date NA
Artesian flow _____ gpm. Date _____

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
 Yes No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ORDER Depth of strata 28
Was a chemical analysis made? Yes No NA

12) PACKERS: Type _____ Depth _____
NA

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME MAXIM ENGINEERS (Type or print) WELL DRILLER'S LICENSE NO. 2945 M
ADDRESS 2342 FABENS DALLAS TX 75229
(Street or RFD) (City) (State) (Zip)
(Signed) James R Logan (Licensed Well Driller) (Signed) _____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TWC use only: Well No. _____ Located on map _____

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE