TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
PETROLEUM STORAGE TANK DIVISION
ASSESSMENT REPORT FORM

Addison Airport Fuel Farm
Addison Road and Roscoe Turner
Dallas, Texas 75248
LPST: 91471

Registered Corrective Action Specialist
Triad Onsite Systems, Inc.
2435 Southwell, Suite 1
P.O. Box 59185
Dallas, Texas 75229-1185
(972) 241-7400
RCAS 00328

June 1997

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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
PETROLEUM STORAGE TANK DIVISION
CORRESPONDENCE IDENTIFICATION SHEET

Date: June 5, 1997
Site Name: Addison Airport Fuel Farm
Site Address: Addsion Road & Roscoe Turner
Dallas, Texas

LPST ID No.: 91471
Facility ID No.: 0000022

This checklist **must** accompany all correspondence submitted to the RPR Section and should be affixed to the front of your submittal as a cover page. Please check the appropriate box for the type of correspondence which you have submitted to the RPR Section. Check all boxes that apply if you are submitting more than one type of correspondence. If you cannot find an appropriate category, please complete the "other" section.

PROPOSALS

☐ Initial Abatement (1)	☐ Tank Removal (2)	☐ Excavation (3)
☐ Waste Treatment (4)	☐ Site Assessment (5)	☐ Aquifer Testing (6)
☐ VES/Sparge Testing (7)	☐ Qtrly. GW Monitoring (8)	☐ CAP Prep. (9)
☐ GW Extrac./Treatment (10)	☐ Soil Vapor Extrac. (11)	☐ Operation & Main. (12)
☐ Site Closure (13)	☐ Plan A Risk Ass. (14)	☐ Plan B Risk Ass. (15)
☐ Semi-annual GW Mon. (16)*	☐ Annual GW Mon. (18)	☐ Product Recovery (19)

☐ Other proposal _____

REPORTING FORMS

☐ Assessment Report Form (TNRCC-0562)	☐ LPST Case Questionnaire
☐ Product Recovery Report Form (TNRCC-0016)	☐ Release Report Form (TNRCC-0621)
☐ Site Closure Request Form (TNRCC-0028)	☐ Monitoring Event Summary and Status Report (TNRCC-0013)
☐ Final Site Closure Report Form (TNRCC-0038	☐ Priority 4 LPST Case Closure Request Form (TNRCC-0461)

☐ Other form _____

REPORTS

☐ Tank Closure/Removal	■ Plan A Risk Assessment	☐ Annual Groundwater Monitoring
☐ O&M/Performance Mon.	☐ Plan B Risk Assessment	☐ CAP Installation/Modification
☐ Property Divestiture/Phase I ESA	☐ Corrective Action Plan (CAP)	☐ Aquifer/Pilot Test Results

MISCELLANEOUS

☐ Off-site access assistance	☐ Deadline Extension Request
☐ Tank tightness test results	☐ Request for State-Lead
☐ Request for LPST Waste Code	☐ Class V Reinjection Request
☐ Notice to Owner/Operator for CAS Services	☐ Petroleum-Substance Waste Manifest
☐ Notice of Continuation of Groundwater Monitoring	☐ Underground Storage Tank Registration Form
☐ Notice of Continuation of Operation and Maintenance	☐ Aboveground Storage Tank Registration Form

☐ Other (anything that does not fit into one of the categories above) _____

* The proposal for semi-annual monitoring and annual report (Proposal Activity 17) has been discontinued. For semi-annual monitoring, use Proposal Activity 16.

I attest that all work has been conducted in accordance with accepted industry standards/practices and adhered to TNRCC guidance and rules. I certify that I am aware that misrepresentation of any of the above claims is a violation of 30 TAC 33.4453(b)(1)(E) and that this violation may result in the disciplinary actions set forth in 30 TAC 334.453 and or 334.463 and 334.465.

If a proposal is attached for preapproval, has the proposed work, in part or in whole, already been performed or in progress? ☐ Yes ☐ No

If yes, what work?_____

Triad Onsite Systems, Inc.	00328	April 27, 1998
(Registered Corrective Action Specialist)	(RCAS Reg. No.)	(Expiration date)

Ray Wyman — June 5, 1997
(Signature) (Date)

(972) 241-7400 — (972) 241-7436
(Telephone #) (FAX #)

Marisa A. Basso	00251	August 10, 1997
(Project Manager)	(CAPM Reg. No.)	(Expiration date)

Marisa A. Basso — June 5, 1997
(Signature) (Date)

(972) 241-7400 — (972) 241-7436
(Telephone #) (FAX #)

By signature below, I certify that documents checked above are included.

Sam Stuart	Addison Airport of Texas Inc.
(Name of Responsible Party Contact)	(Company)

Sam Stuart — June 5, 1997
(Signature) (Date)

(972) 248-7733 — (972) 248-2416
(Telephone #) (FAX #)

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
PETROLEUM STORAGE TANK DIVISION
ASSESSMENT REPORT FORM

This form should only be submitted when all information has been obtained as outlined in the document entitled *Guidance for Risk-Based Assessments at LPST Sites in Texas*. If the Table of Contents (page 2) is not fully completed, the TNRCC will return this form to the responsible party without review. This document must not be altered in any manner. **Requested information denoted with "*" is beyond the minimal requirements for a site assessment as defined by 30 TAC 334.78(a)(5).** Attach a workplan(s) and preapproval request(s) for those activities on sites eligible for reimbursement for the next appropriate activity.

LPST ID No: 91471 Facility ID No: 00022 Site priority: 4.2

Facility Name: Addison Airport Fuel Farm

Facility Address: Addison Road and Roscoe Turner

City: Dallas State: Texas Zip: 75248

RP Name: Addison Airport of Texas, Inc.

RP Address: 4505 Claire Chennault

City: Dallas State: Texas Zip: 75248

I certify that all work has been conducted in accordance with accepted industry standards/practices and adhered to TNRCC guidance and rules. I certify that I am aware that misrepresentation of any of the above claims is a violation of 30 TAC 33.4453(b)(1)(E) and that this violation may result in the disciplinary actions set forth in 30 TAC 334.453 and or 334.463 and 334.465.

Triad Onsite Systems, Inc. (Registered Corrective Action Specialist) RCAS 00328 (RCAS Reg. No.) April 27, 1998 (Expiration date)

Ray Kleyson (Signature) June 4, 1997 (Date)

(972) 241-7400 (Telephone #) (972) 241-7436 (FAX #)

Marisa A. Basso (Project Manager) CAPM 00251 (CAPM Reg. No.) August 10, 1997 (Expiration date)

Marisa A. Basso (Signature) June 4, 1997 (Date)

(972) 241-7400 (Telephone #) (972) 241-7436 (FAX #)

By signature below, I certify that I have reviewed this report for completeness.

Sam Stuart (Name of Responsible Party Contact) Addison Airport of Texas, Inc. (Company)

Sam Stuart (Signature) 6/5/97 (Date)

(972) 248-7733 (Telephone #) (972) 248-2416 (FAX #)

mailing address: TNRCC/PST Division/RPR Section
MC 137
P.O. Box 13087
Austin, TX 78711-3087

SITE ASSESSMENT

PST ID: 91471
Site Name: Addison Airport Fuel Farm
Site Location: Addison Road and Roscoe Turner, Dallas, Texas

TABLE OF CONTENTS

PST ID: 91471
Site Name: Addison Airport Fuel Farm
Site Location: Addison Road and Roscoe Turner, Dallas, Texas

EXECUTIVE SUMMARY

Check all applicable boxes.

UST/AST System Status: ■ Active ☐ Permanently Removed from Service
☐ Temporarily Out of Service ☐ Temporarily Indefinitely Out of Service (Variance Due Date:_____)

Current site land use:
☐ vacant ■ indus./coml. ☐ residential ☐ agricultural ☐ recreational ■ UST/AST Facility /Airport Fuel Farm

Sources of Release: ☐ tank(s) ☐ piping ■ spills ☐ dispenser ☐ Other:_____

Substance Released:
☐ gasoline ■ diesel ☐ waste oil ☐ hydraulic fluid ■ AV gas ■ jet fuel ☐ Other: _____

Site Assessment History:
■ Preliminary/LSA ☐ Groundwater Monitoring ☐ Remedial Action ☐ Emergency Response

Affected environmental media: ■ surficial soil (<2 ft. BGS) ■ soil (2 to 15 ft. BGS) ☐ soil (>15 ft. BGS)
☐ groundwater ☐ surface water ☐ air

Identified affected receptors: ☐ water wells ☐ basements/structures ☐ habitat ☐ building ☐ underground utilities ☐ surface water ☐ exposed contaminated soil ☐ Other Distance from site (ft.):_____

Samples collected ■ yes ☐ no Abatement initiated: ☐ yes ■ no Type:_____

Identified potential receptors: ☐ water wells ☐ basements/structures ☐ habitat ☐ building ■ underground utilities ☐ surface water ■ exposed contaminated soil ☐ Other Distance from site (ft.):_____

Depth to first encountered groundwater (ft.) BGS: ☐ >50 ☐ 15-50 ☐ 0-15 N/A

Presence of NAPLs (ft.):
☐ sheen ☐ 0.1-0.5 ft. ☐ 0.5-2 ft. ☐ 2-5 ft. ☐ >5 ft. ■ none Recovery Initiated: ☐ yes ☐ no

Current NAPL extent: ☐ on-site ☐ off-site N/A

Dissolved-phase extent: ☐ on-site ■ off-site ☐ unknown

Groundwater beneficial use category:
☐ Cat. I ☐ Cat. II ☐ Cat. III ☐ Cat. IV ■ Soils only affected, regional beneficial use can not be established.

Contaminants of Concern Exceed Target Concentrations of Affected media:

Soil (Worksheets 7.0, 11.1-5):	■ yes ☐ no
Groundwater (Worksheet 8 & 11.1-4):	☐ yes ■ no
Vapors (Worksheet 9.0):	☐ yes ■ no
Surface Water (Worksheet 10.0):	☐ yes ■ no

Site Priority: 1. 2. 3. 4. 2

Recommended Actions:

☐ a) Affected Receptors Identified - Propose additional corrective action and/or monitoring program.

☐ b) Site does not exceed Plan A criteria - Submit site closure request form.

☐ c) Site does not exceed Plan A criteria - Propose verification groundwater monitoring program.

☐ d) Site exceeds Plan A criteria - Propose corrective action to achieve Plan A criteria.

■ e) Site exceeds Plan A criteria - Propose Plan B risk assessment and/or evaluation.

PST ID: 91471

SITE DESCRIPTION

Location Description

Facility Name: Addison Airport Fuel Farm

Address: Addison Road, Dallas, Texas

Cross-Street: Roscoe Turner

City: Dallas

County: Dallas

Current Site Water Supply: Town of Addison

Notes: The Town of Addison purchases its water from the City of Dallas, which receives its water from lakes and surface reservoirs.

Topography

Terrain: ■ Flat ☐ Steep ☐ Variable

Ground Surface Slope

Direction S/SW Grade (ft./ft.) 0.007

Other Comments:

Discuss any significant onsite or adjacent significant topographic feature.

Local Climate:

Average Annual Rainfall (in.): 40

Within 100 Year Floodplain: ☐ yes / ■ no

Other Comments:

Discuss recent (i.e., within the past year) extreme climatic changes. Discuss engineered modifications to floodplain status or designation.

PST ID: 91471

LAND USE

PAST, CURRENT, AND FUTURE USE (check all that apply)

■ Past use of site: ■ Commercial/Industrial ☐ Residential ☐ Agricultural ☐ Recreational ☐ Vacant ☐ UST/AST Facility

■ Past Predominant Land Use of the Area: ■ Commercial/Industrial ☐ Residential

Describe: Site has operated as Addison Airport since approximately 1960

■ Current use of site: ■ Commercial/Industrial ☐ Residential ☐ Agricultural ☐ Recreational ☐ Vacant ☐ UST/AST Facility

■ Current Predominant Land Use of the Area: ■ Commercial/Industrial ☐ Residential

■ Type of Residential Area: ☐ Minority/Low Income ☐ Non-minority/Low Income ☐ Other

Describe: Addison Airport

■ Future use of site: ■ Commercial/Industrial ☐ Residential ☐ Agricultural ☐ Recreational ☐ Vacant ☐ UST/AST Facility

■ Future Predominant Land Use of the Area: ■ Commercial/Industrial ☐ Residential

Describe: Site will continue to operate as commercial airport

List all facilities (not limited to PST regulated) within 500 feet of the site that could be a source of contaminants:

Facility Name & Type: Million Air Fuel Farm
Address: 15409 Addison Road
Facility No.: 03036
LPST ID No. 98890
Owner/Operator: RR Investments, Inc.

Facility Name & Type: Mission Aire Facility
Address: 15407 Addison Road
Facility No.: 015460
LPST ID No. 92419
Owner/Operator: E.U.A.

Facility Name & Type: Texas Pro Air Facility
Address: 15407 Addison Road
Facility No.: 020294
LPST ID No. 92419
Owner/Operator: Addison Airport

Other Comments:

Additional facilities may be listed and noted on Attachment 2.

Four (4) more facilities listed in Attachment 2.

PST ID: 91471

WATER WELL INVENTORY

SUMMARY OF WELLS WITHIN 0.5 MILE RADIUS OF THE SITE

			Downgradient Direction		
	Total No.	Active No.	Total No.	Active No.	No. Screened in Affected Zone
Public/Municipal:	1	0	0	0	0
Industrial:	0	0	0	0	0
Domestic:	0	0	0	0	0
Agricultural:	0	0	0	0	0

POTENTIAL RECEPTOR POINTS

	Closest Downgradient Water Well	Closest Downgradient Well Screened Within Affected Zone
Well No./Designation:	N/A	N/A
Distance from Site (ft.):	N/A	N/A
Total Well Depth (ft.):	N/A	N/A
Current Use of Water:	N/A	N/A
Screened Interval below Ground Surface (ft):	N/A	N/A
Year Constructed:	N/A	N/A

Comments: *(Include discussion of any ordinances which prevent or influence the future installation of water wells at the site or surrounding area.)*

* PST ID: 91471

RECEPTOR SURVEY

Underground Utility Survey

Nearest Underground Utility
Name: City of Addison sewer
Type: Storm
Depth of Utility: Unknown
Distance & Direction
From Affected Zone: Approx 30' east of site

Nearest Downgradient Utility
Name: City of Addison
Type: Water main
Depth of Utility: Unknown
Distance & Direction
From Affected Zone: Approx 30' southeast/site

Other Comments:

Discuss other receptors and indicate on Attachment 2. If affected discuss abatement measures.

Building Survey

Nearest Building
Name: Addison Airport
Type: Storage warehouse
Distance & Direction
From Affected Zone: Approx 100' w/sw

Nearest Downgradient Building
Name: Addison Airport
Type: Storage warehouse
Distance & Direction
From Affected Zone: Approx 100' w/sw

Other Comments:

Discuss nearest and other receptors and indicate on Attachment 2. Buildings should include residences, schools, day care facility, nursing home, etc.

Surface Water Hydrology

Nearest Surface Water
Name: White Rock Creek
Type: Creek
Distance & Direction
From Affected Zone: Approx 2000' east

Impacted Surface Water
Name: N/A
Type:
Distance & Direction
From Affected Zone:

Nearest Downgradient Surface Water
Name: White Rock Creek
Type: Creek
Distance & Direction
From Affected Zone: Approx 2000' east

Other Comments:

If affected complete Worksheet 10.0. Describe potential for affected storm water or groundwater discharge to surface water feature.

* PST ID: 91471

HABITAT SURVEY

Presence of Sensitive Habitat
Site located within or affects a sensitive or protected habitat? ☐ yes (explain below) ■ no

Name:
Location:

Discussion: *Provide the habitat type (wildlife sanctuary, wetlands, etc.), condition, regulatory authority, and other information relative to habitat characterization.*

SUMMARY AND RECOMMENDED ACTION

Observed or Potential Impacts	-	Recommended Action
■ None observed or anticipated	-	No action required
☐ Potential for Significant Impact	-	Additional Corrective Action Required (See Attachment 20)
☐ Significant Impact Observed	-	Additional Corrective Action Required (See Attachment 20)

Comments: *Discuss any emergency abatement and continued corrective action.*

_PST ID: 91471

SITE ASSESSMENT HISTORY

SUMMARY OF PREVIOUS SITE ACTIVITIES

Typical site activities to be recorded include:
- Preliminary/Limited/Comprehensive Site Assessment
- Emergency Response • Risk/Exposure Assessment • Remedial/Corrective Actions

Types of sampling to be included: • Soil • Groundwater • Surface Water • Vapors

Date Completed	Description of Activity	Sampling and Testing	Result/Impact/Target Cleanup
9/16/87	Hand augered three shallow borings	Soil and water testing for inspection and monitoring. No laboratory analysis.	Water at 3" below surface. Strong fuel odors in all borings.
11/24/87	Installed 12 subsurface borings and converted five to groundwater monitoring wells.	Soil sampling and analysis for TPH only. No true groundwater encountered.	Maximum concentration of TPH in mg/kg: B-2: 10,000(tank field) B-1: 2,530 (outside tank field)
12/12 and 12/13/91	Emergency response - Tank floated during upgrade	Four soil samples collected and analyzed for BTEX and TPH.	Max. concentration in mg/kg (tank fill material): B - 27.480 E - 3.138 T - 1.185 X - 29.126 TPH - 12,378

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UST/AST SYSTEM CHARACTERIZATION

Release Information

UST/AST System Status:
☐ Active ☐ Permanently Removed From Service
☐ Temporarily Out of Service
☐ Temporarily/Indefinitely Out of Service (Due Date:_____)

Method of release discovery:
☐ UST Removal ☐ Release Detection Equipment
☐ Divestiture Assessment ☐ Inventory Control
☐ System Tightness Testing ☐ Other Surface spills

Substance released (check all that apply):
☐ Gasoline ☐ Diesel ☐ Waste Oil
☐ AV Gas ☐ Jet Fuel ☐ Hydraulic Fluid
☐ Other_____

Source of release(s): Date Discovered:
☐ Spills/overfills 5/91 spill; ongoing spills
☐ Piping _____
☐ Dispenser _____
☐ Tank _____
☐ Other _____

Other Comments:

Describe the measures taken to abate the release:

Emergency response in 5/91:
Ongoing surface spills during UST fill-up.

Removal Information

Date(s) of removal(s): N/A
Type of removal:
☐ Removal from the ground ☐ Closure in place
Water in tankhold during excavation? ☐ yes ☐ no
Depth of water in tankhold (BGS):
☐ <5 ft. ☐ 5-10 ft. ☐ 11-15 ft. ☐ None
NAPL: ☐ yes ☐ no Thickness (ft.): _____
Water Evacuated from tankhold: ☐ yes ☐ no
Volume (gal.): _____
Groundwater recharged into tankhold: ☐ yes ☐ no
Depth (ft. BGS): _____
Status of excavation(s):
☐ Open with water ☐ Open/dry
☐ Backfilled with impervious cover
☐ Backfilled with no impervious cover
Type of fill material:
☐ Untreated backfill ☐ Treated backfill ☐ Other
☐ Clean fill - gravel ☐ Clean fill - sandy/clay

Other Comments:

Provide the maximum contaminant concentrations milligrams per kilograms (mg/kg) of untreated backfill returned to the tankhold(s): Benzene___ TEX___ TPH___ OTHER___. If a new UST/AST system was installed describe & indicate on Attachment 1.

Maximum level of contamination detected in native soils upon completion of removal/repair (mg/kg):

Chemical of Concern	Sample Date	Sample Location/Depth	Laboratory Method Detection Limit	Maximum Concentration (mg/kg)
Benzene				
Toluene				
Ethylbenzene				
Total Xylenes				
TPH				
Metals				
VOC				
Other_____				

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SOIL ASSESSMENT

SOIL DATA COLLECTION AND EVALUATION

Number of soil sampling points: 46 to define horizontal extent of plume for possible future remediation.

Method of determination: ☐ Direct Push ☐ Borings ☐ Other:

Surface cover over affected soil zone (check all that apply):
☐ Concrete ☐ Asphalt ☐ Gravel ☐ Dirt ☐ Grass ☐ Other:

Percent of affected soil zone covered with impervious cover:
☐ 0-25 % ☐ 25-50 % ☐ 50-75 % ☐ 75-100 %

If there is no impervious surface cover, is there public access to the affected surface (0-2 ft.) soil? ☐ yes ☐ no

Affected soil zone thickness (ft.): 6.5'

*Affected soil zone surface area dimensions (ft.): 330' x 180'

Maximum depth of contamination exceeding appropriate Plan A risk-based levels: 6.5' ft. BGS

*Estimated volume of soil exceeding Plan A target concentration (yd^3): 1000

*Minimum distance from affected soil zone to property boundary: ☐ 0-10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ 300-500 ft. ☐ >500 ft. ☐ Extends beyond property boundary

Waste disposal: ☐ Landfill ☐ On-site treatment ☐ Off-site treatment ☐ Other ☐ Pending ☐ None

Maximum level of contamination detected in native soils (mg/kg):

Chemical of Concern	Sample Date	Sample Depth (ft.)	Sample ID	Laboratory Method Detection Limit	Max Conc. (mg/kg)	Target Cleanup Goals †
Benzene	9/5/96	3.5 - 5.0	B - 1	1.0	15.0	0.13
Toluene	9/5/96	1.0 - 3.0	B - 3	0.1	1.04	69
Ethylbenzene	9/5/96	3.5 - 5.0	B - 1	1.0	85.5	160
Total Xylenes	9/5/96	3.5 - 5.0	B - 1	1.0	209.0	568
TPH	9/5/96	5.0 - 6.5	B - 3	100	32,900	N/A
Total Lead						
Naphthalene	3/18/7	3.5 - 4.25	B - 3A	0.201	<0.201	389
Other						
Other						

* Beyond the minimal requirements for a Site Assessment as defined by 30 TAC 334.
† Refer to Worksheets 11.1-5 and *Risk-Based Corrective Action for Leaking Storage Tank Sites*, RG-36, Table A-1.

Note: Geophysical survey was performed as part of the soil assessment to assist in defining the horizontal extent of contamination. This survey is included as Attachment 21.

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*** Geotechnical soil parameters:**

Parameter	Result	Depth	Location/Sample ID	Method of Determination
Dry Bulk Density (g/m^3):				
Effective Porosity (%):				
Fraction Organic Carbon (g/g):				
Intrinsic Permeability (cm^2):				
Water Content (cm^3/cm^3):				
Other				

*** Biodegradation Indicators:**

Present spatial distribution of O_2, CO_2, CH_4, etc. levels on map. (Attachment 9)

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GROUNDWATER ASSESSMENT

GROUNDWATER DATA AND EVALUATION

Groundwater affected by release: ☐ yes ■ no (If no, complete only the Beneficial Groundwater Use Categories on this Worksheet.)

Site Hydrogeology	Upper Most Zone	Other
Depth to groundwater (ft.)		
Aquifer type (Perched, confined, unconfined)		
*Estimated Aquifer thickness (ft.)		
*Water level fluctuations (± ft.)		
Gradient (ft./ft.)/Direction	/	/
*Saturated hydraulic conductivity (ft./day)		
*Approximate well yield (gpd)		
Lithology		
Geologic Formation		
Major/minor aquifer name		
Total dissolved solids (mg/ℓ)		
Confining layer depth (ft. BGS)		
Confining layer thickness (ft.)		

Beneficial Groundwater Use Categories

Mark the potential beneficial use category for the impacted zone and indicate the selection criteria. Complete the appropiate worksheet (11.1-5) for the Category indicated.

☐ Category I	☐ Category II	☐ Category III	☐ Category IV
☐ Impacted or threatened water supply well(s)‡	☐ Affected groundwater zone TDS <3,000 ppm, and no beneficial use† is documented within 0.5 miles of the site.	☐ Affected groundwater zone TDS 3,000 - 10,000 ppm, and no beneficial use† within 0.5 miles of the site.	☐ Affected groundwater zone TDS >10,000 ppm, and no beneficial use† is documented within 0.5 miles of the site.
OR ☐ Affected groundwater zone TDS <3,000 ppm, and water well(s)‡ or water supply spring within 0.5 miles of the site. OR ■ Soils only affected. Regional groundwater beneficial use† cannot be established.	OR ☐ TDS 3,000 - 10,000 ppm, and beneficial use† is documented within the 0.5 miles of the site.		OR ☐ Well yield <150 gpd (i.e., affected zone is not considered to have a beneficial use†)

‡ If construction details of water well(s) are unknown or can not be proven, the interval is assumed to be connected.
† Applies to a drinking water source producing from the same or connected interval as the affected groundwater zone.

Groundwater Sampling Points

	On-Site (provide well ID)	*Beyond Property Boundary (provide well ID)
Number of Sampling points:		
Number of permanent monitoring wells:		
Static water levels above screened intervals: ☐ yes ☐ no		

*PST ID: 91471

DISSOLVED-PHASE PLUME

*Aerial extent of dissolved-phase plume (ft²): _____

*Distance from edge of plume to property boundary if on-site: ☐ <10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ >300 ft.

*Distance from property boundary to edge of plume if off-site: ☐ <10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ >300 ft.

Maximum level of contamination detected in groundwater (mg/ℓ):

Contaminant	Sample Date	Sample ID	Laboratory Method Detection Limit	Maximum Concentration (mg/ℓ)	Target Cleanup Goals†
Benzene					
Toluene					
Ethylbenzene					
Total Xylenes					
MTBE					
TPH					
Naphthalene					
Other_____					

† Refer to Worksheet 11.1-3 and the *Risk-Based Correction Action for Leaking Storage Tank Sites*, RG-36, Table A1.

NAPL PLUME

NAPL Present? ☐ yes ☐ no

	On-Site (provide well ID)	Thickness (ft.)	*Beyond Property Boundary (provide well ID)	Thickness (ft.)
Current maximum NAPL thickness (ft.):				

NAPL recovery method: ☐ hand bail ☐ passive skimmer ☐ sorbent socks ☐ automated system ☐ none

Volume recovered to date (gals.): _____

*Aerial extent of NAPL plume: (ft²)_____ ☐ beyond property boundary

*Distance from edge of NAPL plume to property boundary if on-site: ☐ <10 ft. ☐ 10-50 ft. ☐ 50-100 ft. ☐ 100-300 ft. ☐ >300 ft.

*Distance from edge of NAPL plume from property boundary if off-site: ☐ <10 ft. ☐ 10-50 ft. ☐ 50-75 ft. ☐ 75-100 ft. ☐ >100 ft.

* Biodegradation Indicators:

Present spatial distribution of dissolved Oxygen, dissolved CO_2, dissolved CH_4, Fe, SO_4, or other alternate electron acceptors on isoconcentration map. (Attachment 9)

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VAPOR ASSESSMENT

VAPOR DATA AND EVALUATION

Known vapor impact: ☐ yes ■ no

Location: ☐ ambient air ☐ utilities ☐ residences
☐ hospital ☐ school/day care ☐ commercial buildings ☐ other:_____

Lower Explosive Limit (LEL) concentrations: ☐ not measured ■ measured ☐ calculated[1]

NAPL present or soil concentration near saturation (for calculating soil vapor concentrations, refer to *Risk-Based Correction Action for Leaking Storage Tank Sites*, RG-36): ☐ yes ■ no Depth (ft. BGS):_____

Vapor monitoring data:

Sample No.	Location	Depth	% LEL	Total Organic Vapors (ppmv)	Benzene (ppmv)	Other
1	B - 1	3.5 - 5.0'	8			
2	B - 2	4.0 - 5.5'	5			
3	B - 3	1.0 - 3.0'	2			
4	B - 3	5.0 - 6.5'	2			
5	B - 4	3.0 - 4.0'	0			
6	B - 5	2.0 - 3.0'	0			
7	B - 7	3.0 -4.0	1			
8	B - 8	2.5 - 3.5'	1			
9	B - 9	2.5 - 3.5'	0			

If vapor concentrations exceed 25% of the LEL or other potential for explosive vapor exist in surface or subsurface structure, describe affected area, methods of determination, and any abatement measure. Identify and discuss any occupational or indoor air exposures to released contaminants. Provide all calculations for the determination of the target concentrations:

N/A

[1]LEL% should reflect whole mixture evaluation. If more than one compound is present, actual measurement of vapors will typically be warranted.

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SURFACE WATER ASSESSMENT

SURFACE WATER DATA AND EVALUATION

Surface water(s) affected: ☐ yes ■ no Name:_____ Type:_____
Name:_____ Type:_____

NAPL present on surface water or run off: ☐ yes ☐ no

NAPL recovery method: ☐ passive skimmer ☐ sorbent socks ☐ automated system ☐ booms ☐ other _____ ☐ none

Volumes recovered to date (gals.): _____

Aerial extent of NAPL plume (ft.²): _____

Uses of affected surface water: ☐ drinking water ☐ contact recreation ☐ habitat for endangered species ☐ agriculture

Is a public or domestic surface water intake impacted? ☐ yes ☐ no

If impacted lake or pond, indicate affected surface area (ft.²):_____

Average depth of surface water (ft.): _____

Maximum level of contamination detected in surface water (mg/ℓ):

Contaminant	Sample Date	Sample Location & ID	Laboratory Method Detection Limit	Maximum Concentration (mg/ℓ)	Target Cleanup Goals†
Benzene					
Toluene					
Ethylbenzene					
Total Xylenes					
MTBE					
TPH					
Naphthalene					
Other_____					
Other_____					

† Refer to 30 TAC, Chapter 307, the MCL or the *Risk-Based Correction Action for Leaking Storage Tank Sites*, RG-36.

Describe affected area, methods of determination and any abatement measures. Discuss the migration pathway between the source of contamination and the surface water body.

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PLAN A EVALUATION

CATEGORY I: Soil and Groundwater Target Cleanup Level Determination

- Complete this worksheet for Category I sites. Indicate the maximum detected concentration for the chemicals of concern.
- If groundwater is >15 feet BGS, calculate groundwater protective soil concentrations using the equilibrium partition equation on Worksheet 11.5 (when site specific geotechnical parameters have been analyzed).
- Check the box for each compound that exceeds the target concentrations. If any boxes are checked, further corrective action (i.e., monitoring, Plan B, CAP) will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*

Chemical of Concern	GROUNDWATER (mg/l)		SOIL (mg/kg)				
			Depth to Affected Soil ≤15 ft.		Depth to Affected Soil >15 ft.		
	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	GW >15 ft. CALC. SOIL CONC. C_T
BENZENE	☐ 0.005		☐ 0.13		☐ 0.13		
ETHYLBENZENE	☐ 0.7		☐ 160		☐ 160		
TOLUENE	☐ 1		☐ 69		☐ 69		
XYLENE	☐ 10		☐ 568		☐ 568		
ACENAPHTHENE	☐ 2.19		☐ 314		☐ 314		
ANTHRACENE	☐ 11		☐ 13		☐ 13		
BENZO(A)ANTHRACENE	☐ 0.000117		☐ 0.877[H]		☐ 3.2		
BENZO(B)FLUORANTHENE	☐ 0.000117		☐ 0.877[H]		☐ 13		
BENZO(K)FLUORANTHENE	☐ 0.00117		☐ 8.77[H]		☐ 47		
BENZO(A)PYRENE	☐ 0.0002		☐ 0.0877[H]		☐ 220		
CHRYSENE	☐ 0.0117		☐ 7.2		☐ 7.2		
DIBENZO(A,H)ANTHRACENE	☐ 0.0000117		☐ 0.0877[H]		☐ 7.7		
FLUORANTHENE	☐ 1.46		☐ 156		☐ 156		
FLUORENE	☐ 1.46		☐ 247		☐ 247		
INDENO(1,2,3-CD)PYRENE	☐ 0.000117		☐ 0.877[H]		☐ 17		
NAPHTHALENE	☐ 1.46		☐ 389		☐ 389		
PYRENE	☐ 1.1		☐ 99		☐ 99		
OTHER	☐		☐		☐		
OTHER	☐		☐		☐		

H - Value represents health-based concentration

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PLAN A EVALUATION

CATEGORY II: Soil and Groundwater Target Cleanup Level Determination

- Complete this worksheet for Category II sites. Indicate the maximum detected concentration for the chemicals of concern.
- If groundwater is >15 feet BGS, calculate groundwater protective soil concentrations using the equilibrium partition equation on Worksheet 11.5 (when site specific geotechnical parameters have been analyzed).
- Check the box for each compound that exceeds the target concentrations. If any boxes are checked, further corrective action (i.e., monitoring, Plan B, CAP) will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*

Chemical of Concern	GROUNDWATER (mg/ℓ)		SOIL (mg/kg)				
			Depth to Affected Soil ≤15 ft.		Depth to Affected Soil >15 ft.		
	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	GW >15 ft. CALC. SOIL CONC. C_T
BENZENE	☐ 0.0294		☐ 0.74		☐ 0.74		
ETHYLBENZENE	☐ 3.65		☐ 835		☐ 835		
TOLUENE	☐ 7.3		☐ 503		☐ 503		
XYLENE	☐ 73		☐ 968		☐ 968		
ACENAPHTHENE	☐ 2.19		☐ 314		☐ 314		
ANTHRACENE	☐ 11		☐ 13		☐ 13		
BENZO(A)ANTHRACENE	☐ 0.00117		☐ 0.877[H]		☐ 32		
BENZO(B)FLUORANTHENE	☐ 0.00 117		☐ 0.877[H]		☐ 129		
BENZO(K)FLUORANTHENE	☐ 0. 0117		☐ 8.77[H]		☐ 47		
BENZO(A)PYRENE	☐ 0.000117		☐0.0877[H]		☐ 220		
CHRYSENE	☐ 0. 117		☐ 7.2		☐ 7.2		
DIBENZO(A,H)ANTHRACENE	☐0.00 0117		☐0.0877[H]		☐ 33		
FLUORANTHENE	☐ 1.46		☐ 156		☐ 156		
FLUORENE	☐ 1.46		☐ 247		☐ 247		
INDENO(1,2,3-CD)PYRENE	☐ 0.00117		☐ 0.877[H]		☐ 17		
NAPHTHALENE	☐ 1.46		☐ 389		☐ 389		
PYRENE	☐ 1.1		☐ 99		☐ 99		
OTHER	☐		☐		☐		
OTHER	☐		☐		☐		

H - Value represents health-based concentration

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PLAN A EVALUATION

CATEGORY III: Soil and Groundwater Target Cleanup Level Determination

- Complete this worksheet for Category III sites. Indicate the maximum detected concentration for the chemicals of concern.
- If groundwater is >15 feet BGS, calculate groundwater protective soil concentrations using the equilibrium partition equation on Worksheet 11.5 (when site specific geotechnical parameters have been analyzed).
- Check the box for each compound that exceeds the target concentrations. If any boxes are checked, further corrective action (i.e., monitoring, Plan B, CAP) will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*

Chemical of Concern	GROUNDWATER (mg/ℓ)		SOIL (mg/kg)				
			Depth to Affected Soil ≤15 ft.		Depth to Affected Soil >15 ft.		
	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	TARGET CONC.	MAX. LAB. ANALYZED CONC.	GW >15 ft. CALC. SOIL CONC. C_T
BENZENE	☐ 0.14		☐ 3.5		☐ 3.5		
ETHYLBENZENE	☐ 5.21		☐ 1193		☐ 1193		
TOLUENE	☐ 10.4		☐ 716		☐ 716		
XYLENE	☐ 104		☐ 968		☐ 968		
ACENAPHTHENE	☐ 3.13		☐ 314		☐ 314		
ANTHRACENE	☐ 13		☐ 13		☐ 13		
BENZO(A)ANTHRACENE	☐ 0.00556		☐ 0.877[H]		☐ 153		
BENZO(B)FLUORANTHENE	☐ 0.00556		☐ 0.877[H]		☐ 154		
BENZO(K)FLUORANTHENE	☐ 0.0556		☐ 8.77[H]		☐ 47		
BENZO(A)PYRENE	☐ 0.000556		☐ 0.0877[H]		☐ 330		
CHRYSENE	☐ 0.556		☐ 7.2		☐ 7.2		
DIBENZO(A,H)ANTHRACENE	☐ 0.000556		☐ 0.0877[H]		☐ 33		
FLUORANTHENE	☐ 2.08		☐ 156		☐ 156		
FLUORENE	☐ 2.08		☐ 247		☐ 247		
INDENO(1,2,3-CD)PYRENE	☐ 0.00556		☐ 0.877[H]		☐ 17		
NAPHTHALENE	☐ 2.08		☐ 389		☐ 389		
PYRENE	☐ 1.56		☐ 99		☐ 99		
OTHER	☐		☐		☐		
OTHER	☐		☐		☐		

H - Value represents health-based concentration

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PLAN A EVALUATION

CATEGORY IV: Soil Target Cleanup Level Determination

- Complete this worksheet for Category IV sites. Check the appropriate column indicating the predominant land use and surface cover.
- Indicate the maximum detected soil concentration for the chemical of concern in the column checked. Check the box for each compound that exceeds the target concentration. If any boxes are checked, further corrective action will be required.
- Dermal exposure should be calculated if depth to groundwater is <15 feet, unless documentation can be provided that surface cover will be maintained and/or construction practices will not encroach upon groundwater[a]. For dermal exposure calculations refer to Chapter 10 of *Dermal Exposure Assessment, Principles and Applications (Interim Report)*, EPA/600/8-91/011B.NTIS PB92205665. Attach and provide all dermal exposure assessment calculations. Provide tables which include result and maximum detected concentrations.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36)*.

Chemical of Concern	☐ RESIDENTIAL ☐ Surface to 2 Feet Without Impervious Cover (Soil mg/kg) Target Concentrations Based on Ingestion and Inhalation		☐ RESIDENTIAL ☐ 2-15 Feet Without Impervious Cover ☐ Surface to 15 Feet with Impervious Cover (Soil mg/kg) Soil Target Concentrations Based on Ingestion		☐ COML./INDUSTRIAL Surface to 15 feet Regardless of Surface Cover (Soil mg/kg) Target Concentrations Based on Ingestion/Inhalation	
		Maximum Laboratory Analyzed Concentration		Maximum Laboratory Analyzed Concentration		Maximum Laboratory Analyzed Concentration
BENZENE	☐ 6.3		☐ 22		☐ 10	
ETHYLBENZENE	☐ 3357		☐ 3357[b]		☐ 3357	
TOLUENE	☐ 3257		☐ 3257[b]		☐ 3257	
XYLENE	☐ 968		☐ 968[b]		☐ 968	
ACENAPHTHENE	☐ 314		☐ 314[b]		☐ 314	
ANTHRACENE	☐ 13		☐ 13[b]		☐ 13	
BENZO(A)ANTHRACENE	☐ 0.877		☐ 0.877		☐ 7.8	
BENZO(B)FLUORANTHENE	☐ 0.877		☐ 0.877		☐ 7.8	
BENZO(K)FLUORANTHENE	☐ 8.77		☐ 8.77		☐ 47	
BENZO(A)PYRENE	☐ 0.0877		☐ 0.0877		☐ 0.784	
CHRYSENE	☐ 7.2		☐ 87.7		☐ 7.2	
DIBENZO(A,H)ANTHRACENE	☐ 0.0877		☐ 0.0877		☐ 0.784	
FLUORANTHENE	☐ 156		☐ 156[b]		☐ 156	
FLUORENE	☐ 247		☐ 247[b]		☐ 247	
INDENO(1,2,3-CD)PYRENE	☐ 0.877		☐ 0.877		☐ 7.84	
NAPHTHALENE	☐ 782		☐ 782[b]		☐ 782	
PYRENE	☐ 99		☐ 99[b]		☐ 99	
OTHER	☐		☐		☐	
OTHER	☐		☐		☐	

a Written statements, institutional controls must be provided that impermeable surfaces will be maintained.
b Maximum concentration based on pure product saturation limits.

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PLAN A EVALUATION

SOILS ONLY AFFECTED (Regional Groundwater Beneficial Use Can Not Be Established)

- Complete this worksheet when groundwater beneficial use can not be established. Check the appropriate land use and indicate the maximum detected soil concentration for the chemicals of concern in the appropriate columns.
- For those chemicals of concern exceeding the default target concentrations, use site specific parameters (if collected) to calculate target soil concentrations using the equilibrium partition equation (on the following page).
- Check the box for each chemical of concern that exceeds the default target concentration and the calculated C_T value (Target Soil Concentration Protective of Groundwater determined by the equilibrium partition equation).
- If any boxes are checked, further corrective action will be required.
- If other chemicals of concern are present but not listed, refer to *Risk-Based Corrective Action for Leaking Storage Tank Sites (RG-36).*

Chemical of Concern	SOIL (mg/kg)								
	Affected Soil ≤15 ft.						Affected Soil >15 ft.		
	☐ RESIDENTIAL			■ COMMERCIAL / INDUSTRIAL					
	DEFAULT TARGET CONC.	MAX. LAB. ANALYZED CONC.	CALC. SOIL TARGET CONC. C_T	DEFAULT TARGET CONC.	MAX. LAB. ANALYZED CONC.	CALC.SOIL TARGET CONC. C_T	DEFAULT TARGET CONC.	MAX. LAB. ANALYZED CONC.	CALC. SOIL TARGET CONC. C_T
BENZENE	☐ 0.13			■ 0.13	15.0	3.249	☐ 0.13		
ETHYLBENZENE	☐ 160			☐ 160	85.5	36,611.56	☐ 160		
TOLUENE	☐ 69			☐ 69	1.04	4,746.82	☐ 69		
XYLENE	☐ 568			☐ 568	209	32,451.73	☐ 568		
ACENAPHTHENE	☐ 314			☐ 314			☐ 314		
ANTHRACENE	☐ 13			☐ 13			☐ 13		
BENZO(A)ANTHRACENE	☐ 0.877[H]		0.877[H]	☐ 3.2			☐ 3.2		
BENZO(B)FLUORANTHENE	☐ 0.877[H]		0.877[H]	0.877[H]	☐ 7.8[H]		7.8[H]	☐ 13	
BENZO(K)FLUORANTHENE	☐ 8.77[H]			8.77[H]	☐ 47			☐ 47	
BENZO(A)PYRENE	☐ 0.0877[H]		0.0877[H]	☐ 0.784[H]		0.784[H]	☐ 220		
CHRYSENE	☐ 7.2			☐ 7.2			☐ 7.2		
DIBENZO(A,H)ANTHRACENE	☐ 0.0877[H]			0.0877[H]	☐ 0.784[H]		0.784[H]	☐ 7.7	
FLUORANTHENE	☐ 156			☐ 156			☐ 156		
FLUORENE	☐ 247			☐ 247			☐ 247		
INDENO(1,2,3-CD)PYRENE	☐ 0.877[H]			0.877[H]	☐ 7.84[H]		7.84[H]	☐ 17	
NAPHTHALENE	☐ 389			☐ 389			☐ 389		
PYRENE	☐ 99			☐ 99			☐ 99		
OTHER	☐			☐			☐		
OTHER	☐			☐			☐		

H - Value represents health-based concentration. The equilibrium partition equation may only be used when affected soils are >15 feet BGS for these chemicals of concern.

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PLAN A EVALUATION

EQUILIBRIUM PARTITION EQUATION

- Use this section to determine the target soil concentrations protective of groundwater (C_T).

The C_T value may be calculated for each chemical of concern under the following conditions:

- the option is provided on the appropriate column of the site specific category worksheet;
- default target concentration was exceeded;
- site specific soil parameters have been collected.

- Provide all calculations for each chemical of concern.

PARAMETERS	REFERENCE VALUES USED TO CALCULATE DEFAULT TARGET CONCENTRATION	SITE SPECIFIC VALUES
C_w = Category I groundwater target concentration (chemical specific) (mg/ℓ)	*Reference worksheet 11.1 for chemical specific category I target concentration.*	
ρ_s = Dry Soil bulk density (g-soil/cm^3-soil)	1.8	
θ_w = Water content (cm^3-H_2O/cm^3-soil)	0.1	
θa = Air content (cm^3-air/cm^3-soil)	0.22	
f_{oc} = Faction of organic carbon (g-C/g-soil)	0.002	
K_{oc} = Carbon-Water sorption coefficient (chemical specific) (g-H_2O/g-soil)	*Reference RG-36, page 55, Teble B-1 for chemical specific values.*	
K_d = Soil-Water sorption coefficient = $K_{oc} \times f_{oc}$		
H' = Unitless form of Henry's law constant H x 41.57 (at 25°C)	*Reference RG-36 page 55*	
C_l = Leachate Concentration Dilution Factor = 100	= Dilution Factor x C_w	

Use this equation to determine the target soil concentration which is protective of groundwater for each chemical of concern. Use site specific geotechnical parameters to calculate C_T. (Use referenced default values for any parameters not analyzed.)

C_T = Target soil concentration protective of groundwater determined by the equilibrium partition equation

$$C_T = \frac{C_l \times [\rho_s K_d + \theta_w + \theta_a H']}{\rho_s}$$

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SITE PRIORITIZATION

PRIORITY 1 SITES

NAPL present? ☐ yes ☐ no Evaluate all information on site soils, vapors, groundwater, surface water, and other impacts and check all boxes which match site conditions. The lowest value is the site priority. If priority cannot be determined, the assessment is inadequate.

	PRIORITY	ACTIONS
☐ 1.1	Explosive levels, or concentrations of vapors that could cause acute health effects are present in a residence or other building. (Ensure the local fire authority or State Fire Marshal (512/918-7100) and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, property owners, and potentially affected parties. Mitigate vapor impact. **Additional Actions:** Conduct receptor survey. Conduct assessment of contaminant plumes. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.2	An active public water supply well, public water supply line, or public surface water intake is affected or immediately threatened by the release. (Ensure the public authority and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, well users, and property owners. Prevent further migration. Mitigate impact. Discontinue use of water supply. **Additional Actions:** Provide alternative water source†. Conduct receptor survey. Conduct assessment of contaminant plumes in relation to water supply impact. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.3	A sole-source domestic water supply well or line, or sole-source domestic surface water intake is affected or immediately threatened by the release. (Ensure the well user or surface water user and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, well users, and property owners. Prevent further migration. Mitigate impact. Discontinue use of water supply. **Additional Actions:** Provide alternative water source†. Conduct receptor survey. Conduct assessment of contaminant plumes in relation to water supply impact. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.4	Explosive vapors are present in a subsurface utility system, but no building or residence is affected. (Ensure the utility authority and the local TNRCC Region Office have been notified.)	**Emergency Actions:** Notify appropriate authorities, property owners, and affected parties. Mitigate vapor impact. **Additional Actions:** Conduct receptor survey. Conduct assessment of contaminant plumes. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.5	NAPL is present at the ground surface, on surface water bodies, surface water runoff, or in utilities other than water supply lines. (Ensure the utility authority is notified if utilities are affected. Ensure NAPL is removed as required pursuant to 30 TAC 334.79.)	**Emergency Actions:** Notify appropriate authorities, property owners, and affected parties. Secure area. **Additional Actions:** Conduct NAPL removal activities. Prevent migration of NAPL. Conduct assessment in relation to impact. Conduct receptor survey. Determine target cleanup levels. Conduct remediation as necessary.
☐ 1.6	The Edwards aquifer, recharge zone or transition zone is affected.	**Emergency Actions:** Recover NAPL if present. **Additional Actions:** Initiate assessment activities. Conduct assessment in relation to impact. Conduct receptor survey. Determine target cleanup levels. Conduct remediation as necessary. If NAPL is present, conduct removal activities.
☐ 1.7	Concentrations of vapors/particulates that could cause acute health affects, or safety concerns are present in outdoor air.	**Emergency Actions:** Notify appropriate authorities, property owners, and affected parties. Mitigate immediate impacts. **Additional Actions:** Conduct sufficient assessment to determine exposure pathways, receptors and their locations, and target cleanup goals. If NAPL is present, conduct removal activities.

† Reimbursement is contingent upon 30 TAC 334.308 (c)(3).

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PRIORITY 2 SITES

	PRIORITY	ACTIONS
☐ 2.1	Soils or water contaminated by the release are exposed and unsecured from public access and dwellings, playgrounds, parks, day care centers, schools, or similar use facilities are located within 500 feet of those soils.	Remove, cover, or otherwise secure exposed soils or water. Fill open excavations. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.2	A former vapor impact is associated with this site, or NAPL is present in close proximity to subsurface utilities or other natural or man-made conduit and there is potential for the accumulation of explosive vapors or vapors that could cause acute effects in a building or other structure.	Remediate/remove vapors, NAPL, or contaminated soils. Determine migration pathways and remove/prevent migration pathways. Conduct assessment of contaminant plumes in relation to the potential vapor pathway. Determine target cleanup levels. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.3	A domestic water supply well or line, or a domestic surface water intake is affected or immediately threatened by the release, but the user has access to another public or private water supply. (Ensure the user and the local TNRCC Region Office have been notified.)	Notify proper authorities, users, and property owners. Prevent migration to water intake. Provide alternative water supply if necessary. Conduct assessment to identify contaminant plumes and exposure pathways in relation to water intake. Determine appropriate target cleanup goals based on site conditions. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.4	A non-public or non-domestic water supply well is affected or immediately threatened. (Do not consider monitor wells.) (Ensure the user and the local TNRCC Region Office have been notified.)	Notify proper authorities, well users, and property owners. Prevent migration to water well. Provide alternative water supply if necessary. Plug water well if necessary. Conduct assessment to identify contaminant plumes and exposure pathways in relation to water well. Determine appropriate target cleanup goals based on site conditions. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.5[1]	Groundwater is affected and a public or domestic water supply well is located within 0.25 miles of the UST/AST system or source area. (Check if a well is present, but the well use is unknown). **(See footnote 1 before responding.)**	Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Evaluate well impact potential. Determine appropriate cleanup goals based on site conditions. Conduct actions necessary to contain contamination or prevent impact or exposure.
☐ 2.6	Groundwater or storm water runoff is affected and discharges within 500 feet of the known extent of contamination to a surface water body used for human drinking water, contact recreation, habitat to a protected or listed endangered plant and animal species.	Conduct assessment which addresses the contaminant plumes in relation to the surface water. Determine target cleanup levels. Conduct actions necessary to contain contamination or prevent impact or exposure. Notify property owners if impact is documented.
☐ 2.7	A public or domestic water supply well that produces from a groundwater zone which is not affected or threatened is located within the known extent of contamination. (Check if a well is present, but the well use is unknown.)	Notify well users and property owners. Determine completion data and usage of water well(s). Conduct receptor survey to locate additional sensitive receptors. Investigate well impact or cross-contamination potential. Plug well(s) if necessary. Determine target cleanup levels. Conduct actions necessary to contain contamination or prevent impact or exposure. Monitor water well for groundwater quality.

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PRIORITY 3 SITES

	PRIORITY	ACTIONS
☐ 3.1[1]	Groundwater is affected and a public or domestic water supply well is located between 0.25 and 0.5 miles from the UST/AST system or source area. (Check if a well is present in this interval, but the well use is unknown.) **(See footnote 1 before responding.)**	Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Evaluate well impact potential. Evaluate need for remediation.
☐ 3.2	Groundwater is affected and the affected groundwater zone may discharge between 500 feet and 0.25 miles of the UST/AST or source area to a surface water body used for human drinking water, contact recreation, or habitat to a protected or listed endangered plant and animal species.	Conduct assessment which evaluates potential to impact the surface water. Evaluate need for remediation.
☐ 3.3[1]	Groundwater is affected and a non-public or non-domestic water supply well is located within 0.25 miles of the UST/AST system or source area. **(See footnote 1 before responding.)**	Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Monitor water well for groundwater quality. Evaluate need for remediation.
☐ 3.4	A non-community or non-domestic water supply well that produces from a groundwater zone which is not affected or threatened is located within the known extent of contamination. (If a well is present, but the use of the well is unknown, check 2.7 instead.)	Notify well users and property owners. Determine completion data and usage of well(s) if not already known. Conduct receptor survey to locate additional wells and other potential receptors (if not already done). Investigate well impact or cross-contamination potential. Monitor water well for groundwater quality. Evaluate need for remediation.
☐ 3.5[2]	A designated major or minor groundwater aquifer is affected or immediately threatened. **(See footnote 2 before responding.)**	Conduct assessment of soil and groundwater contaminant plumes in relation to major or minor aquifer. Conduct receptor survey and water well inventory. Evaluate need for remediation.

PRIORITY 4 SITES

	PRIORITY	ACTIONS
☐ 4.1	Groundwater is affected.	Conduct assessment of soil and groundwater contaminant plumes. Conduct receptor survey and water well inventory. Evaluate site conditions to determine need for additional corrective actions.
■ 4.2	The vertical extent of contamination has been defined and the assessment results document that groundwater is not affected.	Conduct assessment of soil contaminant plume. Conduct receptor survey and water well inventory. Evaluate site conditions to determine need for additional corrective actions.

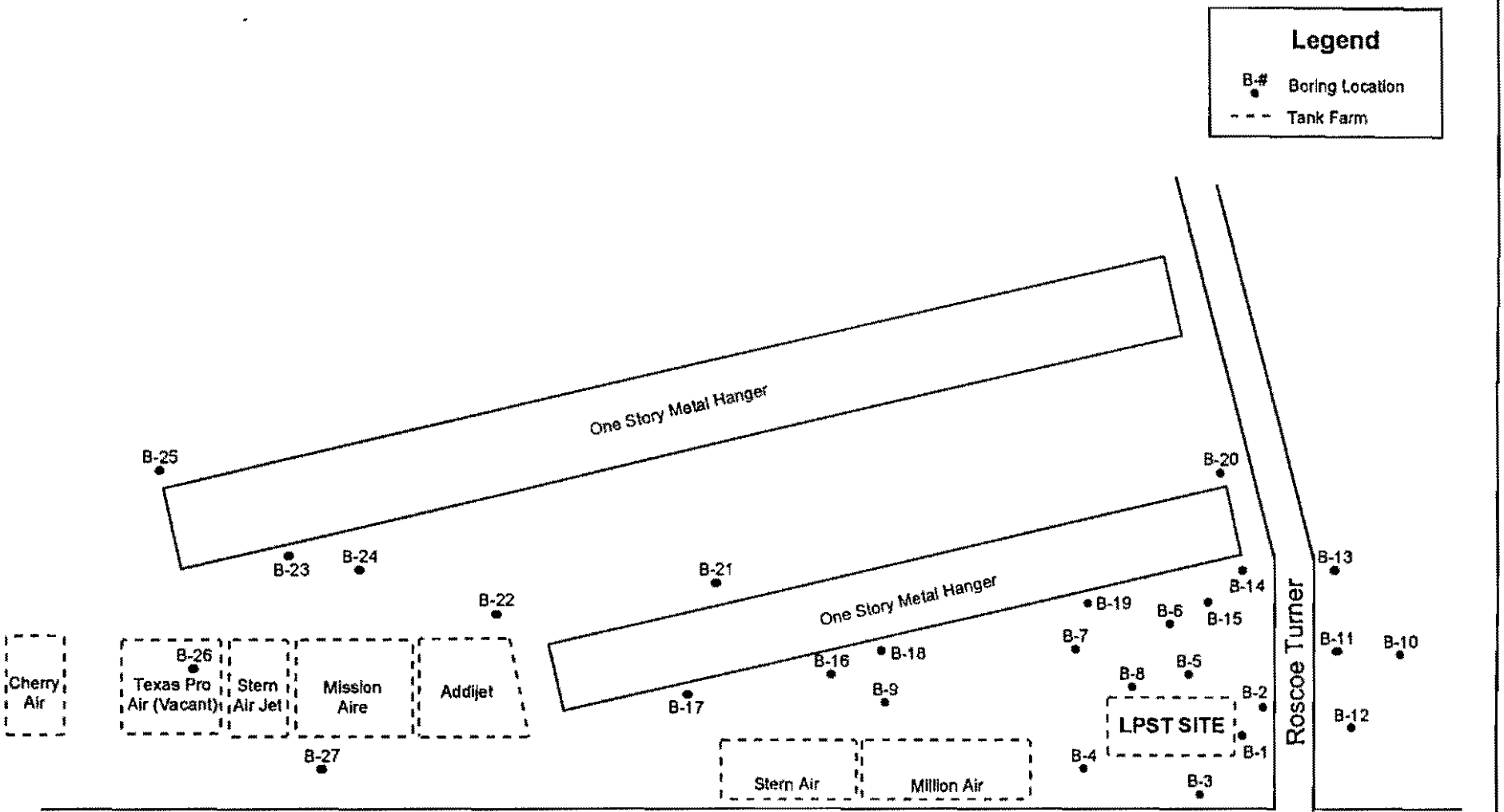
1. Consider only wells producing from the same interval as the affected groundwater zone at the release site, wells which may provide a cross-contamination pathway, or wells where completion details are unknown.

2. Refer to Major and Minor Aquifers of Texas Maps prepared by Texas Water Development Board, September 1990. Do not consider the low permeability Beaumont clays of the Beaumont Formation for the Gulf Coast aquifer. Do not consider a perched groundwater zone overlaying the principal producing portion of the aquifer unless the two are hydrologically connected.

Abbreviations	Definition
%	percent
AST	Aboveground Storage Tank
AV	aviation
BGS	below ground surface
C	celius
CAP	corrective action plan
CAT.	category
CH_4	methane
cm	cubic centimeter
cm^2/cm^2	square centimeter per square centimeter
CO_2	carbon dioxide
coml.	commercial
conc.	concentration
cont.	continue
EPA	Environmental Protection Agency
Fe	iron
ft.	feet
$ft.^2$	square feet
gal.	gallons
g/g	gram per gram
g/m^3	gram per cubic meter
gpd	gallons per day
ID	identification
in.	inches
Lab.	laboratory
LPST	Leaking Petroleum Storage Tank
LSA	Limited Site Assessment
Max.	maximum
MCL	maximum contaminant level
mg/kg	milligram per kilogram
mg/ℓ	milligram per liter
NAPL	non-aqueous phase liquids
No.	number
O_2	oxygen
ppm	parts per million
PST	Petroleum Storage Tank
RP	Responsible Party
RPR	Responsible Party Remediation
TAC	Texas Administrative Code
TEX	toluene, ethylbenzene, and total xylenes
TNRCC	Texas Natural Resource Conservation Commission
TPH	total petroleum hydrocarbons
UST	Underground Storage Tank

ATTACHMENT 1

Site plan illustrating location of entire former/current UST/AST system(s) subsurface utilities, limits of excavation, system removal or repair, sampling points, and surface cover



Note: Water, Stormwater, and Sanitary Sewer Lines run parallel to Addison Road

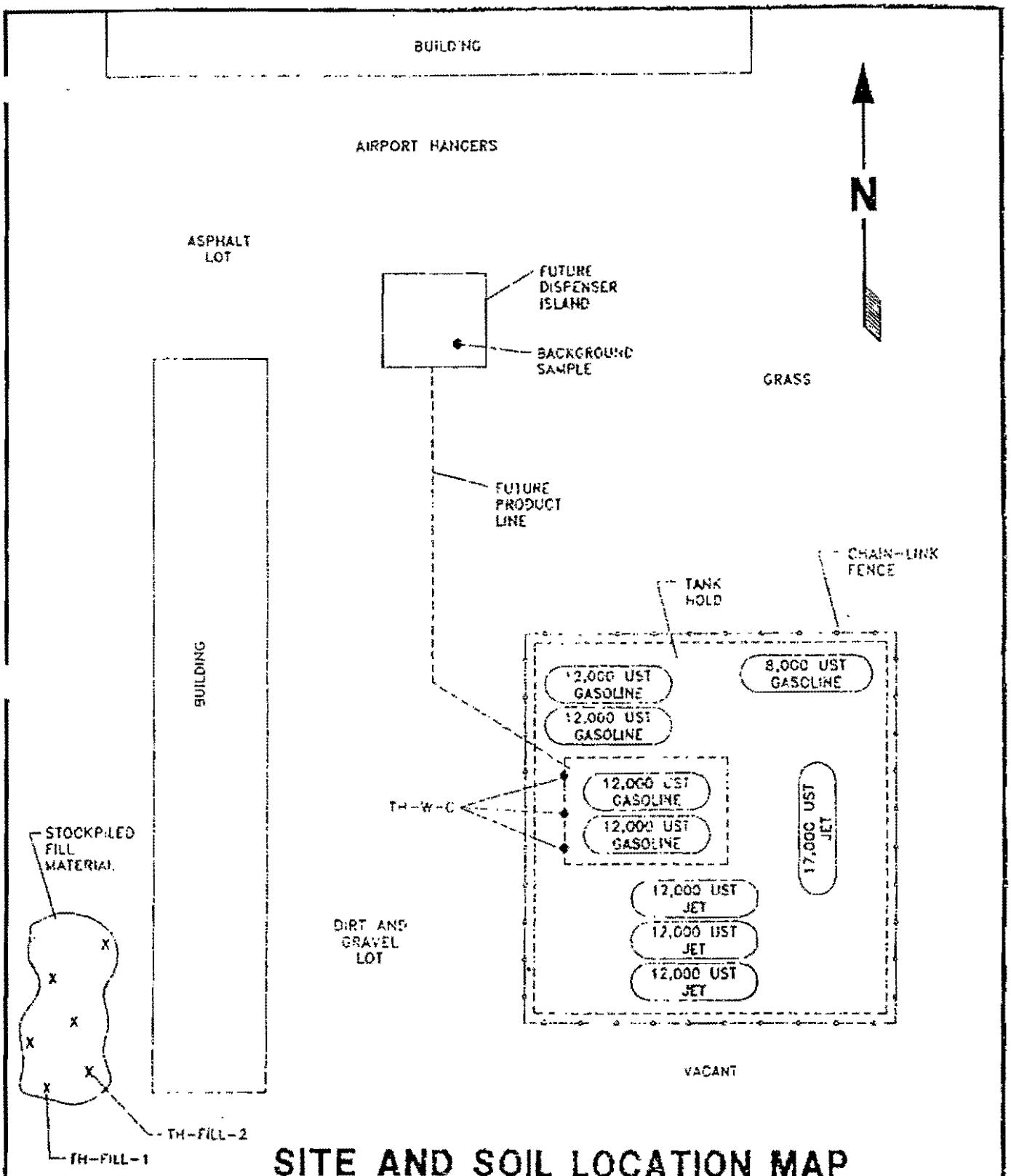
N

Prepared by: TRIAD

Prepared for:
ADDISON AIRPORT
4505 Claire Chennault
Addison, Texas

FIGURE 1-A (Not to Scale)
Addison Airport Fuel Farm
Test Borings, LPST No. 91471

Date: May 28, 1997 TPN: 42078.A01



SITE AND SOIL LOCATION MAP

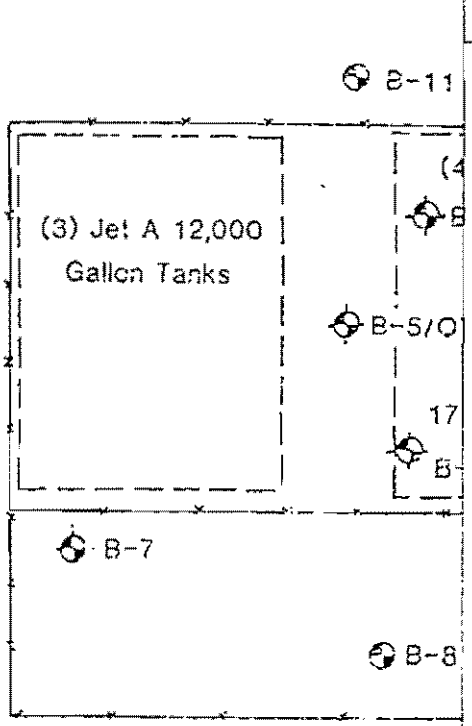
CURA INC. 2209 WISCONSIN, #400 - DALLAS, TEXAS 214 620-7117	ADDISON AIRPORT ROSCOE TURNER ROAD ADDISON, TEXAS	DATE: JAN 1992	SCALE: NTS
		PROJECT NO. 32-91701	FIGURE NO. 1-B

END

ion

Well Location

k Reference Elevation at 100.00'



11/24/87

Figure 1-C

Test Boring

and Observation Well Location Plan

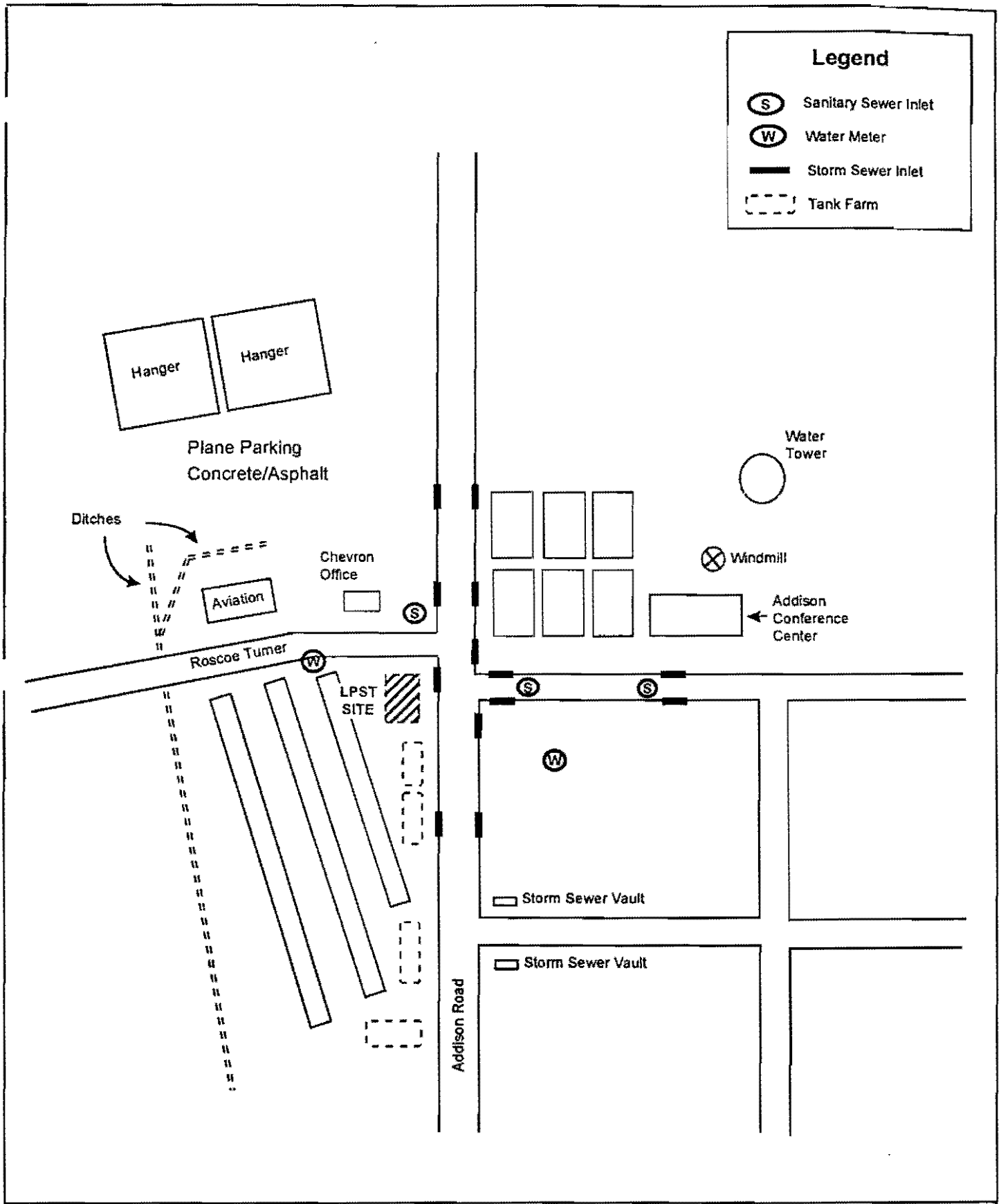
Aviall Corporation
PHASE I HYDROGEOLOGIC INVESTIGATION
Aviall Addison Jetport Fuel Farm
Addison, Texas

ATEC Report No. 25-00483

ATEC Associates, Inc.
of Texas
11310 Newkirk
Dallas, Texas 75229

ATTACHMENT 2

Vicinity map or aerial photograph illustrating surrounding land use and receptors identified within a 500-foot radius

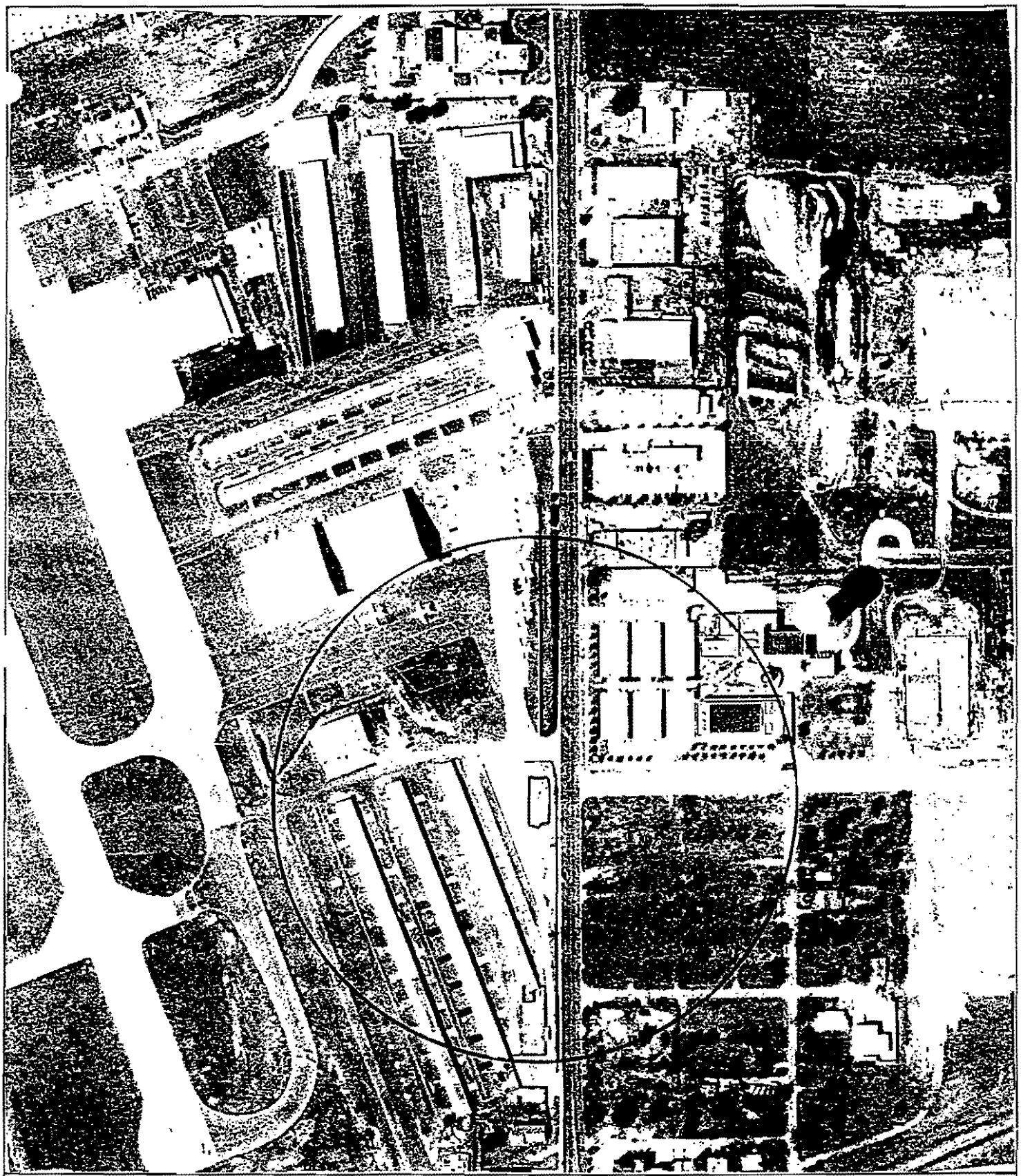


Prepared by: TRIAD

Prepared for:
ADDISON AIRPORT
4505 Claire Chennault
Addison, Texas

FIGURE 2 (Not to Scale)
Site Vicinity Map
Addison Airport Fuel Farm

Date: May 28, 1997 TPN: 42078.A01



TRIAD

SITE AERIAL PHOTOGRAPH

Addison Airport Fuel Farm
Photo Date: 3/31/96

LPST ID: 91471

Continuation of Worksheet 2.0 from Page 5

List all facilities (not limited to PST regulated) within 500 feet of the site that could be a source of contaminants:

Other Comments:

Facility Name & Type: Stern Air Fuel Farm
Address: Addison Rd. Approx 150' south of site
Facility No.: Unregistered
LPST ID No. N/A
Owner/Operator: R. Stern

Facility Name & Type: Addijet (Addison Airport)
Address: 15409 Addison Road
Facility No.: 63865
LPST ID No. N/A
Owner/Operator: Addison Airport/Mercury Air

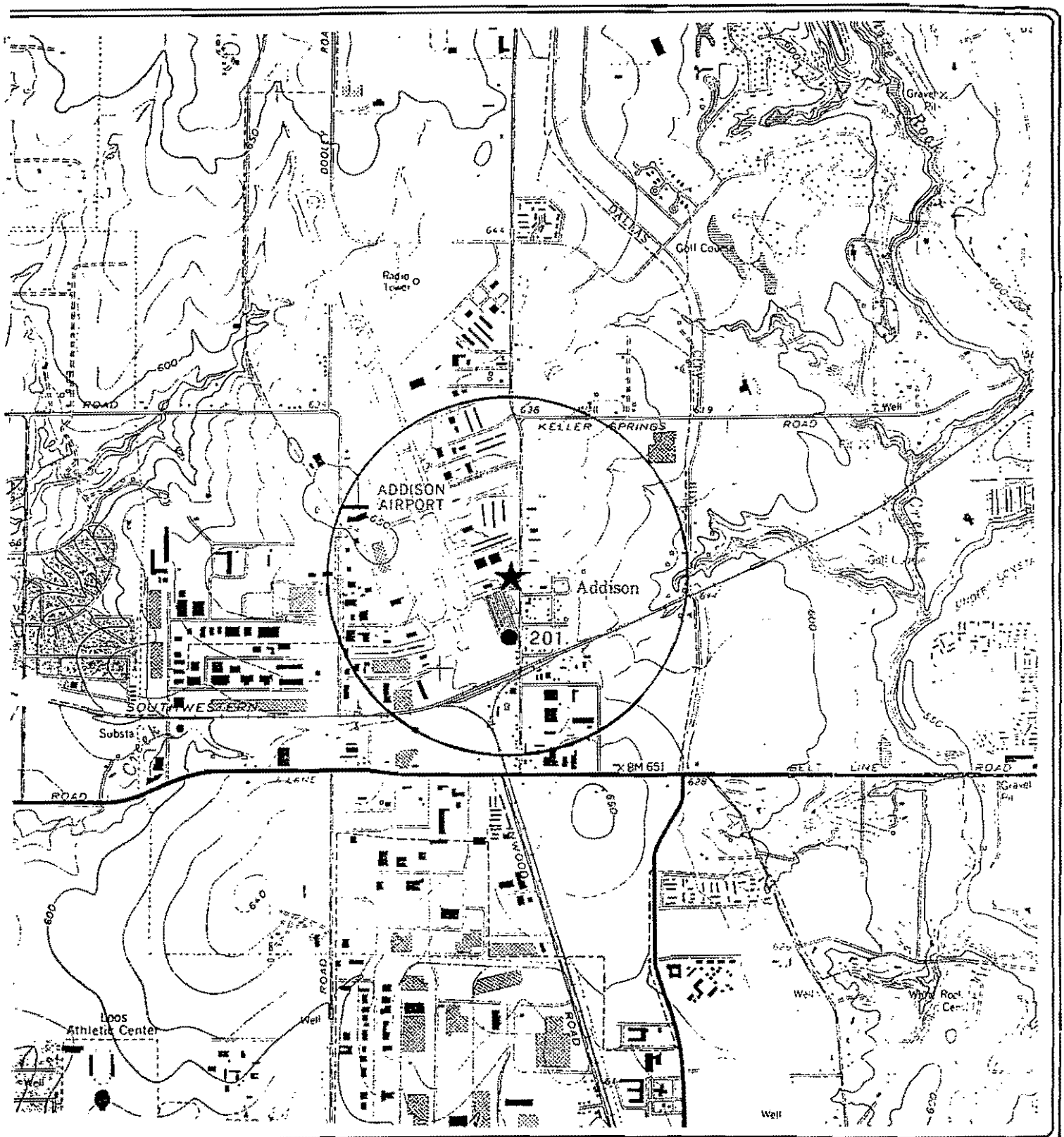
Facility Name & Type: Stern Air Jet Fuel Farm
Address: Addison Road Approx 350' south of site
Facility No.: Unregistered
LPST ID No. N/A
Owner/Operator: R. Stern

Facility Name & Type: Addison Aviation
Address: Addsion Road Approx 500' south of site
Facility No.: Unregistered
LPST ID No. N/A
Owner/Operator: Addison Aviation

(Formerly Cherry Air)

ATTACHMENT 3

USGS topographic map with plotted water well locations



LEGEND

- ● WELL LOCATION
- ★ SITE LOCATION

APPROXIMATE LOCATIONS ONLY

WATER WELL LOCATION MAP
WELLS WITHIN A 1/2 MILE RADIUS

NWC ADDISON RD & ROSCOE TURNER RD
DALLAS, TEXAS
DALLAS COUNTY

USGS 7.5 MINUTE QUADRANGLE

ADDISON (PR 1981)

Geosource, Inc.
ENVIRONMENTAL DATA and RESEARCH

1000 WEST AVE., SUITE A
AUSTIN, TEXAS 78701
512-474-6721 FAX: 512-474-5428

ATTACHMENT 4

Copies of completion details and water well drillers reports for located wells (0.5 mile radius)

GEOSOURCE INCORPORATED

ENVIRONMENTAL DATA, RESEARCH & MAPPING SERVICES

WATER WELL REVIEW

SITE:

NWC ADDISON RD & ROSCOE TURNER RD
DALLAS, TEXAS
PROJECT# 42078.A01

CLIENT:

TRIAD ONSITE SYSTEMS

Geosource Incorporated • 1000 West Ave., Suite A • Austin, Texas 78701 • ph (512)474-6721 fax (512)474-5428

[redacted]

Geosource Incorporated

September 26, 1996 Project# 42078.A01

Risa Basso
Triad Onsite Systems
6415 Cedar Springs
Dallas, TX 75235

In re: Water well search for a site in Dallas County: NWC Addison Rd & Roscoe Turner Rd, Dallas, Texas.

Dear Ms. Basso,

Geosource Incorporated (GI) has performed a water well search for a site in Dallas County. GI utilized the following steps for this project:

1. Locate all located and plotted water wells on TWDB (Texas Water Development Board) County highway maps onto a map provided by GI within the area of review (AOR).

   Locate all located water wells on TWDB USGS (United States Geological Survey) 7.5 minute topo maps onto the map provided by GI.

2. Research well schedules within the unnumbered county water well files.

3. Research well schedules of located and plotted wells found on the TWDB water well maps at the TNRCC (Texas Natural Resources Conservation Commission) central records.

4. Research well schedules of partially numbered water wells within the plotted water well files at the TNRCC central records within the AOR.

Note: A set of files named "unplotted wells" exist for every county. Within these files are well logs which have no location information. The TWDB does not assign a state id. no. to these wells considering that location information is not available. These files date back to 1966. GI did not search through these files due to the fact that many of the logs have little or no location information. if you feel that these files should be examined, GI will search the files per your request.

GI has enclosed the map and well records for your review. The following is a brief explanation of terms:

Plotted water wells - wells whose location has been taken from water well drillers logs. Since June of 1986 the TWDB has stopped locating these wells on their county highway maps. The accuracy of the location for these wells was dependent on the driller. Drillers logs that are currently being processed are given a partial well number where by the well is identified within a 2.5 minute quadrangle (within a 7.5 minute topo). There are also wells which have duplicate well numbers. These wells are supposedly in or around the original well location. (Examples; of a plotted well number is 10-10-5A, of a partial well number 10-10-4)

1000 WEST AVENUE SUITE A · AUSTIN, TEXAS 78701-2019
512-474-6721 · FAX: 512-474-5428

Located water wells - wells whose location has been verified on site by a TWDB or USGS staff member. Often times when a well is located on the ground it ends up being a plotted well. In such cases the plotted water well becomes located well. (Example of a located well number is 12-34-654)

GI identified one located well within a 1/2 mile radius of the site. Following is a listing of the well:

STATE ID NO.

33-02-201

Note: The location map will have one well location.

GI's research of water wells within the AOR was a search of the maps at the TWDB and the records within the TNRCC central records files at the time of the search. GI may not be able to account for logs not within the files of the TNRCC central records files. Also, due to the fact that some water well logs are not submitted by drillers and the unaccountability of privately drilled water wells, GI is unable to provide 100% of the data in the AOR.

If you have any questions concerning this project or need additional information, please call me at 512 474 6721.

Sincerely,

David Stegmann
Enclosures

WELL RECORDS
NWC ADDISON RD & ROSCOE TURNER RD
DALLAS, TEXAS

Form GW-1

TEXAS BOARD OF WATER ENGINEERS

GROUND-WATER DIVISION

WELL SCHEDULE

Date 3/28, 19 61 Field No. _____

Record by WS Office No. HR3302201

Source of data Rec (1950) Home Hunter

Location: County Dallas

Map about 200' NW of Post office

Survey _____

2. Owner: City of Addison Address Addison

Tenant 0 Address _____

Driller H. Myers & Sons Address _____

3. Topography: _____

4. Elevation: 635± ft. above below MSL

5. Type: Dug, drilled, driven, bored, jetted ____ 19 57

6. Depth: Rept. 2778 ft. Meas. _____ ft.

7. Casing: Diam. _____ in., to _____ in., Type _____

Depth _____ ft., Finish _____

8. Chief Aquifer: Kl Trinity From _____ ft. to _____ ft.

Others _____

9. Water level: _____ ft. rept. meas. _____ 19____ above below _____

which is _____ ft. above below surface

10. Pump: Type T Capacity _____ gpm _____

Power: Kind E Horsepower 50

11. Yield: Flow _____ gpm, Pump 200 gpm, Meas. Rept. Est. 1961

Drawdown _____ ft. after _____ hours pumping _____ gpm

12. Use: Dom., Stock, PS, RR., Ind., Obs, Irr. _____

Adequacy, permanence _____

13. Quality: _____

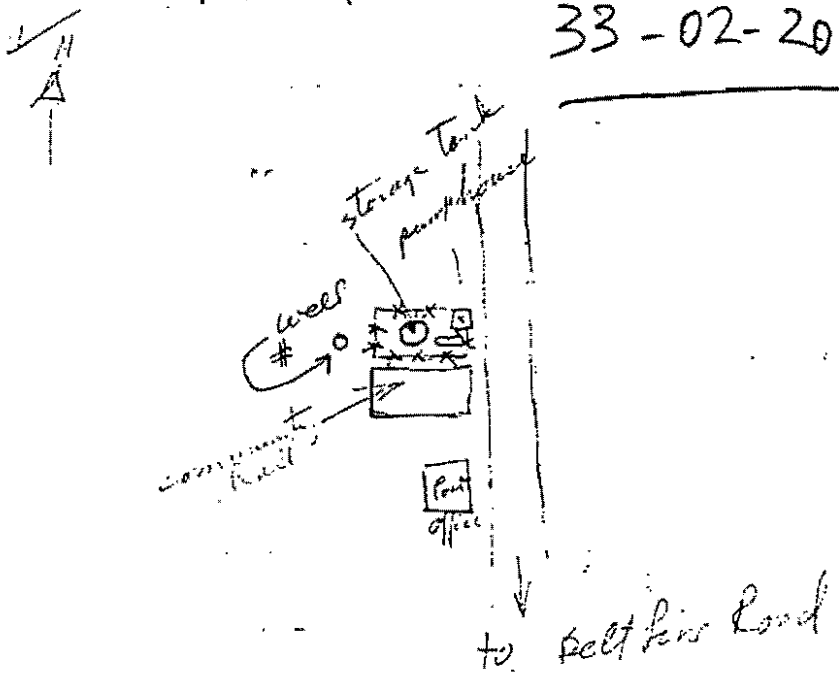
Temp. _____ °F _____ Sample Yes No

14. Log: Yes No driller's log at Myers's

15. Remarks: _____

Circle Drive & Hunter

33-02-201



17

0-15	12" OD
0-1009	8 5/8" OD
1009-1010	8 5/8" OD x 7" OD swedge nipple
1010-2614	7" OD
2614-2615	7" OD x 6 5/8" OD swedge nipple
2615-2768	6 5/8" OD mill slotted pipe
2768-2778	6 5/8" OD blank w/ shoe on bottom

cemented

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Twin Mountains Field No. _____ State Well No. 33-02-201

Owner's Well No. _____ County DALLAS

1. Location: _____ 1/4, _____ 1/4 Sec. _____, Block _____ Survey _____

2. Owner: City of Addison Address: _____

Tenant: _____ Address: _____

Driller: J. L. Myers Saw Address: DALLAS, TEXAS

3. Elevation of _____ is 635 ft. above msl, determined by Topo

4. Drilled: Nov. 3 19 57; Dug, Cable Tool, Rotary

5. Depth: Rept. 2778 ft. Meas. _____ ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed _____

7. Pump: Mfgr. _____ Type Turbine

No. Stages _____, Bowls Diam. _____ in., Setting _____ ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel Elect Make & Model _____ HP. 50

9. Yield: Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est. _____

10. Performance Test: Date _____ Length of Test _____ Made by _____

Static Level _____ ft. Pumping Level _____ ft. Drawdown _____ ft.

Production _____ gpm Specific Capacity _____ gpm/ft.

CASING & BLANK PIPE Cemented From 0 ft. to 2615 ft.

Diam. (in.)	Type	Setting, ft. from	to
12	Steel	0	15
8 5/8	"	0	1009
7	Steel	1009	2615
6 5/8	"	2615	2778

11. Water Level: 200.0 ft. rept. meas. 1961 above below 450' which is _____ ft. above below surface.

UTM ft. rept. meas. 6-16 1975 above below over 900' which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, Ind., Irr., Waterflooding, Observation, Not Used.

13. Quality: (Remarks on taste, odor, color, etc.) _____

Temp. _____ °F, Date sampled for analysis 10-1-71 Laboratory THD

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

Temp. _____ °F, Date sampled for analysis _____ Laboratory _____

WELL SCREEN Screen Openings Slotted

Diam. (in.)	Type	Setting, ft. from	to
6 5/8	Steel	2615	2768

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log mylars

Formation Samples, Pumping Test, _____

15. Record by: Gene Davis Date 6-16 1975

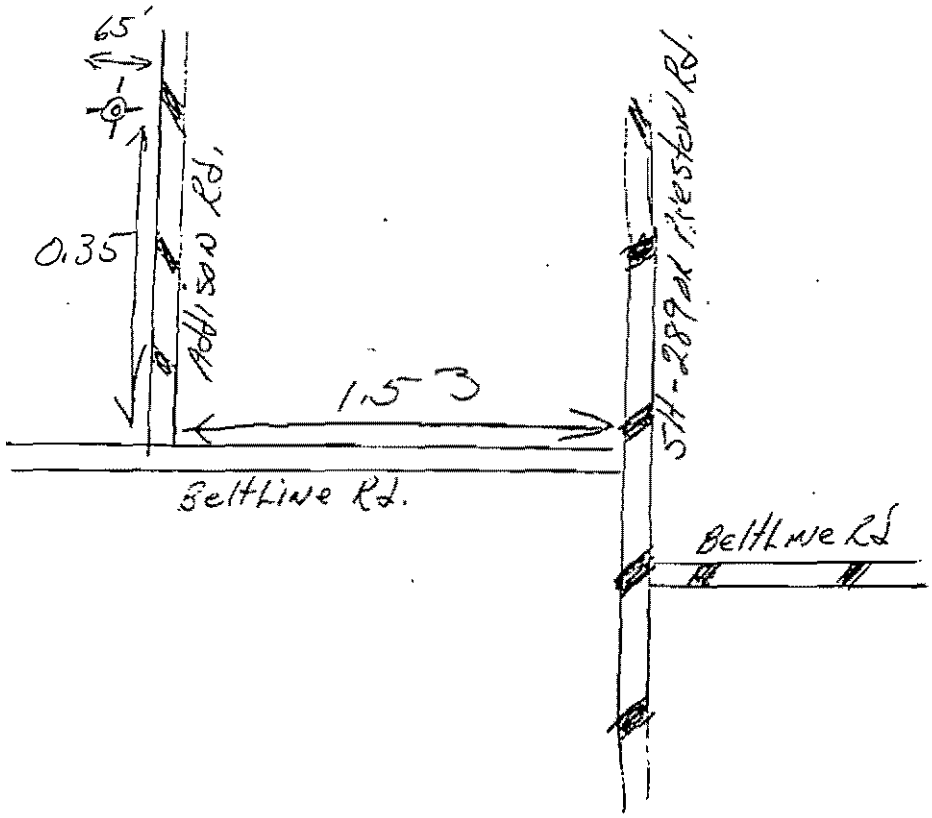
Source of Data TDWR Sch + dcs.

16. Remarks: City on surface water.

E-log Picks → Top of Wb @ 652, Wash @ 967', F @ 1444', Pa @ 1550', GR @ 1720', Tm @ 2210', PC @ 2760'?

Drillers Log

- 5 – surface soil
- – Chalk Rock
- 40 Shale
- – SAND
- 62 – Shale
- 5 – BROKEN SAND
- 5 – Shale
- 15 – Shale & Lime
- 5 – Lime
- 50 – Shale
- – Lime
- – Lime
- – SANDY Shale
- – BROKEN Lime
- 5 – Shale & Lime
- – Shale & SAND
- – BROKEN SAND
- – BROKEN Lime
- 10 – Shale
- SAND
- 8 – Shale



33-02-201

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

State Department of Health Laboratories
West 49th Street
Austin, Texas 78756

TWDBE-GW ONLY

Program No. _____

Proj. No. _____

CHEMICAL WATER ANALYSIS REPORT

057

County HR DALLAS

State Well No. 33-02-201

Well No. _____

Date Collected 10-01-71

By City

Send report to:

Ground Water Data and Protection Division
Texas Water Development Board
P.O. Box 13087
Austin, Texas 78711

Location _____

Source (type of well) Turbine - Elect Owner City of Addison

Date Drilled 1957 Depth 2778 ft. WBF Twin Mountains

Producing intervals 2615'-2768' Water level 200.0 ft (1961)

Sampled after pumping — hrs. Yield — GPM meas. est. Temperature °F °C

Point of collection well Appearance ☐ clear ☐ turbid ☐ colored ☐ other

Use P.S. Remarks _____

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

KEY PUNCHED

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L	ME/L
Silica		
Calcium	5	.25
Magnesium	2	.16
Sodium	384	16.70
Total		17.11
☐ Potassium	.	.
☐ Manganese	.	.
☐ Boron	.	.
☐ Total Iron	.	.
☐ (other) _____		

%Na _____

SAR _____

RSC _____

Specific Conductance (micromhos/cm³) _____

Calculated Conductance (micromhos/cm³) _____ X _____

☐ * items will be analyzed if checked.

	MG/L	ME/L
Carbonate		.
Bicarbonate	534	.
Sulfate	183	3.81
Chloride	140	3.95
Fluoride	2.3	.
Nitrate	4.4	.
pH	8.4	Total .
1/ Dissolved Solids (sum in MG/L)		1250
Phenolphthalein Alkalinity as $CaCO_3$		
Total Alkalinity as $CaCO_3$		438
Total Hardness as $CaCO_3$		19

2/ Nitrogen Cycle

Ammonia - N	.
Nitrite - N	.
Nitrate - N	.
Organic Nitrogen	.

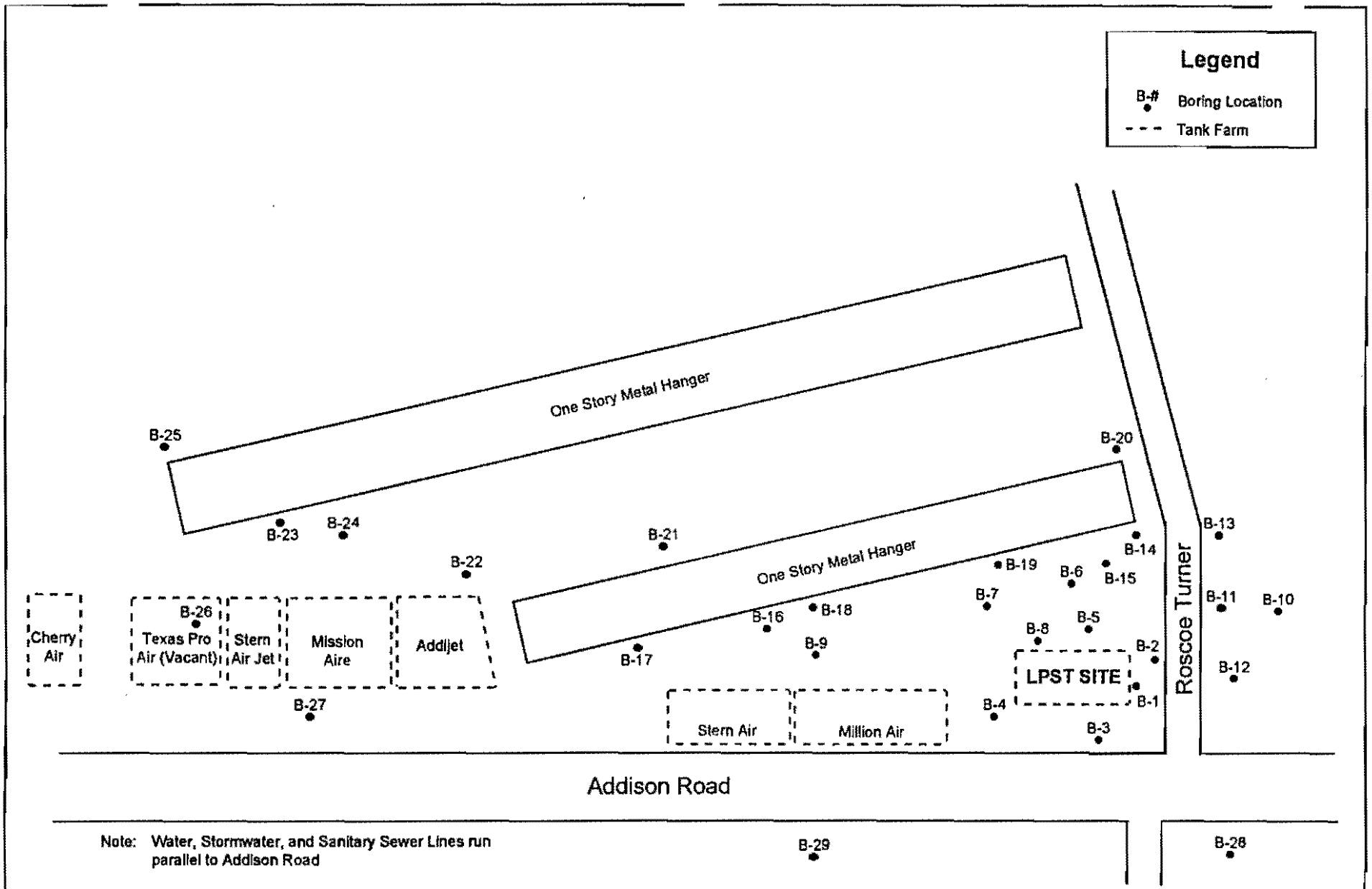
1/ The bicarbonate reported in this analysis is converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure is used in the computation of this sum.

2/ Nitrogen cycle requires separate sample.

3/ Total Iron requires separate sample.

ATTACHMENT 5

Site plan(s) illustrating former/current UST/AST system(s) and all (i.e., soil, groundwater, vapor, surface water) sampling points



Prepared by: TRIAD

Prepared for:

ADDISON AIRPORT

4505 Claire Chennault

Addison, Texas

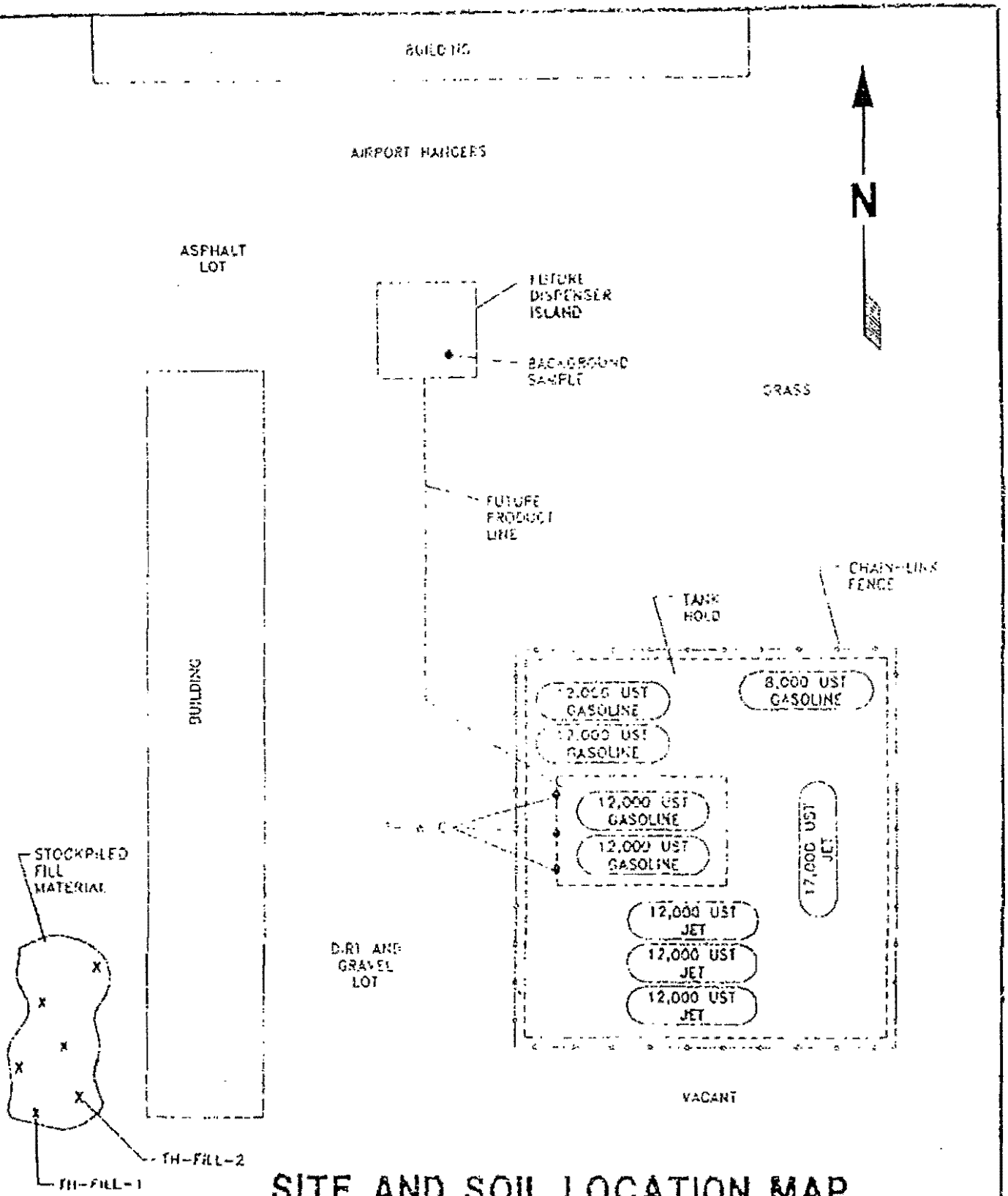
FIGURE 5-A (Not to Scale)

Addison Airport Fuel Farm

Test Borings, LPST No. 91471

Date: May 28, 1997

TPN: 42078.A01

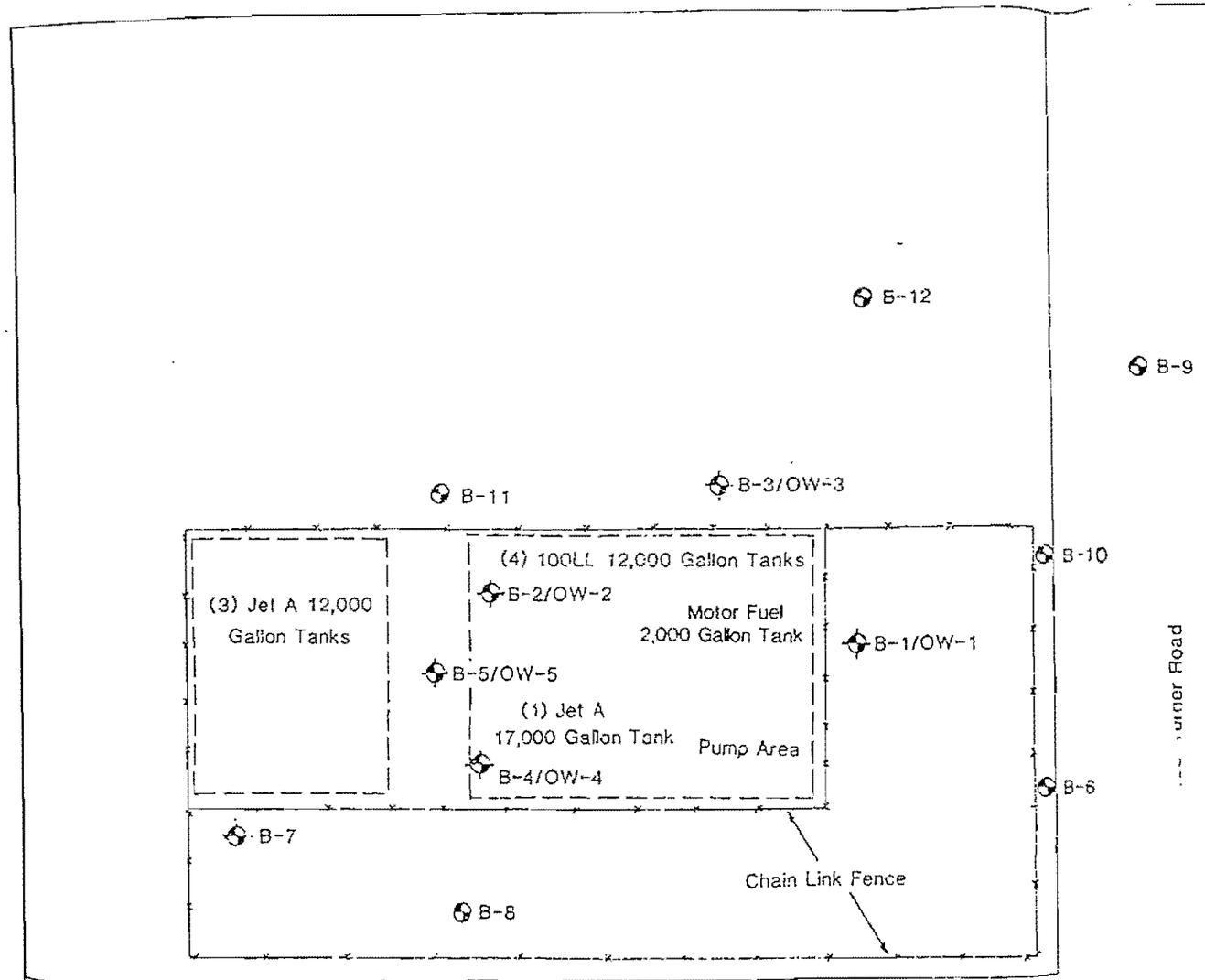


SITE AND SOIL LOCATION MAP

CURA INC.
2209 WISCONSIN, #400 – DALLAS, TEXAS
214 620-7117

ADDISON AIRPORT
ROSCOE TURNER ROAD
ADDISON, TEXAS

DATE:	SCALE:
JAN 1992	NTS
PROJECT NO.	FIGURE NO.
32-91701	5-B



LEGEND

Boring Location

Observation Well Location

(BM)– Benchmark Reference Elevation at 100.00'

Scale 1" 20.0'

(BM)

Top of Fire Hydrant

Figure 5-C

Test Boring

and Observation Well Location Plan

Aviall Corporation
PHASE I HYDROGEOLOGIC INVESTIGATION
Aviall Addison Jetport Fuel Farm
Addison, Texas

ATEC Report No. 25-00483

ATEC Associates, Inc.
of Texas
11310 Newkirk
Dallas, Texas 75229

ATTACHMENT 6

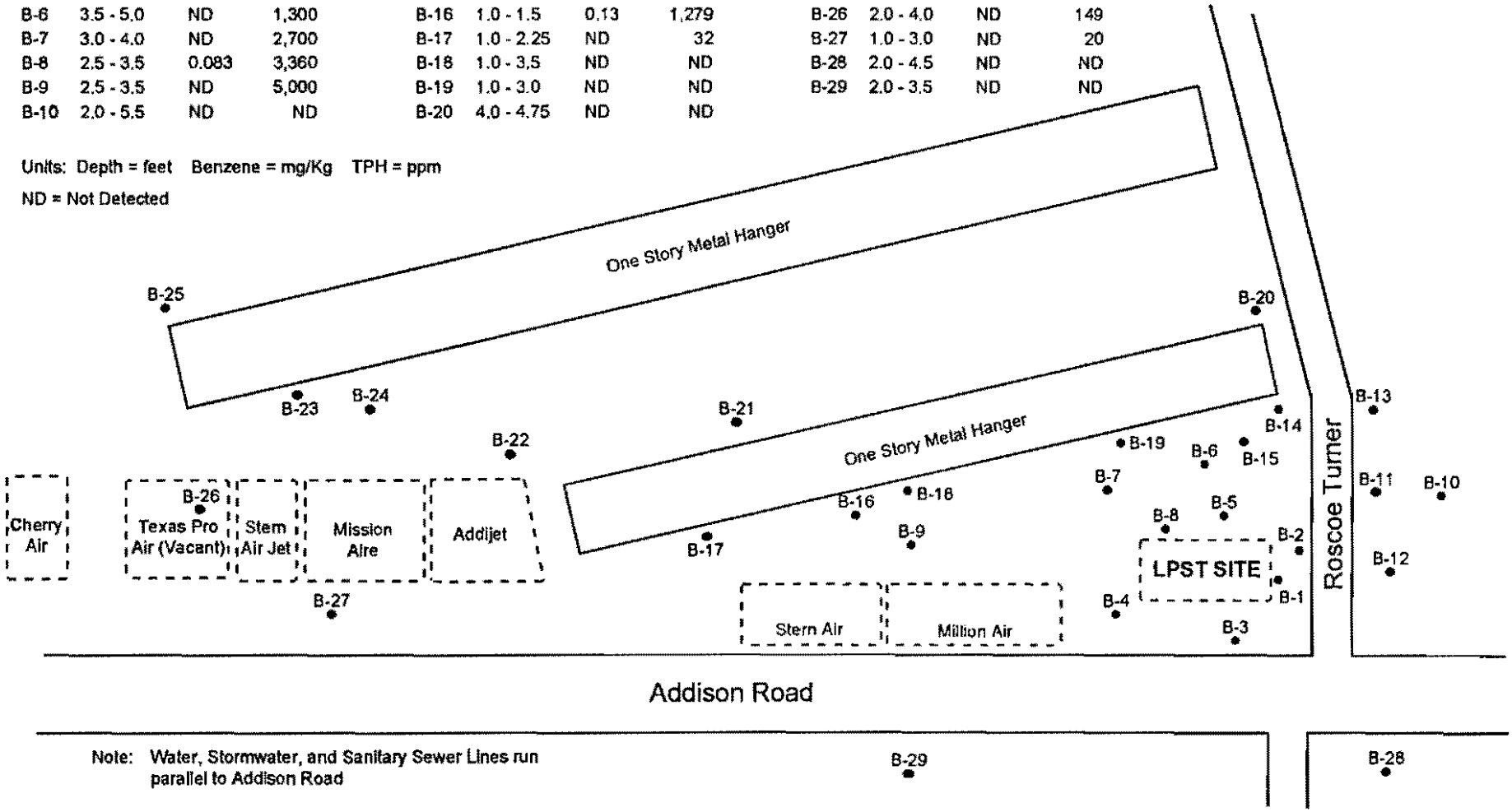
Soil contaminant concentration maps

ANALYTICAL RESULTS FOR EACH BORING LOCATION

	Depth	Benzene	TPH
B-1	3.5 - 5.0	15.00	11,566
B-2	4.0 - 4.5	8.05	3,160
B-3	5.0 - 6.5	1.07	32,900
B-4	3.0 - 4.0	ND	3,640
B-5	2.0 - 3.0	ND	1,900
B-6	3.5 - 5.0	ND	1,300
B-7	3.0 - 4.0	ND	2,700
B-8	2.5 - 3.5	0.083	3,360
B-9	2.5 - 3.5	ND	5,000
B-10	2.0 - 5.5	ND	ND
B-11	3.5 - 4.0	ND	ND
B-12	5.0 - 6.0	ND	ND
B-13	3.0 - 5.0	ND	ND
B-14	4.0 - 6.0	ND	477
B-15	6.0 - 6.75	0.36	819
B-16	1.0 - 1.5	0.13	1,279
B-17	1.0 - 2.25	ND	32
B-18	1.0 - 3.5	ND	ND
B-19	1.0 - 3.0	ND	ND
B-20	4.0 - 4.75	ND	ND
B-21	1.0 - 2.5	ND	ND
B-22	1.0 - 2.0	ND	ND
B-23	1.0 - 3.0	ND	419
B-24	1.0 - 2.25	ND	ND
B-25	1.0 - 3.5	ND	ND
B-26	2.0 - 4.0	ND	149
B-27	1.0 - 3.0	ND	20
B-28	2.0 - 4.5	ND	ND
B-29	2.0 - 3.5	ND	ND

Units: Depth = feet Benzene = mg/Kg TPH = ppm

ND = Not Detected



Note: Water, Stormwater, and Sanitary Sewer Lines run parallel to Addison Road

N

Prepared by: TRIAD

Prepared for:

ADDISON AIRPORT

4505 Claire Chennault

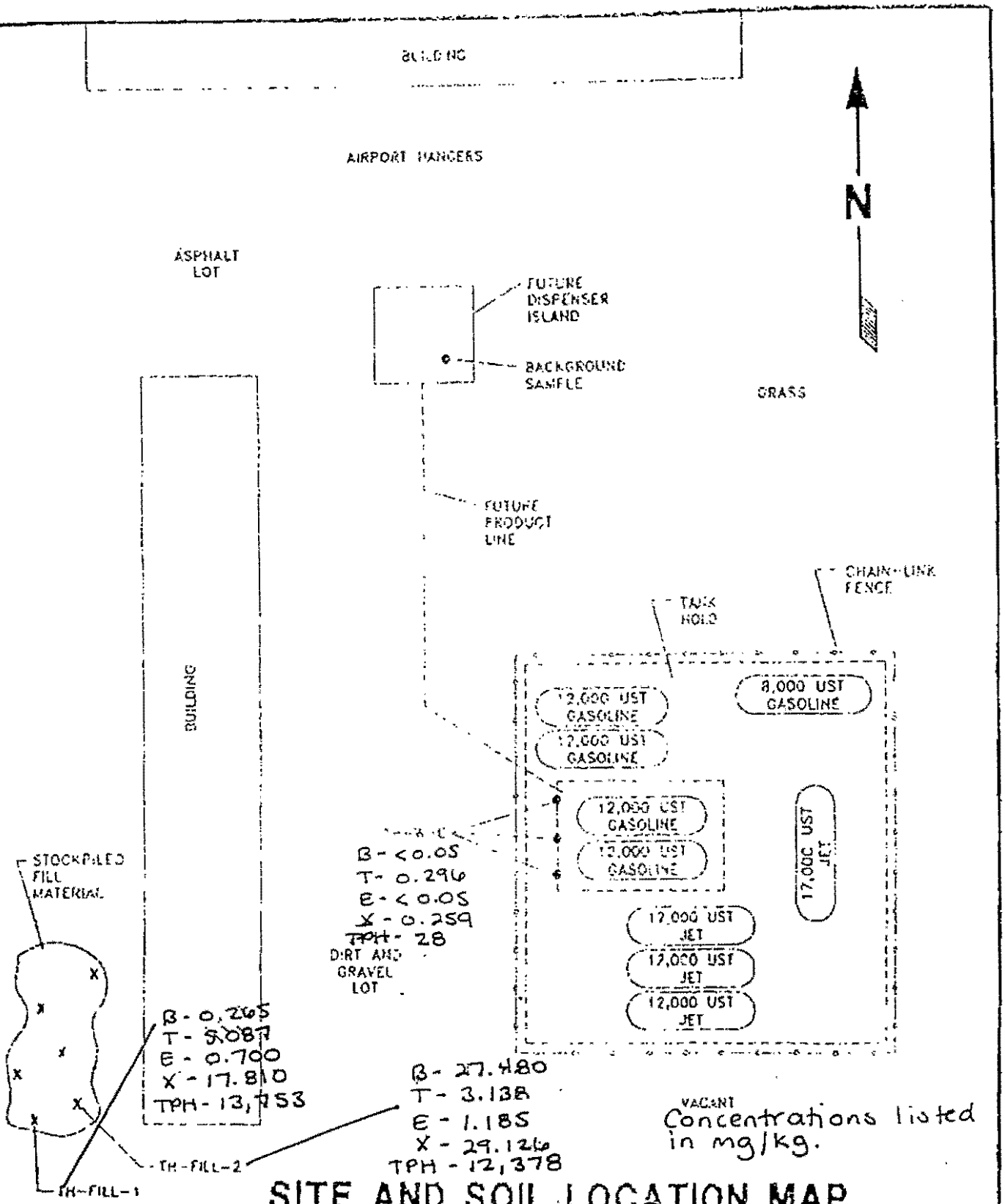
Addison, Texas

FIGURE 6-A (Not to Scale)

Addison Airport Fuel Farm

Analytical Results, LPST No. 91471

Date: May 28, 1997 TPN: 42078.A01

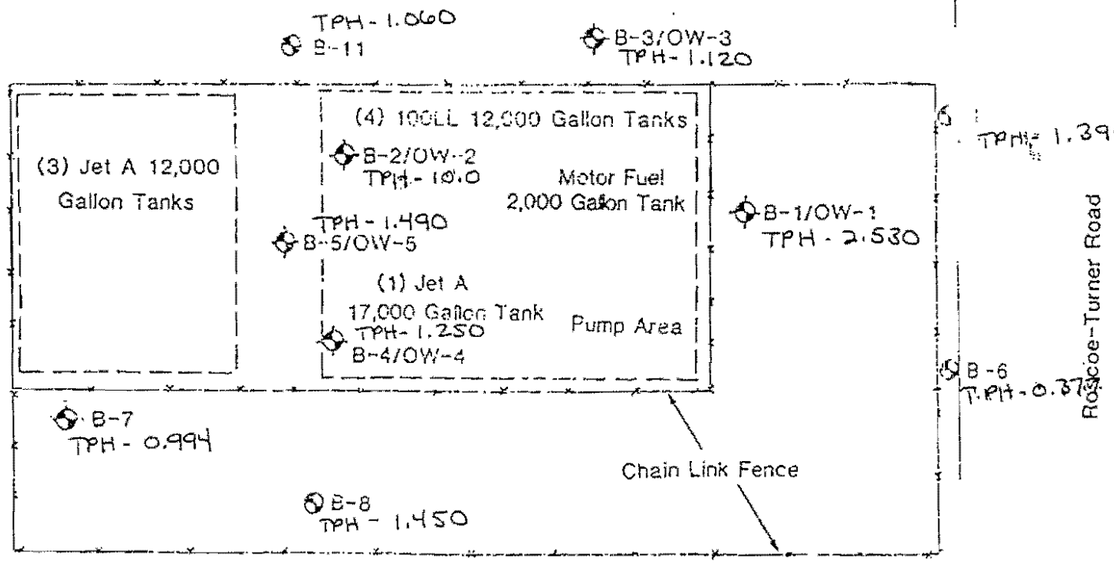


Concentrations listed in mg/kg.

SITE AND SOIL LOCATION MAP

12/12-13/91

CURA INC 7209 WISCONSIN, #400 – DALLAS, TEXAS 214 620-7117	ADDISON AIRPORT ROSCOE TURNER ROAD ADDISON, TEXAS	DATE: JAN 1992	SCALE NTS
		PROJECT NO. 32-91701	FIGURE NO. 6-B



LEGEND

- Boring Location
- Observation Well Location
- (BM)- Benchmark Reference Elevation at 100.00'

Scale 1" 20.0'

N

(BM)
Top of Fire Hydrant

- Concentrations listed in mg/kg.
- Samples analyzed for TPH only. Sample depths were not available.

Figure 6-C

Test Boring

and Observation Well Location Plan

Aviall Corporation
PHASE I HYDROGEOLOGIC INVESTIGATION
Aviall Addison Jetport Fuel Farm
Addison, Texas

ATEC Report No. 25-00483

ATEC Associates, Inc.
of Texas
11310 Newkirk
Dallas, Texas 75229

ATTACHMENT 7

Groundwater gradient map

N/A

ATTACHMENT 8

Groundwater contaminant concentration maps

N/A

ATTACHMENT 9

Biodegradation Indicator Distribution Map

N/A

ATTACHMENT 10

Soil Gas Survey Maps

N/A

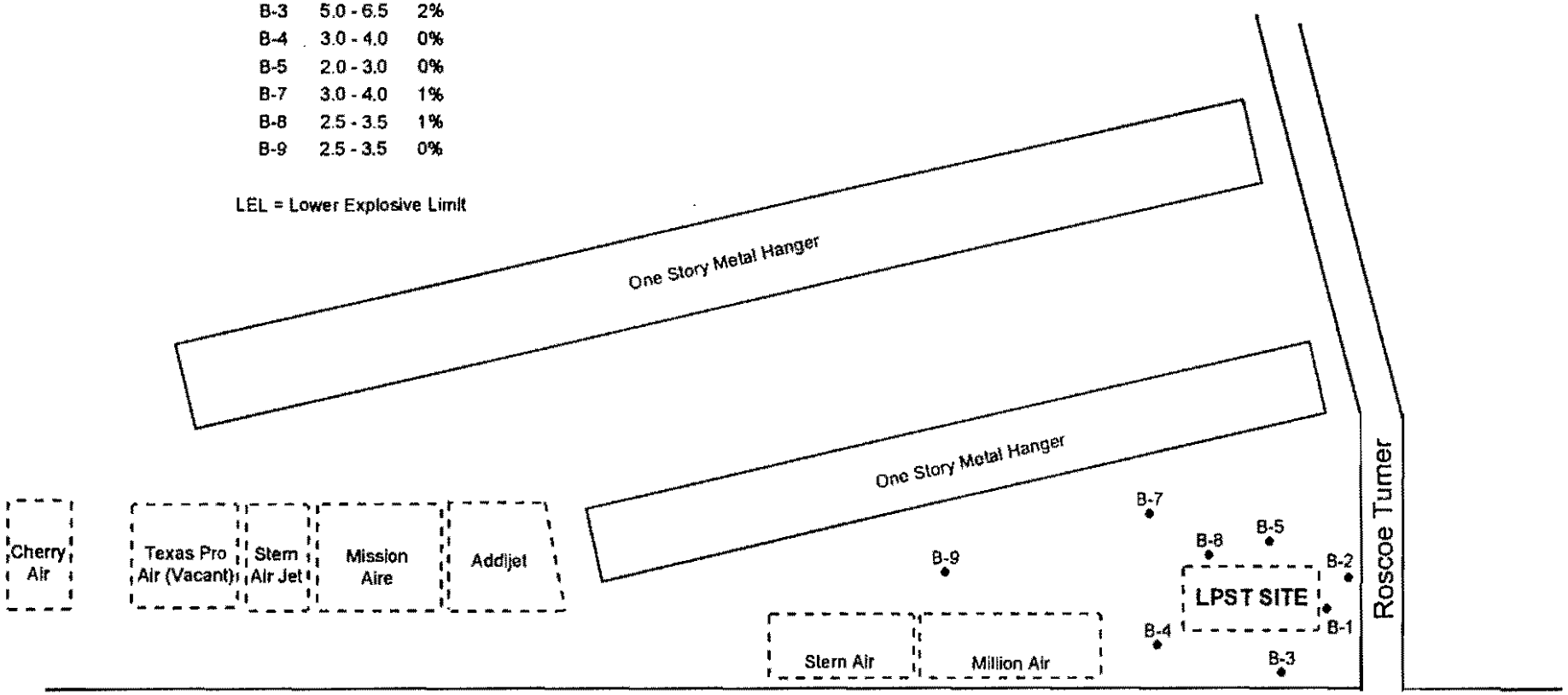
ATTACHMENT 11

Vapor Contaminant Concentration Map

VAPOR CONTAMINANT LIMITS

	Depth (ft)	LEL
B-1	3.5 - 5.0	8%
B-2	4.0 - 5.5	5%
B-3	1.0 - 3.0	2%
B-3	5.0 - 6.5	2%
B-4	3.0 - 4.0	0%
B-5	2.0 - 3.0	0%
B-7	3.0 - 4.0	1%
B-8	2.5 - 3.5	1%
B-9	2.5 - 3.5	0%

LEL = Lower Explosive Limit



Note: Water, Stormwater, and Sanitary Sewer Lines run parallel to Addison Road

N

Prepared by: TRIAD

Prepared for:
ADDISON AIRPORT
4505 Claire Chennault
Addison, Texas

FIGURE 11 (Not to Scale)
Addison Airport Fuel Farm
Vapor Contaminant Concentration Map

Date: May 28, 1997 TPN: 42078.A01

ATTACHMENT 12

Surface Water Contaminant Concentration Map

N/A

ATTACHMENT 13

Surface Water Flow Map

ATTACHMENT 14

Soil boring logs to include: lithology, field screening, sample locations, well completion details, TNRCC Form 0019

Log of Boring

Number B-1

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled by: TEG | Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Black Clay with calcareous nodules		85						
3			Dark Brown Clay with calcareous nodules		115						
4					475	15	ND	85.5	209	309.5	11,566
5			Light Gray Clay friable with beige mottles								
					310	14.7	ND	42.7	50.5	107.9	6,640
6			Weathered Limestone								
7			End of Boring								
8											
9											
10											
11											
12											
13											

Completion Depth: 6.5 feet | Date | Water Observations: None

Log of Boring

Number **B-2**

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled by: TEG | Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Black Clay with calcareous nodules		40						
3			Dark Brown Clay with calcareous nodules		100						
4											
5			Light Gray Clay friable with beige mottles		190	8.05	ND	35.2	11.2	54.45	3,160
6			Weathered Limestone		210	0.024	ND	0.084	0.044	154	3,990
7			End of Boring								
8											
9											
10											
11											
12											
13											

Completion Depth: 6.75 feet | Date

Water Observations: None

Log of Boring

Number **B-3**

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled by: TEG | Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Black Clay with calcareous nodules		360	0.63	1	0.52	3.85	6.04	16,960
3			Dark Brown Clay with calcareous nodules								
4											
5			Light Gray Clay friable with beige mottles		490	ND	ND	ND	5.09	5.09	24,300
6			Weathered Limestone		510	1.07	0.78	ND	1.27	3.12	32,900
7			End of Boring								
8											
9											
10											
11											
12											
13											

Completion Depth: 6.5 feet | Date:

Water Observations: None

Log of Boring

Number: B-4

Location: See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe

Casing Elevation:

Drilled by: TEG

Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Black Clay with calcareous nodules		90						
3											
4	X		Medium Brown Clay		195	ND	ND	ND	5.44	5.44	3,640
5			Weathered Limestone								
	X				0	ND	ND	ND	10.1	10.1	ND
6											
7											
8											
9											
10											
11											
12											
13											

Completion Depth: 5.5 feet

Date:

Water Observations: None

Log of Boring

Number B-5

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled by: TEG | Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Dark Gray Clay with calcareous nodules								
	X				170	ND	ND	0.08	0.68	0.76	1,900
3			Medium Brown Clay with calcareous nodules								
4											
5			Light Gray and Beige Clay friable with product		90						
6			Weathered Limestone								
	X				85	ND	ND	ND	0.07	0.07	300
7			End of Boring								
8											
9											
10											
11											
12											
13											

Completion Depth: 6.5 feet | Date | Water Observations: None

Log of Boring

B- 6

See Figure

Project

Addison Airport Fuel Farm,

Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Stratum Description	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			FILL DIRT & GRAVEL								
1			1.0 BLACK CLAY		10.0						
2			2.0 DARK BROWN CLAY - with calcareous nodules								
3					165.0	ND	ND	0.01	0.27	0.29	1,300
4			4.0 TAN & BROWN FRIABLE CLAY - with weathered limestone								
5											
			5.5 WEATHERED LIMESTONE								
6					2.0	ND	ND	ND	ND	ND	30.00
			6.7 END OF BORING								

Completion Depth	Date	Water Observations
6.8'		No Groundwater Encountered

Log of Boring

Number B-7

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe

Casing Elevation:

Drilled by: TEG

Logged By: R. Basso

Depth In Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Dark Brown Clay with calcareous nodules		50						
3			Tan and Brown Clay friable with limestone fragments								
4			Weathered Limestone		190	ND	ND	0.44	4.23	4.66	2,700
5			End of Boring								
6											
7											
8											
9											
10											
11											
12											
13											

Completion Depth: 4.0 feet

Date:

Water Observations: None

Log of Boring

Number B-8

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe

Casing Elevation:

Drilled by: TEG

Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Dark Gray Clay with calcareous nodules		70						
3			Medium Brown Clay		200	0.08	ND	0.21	2.7	2.99	3,360
			Weathered Limestone								
4			End of Boring								
5											
6											
7											
8											
9											
10											
11											
12											
13											

Completion Depth: 3.5 feet

Date:

Water Observations: None

Log of Boring

Number B-9

Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe

Casing Elevation:

Drilled by: TEG

Logged By: R. Basso

Depth in Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-Ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T P H (ppm)
1			Fill Dirt and Gravel								
2			Black Clay with calcareous nodules		70						
3			Dark Brown Clay with limestone seams		290	ND	ND	0.14	2.07	2.21	5,000
4			Weathered Limestone		190	ND	ND	0.3	2.73	3.02	1,865
5			End of Boring								
6											
7											
8											
9											
10											
11											
12											
13											

Completion Depth: 4.5 feet

Date:

Water Observations: None

Log of Boring

Number: B-10 | Location: See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 BLACK CLAY - with calcareous nodules								
1					0.0						
2			2.0 DARK BROWN CLAY - with limestone seams		0.0	ND	ND	ND	ND	ND	ND
3					0.0						
4			4.0 TAN & BROWN FRIABLE CLAY -with weathered limestone fragments								
5			5.0 WEATHERED LIMESTONE		0.0	ND	ND	ND	ND	ND	ND
			5.5 END OF BORING								

Completion Depth	Date	Water Observations
5.5'	3/14/97	No Groundwater Encountered

Log of Boring

Number B-11 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T.P.H. (ppm)
			GRASS & TOPSOIL								
			0.5 BLACK CLAY - with calcareous nodules								
1					0.0						
2			2.0 DARK GRAY & DARK BROWN CLAY - with limestone seams		0.0	ND	ND	ND	ND	ND	ND
3					0.0						
4			4.0 WEATHERED LIMESTONE		0.0	ND	ND	ND	ND	ND	ND
			4.5 END OF BORING								

Completion Depth	Date	Water Observations
4.5'	3/14/97	No Groundwater Encountered

Log of Boring

Number B-12 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Stratum Description	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL		0.0						
			0.5 BLACK CLAY								
1											
2			2.0 DARK GRAY CLAY		0.0	ND	ND	ND	ND	ND	ND
3											
4					5.0						
			4.5 DARK BROWN CLAY - with weathered limestone fragments								
5					10.0	ND	ND	ND	ND	ND	58.00
			5.5 WEATHERED LIMESTONE								
6			6.0 END OF BORING								

Completion Depth	Date	Water Observations
6.0'	3/14/97	No Groundwater Encountered

Log of Boring

Number B-13 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Well Construction Details	Photo-ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T.P.H. (ppm)
				GRASS & TOPSOIL						
				0.5 BLACK CLAY						
1				0.0						
2				0.0						
				2.0 DARK GRAY & DARK BROWN CLAY						
3				0.0	ND	ND	ND	ND	ND	ND
4				0.0	ND	ND	ND	ND	ND	ND
				4.0 TAN & BROWN FRIABLE CLAY - with weathered limestone seams						
				4.5 WEATHERED LIMESTONE						
5				5.0 END OF BORING						

Completion Depth	Date	Water Observations
5.0'	3/14/97	No Groundwater Encountered

Log of Boring

Number B-14 | Location See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 DARK BROWN CLAY - with calcareous nodules								
1											
2			2.0 DARK GRAY & DARK BROWN CLAY - with calcareous nodules		0.0						
3											
4			4.0 TAN & BROWN FRIABLE CLAY - with weathered limestone fragments		50.0	ND	ND	ND	ND	ND	477.00
5											
6			6.0 WEATHERED LIMESTONE		15.0	ND	ND	ND	ND	ND	97.00
			6.5 END OF BORING								

Completion Depth: 6.5' | Date: 3/14/97 | Water Observations: Perched Water at 16"

Log of Boring

Number: B-15 | Location: See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 DARK BROWN CLAY - with calcareous nodules								
1											
2					65.0						
3											
4			4.0 TAN & BROWN FRIABLE CLAY - with weathered limestone fragments		80.0	ND	0.10	0.60	1.34	2.04	303.00
5											
6			6.0 WEATHERED LIMESTONE		95.0	0.36	0.72	0.81	4.79	6.68	819.00
			6.7 END OF BORING								

Completion Depth: 6.8' | Date: 3/14/97 | Water Observations: Perched Water at 16"

Log of Boring

Number B-16 | Location See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth (Feet)	Samples Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
		GRASS & TOPSOIL								
		0.5 BROWN CLAYEY SAND								
1				70.0	0.13	0.09	1.04	2.34	3.60	1,270.0
2		2.0 WEATHERED LIMESTONE		30.0						
		2.5 END OF BORING								

Completion Depth	Date	Water Observations
2.5'	3/14/97	No Groundwater Encountered

Log of Boring

Number B-17 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 BROWN CLAYEY SAND								
1					1.0	ND	ND	ND	ND	ND	32.00
2			2.0 WEATHERED LIMESTONE		0.0						
			END OF BORING 2.2								

Completion Depth: 2.3' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-18 | Location See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 DARK BROWN SANDY CLAY								
1					0.0						
			1.5 TAN SANDY CLAY - with limestone fragments								
2					0.0	ND	ND	0.70	1.78	2.48	ND
3			3.0 WEATHERED LIMESTONE								
			3.5 END OF BORING								

Completion Depth: 3.5' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-19 | Location See Figure | Page 1 of 1

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth (Feet)	Samples Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
		GRASS & TOPSOIL		0.0						
		0.5 BLACK CLAY								
1		1.0 DARK BROWN CLAY - with calcareous nodules		0.0	ND	ND	ND	ND	ND	ND
2		2.0 TAN & BROWN CLAY - with limestone fragments		0.0						
		2.5 WEATHERED LIMESTONE								
3		3.0 END OF BORING								

Completion Depth: 3.0' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-20 | Location See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			TOPSOIL								
			0.5 BLACK CLAY								
1					0.0						
2			2.0 DARK GRAY CLAY		0.0	ND	ND	ND	ND	ND	ND
3											
4			4.0 DARK BROWN CLAY - with limestone seams		0.0	ND	ND	ND	ND	ND	ND
			4.5 WEATHERED LIMESTONE								
			END OF BORING 4.7								

Completion Depth: 4.8' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-21 | Location See Figure | Page 1 of 1

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 BROWN CLAY - with limestone fragments								
1					0.0	ND	ND	ND	ND	ND	ND
2			2.0 TAN & BROWN FRIABLE CLAY - with limestone seams								
			2.5 WEATHERED LIMESTONE								
3			3.0 END OF BORING		0.0						

Completion Depth: 3.0' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-22 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth Feet	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			FILL DIRT & GRAVEL								
			0.5 DARK BROWN CLAY - with limestone seams								
1					0.0	ND	ND	ND	ND	ND	ND
2			2.0 WEATHERED LIMESTONE		0.0						
			2.3 END OF BORING								

Completion Depth: 2.3' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-23 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Stratum Description	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 DARK BROWN CLAY - with limestone fragments								
1					90.0	ND	ND	ND	1.53	1.53	419.00
2											
3			3.0 WEATHERED LIMESTONE								
			END OF BORING 3.2								

Completion Depth: 3.2' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-24 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T.P.H. (ppm)
			GRASS & TOPSOIL								
			0.5 DARK BROWN CLAY - with limestone fragments								
1					0.0	ND	ND	ND	ND	ND	ND
2			2.0 WEATHERED LIMESTONE								
			END OF BORING 2.2								

Completion Depth: 2.3' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

Log of Boring

Number B-25 | Location See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Stratum Description	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 DARK BROWN CLAY - with limestone fragments								
1					0.0	ND	ND	ND	ND	ND	ND
2					0.0						
3			3.0 WEATHERED LIMESTONE								
			3.5 END OF BORING								

Completion Depth	Date	Water Observations
3.5'	3/14/97	No Groundwater Encountered

Log of Boring

Number: B-26

See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Stratum Description	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			FILL DIRT & GRAVEL								
1			1.0 TAN & GRAY CLAY								
2					25.0	ND	ND	ND	2.92		149.00
3											
4					10.0	ND	ND	ND	1.51		46.00
5			5.0 WEATHERED LIMESTONE								
			5.5 TAN & GRAY CLAY - with limestone fragments & moisture								
6			6.0 END OF BORING								

Completion Depth	Date	Water Observations
6.0'	3/14/97	Moisture at 5.5'

Log of Boring

Number B-27 | Location See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type	Casing Elevation
Geoprobe	
Drilled By	**Logged By**
TEG	R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			FILL DIRT & GRAVEL								
1			1.0 BLACK CLAY		0.0	ND	ND	ND	ND	ND	20.00
2			2.0 DARK GRAY CLAY - with limestone seams		0.0						
			2.5 WEATHERED LIMESTONE								
3			3.0 END OF BORING								

Completion Depth	Date	Water Observations
3.0'	3/14/97	No Groundwater Encountered

Log of Boring

Number: B-28

Location: See Figure

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe

Casing Elevation:

Drilled By: TEG

Logged By: R.Basso

STRATUM DESCRIPTION

Depth (Feet)	Samples	Symbol	Stratum Description	Well Construction Details	Photo-ionization Reading	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Xylene (ppm)	Total BTEX (ppm)	T.P.H. (ppm)
			GRASS & TOPSOIL								
			0.5 DARK GRAY CLAY								
1					0.0						
2					0.0	ND	ND	ND	ND	ND	ND
3					0.0						
4			4.0 WEATHERED LIMESTONE								
			4.5 END OF BORING								

Completion Depth: 4.5'

Date: 3/14/97

Water Observations: No Groundwater Encountered

Log of Boring

Number B-29 | Location See Figure |

Project: Addison Airport Fuel Farm, Addison, Texas

Auger Type: Geoprobe | Casing Elevation:

Drilled By: TEG | Logged By: R.Basso

Depth (Feet)	Samples	Symbol	STRATUM DESCRIPTION	Well Construction Details	Photo-ionization Reading	Benzene [ppm]	Toluene [ppm]	Ethyl Benzene [ppm]	Xylene [ppm]	Total BTEX [ppm]	T.P.H. [ppm]
			GRASS & TOPSOIL								
			0.5 DARK GRAY CLAY								
1					0.0						
2					0.0	ND	ND	ND	ND	ND	ND
3			3.0 WEATHERED LIMESTONE		0.0						
			3.5 END OF BORING								

Completion Depth: 3.5' | Date: 3/14/97 | Water Observations: No Groundwater Encountered

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-1/OW-1
Job #: 25-00483
Drawn By: M. Owens
Approved By: M. Owens

DRILLING and SAMPLING INFORMATION

Date Started: 12-2-87 | Hammer Wt.: ____ lbs
Date Completed: 12-2-87 | Hammer Drop: ____ in
Drill Foreman: P. K. | Spoon Sampler OD: ____ in.
Geologist: M. Owens | Rock Core Dia: ____ in.
Boring Method: H/S/A | Shelby Tube OD: 3.0 in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Op-tons/square foot	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Brown GRAVELLY SANDY CLAY (SC) [FILL MATERIAL]	2.0'		1	ST	30			80	
Dark brown CLAY (CH) w/few calcareous nodules	4.0		2	ST	75			90	
Dark brown SANDY CLAY (CL) w/abundant weathered LIMESTONE fragments	6.0'	5	3	ST	60			60	
Gray weathered LIMESTONE			4	CT	30			65	
Bottom of test boring @ 10.0' Auger refusal @ 10.0'		10							
		15							
		20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER
RC — ROCK CORE
THD — TEXAS HIGHWAY DEPARTMENT CONE

GROUND WATER DEPTH
▽ AT COMPLETION FT.
▼ AFTER 96 HRS. 1.7 FT
▪ WATER ON RODS FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING
MD — MUD DRILLING

FIELD WELL COMPLETION FORM

JOB NAME: AVIALL - Addison

JOB NUMBER: 25-00483 | PROJECT MANAGER: M. Owens

LOGGED BY: M. Owens | EDITED BY:

WELL NAME: B-1/OW-1 | DATE:

DRILLING COMPANY: ATEC Associates, Inc.

EQUIPMENT: ☒ 6 5/8 INCH HOLLOW STEM AUGER ☐ ____ INCH ROTARY WASH | DRILLER: | HOURS DRILLED:

GALLONS OF WATER USED DURING DRILLING: GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT:

DEVELOPMENT BEGAN DATE: TIME:

YIELD ____ GPM	TIME FROM	TO	DATE
YIELD ____ GPM	TIME FROM	TO	DATE
YIELD ____ GPM	TIME FROM	TO	DATE
YIELD ____ GPM	TIME FROM	TO	DATE

TOTAL WATER REMOVED DURING DEVELOPMENT: GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: ☐ CLEAR ☐ SLIGHTLY CLOUDY ☐ MOD TURBID ☐ VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: ☐ GROUND SURFACE ☐ TANK TRUCK ☐ STORM SEWERS ☐ STORAGE TANK ☐ DRUMS ☐ OTHER ____

DEPTH TO WATER AFTER DEVELOPMENT: FEET

MATERIALS USED

4 SACKS OF coarse 8/20 SAND

____ SACKS OF ____ CEMENT

2 GALLONS OF GROUT USED

____ SACKS OF POWDERED BENTONITE

20 POUNDS OF BENTONITE PELLETS

2.5 FEET OF 4 INCH PVC BLANK CASING

7.5 FEET OF 4 INCH PVC SLOTTED SCREEN

____ FEET OF ____ INCH STEEL CONDUCTOR CASING

____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED

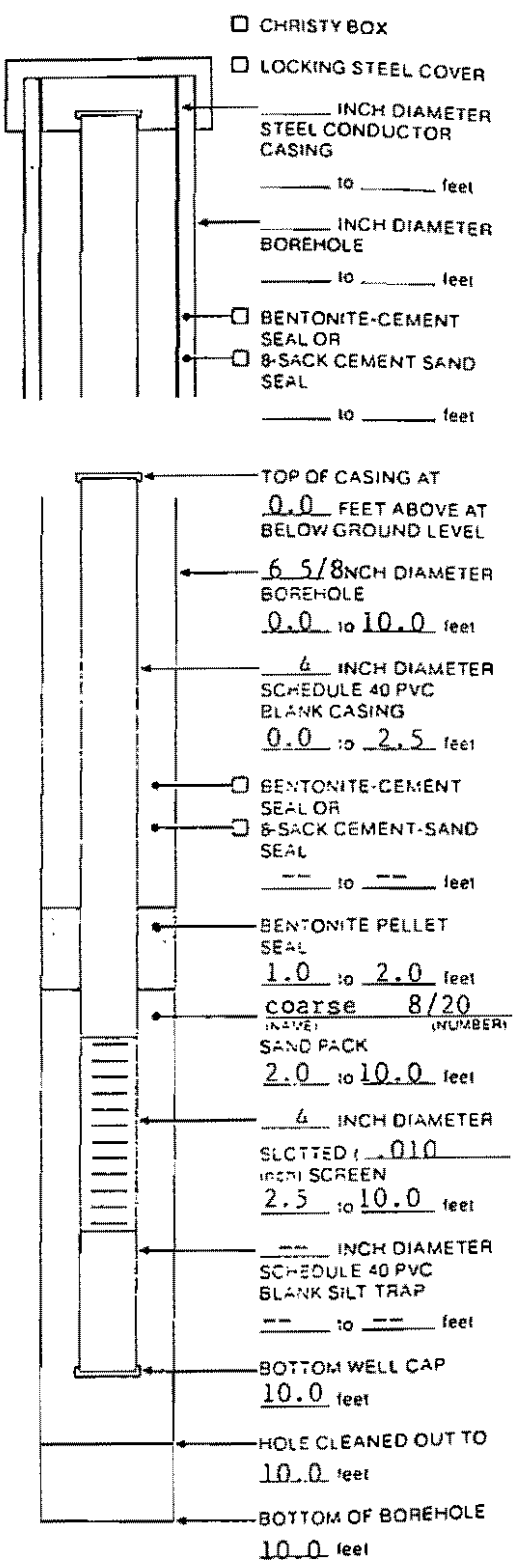
____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? ☒ NO ☐ YES

NAME ____

WELL COVER USED ☒ LOCKING STEEL COVER ☐ CHRISTY BOX ☐ OTHER ____

SILT TRAP USED? ☒ NO ☐ YES FIBER WRAPPED SCREEN? ☒ NO ☐ YES



NOTE TO SCALE

ADDITIONAL INFORMATION ____

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-2/OW-2
Job #: 25-00483
Drawn By: M.Owens
Approved By: M.Owens

DRILLING and SAMPLING INFORMATION

Date Started: 12/2/87 — Hammer Wt: ____ lbs.
Date Completed: 12/2/87 — Hammer Drop: ____ in.
Drill Foreman: P.K. — Spoon Sampler OD: ____ in.
Geologist: M.Owens — Rock Core Dia: ____ in
Boring Method: H/S/A — Shelby Tube OD: 3.0 in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Op-tons/square foot	HNU REading (PPM)	BORING AND SAMPLING NOTES
Light brown coarse SAND (SP) [TANK BACKFILL]			1	ST	75			80	
			2	ST	80			90	
		5	3	ST	90			80	
			4	CT	65			80	
	10.5'	10							
Gray weathered LIMESTONE									
Bottom of Boring 11.0' Auger Refusal @ 11.0'		15							
		20							

TEST DATA

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER
RC — ROCK CORE

GROUND WATER DEPTH
▽ AT COMPLETION FT.
▼ AFTER 96 HRS. 1.2 FT
• WATER ON RODS FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING
MD — MUD DRILLING

FIELD WELL COMPLETION FORM

JOB NAME: AVIALL - Addison

JOB NUMBER: 25-00483 | PROJECT MANAGER: M.Owens

LOGGED BY: M.Owens | EDITED BY:

WELL NAME: B-2/OW-2 | DATE: 12/2/87

DRILLING COMPANY: ATEC Associates, Inc.

EQUIPMENT: ☒ 6 5/8 INCH HOLLOW STEM AUGER ☐ ____ INCH ROTARY WASH | DRILLER: P.K. | HOURS DRILLED:

GALLONS OF WATER USED DURING DRILLING: ____ GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT:

DEVELOPMENT BEGAN DATE: ____ TIME: ____

YIELD	TIME FROM	TO	DATE
____ GPM			
____ GPM			
____ GPM			
____ GPM			

TOTAL WATER REMOVED DURING DEVELOPMENT: ____ GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: ☐ CLEAR ☐ SLIGHTLY CLOUDY ☐ MOD. TURBID ☐ VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: ☐ GROUND SURFACE ☐ TANK TRUCK ☐ STORM SEWERS ☐ STORAGE TANK ☐ DRUMS ☐ OTHER ____

DEPTH TO WATER AFTER DEVELOPMENT: ____ FEET

MATERIALS USED

5 SACKS OF coarse 8/20 SAND

____ SACKS OF ____ CEMENT

3 GALLONS OF GROUT USED

____ SACKS OF POWDERED BENTONITE

20 POUNDS OF BENTONITE PELLETS

1.0 FEET OF 4 INCH PVC BLANK CASING

10.0 FEET OF 4 INCH PVC SLOTTED SCREEN

____ FEET OF ____ INCH STEEL CONDUCTOR CASING

____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED

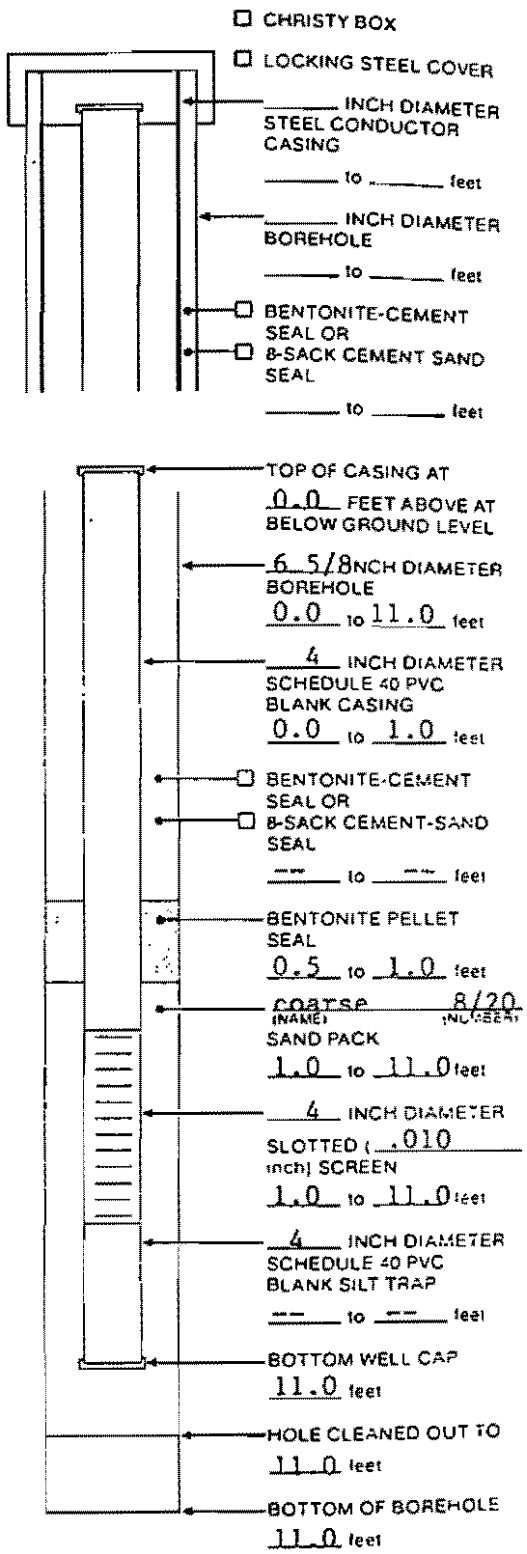
____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? ☒ NO ☐ YES

NAME ____

WELL COVER USED ☒ LOCKING STEEL COVER ☐ CHRISTY BOX ☐ OTHER ____

SILT TRAP USED? ☒ NO ☐ YES FIBER WRAPPED SCREEN? ☒ NO ☐ YES



NOTE TO SCALE

ADDITIONAL INFORMATION: ____

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-3/OW-3
Job #: 25-00483
Drawn By: M.Owens
Approved By: M.Owens

DRILLING and SAMPLING INFORMATION

Date Started: 12/2/87
Date Completed: 12/2/87
Drill Foreman: P.K.
Geologist: M.O.
Boring Method: H/S/A

Hammer Wt. ____ lbs.
Hammer Drop ____ in
Spoon Sampler OD ____ in.
Rock Core Dia. ____ in.
Shelby Tube OD ____ in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Qp-tons/square foot	HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark Brown SANDY CLAY (CL)			1	ST	50			3	
			2	ST	60			27	
		5	3	ST	60			60	
	6.0'								
Gray SILTY CLAY (CL)	6.5'		4	CT	40			60	
Weathered tan and gray LIMESTONE									
Bottom of boring 8.0'		10							
Auger Refusal @ 8.0'									
		15							
		20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER
RC — ROCK CORE
THD — TEXAS HIGHWAY DEPARTMENT CONE

GROUND WATER DEPTH
▽ AT COMPLETION FT.
▼ AFTER 96 HRS 2.0 FT
• WATER ON RODS FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING
MD — MUD DRILLING

FIELD WELL COMPLETION FORM

JOB NAME: PHASE I HYDROGEOLOGIC INVESTIGATION

JOB NUMBER: 25-00483 | PROJECT MANAGER: MAO

LOGGED BY: M. Owens | EDITED BY: MAO

WELL NAME: B-3/OW-3 | DATE: 12/2/87

DRILLING COMPANY: ATEC Associates, Inc.

EQUIPMENT: ☒ 6 5/8 CH HOLLOW STEM AUGER ☐ ____ INCH ROTARY WASH | DRILLER: P.K. | HOURS DRILLED:

GALLONS OF WATER USED DURING DRILLING: GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT:

DEVELOPMENT BEGAN DATE: TIME:

YIELD ____ GPM	TIME FROM	TO	DATE	
YIELD ____ GPM	TIME FROM	TO	DATE	
YIELD ____ GPM	TIME FROM	TO	DATE	
YIELD ____ GPM	TIME FROM	TO	DATE	

TOTAL WATER REMOVED DURING DEVELOPMENT: GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: ☐ CLEAR ☐ SLIGHTLY CLOUDY ☐ MOD. TURBID ☐ VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: ☐ GROUND SURFACE ☐ TANK TRUCK ☐ STORM SEWERS ☐ STORAGE TANK ☐ DRUMS ☐ OTHER ____

DEPTH TO WATER AFTER DEVELOPMENT: FEET

MATERIALS USED

6 SACKS OF ____ SAND

____ SACKS OF ____ CEMENT

3 GALLONS OF GROUT USED

____ SACKS OF POWDERED BENTONITE

20 POUNDS OF BENTONITE PELLETS

1.0 FEET OF 4 INCH PVC BLANK CASING

7.0 FEET OF 4 INCH PVC SLOTTED SCREEN

____ FEET OF ____ INCH STEEL CONDUCTOR CASING

____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED

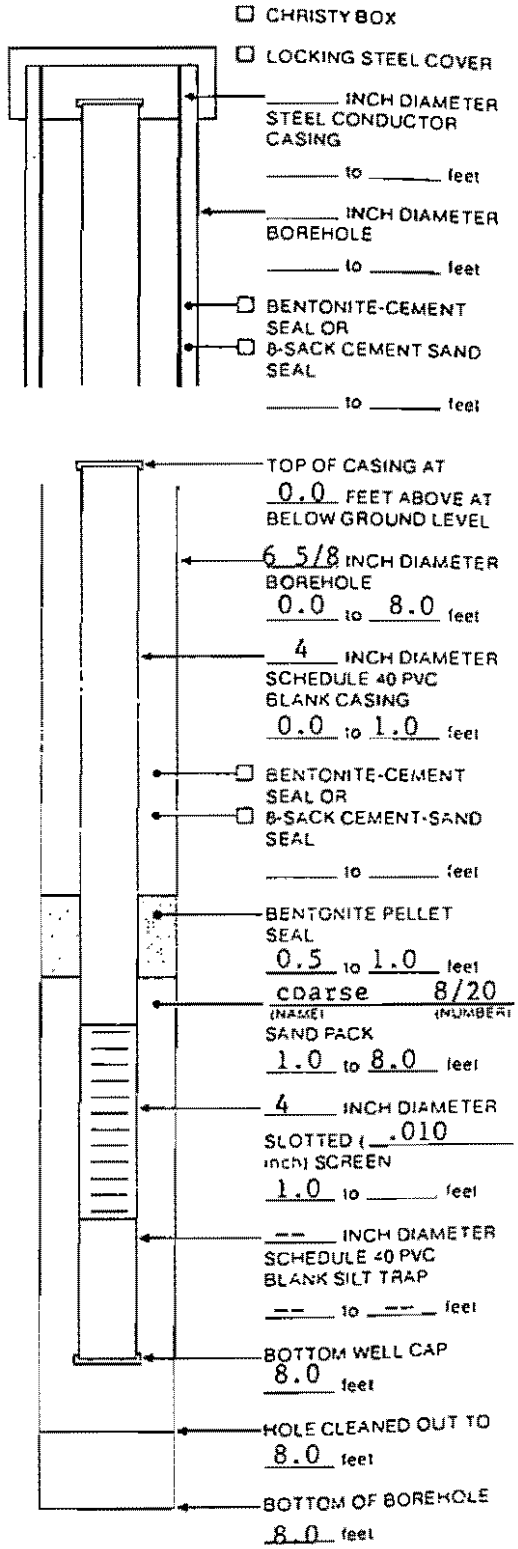
____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? ☒ NO ☐ YES

NAME ____

WELL COVER USED ☒ LOCKING STEEL COVER ☐ CHRISTY BOX ☐ OTHER ____

SILT TRAP USED? ☒ NO ☐ YES FIBER WRAPPED SCREEN? ☒ NO ☐ YES



NOTE TO SCALE

ADDITIONAL INFORMATION: ____

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-4/OW-4
Job #: 25-00483
Drawn By: M.Owens
Approved By: M.Owens

DRILLING and SAMPLING INFORMATION

Date Started: 12/2/87
Date Completed: 12/2/87
Drill Foreman: P.K.
Geologist: M.Owens
Boring Method: H/S/A

Hammer Wt: ____ lbs.
Hammer Drop: ____ in.
Spoon Sampler OD: ____ in.
Rock Core Dia.: ____ in.
Shelby Tube OD: ____ in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Op-tons/square foot	HNU Readings (ppm)	BORING AND SAMPLING NOTES
Light Brown Coarse SAND (SP) {TANK BACKFILL}			1	ST	50			80	
			2	ST	75			80	
		5	3	ST	60			80	
			4	CT	80			80	
	10.0	10							
Grav weathered LIMESTONE			5	CT	90			60	
Bottom of Boring 11.0' Auger Refusal @ 11.0'		15							
		20							

TEST DATA

SAMPLER TYPE
- SS — DRIVEN SPLIT SPOON
- ST — PRESSED SHELBY TUBE
- CA — CONTINUOUS FLIGHT AUGER
- RC — ROCK CORE
- THD — TEXAS HIGHWAY DEPARTMENT CONE

GROUND WATER DEPTH
- ▽ AT COMPLETION FT.
- ▼ AFTER 96 HRS 1.5 FT.
- • WATER ON RODS FT.

BORING METHOD
- HSA — HOLLOW STEM AUGERS
- CFA — CONTINUOUS FLIGHT AUGERS
- DC — DRIVING CASING
- MD — MUD DRILLING

FIELD WELL COMPLETION FORM

JOB NAME: AVIALL - ADDISON

JOB NUMBER: 25-00483 | PROJECT MANAGER: M.Owens

LOGGED BY: M.Owens | EDITED BY:

WELL NAME: B-4/OW-4 | DATE: 12/2/87

DRILLING COMPANY: ATEC Associates, Inc.

EQUIPMENT: ☒ 6 5/8 INCH HOLLOW STEM AUGER ☐ ____ INCH ROTARY WASH | DRILLER: P.K. | HOURS DRILLED:

GALLONS OF WATER USED DURING DRILLING: ____ GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT:

DEVELOPMENT BEGAN DATE: ____ TIME: ____

YIELD	TIME FROM	TO	DATE
____ GPM			
____ GPM			
____ GPM			
____ GPM			

TOTAL WATER REMOVED DURING DEVELOPMENT: ____ GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: ☐ CLEAR ☐ SLIGHTLY CLOUDY ☐ MOD. TURBID ☐ VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: ☐ GROUND SURFACE ☐ TANK TRUCK ☐ STORM SEWERS ☐ STORAGE TANK ☐ DRUMS ☐ OTHER ____

DEPTH TO WATER AFTER DEVELOPMENT: ____ FEET

MATERIALS USED

6 SACKS OF Coarse 8/20 SAND

____ SACKS OF ____ CEMENT

3 GALLONS OF GROUT USED

____ SACKS OF POWDERED BENTONITE

20 POUNDS OF BENTONITE PELLETS

1.0 FEET OF 4 INCH PVC BLANK CASING

10.0 FEET OF 4 INCH PVC SLOTTED SCREEN

____ FEET OF ____ INCH STEEL CONDUCTOR CASING

____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED

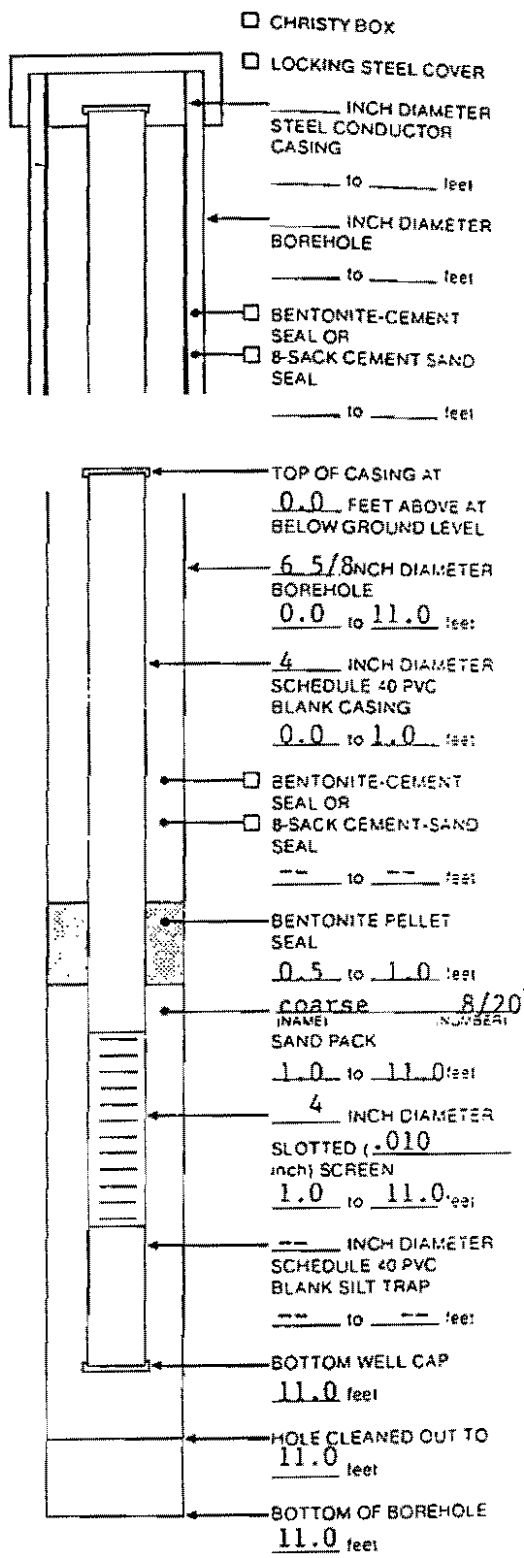
____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? ☒ NO ☐ YES

NAME ____

WELL COVER USED ☒ LOCKING STEEL COVER ☐ CHRISTY BOX ☐ OTHER ____

SILT TRAP USED? ☒ NO ☐ YES FIBER WRAPPED SCREEN? ☒ NO ☐ YES



NOTE TO SCALE

ADDITIONAL INFORMATION ____

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring # B-5/OW-5
Job # 25-00483
Drawn By M.Owens
Approved By M.Owens

DRILLING and SAMPLING INFORMATION

Date Started 12/2/87 Hammer Wt. ____ lbs.
Date Completed 12/2/87 Hammer Drop ____ in
Drill Foreman P.K. Spoon Sampler OD ____ in.
Geologist M.Owens Rock Core Dia. ____ in.
Boring Method H/S/A Shelby Tube OD 3.0 in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	TEST DATA: BLOWS/6 inch (three 6 inch increments) or Pocket Penetrometer Op-tons/square foot	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark brown SANDY CLAY (CL)			1	ST	60			25	
	4.0'		2	ST	65			25	
Gray weathered LIMESTONE		5	3	ST	60			25	
			4	ST	50			25	
Bottom of boring 7.25		10							
		15							
		20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER
RC — ROCK CORE
THD — TEXAS HIGHWAY DEPARTMENT CONE

GROUND WATER DEPTH
▽ AT COMPLETION FT
▼ AFTER 96 HRS 1.0 FT
• WATER ON RODS FT

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING
MD — MUD DRILLING

FIELD WELL COMPLETION FORM

JOB NAME: AVIALL - ADDISON

JOB NUMBER: 25-00483 | PROJECT MANAGER: M.Owens

LOGGED BY: M.Owens | EDITED BY:

WELL NAME: B-5/OW-5 | DATE: 12/2/87

DRILLING COMPANY: ATEC Associates, Inc.

EQUIPMENT: ☒ 6 5/8 INCH HOLLOW STEM AUGER | DRILLER: P.K.

☐ ___ INCH ROTARY WASH | HOURS DRILLED:

GALLONS OF WATER USED DURING DRILLING: ____ GALLONS

METHOD OF DECONTAMINATION PRIOR TO DRILLING:

DEVELOPMENT

METHOD OF DEVELOPMENT:

DEVELOPMENT BEGAN DATE: ____ TIME: ____

YIELD ____ GPM	TIME FROM	TO	DATE
YIELD ____ GPM	TIME FROM	TO	DATE
YIELD ____ GPM	TIME FROM	TO	DATE
YIELD ____ GPM	TIME FROM	TO	DATE

TOTAL WATER REMOVED DURING DEVELOPMENT: ____ GALLONS

DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: ☐ CLEAR ☐ SLIGHTLY CLOUDY ☐ MOD TURBID ☐ VERY MUDDY

ODOR OF WATER:

WATER DISCHARGED TO: ☐ GROUND SURFACE ☐ TANK TRUCK ☐ STORM SEWERS ☐ STORAGE TANK ☐ DRUMS ☐ OTHER ____

DEPTH TO WATER AFTER DEVELOPMENT: ____ FEET

MATERIALS USED

5 SACKS OF coarse 8/20 SAND

____ SACKS OF ____ CEMENT

2 GALLONS OF GROUT USED

____ SACKS OF POWDERED BENTONITE

____ POUNDS OF BENTONITE PELLETS

2.25 FEET OF 4 INCH PVC BLANK CASING

5.00 FEET OF 4 INCH PVC SLOTTED SCREEN

____ FEET OF ____ INCH STEEL CONDUCTOR CASING

____ YARD³ CEMENT-SAND (REDI-MIX) ORDERED

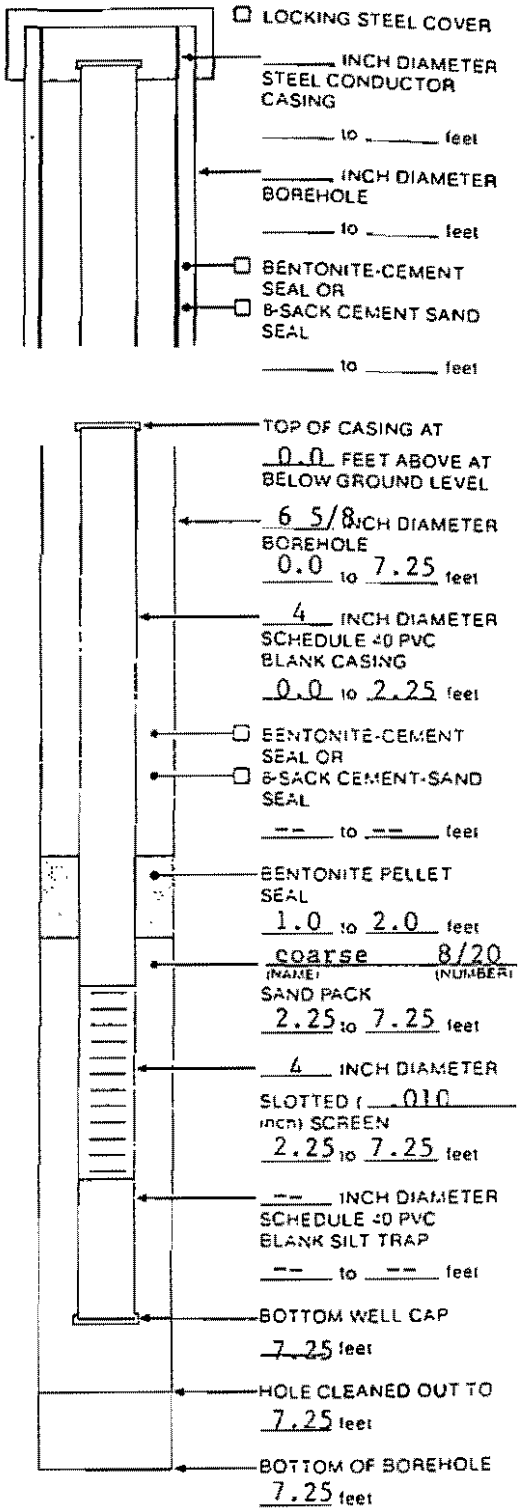
____ YARD³ CEMENT-SAND (REDI-MIX) USED

CONCRETE PUMPER USED? ☒ NO ☐ YES

NAME ____

WELL COVER USED ☒ LOCKING STEEL COVER ☐ CHRISTY BOX ☐ OTHER ____

SILT TRAP USED? ☒ NO ☐ YES FIBER WRAPPED SCREEN? ☒ NO ☐ YES



NOTE TO SCALE

ADDITIONAL INFORMATION: ____

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Boring #: B-6
Architect Engineer:
Job #: 25-00483
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Drawn By: DPZ
Project Location: Addison, Texas
Approved By: GD

DRILLING and SAMPLING INFORMATION

Date Started: 11/24/87 Hammer Wt: ____ lbs.
Date Completed: 11/24/87 Hammer Drop: ____ in.
Drill Foreman: P.K. Spoon Sampler OD: ____ in.
Geologist: C. Ruble Rock Core Dia: ____ in.
Boring Method: H.S.A. Shelby Tube OD: ____ in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	TEST DATA: BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Op-tons/square foot	TEST DATA: HNU Readings (ppm)	BORING AND SAMPLING NOTES
FILL - Brown SANDY CLAY (CL) with LIMESTONE fragments	2.0		1	ST	100			15	
Dark Brown CLAY (CH) with calcareous nodules			2	ST	100			90	
-Brown below 4.0'	5.0	5	3	ST	100			4	
Light brown laminated SILTY CLAY (CL)	7.5		4	CT	100			45	
Tan weathered LIMESTONE									
Botton of test boring at 8.0' Auger refusal at 8.0'		10							
		15							
		20							
		25							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT.
▼ AFTER HRS. FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-6
Job #: 25-00483
Drawn By: DPZ
Approved By: GD

DRILLING and SAMPLING INFORMATION

Date Started: 11/24/87 Hammer Wt. ____ lbs.
Date Completed: 11/24/87 Hammer Drop ____ in.
Drill Foreman: P.K. Spoon Sampler OD ____ in
Geologist: C. Ruble Rock Core Dia. ____ in
Boring Method: H.S.A. Shelby Tube OD ____ in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Op-tons/square foot	TEST DATA: HNU Readings (ppm)	BORING AND SAMPLING NOTES
FILL - Brown SANDY CLAY (CL) with LIMESTONE fragments	2.0		1	ST	100			15	
Dark Brown CLAY (CH) with calcareous nodules			2	ST	100			90	
-Brown below 4.0'	5.0	5	3	ST	100			4	
Light brown laminated SILTY CLAY (CL)	7.5		4	CT	100			45	
Tan weathered LIMESTONE									
Botton of test boring at 8.0' Auger refusal at 8.0'		10 15 20 25							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT.
▼ AFTER HRS. FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: Aviall
Architect Engineer:
Project Name: Phase I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-7
Job #: 25-00483
Drawn By: DPZ
Approved By: GD

DRILLING and SAMPLING INFORMATION

Date Started: 12/2/87
Date Completed: 12/2/87
Drill Foreman: P.K.
Geologist: C.R.
Boring Method: H/S/A
Hammer Wt. ____ lbs.
Hammer Drop ____ in.
Spoon Sampler OD ____ in.
Rock Core Dia. ____ in.
Shelby Tube OD: 3.0 in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	TEST DATA: BLOWS/6 inch (Three 6 inch increments) or Pocket Penetrometer (tons/square foot)	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark brown to tan CLAY (CH) W/Limestone fragments	4.0'	5	1	ST	50			10	
			2	ST	80			70	
Dark brown CLAY (CH)	5.0'		3	ST	100			50	
Light brown SILTY CLAY (CL)	7.0'		4	CT	100			20	
Tan to gray weathered LIMESTONE									
Bottom of test boring @ 8.0' Auger refusal @ 8.0'		10 15 20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT.
▼ AFTER HRS. FT
NONE

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client AVIALL
Architect Engineer
Project Name PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location Addison, Texas

Boring # B-8
Job # 25-00483
Drawn By DPZ
Approved By CD

DRILLING and SAMPLING INFORMATION

Date Started 11/24/87 Hammer Wt ____ lbs
Date Completed 11/24/87 Hammer Drop ____ in.
Drill Foreman P.K. Spoon Sampler OD ____ in.
Geologist C.R. Rock Core Dia ____ in
Boring Method H/S/A Shelby Tube OD 3.0 in.

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO.	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch (Three 6 inch increments or Pocket Penetrometer Op-tons/square tool)	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Mottled dark brown and gray CLAY (CH) W/limeston fragments	3.0'		1	ST	100			35	
Dark brown to brown CLAY(CH)	4.5'		2	ST	100			70	
			3	ST	100			75	
Light brown SILTY CLAY (CL)	7.0'	5	4	CT	100			30	
Tan to gray weathered LIMESTONE									
Bottom of test boring @ 8.0' Auger refusal @ 8.0'		10 15 20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT
▼ AFTER HRS FT.
▽ WATER ON RODS NONE FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: AVIALL
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-9
Job #: 25-00483
Drawn By: DPZ
Approved By: GD

DRILLING and SAMPLING INFORMATION

Date Started: 11/24/87
Date Completed: 11/24/87
Drill Foreman: P.K.
Geologist: C.R.
Boring Method: H/S/A

Hammer Wt: lbs
Hammer Drop: in.
Spoon Sampler OD: in
Rock Core Dia: in.
Shelby Tube OD: 3.0 in

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO	SAMPLE TYPE	% RECOVERY	GROUND WATER	TEST DATA: BLOWS/6 inch (Three 6 inch increments or Pocket Penetrometer Op-tons/square foot)	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark brown CLAY(CH) and brown SANDY CLAY(CL)			1	CU	--			10	
	4.0'		2	CU	--			15	
Dark brown CLAY (CH)	5.0'	5	3	ST	95			95	
Light brown SILTY CLAY (CL)	7.0'		4	CT	90			75	
Tan to gray weathered LIMESTONE									
Bottom of test boring @ 8.0' Auger refusal @ 8.0'		10 15 20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT
▼ AFTER HRS FT.
▷ WATER ON RODS NONE FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: AVIALL
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring #: B-10
Job #: 25-00483
Drawn By: DPZ
Approved By: CD

DRILLING and SAMPLING INFORMATION

Date Started: 11-24-87 Hammer Wt. ____ lbs
Date Completed: 11-24-87 Hammer Drop ____ in
Drill Foreman: P.K. Spoon Sampler OD ____ in
Geologist: C.R. Rock Core Dia. ____ in
Boring Method: H/S/A Shelby Tube OD: 3.0 in

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO	SAMPLE TYPE	% RECOVERY	GROUND WATER	BLOWS/6 inch Three 6 inch increments or Pocket Penetrometer Op-tons/square tool	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark brown CLAY(CH) and brown SANDY CLAY(CL)	3.0'		1	CU	--			40	
			2	ST	60			35	
Dark brown CLAY (CH)	4.5'								
		5	3	ST	60			105	
Light brown laminated SILTY CLAY (CL)	7.0'		4	CT	100			115	
Tan to gray weathered LIMESTONE									
Bottom of test boring @ 8.0' Auger refusal @ 8.0'		10							
		15							
		20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT.
▼ AFTER HRS. FT
• WATER ON RODS NONE FT.

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client AVIALL
Architect Engineer
Project Name PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location Addison, Texas

Boring # B-11
Job # 25-00483
Drawn By DPZ
Approved By CD

DRILLING and SAMPLING INFORMATION

Date Started 11-24-87 Hammer Wt ____ lbs
Date Completed 11-24-87 Hammer Drop ____ in.
Drill Foreman P.K. Spoon Sampler OD ____ in
Geologist C.R. Rock Core Dia ____ in
Boring Method H/S/A Shelby Tube OD 3.0 in

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO	SAMPLE TYPE	% RECOVERY	GROUND WATER	TEST DATA: BLOWS/6 inch (Three 6 inch increments or Pocket Penetrometer Tons/square foot)	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark brown CLAY (CH) and SANDY CLAY (CL)	2.0'		1	CU	--			5	
Dark brown to brown CLAY (CH) W/calcareous nodules	4.0'		2	ST	40			35	
Light brown SILTY CLAY (CL)	7.0'	5	3	ST	30			95	
Tan to gray weathered LIMESTONE			4	CT	25			25	
Bottom of test boring @ 8.0' Auger refusal @ 8.0'		10 15 20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER
RC — ROCK CORE

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT
▼ AFTER HRS FT
• WATER ON RODS NONE FT

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING
MD — MUD DRILLING

ATEC Associates, Inc.
11310 Newkirk Street
Dallas, Texas 75229
(214) 243-8931

RECORD OF SUBSURFACE EXPLORATION

Client: AVIALL
Architect Engineer:
Project Name: PHASE I HYDROGEOLOGIC INVESTIGATION
Project Location: Addison, Texas

Boring # B-12
Job # 25-00483
Drawn By DPZ
Approved By GD

DRILLING and SAMPLING INFORMATION

Date Started 11-24-87 Hammer Wt ____ lbs
Date Completed 11-24-87 Hammer Drop ____ in
Drill Foreman P.K. Spoon Sampler OD ____ in
Geologist C.R. Rock Core Dia ____ in
Boring Method H/S/A Shelby Tube OD 3.0 in

SOIL CLASSIFICATION / SURFACE ELEVATION	STRATUM DEPTH	DEPTH SCALE	SAMPLE NO	SAMPLE TYPE	% RECOVERY	GROUND WATER	TEST DATA: BLOWS/6 inch (Three 6 inch increments or Pocket Penetrometer Qp tons/square foot)	TEST DATA: HNU Reading (PPM)	BORING AND SAMPLING NOTES
Dark brown CLAY (CH) W/limestone fragments	2.0'		1	ST	50			20	
Dark brown CLAY (CH) W/calcareous nodules	4.5'		2	ST	50			50	
		5	3	ST	100			115	
Light brown SILTY CLAY (CL)	7.0'		4	CT	100			50	
Tan to gray weathered LIMESTONE									
Bottom of test boring @ 8.0' Auger refusal @ 8.0'		10							
		15							
		20							

SAMPLER TYPE
SS — DRIVEN SPLIT SPOON
ST — PRESSED SHELBY TUBE
CA — CONTINUOUS FLIGHT AUGER

GROUND WATER DEPTH
▽ AT COMPLETION DRY FT
▼ AFTER HRS. FT
• WATER ON RODS NONE FT

BORING METHOD
HSA — HOLLOW STEM AUGERS
CFA — CONTINUOUS FLIGHT AUGERS
DC — DRIVING CASING

ATTACHMENT 15

Summary table of all soil, groundwater, surface water, and vapor analytical results, including from all sampling points, and tank removal or repair activities

TABLE 2

LABORATORY CHEMICAL ANALYSIS

SUBSURFACE SOIL SAMPLES

ATEC Project No. 25-00483

Boring No.	Total P-HC Concentration (reported in ug/g (ppm))
B-1	2530
B-2	10000
B-3	1120
B-4	1250
B-5	1490
B-6	377
B-7	994
B-8	1450
B-9	269
B-10	1390
B-11	1060
B-12	1340

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS

Soil samples obtained on December 12 and 13, 1991

Sample	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	TPH
Background	142	229	80	897	1,348	49
TH-W-C	<50	296	<50	259	555	28
TH-Fill-1	265	5,087	700	17,810	23,862	13,753
TH-Fill-2	27,480	3,138	1,185	29,126	60,929	12,378

BTEX results listed in µg/kg (parts per billion; ppb) with a method detection limit of 50 µg/kg (ppb). TPH results listed in mg/kg (parts per million; ppm) with a method detection limit of 10 mg/kg (ppm). Analyses were conducted using EPA Method 8020 (BTEX) and EPA Method 418.1 (TPH).

Per the Texas Water Commission requirement to treat the on site hydrocarbon-affected fill materials, CURA is awaiting authorization from Cornerstone Fuels Inc., to develop and submit a Remedial Action Plan (Bio-remediation).

CURA appreciates the opportunity to provide you with our professional consulting services. If you have any questions concerning this project or if CURA can be of further service, please do not hesitate to contact us.

Respectfully,
CURA, Inc.

Claude A. Brown
Section Leader/Geologist

Gregory J. Delicato, R.E.P.
Project Manager

CAB/tlh

cc: Mr. Edward Morales - Addison Airport
Mr. Mike Delaney - TWC District 4 Office

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TEXAS WATER COMMISSION

TABLE 1

SOIL SAMPLING RESULTS
Sample Date 9-5-96
Results are reported in milligrams per kilogram (mg/kg)

Sample Location	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	TPH
Detection Limit	0.002	0.002	0.002	0.002	0.002	10
B-1 (3.5-5')	15.0	ND	85.5	209.0	309.5	11,566
B-1 (5-6')	14.7	ND	42.7	50.5	107.9	6,640
B-2 (4.5-5')	8.05	ND	35.2	11.2	54.45	3,160
B-2 (5.5-6.75')	.024	ND	.084	.044	.154	3,990
B-3 (1-3')	.633	1.04	.518	3.85	6.04	16,960
B-3 (4-5')	ND	ND	ND	5.09	5.09	24,300
B-3 (5-6.5')	1.07	.778	ND	1.27	3.11	32,900
B-4 (3-4')	ND	ND	ND	5.44	5.44	3,640
B-4 (5-5.5')	ND	ND	ND	.01	.01	ND
B-5 (2-3')	ND	ND	.077	.679	.756	1,900
B-5 (6-6.5')	ND	ND	ND	.065	.065	300
B-6 (3.5-5')	ND	ND	.011	.274	.286	1,300
B-6 (6-6.75')	ND	ND	ND	ND	ND	30
B-7 (3-4')	ND	ND	.435	4.23	4.66	2,700
B-8 (2.5-3.5')	.083	ND	.214	2.7	2.99	3,360
B-9 (2.5-3.5')	ND	ND	.142	2.07	2.21	5,000
B-9 (4-4.5')	ND	ND	.295	2.73	3.02	1,866

ND - None Detected

TABLE 2
SOIL SAMPLING RESULTS
Sample Date 3-14-97
Results are reported in milligrams per kilogram (mg/kg)

Sample Location	Benzene	Toluene	Ethyl-benzene	Xylenes	Total BTEX	TPH
Detection Limit	0.002	0.002	0.002	0.002	0.002	10
B-10 (2-4')	ND	ND	ND	ND	ND	ND
B-10 (5-5.5')	ND	ND	ND	ND	ND	ND
B-11 (2-4')	ND	ND	ND	ND	ND	ND
B-11 (4-4.5')	ND	ND	ND	ND	ND	ND
B-12 (2-4')	ND	ND	ND	ND	ND	ND
B-12 (5-6')	ND	ND	ND	ND	ND	58
B-13 (3-4')	ND	ND	ND	ND	ND	ND
B-13 (4-5')	ND	ND	ND	ND	ND	ND
B-14 (4-6')	ND	ND	ND	ND	ND	477
B-14 (6-6.5')	ND	ND	ND	ND	ND	97
B-15 (4-6')	ND	0.10	0.60	1.34	2.04	303
B-15 (6-6.75')	0.36	0.72	0.81	4.79	6.68	819
B-16 (1-1.5')	0.13	0.09	1.04	2.34	3.6	1,279
B-17 (1-2.25')	ND	ND	ND	ND	ND	32
B-18 (1-3.5')	ND	ND	0.70	1.78	2.48	ND
B-19 (1-3')	ND	ND	ND	ND	ND	ND
B-20 (2-4')	ND	ND	ND	ND	ND	ND
B-20 (4-4.75')	ND	ND	ND	ND	ND	ND
B-21 (1-2.5')	ND	ND	ND	ND	ND	ND
B-22 (1-2')	ND	ND	ND	ND	ND	ND
B-23 (1-3')	ND	ND	ND	1.53	1.53	419
B-24 (1-2.25')	ND	ND	ND	ND	ND	ND
B-25 (1-3.5')	ND	ND	ND	ND	ND	ND
B-26 (2-4')	ND	ND	ND	2.92	2.92	149
B-26 (4-6')	ND	ND	ND	1.51	1.51	46
B-27 (1-3')	ND	ND	ND	ND	ND	20
B-28 (2-4.5')	ND	ND	ND	ND	ND	ND
B-29 (2-3.5')	ND	ND	ND	ND	ND	ND

ATTACHMENT 16

Summary tables of all gauging data, water level data, NAPL thickness and corrected water level data and well screen interval (if applicable)

N/A

TABLE 1

SUMMARY OF RELATIVE GROUND WATER LEVEL
ELEVATIONS AND PRODUCT THICKNESS MEASUREMENTS

Monitor Well Number	MW-1	MW-2	MW-3	MW-4	MW-5
Top of Rise Elevation, feet	97.00	96.78	96.77	96.91	96.99
6/2/87					
Relative Ground Water Elevation, Feet	N/A	N/A	N/A	N/A	N/A
Product Thickness Measurement, feet	None	None	None	None	None

Note: Reference Elevation 100.00 is taken to be the top of the fire hydrant north of the fuel farm facility.

* True ground water elevations could not be determined due to surface water infiltration.

ATTACHMENT 17

Copies of all analytical reports including complete chain-of-custody and quality assurance/quality control documentation

CURA INC.
Environmental Consultants, Engineers & Scientists
2209 Wisconsin Street Suite 400 • Dallas, Texas 75229 • 214/620-7117 • FAX 620-8219

CEL INC. Lab Report No:91-1268-02

Client: Cura, Inc.

Project Number:32-91701.1

Sample Identification:TH-FILL-1

Sample Type: Soil

Depth Interval:NA

Date Reported:12/17/91

Date Received:12/13/91

Volatiles Extraction Date:12/16/91

Volatiles Analysis Date:12/16/91

TPH Extraction Date:12/17/91

TPH Analysis Date:12/17/91

********* Results *********			Analytical Detection Limit	
Benzene -	265	ug/kg (ppb)	50	ug/kg (ppb)
Toluene -	5,087	ug/kg (ppb)	50	ug/kg (ppb)
Ethylbenzene -	700	ug/kg (ppb)	50	ug/kg (ppb)
Xylenes -	17,810	ug/kg (ppb)	50	ug/kg (ppb)
Total BTEX(calculated)-	23,862	ug/kg (ppb)	50	ug/kg (ppb)
*TPH -	13,753	mg/kg (ppm)	10	mg/kg (ppm)
*(Total Petroleum Hydrocarbons)				
Ignitability -	N/A	degrees fahrenheit		

Method: BTEX – EPA Method 8020/5030; Voaltile Extraction: EPA Method 3550:
TPH – EPA Method 418.1/ Extraction 3550
Ignitability – EPA Method 1010 per SW-846 Guidelines.

Don Kenneth Hensen

for Steven A. Hensen
Director of Technical Services

Xiang-Yong Chen

Xiang-Yong Chen
Environmental Chemist

CURA INC.
Environmental Consultants, Engineers & Scientists
2209 Wisconsin Street, Suite 400 • Dallas, Texas 75229 • 214/620-7117 • FAX 620-8219

CEL INC. Lab Report No:91-1268-03

Client: Cura, Inc.

Project Number:32-91701.1

Sample Identification:TH-FILL-2

Sample Type: Soil

Depth Interval:NA

Date Reported:12/17/91

Date Received:12/13/91

Volatiles Extraction Date:12/16/91

Volatiles Analysis Date:12/16/91

TPH Extraction Date:12/17/91

TPH Analysis Date:12/17/91

********* Results *********			Analytical Detection Limit	
Benzene –	27,480	ug/kg (ppb)	50	ug/kg (ppb)
Toluene –	3,138	ug/kg (ppb)	50	ug/kg (ppb)
Ethylbenzene –	1,185	ug/kg (ppb)	50	ug/kg (ppb)
Xylenes –	29,126	ug/kg (ppb)	50	ug/kg (ppb)
Total BTEX(calculated)–	60,929	ug/kg (ppb)	50	ug/kg (ppb)
*TPH –	12,378	mg/kg (ppm)	10	mg/kg (ppm)
*(Total Petroleum Hydrocarbons)				
Ignitability –	N/A	degrees fahrenheit		

Method: BTEX – EPA Method 8020/5030; Voaltile Extraction: EPA Method 3550:
TPH – EPA Method 418.1/ Extraction 3550
Ignitability – EPA Method 1010 per SW-846 Guidelines.

for Steven A. Hensen
Director of Technical Services

Xiang-Yong Chi
Environmental Chemist

CURA INC.
Environmental Consultants, Engineers & Scientists
2209 Wisconsin Street, Suite 400 • Dallas, Texas 75229 • 214/620-7117 • FAX 620-8219

CEL INC. Lab Report No:91-1268-01

Client: Cura, Inc.

Project Number:32-91701.1

Sample Identification:TH-W-C

Sample Type: Soil

Depth Interval:NA

Date Reported:12/16/91

Date Received:12/13/91

Volatiles Extraction Date:12/16/91

Volatiles Analysis Date:12/16/91

TPH Extraction Date:12/16/91

TPH Analysis Date:12/16/91

********* Results *********				Analytical Detection Limit	
Benzene –	<	50	ug/kg (ppb)	50	ug/kg (ppb)
Toluene –		296	ug/kg (ppb)	50	ug/kg (ppb)
Ethylbenzene –	<	50	ug/kg (ppb)	50	ug/kg (ppb)
Xylenes –		259	ug/kg (ppb)	50	ug/kg (ppb)
Total BTEX(calculated)–		555	ug/kg (ppb)	50	ug/kg (ppb)
*TPH –		28	mg/kg (ppm)	10	mg/kg (ppm)

*(Total Petroleum Hydrocarbons)

Ignitability – N/A degrees fahrenheit

Method: BTEX – EPA Method 8020/5030; Voaltile Extraction: EPA Method 3550:
TPH – EPA Method 418.1/ Extraction 3550
Ignitability – EPA Method 1010 per SW-846 Guidelines.

Don Klueb Jr.
for Steven A. Hensen
Director of Technical Services

Yaqi Li for
Xiang-Yong Cni
Environmental Chemist

CHAIN OF CUSTODY

CEL CURA ENVIRONMENTAL LABORATORIES INCORPORATED
2209 WISCONSIN, #200 · DALLAS, TEXAS
214 620-7117

CLIENT: CEL, INC.
CLIENT ADDRESS: 2209 WISCONSIN STREET, SUITE 400, DALLAS, TX 75229
BILLING ADDRESS: SAME
CONTACT/PHONE: Claude Brown 214-620-7117
P.O. NUMBER:
PROJECT NUMBER: 32-91701.1
PROJECT NAME: Addison Airport Reuse Furnace Addison, TX
SAMPLERS (Signature): Claude Brown

DATE	TIME	MATRIX TYPE	Comp	Grab	STATION LOCATION/IDENTIFICATION	Number of containers	Preservations	ANALYSIS PARAMETERS: BTEX	TPH					SPECIAL REQUIREMENTS/TAT
12/13	12:30	Soil	4		TH-W-C	1	-	4	4					100% RUSH
12/13	12:00	Soil	4		TH-FILL-1	1	-	4	4					50% RUSH
12/13	13:45	Soil	4		TH-FILL-2	1	-	4	4					50% RUSH

SAMPLE REMAINDER DISPOSAL
☐ Return via _____ (shipping charges may be incurred) OR ☐ Request CEL to dispose of all sample remainders*

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	CONDITION OF SAMPLES:
Claude Brown	12/13/91 1400	[illegible]	12/13 2:00 PM	Good
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED FOR CEL LABORATORY BY: (Signature)	DATE/TIME	1.2 C

DUE DATE:

* If sample remainder is determined to be hazardous a minimum additional charge of $20.00 per sample will be assessed prior to disposal and billed to client.

PF920003.FRM (rev. 11/15/90)

CM2 ANALYTICAL SERVICE

Summary Report- 09-05-86

	Blank	SB1 3.5-5'	SB1 5-6'	SB2 4-5.5'	SB2 5.5-6.75'
BTEX 8020 *(ug/Kg)*		1/500	1/1000	1/250	5g
BENZENE	<10.0	15,000	14,700	8,050	24.3
TOLUENE	<10.0	<1,000	<2,000	<500	<10.0
ETHYL BENZENE	<10.0	85,500	42,700	35,200	84.7
XYLENES	<10.0	209,000	50,500	11,200	44.6
TOTAL BTEX	<10.0	309,500	107,900	54,450	154
SURROGATE REC. *(%)*	94.0%	105%	108%	116%	86.9%
TPH 418.1					
TOTAL PETROLEUM *(mg/Kg)* HYDROCARBONS	<50.0	11,566	6,640	3,160	3,990

	SB3 1-3'	SB3 4-5'	SB3 5-6.5'	SB4 3-4'	SB4 5-5.5'
BTEX 8020 *(ug/Kg)*	1/50	1/100	1/50	1/250	1/5
BENZENE	633	<200	1,070	<500	<10.0
TOLUENE	1,041	<200	778	<500	<10.0
ETHYL BENZENE	518	<200	<100	<500	<10.0
XYLENES	3,850	5,090	1,270	5,440	10.1
TOTAL BTEX	6,042	5,090	3,118	5,440	10.1
SURROGATE REC. *(%)*	132%	116%	92.3%	102%	94.0%
TPH 418.1					
TOTAL PETROLEUM *(mg/Kg)* HYDROCARBONS	16,960	24,300	32,900	3,640	<10.0

CM2 ANALYTICAL SERVICE

Summary Report- 09-05-96

	SB5 2-3'	SB5 6-6.5'	SB6 3.5-5'	SB6 6-6.75'	SB7 3-4'
BTEX 8020 *(ug/Kg)*	1/25	1/5	1/5	1/5	1/100
BENZENE	<50.0	<10.0	<10.0	<10.0	<200
TOLUENE	<50.0	<10.0	<10.0	<10.0	<200
ETHYL BENZENE	77.3	<10.0	11.6	<10.0	435
XYLENES	679	65.4	274	<10.0	4230
TOTAL BTEX	756	65.4	286	<10.0	4,660
SURROGATE REC. *(%)*	72.2%	71.5%	95.1%	101%	125%
TPH 418.1					
TOTAL PETROLEUM *(mg/Kg)* HYDROCARBONS	1,900	300	1,300	30.0	2,700

	SB8 2.5-3.5'	SB9 2.5-3.5'	SB9 4-4.5'		
BTEX 8020 *(ug/Kg)*	1/25	1/25	1/25		
BENZENE	83.4	<50.0	<50.0		
TOLUENE	<50.0	<50.0	<50.0		
ETHYL BENZENE	214	142	295		
XYLENES	2700	2070	2730		
TOTAL BTEX	2,997	2,212	3,025		
SURROGATE REC. *(%)*	110%	106%	105%		
TPH 418.1					
TOTAL PETROLEUM *(mg/Kg)* HYDROCARBONS	3,360	5,000	1,866		

TRIAD ONSITE SYSTEMS
PROJECT#:42078.A01
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

TEG Project #: T2-970314

TRPH (EPA Method 418.1) & BTEX (EPA Method 8020 Modified) ANALYSES OF SOILS

Sample Number	Depth (ft)	Date Analyzed	TRPH mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	Surrogate (EPA 8020) % Recovery
METHOD BLANK	–	3/14/97	ND	ND	ND	ND	ND	123%
B-10	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	84%
B-10	5.0-5.5'	3/14/97	ND	ND	ND	ND	ND	74%
B-11	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	106%
B-11	4.0-4.5'	3/14/97	ND	ND	ND	ND	ND	109%
B-12	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	111%
B-12	5.0-6.0'	3/14/97	58	ND	ND	ND	ND	71%
B-13	3.0-4.0'	3/14/97	ND	ND	ND	ND	ND	83%
B-13	4.0-5.0'	3/14/97	ND	ND	ND	ND	ND	111%
B-14	4.0-6.0'	3/14/97	477	ND	ND	ND	ND	99%
B-14	6.0-6.5'	3/14/97	97	ND	ND	ND	ND	113%
B-15	4.0-6.0'	3/14/97	303	ND	0.10	0.60	1.34	80%
B-15	6.0-6.75'	3/14/97	819	0.36	0.72	0.81	4.79	124%
B-16	1.0-1.5'	3/14/97	1279	0.13	0.09	1.04	2.34	107%
B-17	1.0-2.25'	3/14/97	32	ND	ND	ND	ND	114%
B-18	1.0-3.5'	3/14/97	ND	ND	ND	0.70	1.78	72%
B-19	1.0-3.0'	3/14/97	ND	ND	ND	ND	ND	89%
B-20	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	112%
B-20	4.0-4.75'	3/14/97	ND	ND	ND	ND	ND	102%
B-21	1.0-2.5'	3/14/97	ND	ND	ND	ND	ND	86%
B-22	1.0-2.0'	3/14/97	ND	ND	ND	ND	ND	71%
B-23	1.0-3.0'	3/14/97	419	ND	ND	ND	1.53	74%
B-24	1.0-2.25'	3/14/97	ND	ND	ND	ND	ND	79%
B-25	1.0-3.5'	3/14/97	ND	ND	ND	ND	ND	94%
B-26	2.0-4.0'	3/14/97	149	ND	ND	ND	2.92	99%
B-26	4.0-6.0'	3/14/97	46	ND	ND	ND	1.51	128%
B-27	1.0-3.0'	3/14/97	20	ND	ND	ND	ND	74%
B-28	2.0-4.5'	3/14/97	ND	ND	ND	ND	ND	77%
B-29	2.0-3.5'	3/14/97	ND	ND	ND	ND	ND	96%
DETECTION LIMITS			10	0.05	0.05	0.05	0.05	65%-135%

"ND" - NOT DETECTED AT OR ABOVE THE DETECTION LIMITS LISTED ABOVE:

ANALYSES PERFORMED IN TEG-TEXAS' MOBILE ENVIRONMENTAL LABORATORY
ANALYSES PERFORMED BY: Mark Masino & Richard Rodriguez

TRIAD ONSITE SYSTEMS
PROJECT#:42078.A01
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

TEG Project #: T2-970314

TRPH (EPA Method 418.1) & BTEX (EPA Method 8020 Modified) ANALYSES OF WATERS

Sample Number	Depth (ft)	Date Analyzed	TRPH mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Surrogate (EPA 8020) % Recovery
METHOD BLANK	--	3/14/97	ND	ND	ND	ND	ND	123%
B-14 (water)	--	3/14/97	2084	0.082	0.114	0.298	1.574	75%
DETECTION LIMITS			1.0	0.005	0.005	0.005	0.005	65%-135%

"ND" - NOT DETECTED AT OR ABOVE THE DETECTION LIMITS LISTED ABOVE:

ANALYSES PERFORMED IN TEG-TEXAS' MOBILE ENVIRONMENTAL LABORATORY
ANALYSES PERFORMED BY: Mark Masino & Richard Rodriguez

TRIAD ONSIT' 'YSTEMS
PROJECT#:42078.A01
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

Quality Assurance Report
14-Mar-97

TEG Project #: T2-970314

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) FOR SOILS

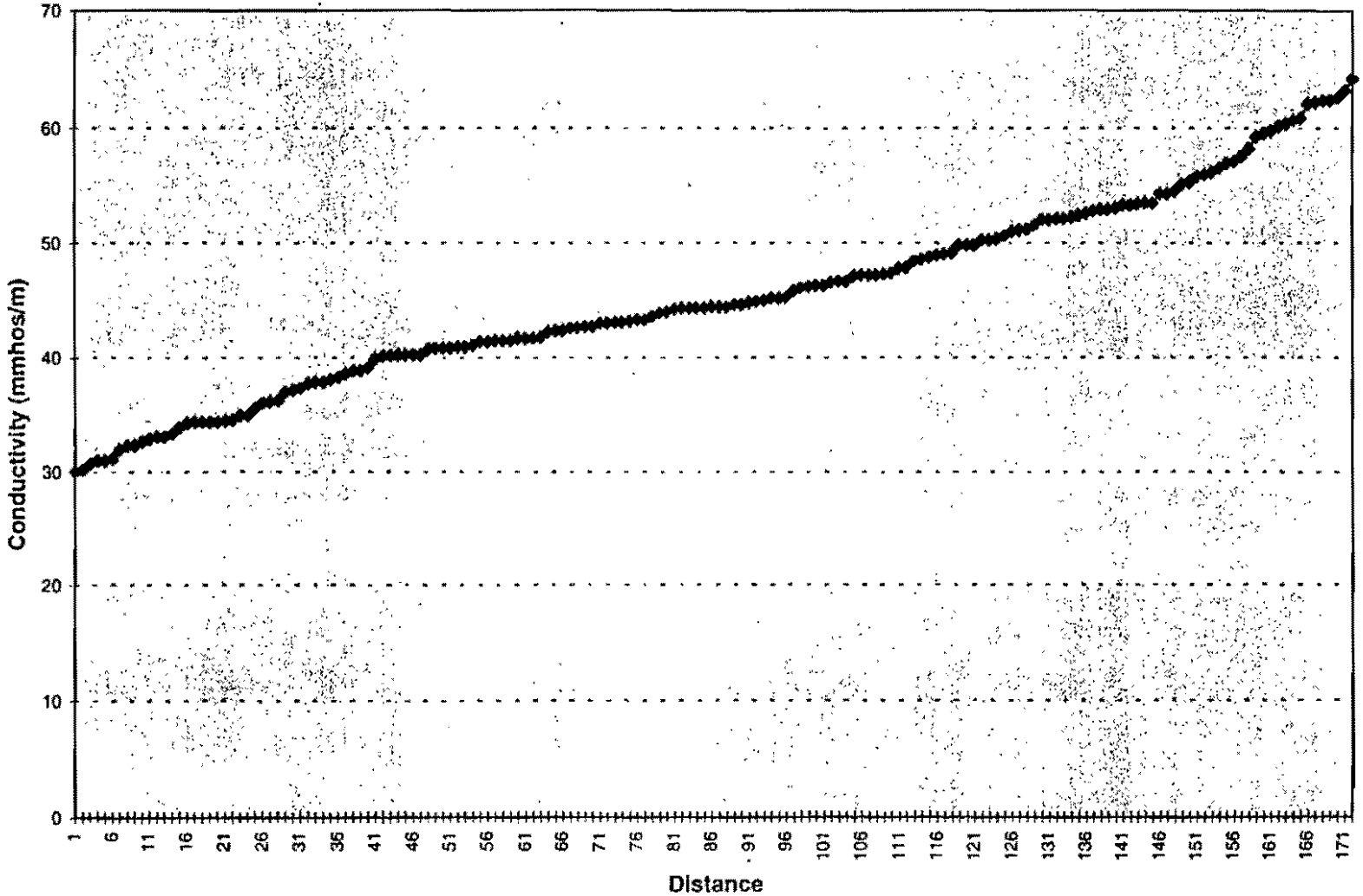
COMPOUND	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS RECOVERY (%)	MSD CONC. (mg/Kg)	MSD RECOVERY (%)	RPD (%)	ACCEPTABLE RPD	ACCEPTABLE RECOVERY
TRPH	500	482	96%	498	100%	3.3%	15%	65%-135%
Benzene	1.00	0.93	93%	0.85	85%	9.0%	15%	65%-135%
Toluene	1.00	1.04	104%	1.11	111%	6.5%	15%	65%-135%
Ethyl Benzene	1.00	1.19	119%	1.14	114%	4.3%	15%	65%-135%
Xylenes (total)	3.00	3.41	114%	3.40	113%	0.3%	15%	65%-135%

MATRIX SPIKE (MS)/MATRIX SPIKE DUPLICATE (MSD) FOR WATERS

"SPK CONC" - CONCENTRATION SPIKED INTO MATRIX
"MS CONC" - ANALYZED CONCENTRATION OF SPIKED SAMPLE
"% REC" - PERCENT RECOVERY OF SPIKE FROM MATRIX
"RPD" - RELATIVE PERCENT DIFFERENCE BETWEEN MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERIES

ANALYSES PERFORMED IN TEG-TEXAS' MOBILE ENVIRONMENTAL LABORATORY
ANALYSES PERFORMED BY: Mark Masino

Graph 2
Edited EM31 Data Profile
Vertical Orientation - 9 Foot Depth
Addison Municipal Airport
Addison, Texas



Transglobal Environmental Geochemistry
CHAIN-OF-CUSTODY RECORD

P.O.# _____

CLIENT: Triad Onsite Systems
ADDRESS: 2435 Southwell Ste 1
PHONE: 972.241.7400 FAX: 972.241.7436
CLIENT PROJECT #: 42078.A01 PROJECT MANAGER: Risa Basso

DATE: 3/14/97 PAGE 1 OF
TEG PROJECT #: 2054
LOCATION: Addison Airport Fuel Farm
COLLECTOR: Risa Basso DATE OF COLLECTION: 3/14/97

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: VOA 601/8010	VOA 602/8020	MTBE	Methane	TPH 418.1	TPH 6015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (# C)	PNA 610/8100	PEST/PCBs 8080	Oxygen	Nitrogen	Carbon Dioxide	FIELD NOTES	Total No. of Containers	Laboratory Note No.
B-10	2-4'	938	Soil	40z Jar		X			X										1	
B-10	5-5.5	949	"	"		X			X										1	
B-11	2-4'	1008	"	"		X			X										1	
B-11	4-4.5	1014	"	"		X			X										1	
B-12	2-4'	1026	"	"		X			X										1	
B-12	5-6'	1042	"	"		X			X										1	
B-13	3-4'	1106	"	"		X			X										1	
B-13	4-5'	1109	"	"		X			X										1	
B-14	4-6	1121	"	"		X			X										1	
B-14 water	—	1359	H2O	40 VOA		X			X										3	
B-14	6-6.5	1348	Soil	4 oz		X			X										1	
B-15	4-6	1029	"	"		X			X										1	
B-15	6-6.5	1031	"	"		X			X										1	
B-16	1-1.5'	1452	"	"		X			X										1	
B-17	1-2.5'	1515	"	"		X			X										1	
B-18	1-2.5'	1530	"	"		X			X										1	
B-19	1-2.5'	1600	"	"		X			X										1	

RELINQUISHED BY (Signature): Risa Basso DATE/TIME: 3/14/97
RECEIVED BY (SIGNATURE): [signature] DATE/TIME: 3/14/97
RELINQUISHED BY (Signature): DATE/TIME:
RECEIVED BY (SIGNATURE): DATE/TIME:

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL/$2.00@ ☐ RETURN ☐ PICKUP

SAMPLE RECEIPT

Total No. of Containers	
Seals Intact? Y/N/NA	
Received Good Cond./Cold	
Notes:	

Laboratory Notes:

AMP 11/95

Transglobal Environmental Geochemistry

teg

CHAIN-OF-CUSTODY RECORD

P.O.# _____

CLIENT: _____ DATE: _____ PAGE 2 OF _____

ADDRESS: _____ TEG PROJECT #: _____

PHONE: _____ FAX: _____ LOCATION: _____

CLIENT PROJECT #: _____ PROJECT MANAGER: _____ COLLECTOR: _____ DATE OF COLLECTION: _____

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSIS: VOA 601/8010	VOA 602/8020	MTBE	Methane	TPH 418.1	TPH 8015 (Gasoline)	TPH 8015 (Diesel)	TPH 8015 Sig # ?	PNA 610/8100	PEST/PCBs 8080	Oxygen	Nitrogen	Carbon Dioxide	FIELD NOTES	Total No. of Containers	Laboratory Note No.
B-21	1-2.5	1615																		
B-26	4-6																			
B-25	2-4.5																			
B-24	2-3.5																			

RELINQUISHED BY (Signature) _____ DATE/TIME 3/14/17 RECEIVED BY (SIGNATURE) _____ DATE/TIME _____

RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (SIGNATURE) _____ DATE/TIME _____

SAMPLE DISPOSAL INSTRUCTIONS

[ ] TEG DISPOSAL/$2.00@ [ ] RETURN [ ] PICKUP

SAMPLE RECEIPT

Total No. of Containers	
Seals Intact? Y/N/NA	
Received Good Cond./Cold	
Notes:	

Laboratory Notes:

MMP 11/95

March 17, 1997

Ms. Risa Basso
Triad Onsite Systems
2435 Southwell, Ste. 1
Dallas, TX 75229

RE: SOIL & WATER SAMPLES - ADDISON AIRPORT FUEL FARM

TEG-Texas project #T2-970314

Ms. Basso:

Please find enclosed the complete data report for the soil and water samples from the Addison Airport Fuel Farm site in Addison, TX for Triad Onsite Systems. All samples were analyzed in TEG-Texas' mobile environmental laboratory for the following:

- 28 soil samples for Total Recoverable Petroleum Hydrocarbons TRPH (EPA Method 418.1). and Volatile Aromatic Hydrocarbons BTEX (EPA Method 8020).

- 1 water sample for Total Recoverable Petroleum Hydrocarbons TRPH (EPA Method 418.1) and Volatile Aromatic Hydrocarbons BTEX (EPA Method 8020).

You will also find enclosed appropriate QA/QC data and Chain of Custody Records for the above mentioned projects.

TEG-Texas appreciates the opportunity to work with Triad Onsite Systems on this project. If you have any questions regarding these data or need further information, please do not hesitate to call (210)420-3516.

Sincerely,

Julie A. Pieper
General Manager

Transglobal Environmental Geochemistry ★ Texas
Route 2 Box 54P • Marion, TX 78124
Telephone: 210-420-3516 • Fax: 210-420-3603
Mobile Telephone: 210-602-4002 • Pager: 800-710-6181

TRIAD ONSITE SYSTEMS
PROJECT#:42078.A01
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

TEG Project #: T2-970314

TRPH (EPA Method 418.1) & BTEX (EPA Method 8020 Modified) ANALYSES OF WATERS

Sample Number	Depth (ft)	Date Analyzed	TRPH mg/L	Benzene mg/L	Toluene mg/L	Ethyl Benzene mg/L	Total Xylenes mg/L	Surrogate (EPA 8020) % Recovery
METHOD BLANK	--	3/14/97	ND	ND	ND	ND	ND	123%
B-14 (water)	--	3/14/97	2084	0.082	0.114	0.298	1.574	75%
DETECTION LIMITS			1.0	0.005	0.005	0.005	0.005	65%-135%

"ND" - NOT DETECTED AT OR ABOVE THE DETECTION LIMITS LISTED ABOVE:

ANALYSES PERFORMED IN TEG-TEXAS' MOBILE ENVIRONMENTAL LABORATORY
ANALYSES PERFORMED BY: Mark Masino & Richard Rodriguez

TRIAD ONSITE SYSTEMS
PROJECT#:42078.A01
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

TEG Project #: T2-970314

TRPH (EPA Method 418.1) & BTEX (EPA Method 8020 Modified) ANALYSES OF SOILS

Sample Number	Depth (ft)	Date Analyzed	TRPH mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	Surrogate (EPA 8020) % Recovery
METHOD BLANK	--	3/14/97	ND	ND	ND	ND	ND	123%
B-10	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	84%
B-10	5.0-5.5'	3/14/97	ND	ND	ND	ND	ND	74%
B-11	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	106%
B-11	4.0-4.5'	3/14/97	ND	ND	ND	ND	ND	109%
B-12	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	111%
B-12	5.0-6.0'	3/14/97	58	ND	ND	ND	ND	71%
B-13	3.0-4.0'	3/14/97	ND	ND	ND	ND	ND	83%
B-13	4.0-5.0'	3/14/97	ND	ND	ND	ND	ND	111%
B-14	4.0-6.0'	3/14/97	477	ND	ND	ND	ND	99%
B-14	6.0-6.5'	3/14/97	97	ND	ND	ND	ND	113%
B-15	4.0-6.0'	3/14/97	303	ND	0.10	0.60	1.34	80%
B-15	6.0-6.75'	3/14/97	819	0.36	0.72	0.81	4.79	124%
B-16	1.0-1.5'	3/14/97	1279	0.13	0.09	1.04	2.34	107%
B-17	1.0-2.25'	3/14/97	32	ND	ND	ND	ND	114%
B-18	1.0-3.5'	3/14/97	ND	ND	ND	0.70	1.78	72%
B-19	1.0-3.0'	3/14/97	ND	ND	ND	ND	ND	89%
B-20	2.0-4.0'	3/14/97	ND	ND	ND	ND	ND	112%
B-20	4.0-4.75'	3/14/97	ND	ND	ND	ND	ND	102%
B-21	1.0-2.5'	3/14/97	ND	ND	ND	ND	ND	86%
B-22	1.0-2.0'	3/14/97	ND	ND	ND	ND	ND	71%
B-23	1.0-3.0'	3/14/97	419	ND	ND	ND	1.53	74%
B-24	1.0-2.25'	3/14/97	ND	ND	ND	ND	ND	79%
B-25	1.0-3.5'	3/14/97	ND	ND	ND	ND	ND	94%
B-26	2.0-4.0'	3/14/97	149	ND	ND	ND	2.92	99%
B-26	4.0-6.0'	3/14/97	46	ND	ND	ND	1.51	128%
B-27	1.0-3.0'	3/14/97	20	ND	ND	ND	ND	74%
B-28	2.0-4.5'	3/14/97	ND	ND	ND	ND	ND	77%
B-29	2.0-3.5'	3/14/97	ND	ND	ND	ND	ND	96%
DETECTION LIMITS			10	0.05	0.05	0.05	0.05	65%-135%

"ND" - NOT DETECTED AT OR ABOVE THE DETECTION LIMITS LISTED ABOVE

ANALYSES PERFORMED IN TEG-TEXAS' MOBILE ENVIRONMENTAL LABORATORY
ANALYSES PERFORMED BY: Mark Masino & Richard Rodriguez

teg

Inchcape Testing Services
Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel. 972-238-5591
Fax 972-238-5592

ANALYTICAL REPORT

DATE RECEIVED : 19-MAR-1997

REPORT NUMBER : D97-3237
REPORT DATE : 24-MAR-1997

SAMPLE SUBMITTED BY : Triad Onsite
ADDRESS : 2435 Southwell Suite 1
: Dallas, Texas 75229
ATTENTION : Ms. Risa Basso
PROJECT : 42078.A01 Addison Airport

Included in this data package are the analytical results for the sample group which you have submitted to Inchcape Testing Services for analysis. These results are representative of the samples as received by the laboratory.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report and its associated materials please call your Project Manager at (972) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus
General Manager

Inchcape Testing Services
Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel: 972-238-5591
Fax 972-238-5592

DATE RECEIVED : 19-MAR-1997

REPORT NUMBER : D97-3237-1
REPORT DATE : 24-MAR-1997

SAMPLE SUBMITTED BY : Triad Onsite
ADDRESS : 2435 Southwell Suite 1
: Dallas, Texas 75229
ATTENTION : Ms. Risa Basso

SAMPLE MATRIX : Soil
ID MARKS : B-3-A 3.5-4.25'
: Fuel Farm
PROJECT : 42078.A01 Addison Airport
DATE SAMPLED : 18-MAR-1997
PREPARATION METHOD : EPA 3550A
PREPARED BY : GSM
PREPARED ON : 20-MAR-1997
ANALYSIS METHOD : EPA 8310 /1
ANALYZED BY : JCA
ANALYZED ON : 21-MAR-1997
DILUTION FACTOR : 1
METHOD FACTOR : 1
QC BATCH NO : AC051-85

POLYNUCLEAR AROMATIC HYDROCARBONS					
TEST REQUESTED	DETECTION LIMIT		RESULTS		
Acenaphthene	121	µg/Kg	<	121	µg/Kg
Acenaphthylene	201	µg/Kg	<	201	µg/Kg
Anthracene	44.2	µg/Kg	<	44.2	µg/Kg
Benzo(a)anthracene	8.71	µg/Kg	<	8.71	µg/Kg
Benzo(b)fluoranthene	12.1	µg/Kg	<	12.1	µg/Kg
Benzo(k)fluoranthene	11.4	µg/Kg	<	11.4	µg/Kg
Benzo(g,h,i)perylene	50.9	µg/Kg	<	50.9	µg/Kg
Benzo(a)pyrene	15.4	µg/Kg	<	15.4	µg/Kg
Chrysene	10.1	µg/Kg	<	10.1	µg/Kg
Dibenz(a,h)anthracene	20.1	µg/Kg	<	20.1	µg/Kg
Fluoranthene	14.1	µg/Kg		28.7	µg/Kg
Fluorene	14.1	µg/Kg	<	14.1	µg/Kg
Indeno(1,2,3-cd)pyrene	28.8	µg/Kg	<	28.8	µg/Kg
Naphthalene	201	µg/Kg	<	201	µg/Kg

Inchcape Testing Services
Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel. 972-238-5591
Fax 972-238-5592

REPORT NUMBER : D97-3237-1
ANALYSIS METHOD : EPA 8310 /1

POLYNUCLEAR AROMATIC HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Phenanthrene	42.9 µg/Kg	44.1 µg/Kg
Pyrene	18.1 µg/Kg	81.0 µg/Kg

QUALITY CONTROL DATA		
SURROGATE COMPOUND		SPIKE RECOVERED
p-Terphenyl (SS)		87.7 %

Inchcape Testing Services
Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel. 972-238-5591
Fax 972-238-5592

DATE RECEIVED : 19-MAR-1997

REPORT NUMBER : D97-3237-1
REPORT DATE : 24-MAR-1997

SAMPLE SUBMITTED BY : Triad Onsite
ADDRESS : 2435 Southwell Suite 1
: Dallas, Texas 75229
ATTENTION : Ms. Risa Basso

SAMPLE MATRIX : Soil
ID MARKS : B-3-A 3.5-4.25'
: Fuel Farm
PROJECT : 42078.A01 Addison Airport
DATE SAMPLED : 18-MAR-1997

MISCELLANEOUS ANALYSES

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	80.2 %

Analyzed using ASTM D2216 mod. on 20-MAR-1997 by SAB
QC Batch No : 24035D

Inchcape Testing Services
Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel. 972-238-5591
Fax 972-238-5592

REPORT DATE : 24-MAR-1997 REPORT NUMBER : D97-3237

SAMPLE SUBMITTED BY : Triad Onsite
ATTENTION : Ms. Risa Basso
PROJECT : 42078.A01 Addison Airport

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene
BATCH NO.	AC051-85	AC051-85	AC051-85	AC051-85	AC051-85
LCS LOT NO.	AB988-47	AB988-47	AB988-47	AB988-47	AB988-47
PREP METHOD	EPA 3550A	EPA 3550A	EPA 3550A	EPA 3550A	EPA 3550A
PREPARED BY	GSM	GSM	GSM	GSM	GSM
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8310	EPA 8310
ANALYZED BY	JCA	JCA	JCA	JCA	JCA
UNITS	µg/Kg	µg/Kg	µg/Kg	µg/Kg	µg/Kg
METHOD BLANK	< 201	< 201	< 121	< 14.1	< 42.9
SPIKE LEVEL	3330	3330	3330	3330	3330
SPK REC LIMITS	10.0 - 122	10.0 - 139	10.0 - 124	10.0 - 142	10.0 - 142
SPK RPD LIMITS	41.0	45.0	40.0	43.0	43.0
MS RESULT	3460	2880	2960	3000	2990
MS RECOVERY %	104	86.5	88.9	90.1	89.8
MSD RESULT	3450	2820	2850	2980	3030
MSD RECOVERY %	104	84.7	85.6	89.5	91.0
MS/MSD RPD %	0.29	2.11	3.79	0.67	1.33
BS RESULT	3670	3090	3130	3250	3280
BS RECOVERY %	110	92.8	94.0	97.6	98.5
BSD RESULT	3480	2840	2900	3020	3120
BSD RECOVERY %	105	85.3	87.1	90.7	93.7
BS/BSD RPD %	5.31	8.43	7.63	7.34	5.00
DUP RPD LIMITS	---	---	---	---	---
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	3330	3330	3330	3330	33300
LCS REC LIMITS	10.0 - 122	10.0 - 139	10.0 - 124	10.0 - 142	10.0 - 142
LCS RESULT	SEE_BS	SEE_BS	SEE_BS	SEE_BS	SEE_BS
LCS RECOVERY %	SEE_BS	SEE_BS	SEE_BS	SEE_BS	SEE_BS
SPIKE SAMPLE ID	3249-6	3249-6	3249-6	3249-6	3249-6
SAMPLE VALUE	< 201	< 201	< 121	< 14.1	< 42.9
DUP SAMPLE ID	---	---	---	---	---
DUP SAMPLE VAL/1	---	---	---	---	---
DUP SAMPLE VAL/2	---	---	---	---	---

SEE_BS LCS and LCS Duplicate reported as BS and BSD.
NA Not applicable

Inchcape Testing Services
Environmental Laboratories

1089 E. Collins Blvd.
Richardson, TX 75081
Tel. 972-238-5591
Fax 972-238-5592

REPORT DATE : 24-MAR-1997 REPORT NUMBER : D97-3237

SAMPLE SUBMITTED BY : Triad Onsite
ATTENTION : Ms. Risa Basso
PROJECT : 42078.A01 Addison Airport

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Anthracene	Chrysene	Benzo(k)fluoranthene
BATCH NO.	AC051-85	AC051-85	AC051-85
LCS LOT NO.	AB988-47	AB988-47	AB988-47
PREP METHOD	EPA 3550A	EPA 3550A	EPA 3550A
PREPARED BY	GSM	GSM	GSM
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310
ANALYZED BY	JCA	JCA	JCA
UNITS	µg/Kg	µg/Kg	µg/Kg
METHOD BLANK	< 44.2	< 10.1	< 11.4
SPIKE LEVEL	3330	3330	3330
SPK REC LIMITS	10.0 - 126	10.0 - 199	10.0 - 159
SPK RPD LIMITS	29.0	42.0	50.0
MS RESULT	2900	2920	3130
MS RECOVERY %	87.1	87.7	94.0
MSD RESULT	2920	3030	3210
MSD RECOVERY %	87.7	91.0	96.4
MS/MSD RPD %	0.69	3.70	2.52
BS RESULT	3090	3260	3520
BS RECOVERY %	92.8	97.9	106
BSD RESULT	2970	3180	3430
BSD RECOVERY %	89.2	95.5	103
BS/BSD RPD %	3.96	2.48	2.59
DUP RPD LIMITS	---	---	---
DUPLICATE RPD %	NA	NA	NA
LCS LEVEL	3330	3330	3330
LCS REC LIMITS	10.0 - 126	10.0 - 199	10.0 - 159
LCS RESULT	SEE_BS	SEE_BS	SEE_BS
LCS RECOVERY %	SEE_BS	SEE_BS	SEE_BS
SPIKE SAMPLE ID	3249-6	3249-6	3249-6
SAMPLE VALUE	< 44.2	< 10.1	< 11.4
DUP SAMPLE ID	---	---	---
DUP SAMPLE VAL/1	---	---	---
DUP SAMPLE VAL/2	---	---	---

SEE_BS LCS and LCS Duplicate reported as BS and BSD.
NA Not applicable

Inchcape Testing Service — Dallas, TX — CHAIN OF CUSTODY RECORD

Report to:		Invoice to	
Company:	Triad Onsite Systems	Company:	
Address:	2435 Southwell St Dallas, TX 75229	Address:	
Contact:	Risa Busse	Contact:	Ray Guzman
Phone:	972 241-7400	Phone:	
Fax:	972 241-7436	PO/SO #:	

ANALYSIS REQUESTED: PAH; BTEX/TPH

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal Intact: Y / N

Screened For Radioactivity

Sampler's Name: Risa Busse

Sampler's Signature: Risa Busse

Proj. No.: 42078.A01

Project Name: Addison Airport Fuel Farm

No./Type of Containers[2]

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
S	3-18	1645	X		B-3-A 3.5-4.25'			1		3237-1
W	3-18	1655		X	B-3-A water	1	1			Cancelled

ORIGINAL

Turn-around time: ☐ Priority or Standard ☐ Priority 2 or 50% ☐ Priority 3 or 100% ☒ Priority 4 ERS *

* BTEX (602/8020), TPH (418.1 or 8015), VOLATILES (624/8240), IGNITABILITY, TOTAL LEAD (6010)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Risa Busse	3/19/97	1320	M. Driskell	3/19	1320
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks

Client's delivery of samples constitutes acceptance of Inchcape/ITS-Dallas terms and conditions contained in the Price Schedule.

[1] Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge; O - Oil

[2] Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other _____

ITS - Dallas cannot accept verbal changes. Please Fax written changes to 214-238-5592

OFFICE USE ONLY

ATTACHMENT 18

Copies of manifests, waste receipts, or other documents necessary to document waste disposition

Copies of Manifests, Waste Receipts, ...Waste Disposition

Attachment 18

LPST ID: 91471

To date no documented wastes have been transported from the site.

Most recent subsurface investigations were performed using a geoprobe, and therefore, no soil cuttings were generated.

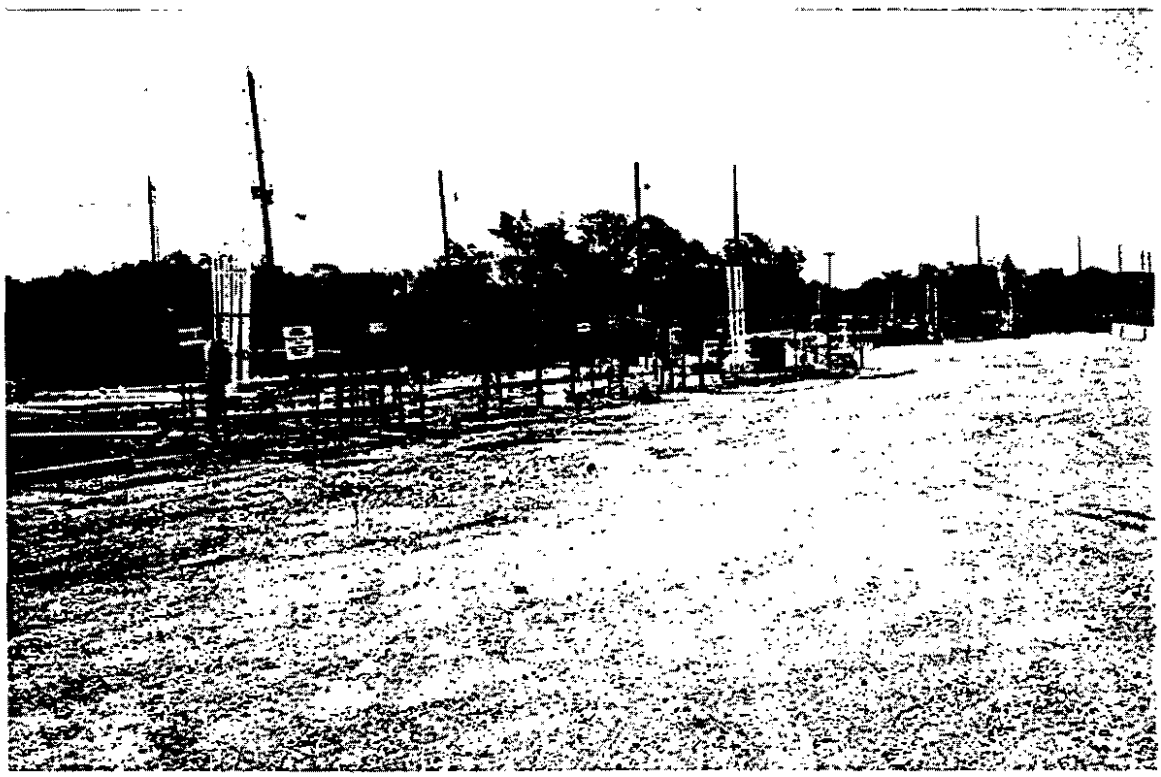
ATTACHMENT 19

Photographic documentation

PHOTO 1

VIEW OF SUBJECT SITE FUEL FARM
(ARROW INDICATES MOTOR FUEL DISPENSER WHICH ORIGINATED LPST)

PHOTO 2

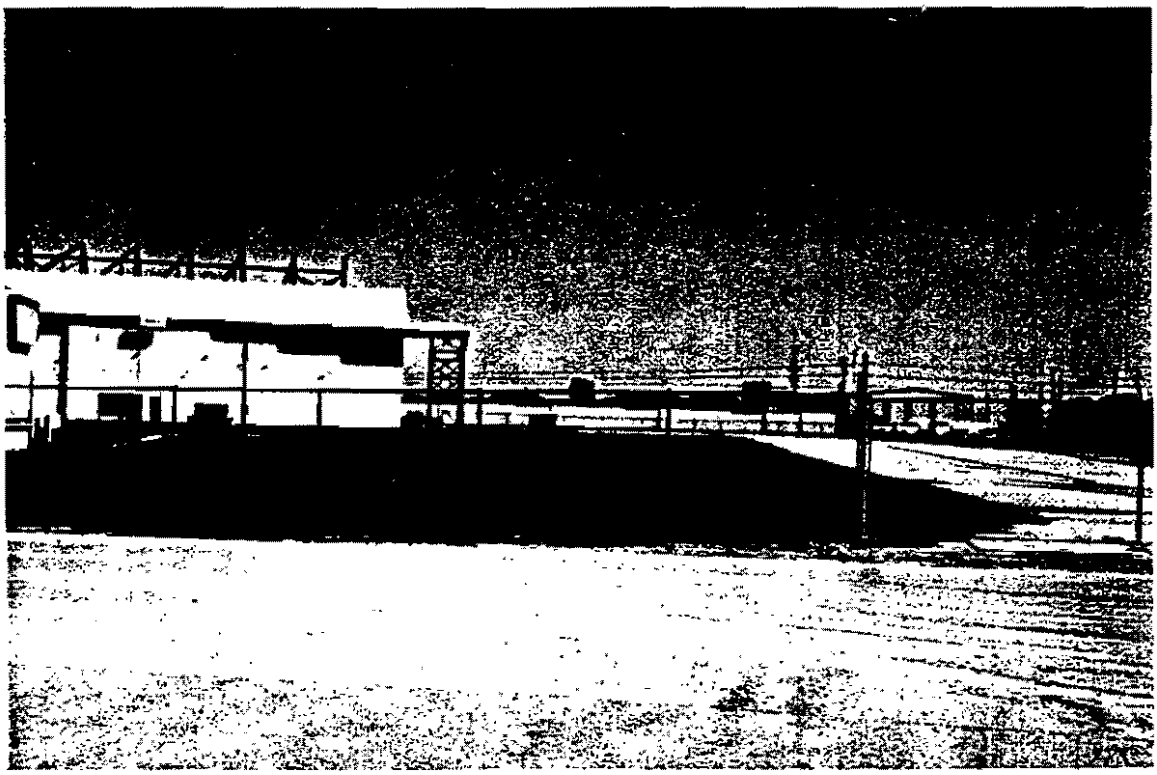


SUBJECT FUEL FARM IN FOREGROUND
AND TWO ADJACENT FUEL FARMS IN BACKGROUND

PHOTO 3

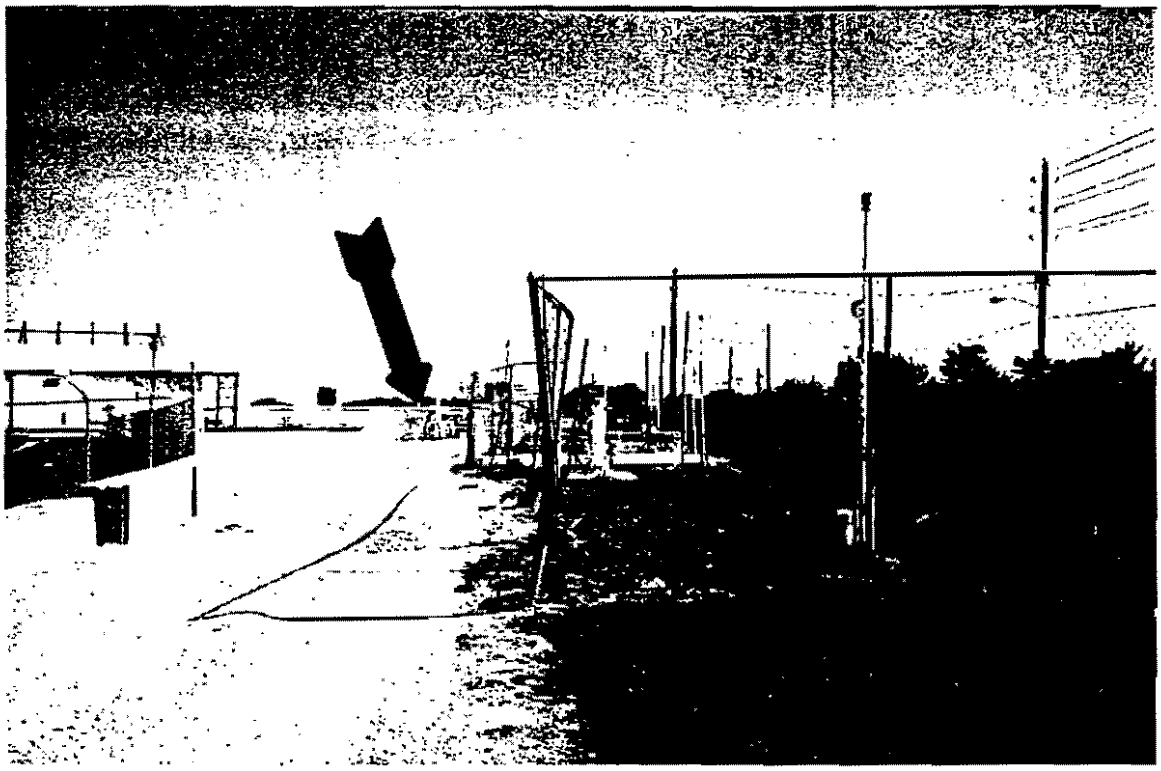
VIEW ALONG ADDISON ROAD IMMEDIATELY TO EAST OF SUBJECT FUEL FARM (LOCATED BEHIND FENCE ON RIGHT)

PHOTO 4



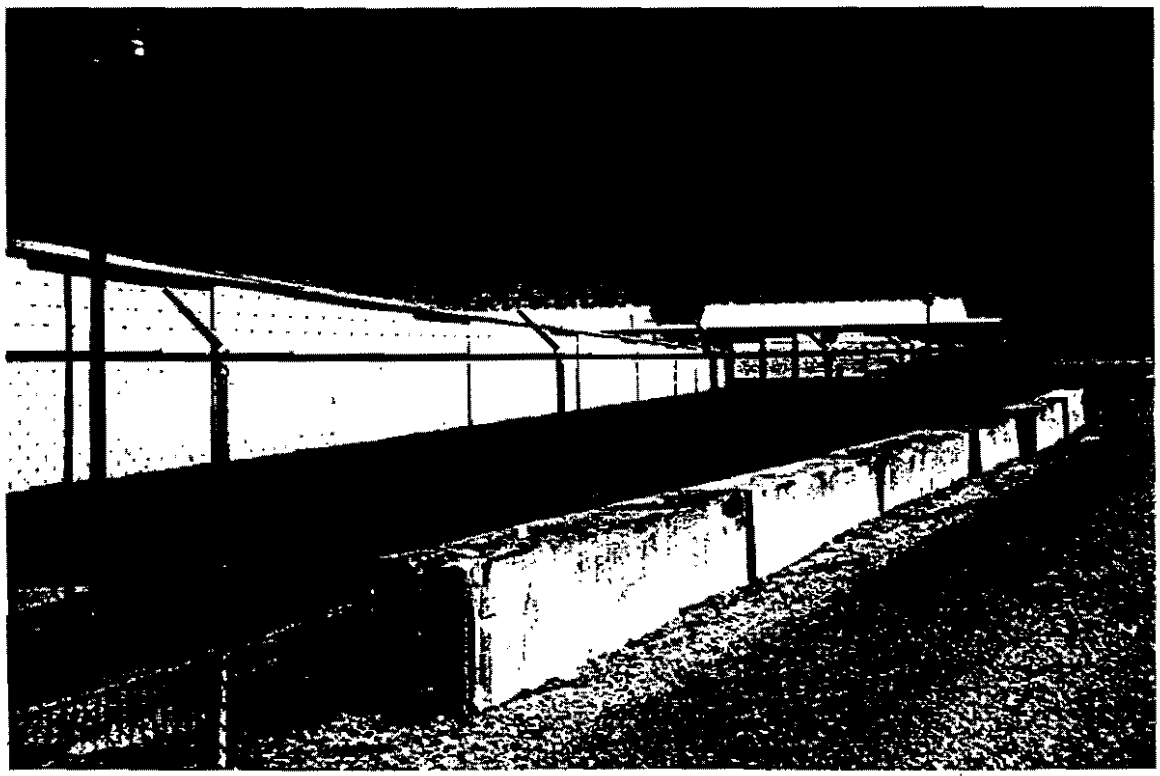
VIEW OF ADDISON AIRPORT TO NORTH OF SUBJECT FUEL FARM (ACROSS ROSCOE TURNER ROAD)

PHOTO 5



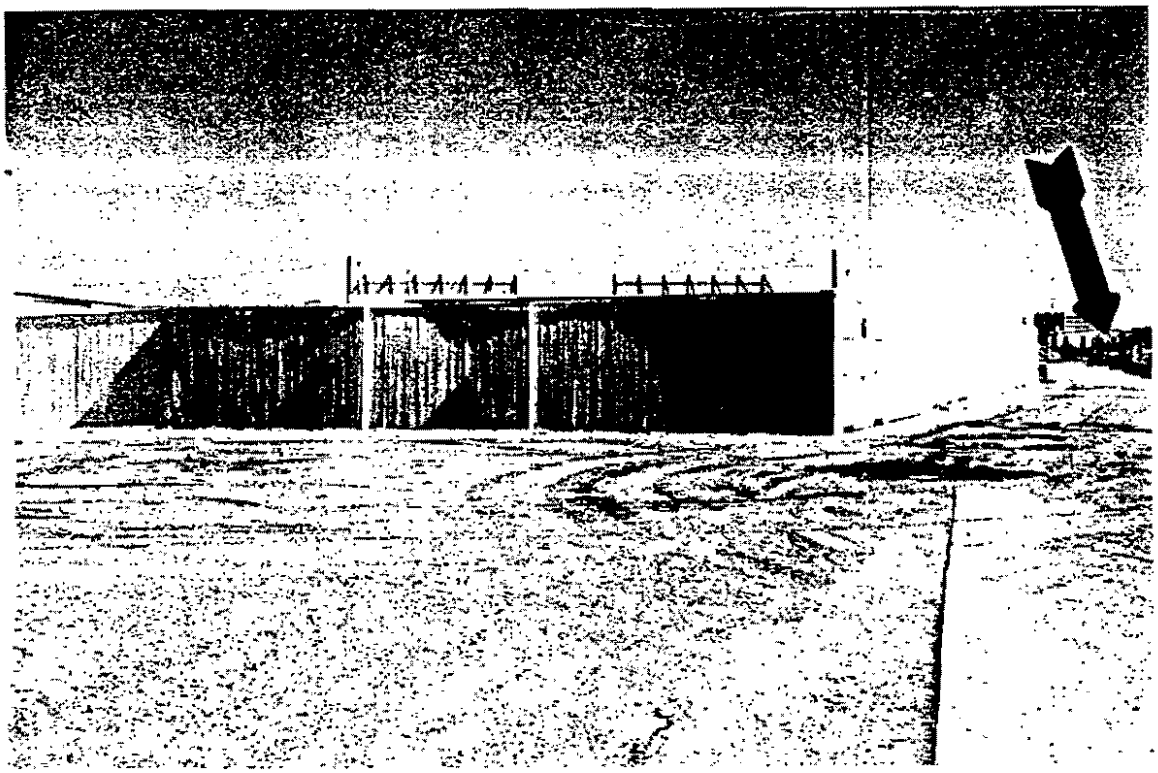
VIEW FROM SOUTH ADJACENT FUEL FARMS
(ARROW INDICATES SUBJECT FUEL FARM TO NORTH)

PHOTO 6



VIEW OF HANGER BUILDING LOCATED WEST OF FUEL FARMS
(FACING NORTH)

PHOTO 7



OTHER AIRPORT FUEL FARMS LOCATED BEHIND WOOD FENCES (ARROW INDICATES PREVIOUSLY SHOWN FUEL FARMS IN BACKGROUND)

PHOTO 8

VIEW OF OTHER AIRPORT FUEL FARMS BEHIND WOOD FENCES

ATTACHMENT 20

Proposal for next appropriate action and/or Site Closure Request

Proposal for Next Appropriate Action

Attachment 20

LPST ID: 91471

It is recommended that the site be evaluated using the current TNRCC exit evaluation criteria.

ATTACHMENT 21

Geophysical survey

CDM Camp Dresser & McKee Inc.

environmental services

12770 Coit Road, Suite 800
Dallas, Texas 75251
Tel: 972 308-9000 Fax: 972 960-2313

February 28, 1997

Ms. Marisa Basso
Triad Onsite Systems, Inc.
2435 Southwell, Suite 1
Dallas, Texas 75229

Re: Results of Earth Conductivity Geophysical Survey
Addison Airport Fuel Farm
Addison Rd. and Roscoe Turner Rd.
Addison, Texas

Dear Ms. Basso:

Camp Dresser & McKee Inc. (CDM) is pleased to submit this letter report summarizing the results of the earth conductivity geophysical survey performed at the above referenced project site. The details of the investigation activities performed at this facility are presented in the following sections.

Project Background

A petroleum release was documented at this site during previous drilling activities performed by Triad Onsite Systems, Inc. (Triad) and the site is currently registered as a Leaking Petroleum Storage Tank (LPST) facility with the Texas Natural Resource Conservation Commission (TNRCC). Petroleum constituents were encountered in several of the borings previously advanced at the site by Triad and further site work was needed to assist in delineating the detected subsurface contamination to the greatest extent possible using non-intrusive geophysical techniques. According to information provided by Triad, rock is located at a depth of 4.5-7 feet beneath this site and was encountered during the advancement of each of the previous borings.

CDM received authorization to proceed with the earth conductivity geophysical survey on February 7, 1997. The objectives of this investigation were to assist in identifying the general limits of the petroleum hydrocarbon impacts identified near the fuel farm, and to assist in reducing the number of soil borings that would be required to delineate the extent of the subsurface petroleum hydrocarbons using conventional drilling methods.

Electromagnetic (EM) Terrain Conductivity Surveys

Electrical conductivity denotes the ability of a material to conduct an electrical current. An electromagnetic (EM) terrain conductivity survey measures spatial variations in the electrical conductivity of subsurface earth materials. The conductivity measurements can be used to evaluate distributions of various subsurface materials of contrasting electrical properties. Indigenous subsurface materials exhibit background conductivity

values, although these values can vary according to variations in the material type (i.e., residuum or rock), the degree of moisture, and the presence of ionic species dissolved in the moisture. As a result, determination of applicable background conditions must consider these variables. Physical and chemical differences of subsurface materials, as compared to background conditions, can be discerned using EM survey techniques.

EM Survey Methodology

The Geonics Model EM-31 Terrain Conductivity Meter offers a means to determine gross ground conductivity in a rapid, non-invasive manner by inducing an electromagnetic field into the earth to effective depths of approximately 9 feet (horizontal coil) and 18 feet (vertical coil) below ground surface, depending on instrument configuration. For each of the two depths, the conductivity measurements represent a weighted composite value, referred to as apparent conductivity, down to the indicated depth. For example, subsurface materials existing within the upper five feet will make a greater contribution to the observed conductivity value than materials existing below five feet. The 9-foot and 18-foot effective depths are considered approximate because these depths vary depending on the apparent conductivity. For typical earth conductivity ranges, the approximated depths are valid. Under extremely low apparent conductivity conditions, the effective depths may be less, and under extremely high apparent conditions, the effective depths may be greater. Measurements provided by the instrument are conventional conductivity units of milliMhos per meter (mmhos/m).

The profiling technique used at the site consisted of earth conductivity measurements collected at regular intervals across the area of interest, and continuing laterally until background values for the area were observed. Measurement location control was established by locating parallel lines to be used as EM survey transects. Transect lines were laid out in order to traverse as much open land as possible while accommodating cultural obstacles as much as possible. EM data were then collected at regular intervals (nodes) along each transect. The initial EM survey was performed using transect spacings of 25 feet and node spacings of approximately 25 feet. Following a field evaluation of the data, follow-up data were collected to refine specific areas of interest. The follow-up EM surveys consisted of transects at 25 foot intervals and data collection nodes at a frequency of approximately 12.5 feet along each transect.

Parallel transect lines were established using a survey tape to provide distances and a rod and brunton compass to provide transect orientations. Data collection nodes along each transect were determined using a distance measuring wheel as the data were collected. At roughly 125-foot intervals along each transect, a perpendicular baseline was located to proportion the distance ratio. All data coordinates were established in reference to an on-site fire hydrant, located on the east side of the property. Data node coordinates and recorded conductivity values for the EM survey were tabulated and

are included as Appendix A. A grid plot showing the transect lines and data nodes is presented in Figure 1.

Instrument performance checks were conducted daily according to the manufacturer's recommendations. The instrument checks consisted of a battery check, electronic nulling, sensitivity checks, and phase adjustment. These checks were intended to ensure that the instrument provided consistent readings throughout the survey period. Following the instrument checks, terrain conductivity measurements were recorded at the control point to assess the degree of time-dependent variation in conductivity values indicated, which could result from variations in subsurface moisture conditions or atmospheric electrical disturbances. Absolute calibration of the instrument was performed by the manufacturer under strictly controlled conditions. An offsite, background control point was also established, based upon surface observations and lateral screening, that was believed to be free of cultural interferences.

EM Survey Results

The tabulated EM survey data were used to construct earth conductivity contour maps at the 9-foot coil spacing depth since rock is located at a depth of 4.5-7 feet beneath the site. The contour maps were prepared by creating an electronic data file containing the location coordinates and apparent earth conductivity values for each data node. This file was then read by geostatistical processing software (Surfer, Version 5.0, 1993-94, Golden Software). The software generated a grid file from the database consisting of regularly spaced nodes and calculated apparent earth conductivity values for each node using a geostatistical method referred to as Kriging, which attempts to identify and express trends in the data set. Once the grid files were created, contour maps showing apparent earth conductivity values were constructed and various site features were identified for reference.

Apparent earth conductivity profiles are presented in Appendix A (Graph 1 and Graph 2). These profiles were constructed from the contour maps and are plots of apparent earth conductivity (Y-axis) against distance (X-axis). These profiles were used as visual aids in further assessing apparent earth conductivity distributions. This was performed by recognizing the background portion of the profile, which is typically represented by a gently undulating profile leading into anomalous zones of higher or lower conductivity.

The apparent earth conductivity contour map shown in Figure 2 represents all data points (unedited). The contours (representing conductivity values) are extremely variable across the site, indicating anomalous areas of higher or lower conductivity, which are deviations from the observed background conditions. These anomalies should not be construed as "true anomalies," since other cultural features such as power transmission lines, piping, underground storage tanks, fences, and buildings

are observed to affect the database. Several site improvements (hangers, roads, fences, etc.) that affected the database are also shown on Figure 2.

The apparent earth conductivity map shown in Figure 3 represents the data set edited for cultural interferences, and based on this data, earth conductivity values of approximately 30 to 45 mmhos/m appear to be indicative of background conditions. These earth conductivity values are typical of natural, minimally-disturbed soils. The earth conductivity values of approximately 45 to 62 mmhos/m appear to be sufficiently elevated above background to correlate with potential subsurface contamination that may be present at the site and warrant additional investigation. The area of elevated earth conductivity values that is likely associated with subsurface contamination is shown on Figure 4. This interpretation is based on a limited data set, and as additional analytical information becomes available, it may be beneficial to refine this interpretation of the geophysical data.

The data obtained during this investigation and the contour maps developed should assist in identifying the general limits of the petroleum constituents located near the fuel farm and should also assist in reducing the number of soil borings that will be needed to delineate the extent of the petroleum impacts present at this facility using conventional drilling methods. However, since intrusive testing was not performed by CDM during this project, Triad should assume that additional soil borings will have to be advanced at the site to verify the limits of petroleum impacts at this facility. It should also be noted that the earth conductivity values generated are based on the electromagnetic variations detected through the entire soil column at each grid location, not analytical data testing at discrete locations within the soil column. Therefore, a direct correlation between discrete data and associated electromagnetic variations in a soil column are not possible and backup analytical data should always be acquired. Geophysical surveys of this type should be considered screening tools which can provide a rapid and effective method of delineating the general limits of contaminant plumes and should always be backed up with appropriate site specific analytical testing data.

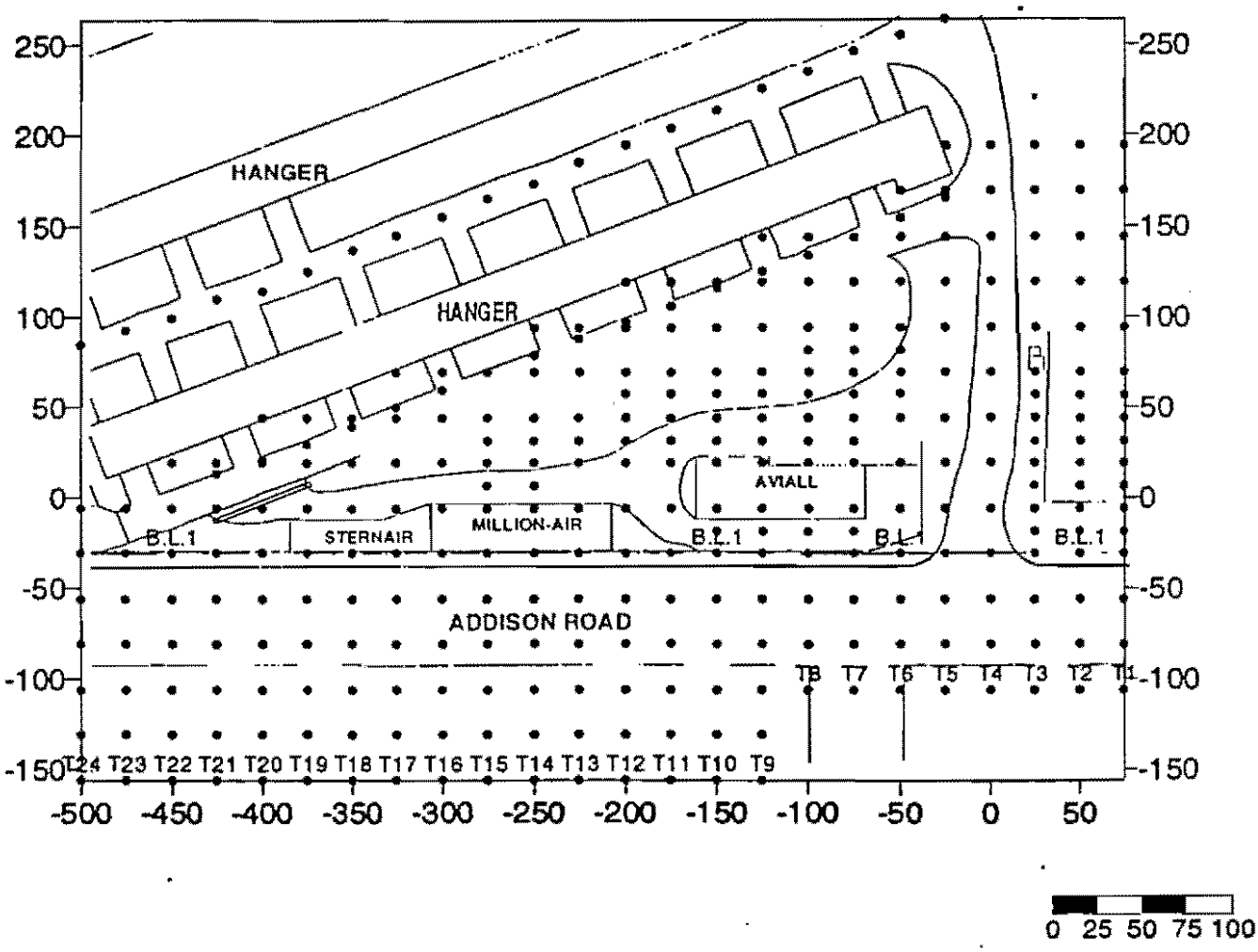
CDM appreciates the opportunity to provide geophysical testing services to Triad. If you have any questions concerning this report, please phone me at 972-308-9000.

Sincerely,

CAMP DRESSER & McKEE INC.

Daphne A. Hall, P.G.
Project Geologist

Ron Hartline, P.E.
Project Manager

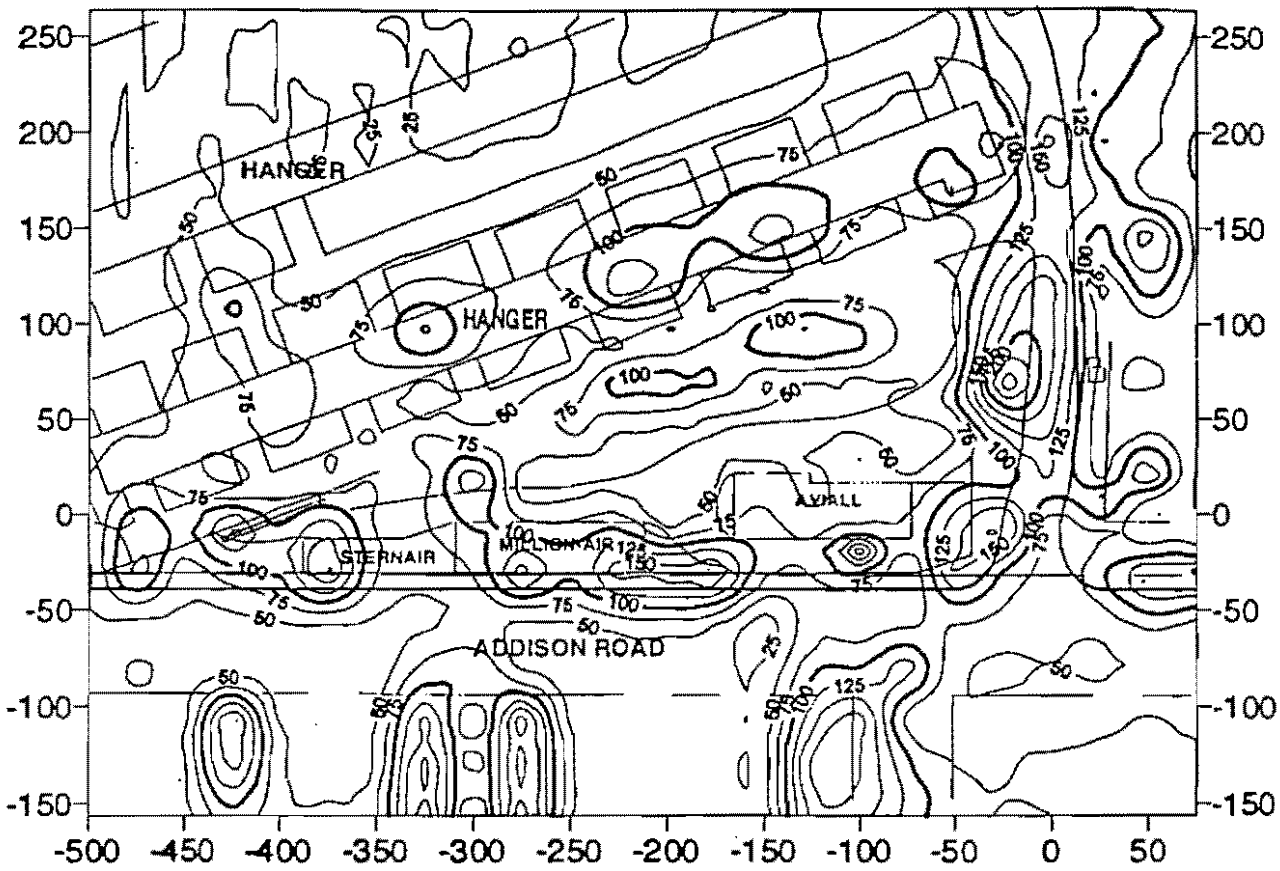


ADDISON MUNICIPAL AIRPORT
ADDISON, TEXAS

EM31 GRID PLOT

CDM
environmental engineers, scientists, planners, & management consultants

FIGURE 1



Map Scale

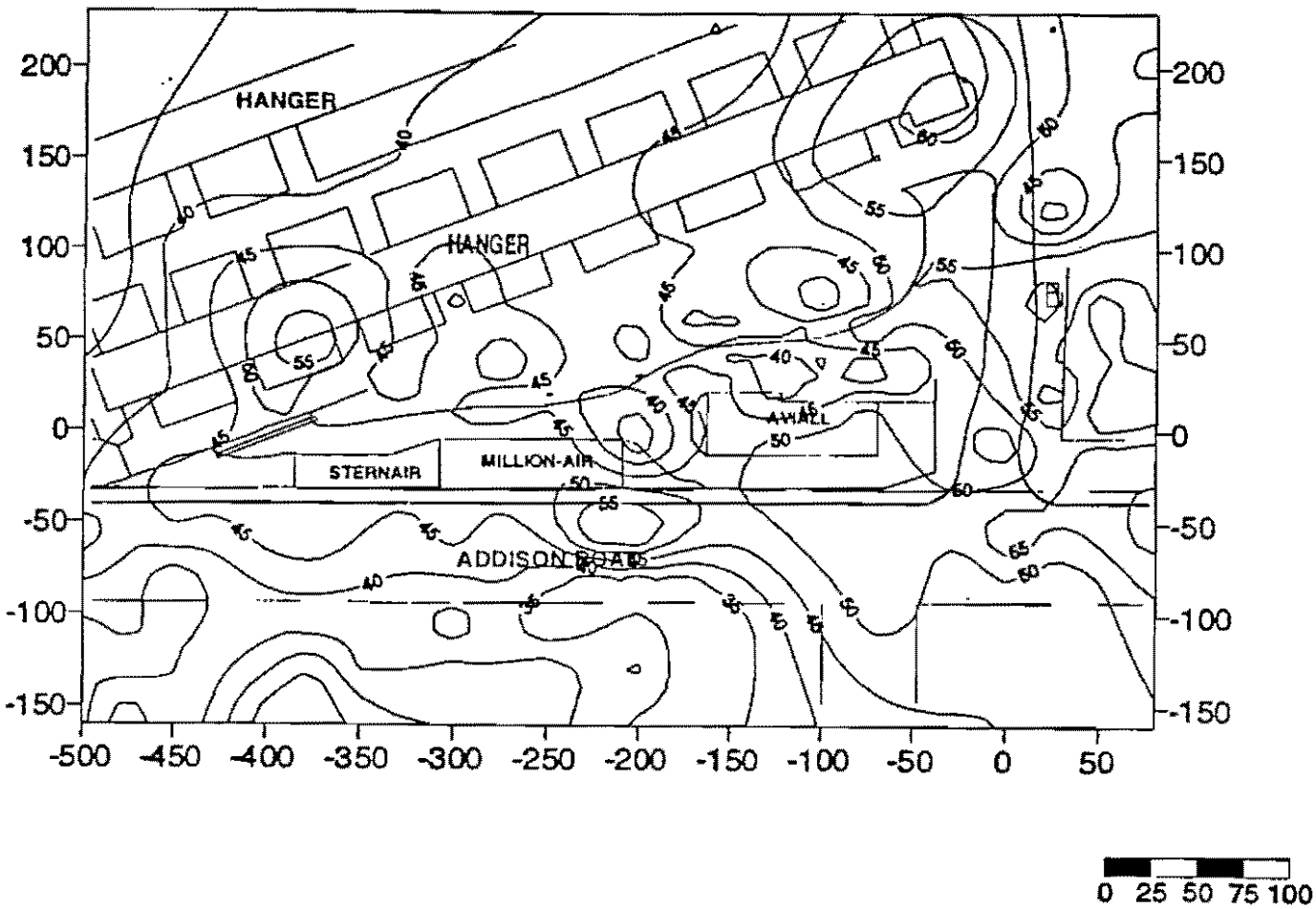
0 25 50 75 100

ADDISON MUNICIPAL AIRPORT
ADDISON, TEXAS

EM31 RAW EARTH CONDUCTIVITY VALUES

CDM
environmental engineers, scientists, planners, & management consultants

FIGURE 2

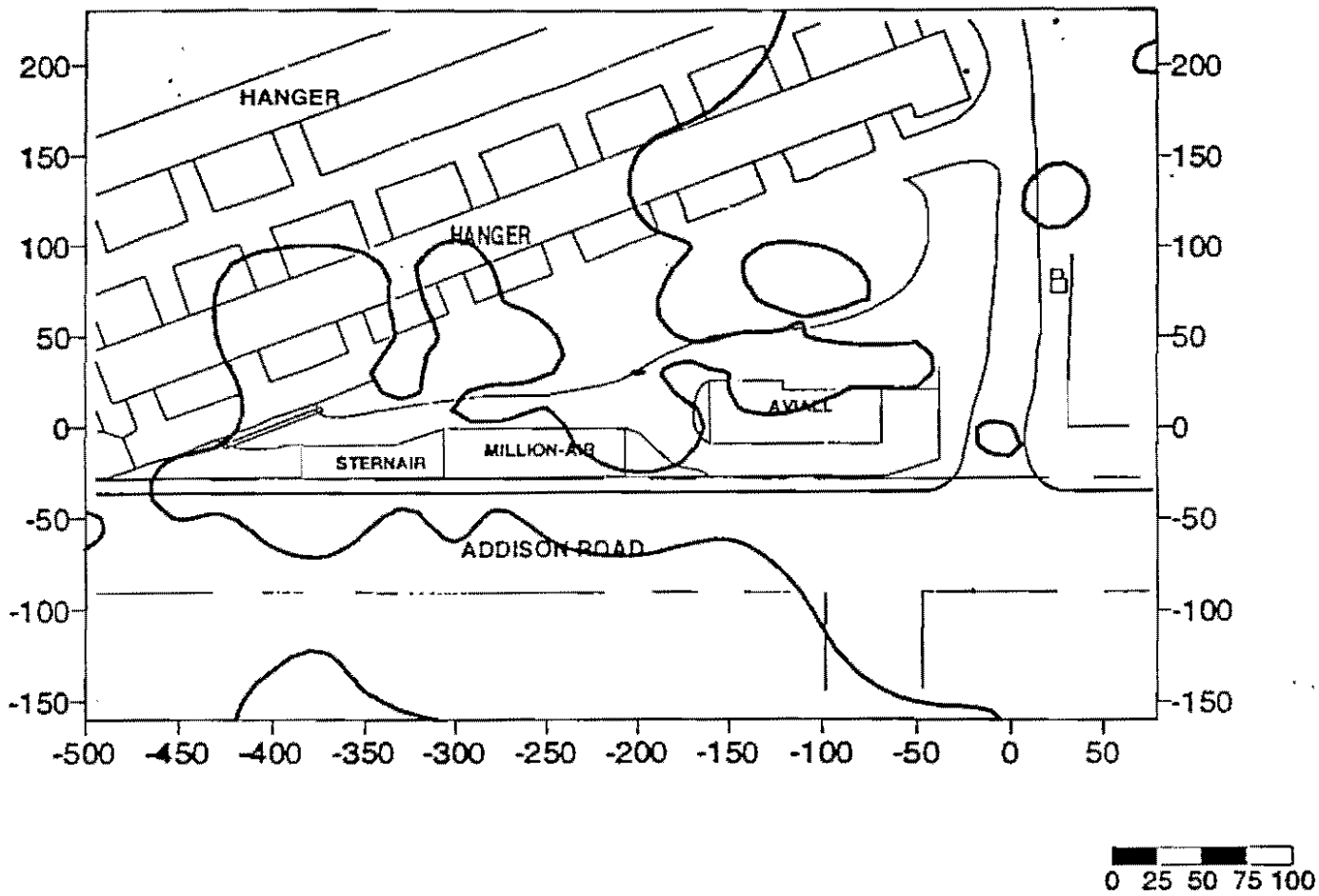


ADDISON MUNICIPAL AIRPORT
ADDISON, TEXAS

EM31 EDITED EARTH CONDUCTIVITY VALUES

CDM
Environmental engineers, scientists, planners, & management consultants

FIGURE 3



ADDISON MUNICIPAL AIRPORT
ADDISON, TEXAS

ESTIMATED ELEVATED EARTH CONDUCTIVITY VALUES

CDM
environmental engineers, scientists, planners, & management consultants

FIGURE 4

APPENDIX A

EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
75	-106.5	69.5	1	T1	0	
75	-81.5	55.9	2		1	
75	-56.5	62	3		2	
75	-31.5	168	4	B.L.1	3	
75	-19	75.5	5		3.5	Concrete Wall
75	-6.5	57.1	6		4	Concrete
75	6	47.1	7		4.5	Plane
75	18.5	46.2	8		5	
75	31	48.4	9		5.5	
75	43.5	52.4	10		6	
75	56	53.5	11		6.5	Water Line
75	68.5	55.1	12		7	Asphalt
75	93.5	55.8	13		8	
75	118.5	54.3	14		9	
75	143.5	63	15		10	Elec./Piping/Asphalt
75	168.5	53.3	16		11	Asphalt
75	193.5	43.8	17		12	Asphalt
50	-106.5	79.1	18	T2	0	
50	-81.5	49.8	19		1	
50	-56.5	82.5	20		2	
50	-31.5	168	21	B.L.1	3	
50	-19	70.1	22		3.5	Concrete Wall
50	-6.5	56.1	23		4	Concrete
50	6	44.5	24		4.5	
50	18.5	164.3	25		5	Airplane
50	31	122	26		5.5	Airplane
50	43.5	61.5	27		6	Asphalt/Conc./Plane
50	56	65.5	28		6.5	
50	68.5	44.2	29		7	
50	93.5	60.1	30		8	
50	118.5	118	31		9	Transformer
50	143.5	183	32		10	Bldg/Concrete
50	168.5	58.7	33		11	Bldg
50	193.5	87.2	34		12	Asphalt
25	-106.5	68.9	35	T3	0	
25	-81.5	44.5	36		1	
25	-56.5	54.5	37		2	
25	-31.5	98	38	B.L.1	3	
25	-19	77.5	39		3.5	Concrete Wall
25	-6.5	71.9	40		4	
25	6	152	41		4.5	
25	18.5	64.2	42		5	Asphalt/Concrete
25	31	59.5	43		5.5	
25	43.5	53.4	44		6	
25	56	58.2	45		6.5	Fence/Transformer
25	68.5	62.6	46		7	Fence/Transformer
25	93.5	59.2	47		8	
25	118.5	35.5	48		9	Transformer/Pipe

EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
25	143.5	80.4	49		10	
25	168.5	124.5	50		11	Electric
25	193.5	70.3	51		12	
0	-106.5	63.8	52	T4	0	
0	-81.5	50.2	53		1	
0	-56.5	59.7	54		2	
0	-31.5	59.1	55	B.L.1	3	
0	-6.5	40.8	56		4	Fence/Sewer/Fire Hydrant
0	18.5	131.6	57		5	Fence/Asphalt
0	43.5	157.6	58		6	Fence/Asphalt/Elec.
0	68.5	170.2	59		7	Fence/Asphalt/Elec.
0	93.5	190	60		8	Fence/Elec.
0	118.5	200	61		9	Fence
0	143.5	139.3	62		10	Fence/Pipe/Elec.
0	168.5	156	63		11	Asphalt
0	193.5	200	64		12	Asphalt/Under. Phone
-25	-106.5	65.5	65	T5	0	
-25	-81.5	43.2	66		1	
-25	-56.5	66.1	67		2	
-25	-31.5	91.9	68	B.L.1	3	
-25	-6.5	200	69		4	Overhead Elec.
-25	18.5	75.2	70		5	Overhead Elec.
-25	43.5	136	71		6	Asphalt
-25	68.5	280	72		7	Asphalt/Pipe
-25	93.5	ND	73		8	Pipe
-25	118.5	ND	74		9	Fence/Pipe
-25	143.5	ND	75		10	Fence/Pipe
-25	164.5	79.2	76		10.7	
-25	168.5	62.3	77		11	Fence
-25	193.5	60.8	78		12	Asphalt
-25	263.5	155.8	79		13	Hangar
-50	-106.5	49.8	80	T6	0	
-50	-81.5	52.9	81		1	
-50	-56.5	75.8	82		2	
-50	-31.5	160.3	83	B.L.1	3	
-50	-6.5	140.5	84		4	Fence/Asphalt
-50	18.5	86.2	85		5	Fence
-50	43.5	42.9	86		6	Concrete
-50	56.5	93	87		6.5	
-50	68.5	85.2	88		7	Concrete
-50	81	55.3	89		7.5	
-50	93.5	71	90		8	Concrete
-50	118.5	73	91		9	Fence
-50	143.5	56.5	92		10	Asphalt
-50	154	61.6	93		10.5	Hangar
-50	168.5	143.5	94		11	Bldg/Concrete
-50	254.5	61.5	95		12	Hangar
-75	-106.5	50.6	96	T7	0	

EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
-75	-81.5	150.5	97		1	
-75	-56.5	66.1	98		2	
-75	-31.5	40.9	99	B.L.1	3	
-75	-19	74.2	100		3.5	Fence
-75	-6.5	76.1	101		4	Gravel
-75	18.5	51	102		5	Gravel
-75	31	33.3	103		5.5	
-75	43.5	40.8	104		6	
-75	56.5	62.3	105		6.5	
-75	68.5	43	106		7	
-75	81	67	107		7.5	
-75	93.5	67.5	108		8	Concrete
-75	118.5	70.3	109		9	Concrete Curb
-75	143.5	60.6	110		10	Asphalt
-75	246	71.5	111		11	Hangar/Gas Line
-100	-106.5	189.3	112	T8	0	
-100	-81.5	98.2	113		1	
-100	-56.5	52.8	114		2	
-100	-31.5	88.5	115	B.L.1	3	
-100	-19	200	116		3.5	Fence
-100	-6.5	52	117		4	Fence/Piping
-100	18.5	74	118		5	Fence/Piping
-100	31	76.5	119		5.5	Fence
-100	43.5	40.2	120		6	Gravel
-100	56.5	53	121		6.5	
-100	68.5	34.3	122		7	
-100	81	91.9	123		7.5	Concrete Wall
-100	93.5	110.2	124		8	Concrete/Gravel
-100	118.5	51.5	125		9	
-100	133.2	52.1	126		9.4	
-100	143.5	56.9	127		10	
-100	235	61.7	128		11	Hangar
-125	-156.5	164.7	129	T9	-2	Storm Drain
-125	-131.5	200	130		-1	Elec./Storm Drain
-125	-106.5	143.4	131		0	
-125	-81.5	99.5	132		1	
-125	-56.5	68.4	133		2	
-125	-31.5	70.1	134	B.L.1	3	
-125	-19	98.1	135		3.5	Fence
-125	-6.5	52	136		4	Pipe
-125	18.5	38	137		5	Gravel/Pipe
-125	31	55.6	138		5.5	Fence
-125	43.5	38.5	139		6	Gravel
-125	56.5	50.3	140		6.5	
-125	68.5	42.6	141		7	Gravel
-125	93.5	145.3	142		8	Fence
-125	118.5	47.7	143		9	Asphalt
-125	124.5	47.1	144		9.2	Hangar

EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
-125	143.5	118.9	145		10	Bldg
-125	225.5	44.1	146		11	
-150	-156.5	29.5	147	T10	-2	
-150	-131.5	28.8	148		-1	
-150	-106.5	31.1	149		0	
-150	-81.5	26.5	150		1	
-150	-56.5	4.4	151		2	
-150	-31.5	78.7	152	B.L.1	3	
-150	-19	91.6	153		3.5	Fence
-150	-6.5	90	154		4	Pipe/Fence/UST/Gravel
-150	18.5	65	155		5	Pipe/Fence/Gravel
-150	31	45.1	156		5.5	Fence
-150	43.5	36.1	157		6	Gravel
-150	56.5	53.5	158		6.5	
-150	68.5	46.6	159		7	Gravel
-150	93.5	125.6	160		8	Fence
-150	115.1	46.6	161		8.8	
-150	118.5	45.7	162		9	Asphalt
-150	143.5	142	163		10	Bldg
-150	213.5	39.8	164		11	
-175	-156.5	33	165	T11	-2	
-175	-131.5	32.8	166		-1	
-175	-106.5	29.2	167		0	
-175	-81.5	32.2	168		1	
-175	-56.5	51.1	169		2	
-175	-31.5	190	170	B.L.1	3	
-175	-6.5	64	171		4	Fence/Pipe/UST
-175	18.5	ND	172		5	
-175	31	50.2	173		5.5	Fence
-175	43.5	38.8	174		6	Gravel
-175	56.5	52.9	175		6.5	
-175	68.5	110	176		7	Fence/Conc./Asphalt
-175	93.5	76.1	177		8	Fence/Asphalt
-175	105.5	44.3	178		8.5	
-175	118.5	49	179		9	Asphalt
-175	203.5	41.4	180		10	
-200	-156.5	34.3	181	T12	-2	
-200	-131.5	40.8	182		-1	
-200	-106.5	38.2	183		0	
-200	-81.5	31.9	184		1	
-200	-56.5	62.1	185		2	
-200	-31.5	169.9	186	B.L.1	3	
-200	-6.5	30	187		4	Gravel/Fence
-200	18.5	37.3	188		5	Gravel
-200	31	46.2	189		5.5	
-200	43.5	36	190		6	
-200	56.5	83.5	191		6.5	
-200	68.5	121.5	192		7	Fence

EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
-200	93.5	40.9	193		8	Asphalt
-200	96.5	43.5	194		8.1	
-200	118.5	124	195		9	Bldg
-200	193.8	42.3	196		10	
-225	-156.5	37.1	197	T13	-2	
-225	-131.5	39.1	198		-1	
-225	-106.5	34.3	199		0	
-225	-81.5	30.6	200		1	
-225	-56.5	60.3	201		2	
-225	-31.5	170.5	202	B.L.1	3	
-225	-6.5	99.1	203		4	Gravel/Fence/Drums
-225	18.5	36.9	204		5	Gravel
-225	31	45.1	205		5.5	
-225	43.5	41.7	206		6	Gravel
-225	68.5	120.9	207		7	fence
-225	87.7	42.5	208		7.8	
-225	93.5	41.6	209		8	Asphalt
-225	118.5	144.5	210		9	Bldg
-225	184.5	43.9	211		10	
-250	-156.5	42.9	212	T14	-2	
-250	-131.5	44.3	213		-1	
-250	-106.5	30.9	214		0	
-250	-81.5	29.1	215		1	
-250	-56.5	46.1	216		2	
-250	-31.5	99.3	217	B.L.1	3	
-250	-6.5	ND	218		4	
-250	6	49.1	219		4.5	
-250	18.5	38.8	220		5	Gravel
-250	31	46.5	221		5.5	
-250	43.5	92	222		6	Gravel/Fence
-250	68.5	54.2	223		7	Fence/Asphalt/Water Line
-250	77.8	41.6	224		7.4	
-250	93.5	41.6	225		8	Asphalt
-250	172.8	41.3	226		9	
-275	-156.5	200	227	T15	-2	
-275	-131.5	200	228		-1	
-275	-106.5	198.1	229		0	
-275	-81.5	40.9	230		1	
-275	-56.5	42.2	231		2	
-275	-31.5	167.7	232	B.L.1	3	
-275	-6.5	ND	233		4	
-275	6	46	234		4.5	
-275	18.5	34.9	235		5	Gravel
-275	31	57.5	236		5.5	
-275	43.5	58.5	237		6	Fence
-275	68.5	44.7	238		7	Asphalt
-275	164.9	41.3	239		8	
-300	-156.5	29.4	240	T16	-2	Water Line

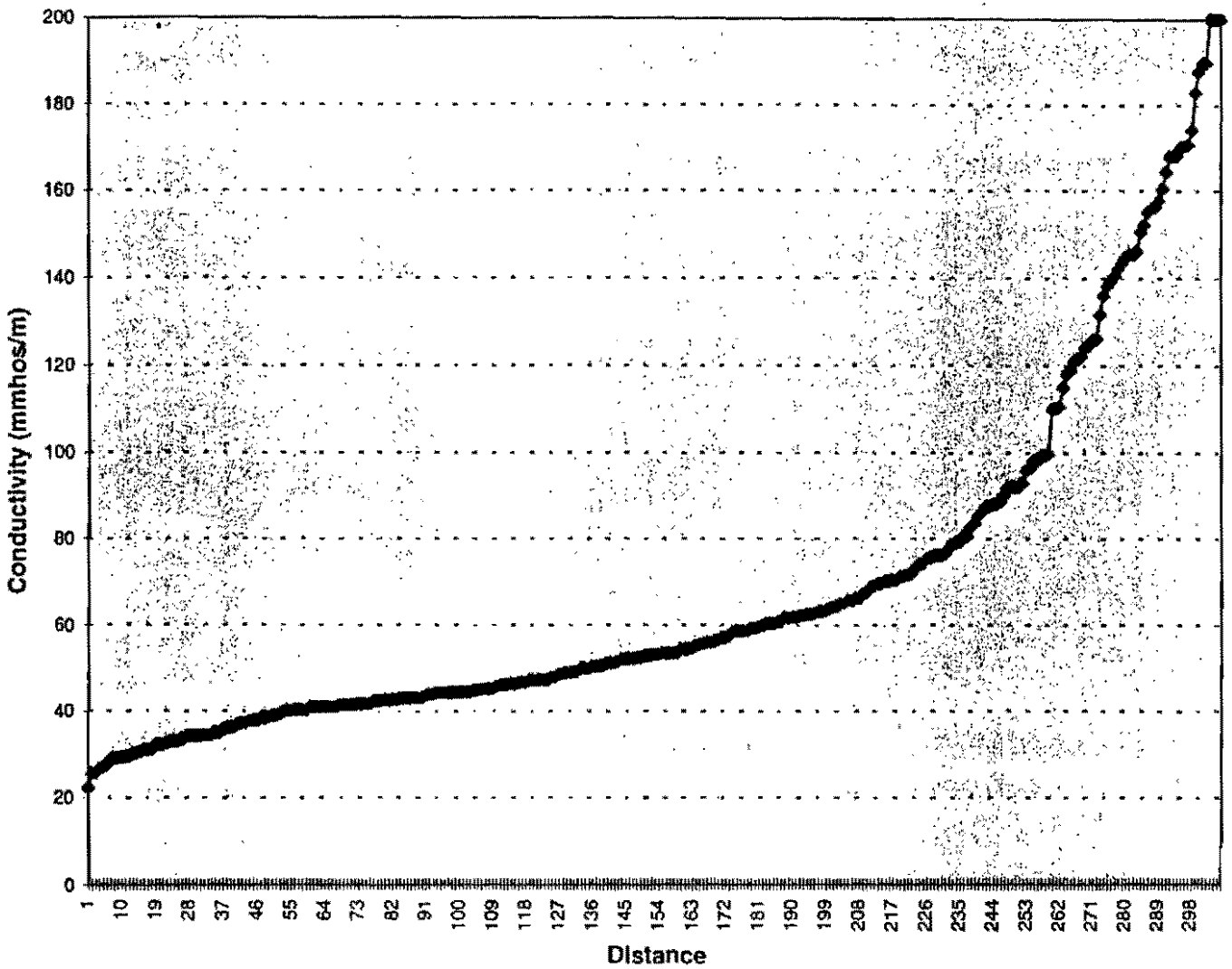
EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
-300	-131.5	42.6	241		-1	
-300	-106.5	32.2	242		0	
-300	-81.5	110.6	243		1	
-300	-56.5	47.1	244		2	
-300	-31.5	71.2	245	B.L.1	3	
-300	-6.5	ND	246		4	
-300	18.5	155	247		5	Fence/Gravel
-300	43.5	47	248		6	Asphalt/Fence/Water Line
-300	58.8	44.2	249		6.5	
-300	68.5	52.2	250		7	Asphalt
-300	154.7	43.2	251		8	
-325	-156.5	200	252	T17	-2	Water Line
-325	-131.5	200	253		-1	Water Line
-325	-106.5	164	254		0	
-325	-81.5	85.4	255		1	
-325	-56.5	43.1	256		2	
-325	-31.5	58.6	257	B.L.1	3	
-325	-6.5	ND	258		4	
-325	18.5	63	259		5	Conc./Fence
-325	43.5	87.9	260		6	Fence
-325	49.5	44.2	261		6.2	
-325	68.5	42.5	262		7	Asphalt
-325	93.5	138.2	263		8	Bldg
-325	144.5	40.2	264		9	
-350	-156.5	60.3	265	T18	-2	
-350	-131.5	40.1	266		-1	
-350	-106.5	37.7	267		0	
-350	-81.5	29.1	268		1	
-350	-56.5	45.2	269		2	
-350	-31.5	69.4	270	B.L.1	3	
-350	-6.5	64.7	271		4	Fence
-350	18.5	80.5	272		5	Fence/Water Line
-350	38.9	44.8	273		5.8	
-350	43.5	48.5	274		6	Asphalt
-350	136.75	40.2	275		7	
-375	-156.5	54.3	276	T19	-2	
-375	-131.5	51.2	277		-1	
-375	-106.5	37.8	278		0	
-375	-81.5	25.6	279		1	
-375	-56.5	49.8	280		2	
-375	-31.5	188	281	B.L.1	3	
-375	-6.5	146	282		4	Fence/Concrete
-375	18.5	48.9	283		5	Asphalt
-375	29	47.2	284		5.4	
-375	43.5	63.2	285		6	
-375	124.6	40.2	286		7	
-400	-156.5	52.6	287	T20	-2	
-400	-131.5	44.2	288		-1	

EM31 Geophysical Survey Data
Vertical Orientation (9 Ft.)
Addison Municipal Airport

X	Y	Z	#	TRANSECT	STATION	COMMENTS
-400	-106.5	37.8	289		0	
-400	-81.5	27.4	290		1	
-400	-56.5	47.3	291		2	
-400	-31.5	99.7	292	B.L.1	3	
-400	-6.5	96.3	293		4	Fence/Gravel
-400	18.5	52.1	294		5	Asphalt
-400	20	53.3	295		5.1	Hangar
-400	43.5	95.8	296		6	Bldg
-400	114.4	41.4	297		7	
-425	-156.5	94.3	298	T21	-2	
-425	-131.5	174.6	299		-1	
-425	-106.5	193	300		0	
-425	-81.5	27	301		1	
-425	-56.5	43	302		2	
-425	-31.5	87.4	303	B.L.1	3	
-425	-6.5	174	304		4	Fence/Gravel
-425	12.7	41	305		4.5	
-425	18.5	40.7	306		5	Asphalt
-425	109.5	115.1	307		6	Hangar
-450	-156.5	34.2	308	T22	-2	
-450	-131.5	34.9	309		-1	
-450	-106.5	34.3	310		0	
-450	-81.5	30.9	311		1	
-450	-56.5	44.3	312		2	
-450	-31.5	47.8	313	B.L.1	3	
-450	-6.5	88	314		4	Fence/Gravel
-450	18.5	58.6	315		5	Water Line
-450	99	42.3	316		6	
-475	-156.5	44.9	317	T23	-2	
-475	-131.5	33	318		-1	
-475	-106.5	36.2	319		0	
-475	-81.5	22.1	320		1	
-475	-56.5	41.4	321		2	
-475	-31.5	145.2	322	B.L.1	3	
-475	-6.5	126	323		4	Fence/Gravel
-475	92	34.4	324		5	
-500	-156.5	32.6	325	T24	-2	
-500	-131.5	34.5	326		-1	
-500	-106.5	33.8	327		0	
-500	-81.5	25.5	328		1	
-500	-56.5	48.7	329		2	
-500	-31.5	40.1	330	B.L.1	3	
-500	-6.5	46.1	331		4	Fence/Asphalt
-500	84.2	30.1	332		5	

Graph 1
EM31 Raw Data Profile
Vertical Orientation - 9 Foot Depth
Addison Municipal airport
Addison, Texas



Washington
Industrial/Process

JP Copy
Signed
Proposal

Thursday, December 13, 2001
WGI Proposal No. 80805-1 (Rev.2)
QP&ES 01-E005

Mr. James C. Pierce, Jr., P.E.
Assistant Director of Public Works
Town of Addison
P.O. Box 9010
Addison, Texas 75001-9010

PROPOSED SCOPE OF WORK
FOR
PHASE II ENVIRONMENTAL SITE ASSESSMENT
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

Dear Mr. Pierce:

Presented here is Revision 2 of our proposed scope of work for the Phase II Environmental Site Assessment of the fuel farm at Addison Airport in Addison, Texas. This proposed scope of work is submitted in accordance with our conversation on August 20, 2001, as authorized by the notice of award from the Town of Addison to Washington Group International, dated August 15, 2001, and subsequent letters and conversations. This proposal supercedes any previous proposals or revisions.

Background

The Town of Addison retained Washington-Staubach to provide management services at Addison Airport beginning January 2001. Another entity managed the airport before 2001 under a lease agreement with the Town. As part of the Town's contract with Washington-Staubach, the Town will establish current, baseline conditions in the subsurface in the fuel farm area, specifically the presence or absence of hydrocarbon contamination. The baseline data will be provided to Washington-Staubach so they can develop, in concert with the Town, a compliance strategy suitable for the fuel farm that is based on an understanding of current conditions. This proposed scope of work is designed to address the Town's need to establish these baseline environmental conditions at the fuel farm and to develop a compliance strategy.

Site Location and Description

Addison Airport, located in Addison, Texas, has several fuel farms located in the southeastern corner of the airport. From the best information available, and according to a Phase I Environmental Site Assessment Update developed by Camp Dresser & McKee (CDM), there are 29 registered Underground Storage Tanks (USTs) and one unregistered above-ground storage tank located at the airport. Fifteen of these USTs are currently inactive. The remaining 14 active USTs and the above-ground storage tank must remain in-service until a new bulk fuel storage and dispensing facility has been constructed or

suitable temporary alternatives are available. There is also concern that additional unregistered aboveground and underground fuel storage tanks may be on the airport property. During an April 11, 2001 inspection of the fuel farm areas, Washington personnel observed another area suspected to have once contained a UST with associated fuel lines that is not documented in the Phase I Update report. This area shows surface evidence of the previous presence of a tank and associated fuel lines. It is located north across the driveway from Fuel Area #1. Washington personnel also observed several monitoring well covers but did not conduct a thorough inventory to obtain an accurate count of wells.

According to Town of Addison Fire Department drawings, dated February 28, 2001, there are four fuel farms operated by six operators, Mercury Air, Million Air, Addison Air, Stern Air, R. Stern, and Cherry Air. However, current airport management personnel indicate that only Million Air, Mercury Air, Addison Air, and Cherry Air are currently operating tanks at the airport. The Fire Department drawings indicate that four fuel areas, termed Fuel Areas #1 to #4, are located at the airport. Therefore, including the suspected area observed by Washington, there are five Fuel Areas at Addison Airport that will be included in the project.

Technical Approach and Project Overview

The objective of this project is defined to obtain sufficient data to delineate the extent of contamination at the Fuel Farm area. Our technical approach consists of a combination of documents analysis, interviews with knowledgeable persons, and invasive field exploration. The objective will be to establish an understanding of the environmental and physical conditions of the tank farms and adjacent areas at the airport. We will review regulatory documents and consultants' reports, speak with airport operations personnel and private operators, conduct subsurface soil vapor analysis, and conduct soil and groundwater sampling and analysis.

Scope of Work

The scope of work consists of six tasks. Tasks 1 through 4 are necessary to establish the areal extent of subsurface contamination. Tasks 5 and 6 are related to additional data gathering activities to further quantify the extent and level of potential contamination in the soil and groundwater. The tasks detailed below will be managed by a TNRCC-registered Corrective Action Project Manager under the employ of Washington. Washington is a Registered Corrective Action Specialist. The tasks will be conducted in accordance with a project-specific Health and Safety Plan (HSP) that we will develop after given Notice To Proceed and before conducting fieldwork. We will forward the HSP to the Town for review and approval.

Task 1 — Soil Vapor Survey. Washington will oversee the execution of a soil vapor survey that will encompass the four known Fuel Areas and the fifth suspected Fuel Area. We will retain the services of Exploration Technologies, Inc., (ETI) to conduct the survey. ETI specializes in soil vapor surveys and is highly regarded by both the regulated and regulatory communities for their work.

The work plan includes the collection of up to 80 soil vapor samples on a grid spacing containing approximately 40 feet between sampling locations. The number of samples required to evaluate the area on this grid spacing is based on a CDM map (Figure 2, dated 2/4/98) supplied to ETI. The modified CDM map showing the proposed soil vapor sample locations is attached. The locations of individual samples may be adjusted in the field during field operations to allow for buildings, piping, utility chases, etc. The proposed locations of the soil vapor samples are on the airport property and do not go off site into the Addison Road right-of-way (ROW) or other properties. Based upon the results of this survey, infill (higher density) or off-site sampling can be performed in anomalous parts of the study area (if required to better delineate the plume(s)); costs have not been included for infill or off-site sampling and would only be conducted with Town approval. For sampling in the Addison Road ROW or other properties, we would require Town permission and/or assistance gaining access for sampling those locations.

Soil vapor samples will be collected from depths of four feet using ETI's proprietary collection system. At each sampling location, a field blank (ambient air) sample will be collected through the sampling probe into an evacuated 125-cc septum top glass bottle prior to inserting the probe into near-surface soils. Following the collection of the blank, a manually operated ½-inch OD steel pounder-bar will be advanced to a depth of four feet below ground surface. Upon removal of the pounder-bar, a ½-inch OD stainless steel sampling probe with a perforated tip will be inserted into the sampling hole.

After purging the probe of ambient air, an evacuated 125-cc septum top glass bottle will be placed on a needle affixed to a three-way valve on the top of the probe to collect the soil vapor sample. Following collection of the sample, the bottle will be removed from the needle and the puncture hole in the septum will be sealed with a silicone rubber adhesive sealant. All samples will be recorded on chain of custody logs immediately following collection.

The steel pounder-bar will be washed with a biodegradable soap solution and rinsed with tap water prior to collecting a soil vapor sample at each location. The stainless steel sampling probe will be similarly washed outside, and inside by injecting the biodegradable soap solution (through the probe) followed by a water rinse. The probe will be then flushed internally with compressed breathing air for 10 seconds at a pressure of about 25-psi.

Vapor samples will be analyzed (screened) in the field during sample collection for methane, carbon dioxide, and oxygen using an infrared gas analyzer. The results of these analyses will aid the field crew in adjusting the sampling grid (if necessary) and determining the location(s) of possible "hot spots" during sample collection.

All soil vapor samples will be analyzed in ETI's Houston, Texas laboratory utilizing standard QA/QC procedures. Samples will be analyzed for C1-C4 (methane, ethane, propane, and butanes) and C5+ (pentane-xylenes+) hydrocarbons using two flame ionization detector (FID) gas chromatographs. The FID gas chromatograph utilized for C5+ hydrocarbon analyses contains a capillary column, allowing for high resolution (and separation) of individual compounds (such as BTEX, etc.) and identification of specific product signatures. Our project price does not include the additional cost for the high-

resolution capillary analyses/interpretation; however, the chromatograms will be archived in the event specific samples require additional review at a later date. Results of the C1-C4 and C5+ analyses will be tabulated and presented in parts per million by volume (ppmv).

Soil vapor samples will also be analyzed for carbon dioxide (CO_2) using a gas chromatograph equipped with a thermal conductivity detector (TCD). Results will be reported in percent (%) by volume. When petroleum hydrocarbon products are released to subsurface soils and/or groundwater, biodegradation of the hydrocarbon compounds commonly occurs. The degradation of hydrocarbon compounds by aerobic and/or anaerobic bacteria can generate significant concentrations of carbon dioxide and/or methane in the subsurface environment. Measurements of methane and CO_2, therefore, provide additional site-specific information regarding the presence of hydrocarbon compounds, and the likelihood and degree to which intrinsic bioremediation (both aerobic and anaerobic) occurs in the subsurface environment.

Hydrocarbon and biogenic gas constituent concentrations will be tabulated and utilized to construct various contoured plume maps delineating the areal extent of individual constituents. Each map will include the specific constituent concentrations at all sampling locations. Areas (between contour lines) within the respective plumes will be color-coded based upon the concentrations of the respective hydrocarbon or biogenic gas constituent. These colored plume maps will graphically depict the boundaries of the contaminant plume, as well as the "hot spot(s)" and concentration gradients within the contaminated area.

Using the various constituent plume maps, conclusions will be formulated regarding source area(s), plume configuration, and migration pathways. The plume maps accurately exhibit the areal extent of the subsurface contamination, and are invaluable in determining locations for drilling/installation of bore holes and/or monitoring wells necessary to define the vertical extent of the contamination.

ETI will prepare a report including tabulated data, colored plume maps for the various hydrocarbon/biogenic gas constituents, and an interpretation of the data/maps. The work program will require up to five field days, based upon the map supplied to ETI. Washington personnel will coordinate with the Town for clearing and marking all utilities and obtaining permission to collect samples on properties and/or right-of-ways included in the survey area (if applicable) prior to the commencement of field activities.

Task 2 — Push Probe Soil Sampling. Based on records of soil conditions at the airport it is anticipated that push probe technology will be adequate for the collection of subsurface soil samples. If during implementation of this task it is found that site-specific conditions are not conducive to push probe boring, it will be necessary to reevaluate this sampling program using hollow-stem auger techniques. Hollow-stem auger is a more costly technique, therefore yielding fewer sampling locations.

We will conduct a one-day push probe boring program, following the soil vapor survey, to collect soil samples for analysis and evaluate the viability of push probe boring program in the predominant lithology (limestone and weathered limestone) of that area. We will attempt to bore as many locations as possible during the day of operation. Borings will be pushed until achieving bedrock refusal or a maximum of 25 feet. Final depths of each borings will be determined in the field based on visual observation, olfactory

sensation, and soil sample headspace analysis with a portable vapor analyzer. Samples will be collected continuously, with a maximum of 10 samples selected for analytical testing. If groundwater is encountered, a maximum of five (5) groundwater samples will also be collected for analysis. Both the soil and groundwater samples will be tested only for BTEX (benzene, toluene, ethylbenzene, and total xylenes) and TPH (total petroleum hydrocarbons). Push probe boring locations will be based on qualitative results from field screening during the soil vapor survey. Based on the data we will recommend to the Town the preferred drilling method for Task 5.

We will place soil samples in laboratory-cleaned glass jars with appropriate labels and place them in an ice-filled chest for transport to our laboratory. Chain-of-custody documents will accompany the samples. All sample handling equipment will be decontaminated between soil sample intervals. After boring completion, we will grout all borings with cement, bentonite, or other acceptable material to inhibit stratigraphic cross contamination. Drilling and sampling wastes will be collected in drums for later characterization testing and proper disposal. Costs to conduct the characterization testing, identification of a suitable disposal firm, disposal costs, and waste manifesting on behalf of the Town have not been included in this cost proposal. The Town may elect to conduct this activity itself.

Task 3 — Documents Review, Site Reconnaissance, and Personnel Interviews. The CDM Phase I ESA Update report of February 1, 2001, cites their own previous Phase I ESA report and leaking registered storage tank files maintained by TNRCC. We will attempt to gather these documents and any others that the Town indicates may be useful for understanding the historical and current conditions of the Fuel Areas. We will conduct a detailed site reconnaissance to document visually observable conditions of the Fuel Area to identify possible mechanical, electrical, and chemical hazards; equipment locations, orientations, and dimensions; and operational parameters, such as fueling. We will also interview the tank operators currently operating at the airport to obtain their understanding of the tanks and operational issues.

The purpose of gathering these data is not to conduct an audit to evaluate compliance with Texas Natural Resource Conservation Commission (TNRCC) regulations but rather to help understand the magnitude of environmental media (soil, sediment, surface water, groundwater) contamination and site-specific arrangements. We will also use the data to evaluate the need for further field exploration to assess the extent and magnitude of environmental media contamination. However, if the data indicate obvious non-compliance with TNRCC regulations (e.g. reporting requirements, overfill protection, tank inventory practices, etc.), we will document the apparent non-compliance(s) and report it to the Town, but that is secondary to the effort to understand the current conditions.

Our objective is to identify the following items, including but not limited to:

- Historical fuel spills, leaks, and response actions, tank tightness testing, including engineered remediation systems
- Tank dimensions, orientation, contents, mechanical condition (integrity), materials of construction, and all the aforesaid for piping and ancillary equipment

- Operational data for hours of operation (times of day), refueling frequencies, fuel suppliers, and safety considerations

Task 4 — Report. We will compile the information from Task 1 through Task 3 into a report that documents the methods of data gathering, summarizes the primary findings, and provides conclusions and recommendations for the later tasks. We will include supporting documents such as the ETI report, TNRCC file data, interview conversation logs, figures, and other supporting documents, as appropriate. We will provide four copies of the report.

Task 5 — Soil Borings and Monitoring Well Installation. Based on the results presented to the Town in Task 4, we will develop a soil boring and monitoring well program designed to complete the delineation of the lateral and vertical extent of contamination within the weathered subsurface. This program does not take into account assessing the extent of contamination in the underlying bedrock formation, if present. This information will be combined with the horizontal boundary data from the soil vapor survey to define the extent of contamination. This program will be conducted only after consultation with and prior approval of the Town.

The preferred soil boring method is push probe drilling. This program is developed on the assumption that the subsurface stratigraphy will be conducive to push probe boring. However, if push probe borings appear infeasible, hollow-stem drilling may be necessary, and will be conducted in conjunction with installation of the monitoring wells.

Ten (10) push probe borings will be strategically located based on the results of the soil vapor survey. As in the previous boring task, soil samples will be collected and logged continuously to a maximum depth of 25 feet or until bedrock refusal. Actual depths of borings will be determined in the field based on visual observation, olfactory sensation, and soil sample headspace analysis with a portable vapor analyzer. We will document soil type, groundwater, evidence of contamination, and other pertinent information on soil boring logs and a field notebook. One soil sample will be selected from each boring location for BTEX and TPH analysis. Five (5) samples will be selected for polyaromatic hydrocarbon analysis (PAH). In-situ groundwater samples will be selected at five (5) push probe boring locations and analyzed for BTEX and TPH.

We will place the soil samples in laboratory-cleaned glass jars with appropriate labels and place them in an ice-filled chest for transport to our laboratory. Chain-of-custody documents will accompany the samples. All sample handling equipment will be decontaminated between soil sample intervals. After boring completion, we will grout all borings with cement, bentonite, or other acceptable material to inhibit stratigraphic cross contamination. Drilling and sampling wastes will be collected in drums for later characterization testing and disposal.

If groundwater is encountered, we will install and sample up to six (6) monitoring wells to bedrock refusal, or a maximum depth of 25 feet. Hollow-stem auger techniques will be required for monitoring well installation. The locations will be determined using the soil vapor data and the soil boring data to optimize the locations, taking into account hydrogeologic and contamination considerations. Actual depths will be determined in the field based on stratigraphy and the depths of hydrocarbon-impacted zones. We will

construct the wells with 2-in. ID, flush-joint-threaded, Schedule PVC, using 0.010-in. slotted casing. Filter pack sand will be placed around the well screen, followed by a bentonite seal and grout to surface. The wells will be flush-mounted relative to ground surface with a protective, locked cover. We will develop the wells to remove cuttings and sediments that could affect hydraulic communication between the well screen and the formation fluids.

After well development, we will purge the wells of stagnant water and collect groundwater samples for analytical testing. Groundwater collected from the monitoring wells will be analyzed for BTEX, TPH, and PAH. We will place groundwater samples in laboratory-cleaned glass jars with appropriate labels and place them in an ice-filled chest for transport to our laboratory. One method blank, a duplicate, and a trip blank to evaluate cross contamination will be included with each sample lot for QA/QC control. Chain-of-custody documents will accompany the samples. Sample handling equipment will be decontaminated between wells. Sampling wastes will be collected in drums for later characterization testing and disposal.

Upon completion of soil boring and monitoring well installation we will retain a Registered Public Land Surveyor (RPLS) to locate all the newly-installed wells and borings. The survey will provide an elevation relative to a local benchmark to provide accurate vertical and horizontal control data that will be necessary for subsequent hydrogeologic characterization. The RPLS will provide a digitized drawing and electronic file in AutoCAD for use in our reports.

Task 6 — Final Report and Recommendations. We will develop a report using TNRCC standardized forms, where required, that are mandatory under their LPST program. These reports include field activity reports, well monitoring reports, site investigation reports, correspondence forms, and others, as appropriate. The final report will incorporate all the data collected from the earlier tasks and include a recommendation directed toward natural attenuation as the preferred remedial alternative. We will also include in the report an estimated cost, $^{+}$/- 30% to 40%, on what the Town could expect for bringing the site to closure under a natural attenuation scenario. However, it is our experience that the TNRCC may require additional information before agreeing to a natural attenuation alternative.

Schedule

Upon receipt of both a signed Work Authorization and Notice to Proceed (NTP), we will begin preparations to mobilize to the site to begin Tasks 1 and 2. We will complete the fieldwork for Tasks 1 and 2 within two weeks of notification, followed by another two weeks to allow for completion of the ETI report. Task 3 will begin the week of receipt of the NTP and will be completed within three to four weeks, depending on availability of documents and knowledgeable persons. We will complete Task 4 two weeks after completion of Tasks 1 through 3, for a total duration of about six weeks after NTP. The schedule for Tasks 5 and 6 will be developed after consultation with the Town; however, we anticipate that Task 5 borings and monitoring wells could begin within two weeks of submission of the Task 4 report, if the Town chooses to move quickly. We estimate the entire process from initiation of Task 1 to completion of the Task 6 report to be 3 to 4 months.

Price

This section presents: (1) a Lump Sum price for Tasks 1 through 4, work that we have confidence has a very well defined scope and (2), Time and Materials estimated prices for Tasks 4 and 5, work where the defined scope may change based on the results of earlier tasks and uncertainties in site subsurface conditions. However, we have attempted to provide reasonable scopes of work for the Time and Materials estimated prices based on experience and generally accepted scientific and engineering practices.

The **Lump Sum** price to conduct Task 1 through Task 4 as one program is $42,500. This price includes provisions for a Kickoff Meeting with the Town attended by the Washington Project Manager, the Washington Client Coordinator/Airport Engineer, and the Washington Field Manager. The Lump Sum price has been developed based on the following assumptions:

1. Washington-Staubach, the Town's airport management agent, will provide unrestricted access to Fuel Areas and will provide notification to tank operators of our intent to conduct work in those areas and to conduct interviews of operational personnel. Town will make good-faith efforts to provide relevant documents in its possession or within its ability to obtain and will assist Washington in its efforts to obtain relevant documents from others.
2. Town will make a good faith effort to identify locations of their buried utility lines. Washington-Staubach will make a good faith effort to identify other utility lines or other buried objects in the Fuel Areas for Washington. It is common for the identification of buried utilities and objects to take many days by the time personnel, equipment, maps, and the field visit are completed. Because of this, it is critical to our schedule that all entities identify their known buried utilities before mobilization. Provisions have been made to use geophysics to identify unknown buried objects.
3. Prices include costs related to routine project meetings and discussions or meetings with the Town. However, the prices include a reasonable timeframe for progressive completion of the tasks without extensive delays between tasks beyond the control of Washington.
4. Prices have been developed on standard 8-hour workdays, 40-hour weeks, assuming normal, nationally recognized holidays with no provision for overtime.

A summary of estimated prices for the work proposed in Tasks 5 and 6, and total estimated cost for all tasks is presented in Table 1 below. These prices are presented as **Time and Materials.** Table 2 presents the rates used in estimating Tasks 5 and 6, and would apply to any change orders requested by the Town.

Table 1 - Task-Specific Estimates	
Description	**Estimated Price[1,2]**
Task 5 – Borings/Wells/Analytical/Survey	$23,900.
Task 6 – Report	$15,400.
Total for Tasks 5 and 6	**$39,300.**
Total for Tasks 1 through 6	**$81,800.**
Notes: (1) A 10% contingency has been included to account for changes in labor rates, inflation, and other unforeseeable circumstances. (2) includes 10% markup on expenses.	

Table 2 - Labor Rates		
Personnel	**Title**	**Labor Rate, $/Hr**
Paul R. Wild	Project Manager	110.
Ron Bowlin	Field Manager	80.
Barry Chamberlain	Project Geologist	70.
Ron Forest	CADD Specialist	70.
Various	Clerical/Secretarial	50.
Various	Field Technician	35.

For the same reason as stated for labor, Tables 3 and 4 present unit rates for Task 5 push probe boring and monitoring wells, and analytical costs for the proposed program, respectively.

Table 3 - Boring and Well Rates	
Description	**Unit Rate, $/Item**
Hollow-Stem Auger Boring, 25-ft depth	$22/ft (25 ft minimum)
Direct Push Boring	$1700/day
Monitoring Well, 25-ft depth, 2-in. ID PVC	$40/ft (25 ft minimum)

25 40
$1000

Table 4 - Analytical Testing Rates			
Medium	Analyte	Method	Unit Rate, $/Test
Soil/Water	Total Petroleum Hydrocarbons (TPH)	TNRCC 1005	75.
	Polynuclear Aromatic Hydrocarbons (PAH)	EPA 8270	140.
	Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	EPA 8020 or 8260	45.

Scope of Work Acceptance

If you accept this scope of work, please sign below or forward us a signed Purchase Order or similar authorizing document that references this Scope of Work.

Closing Remarks

We are pleased to have this opportunity to serve the Town of Addison and to demonstrate our breadth of capabilities. We look forward to working with you.

Sincerely,
WASHINGTON GROUP INTERNATIONAL
TNRCC RCAS 00169

Paul R. Wild
Manager of Environmental Services
TNRCC CAPM00385

Accepted By: _____
Ron Whitehead
City Manager

Date: 12-31-01

Attachments: Soil Vapor Sample Location
Work Authorization Terms

WORK AUTHORIZATION TERMS

1. The work shall be as described in the Washington Group International, Inc. ("Washington") proposed Scope of Work referenced on the face hereof.

2. Unless otherwise agreed in writing, Client shall pay Washington for the work on the basis described in Washington's Scope of Work. Payment shall be due within thirty (30) days of invoice. Payment not received within such time period will be subject to interest of 1% per month for the unpaid balance.

3. Confidentiality obligations related to the work, if any, shall be as set forth in such confidentiality agreements as may be concluded between the parties.

4. (a) During the work, Washington shall maintain the following insurance:

   (1) Workers Compensation insurance at statutory limits, including Employers' Liability coverage at minimum limits of $1,000,000 each-occurrence each-accident/$1,000,000 by disease each-occurrence/$1,000,000 by disease aggregate.

   (2) Commercial general liability insurance, including broad form contractual coverage, for bodily injury, death and property damage, and particularly for liability arising from premises, operations independent contractors, products/completed operations, personal injury, advertising injury, and contractual liability (including, without limitation, the liability assumed under the indemnity provisions of this Agreement) in the following amount: $1,000,000 each-occurrence, CSL/$2,000,000 general aggregate; $1,000,000 Products/Completed Operations aggregate. If such CGL insurance contains a general aggregate limit, it shall apply separately to the work under this Agreement. Provided, however, that if the Addison Airport commercial general liability insurance currently in place for the benefit of Washington Staubach Addison Airport Venture (as the manager and operator of the Addison Airport) specifically insures Washington for its liability under this Agreement, then such insurance may be accepted by the Town of Addison in lieu of the separate commercial general liability insurance described above.

   (3) Commercial Automobile Liability insurance at minimum combined single limits of $1,000,000 per-occurrence for bodily injury and property damage, including owned, non-owned and hired car coverage.

   (4) Professional liability Insurance to protect from liability arising out of the performance of professional services under this contract. Such coverage shall be in the sum of not less than Two Million and No/100 Dollars ($2,000,000.00), and shall be extended to include and eover environmental legal liability.

   The environmental legal liability insurance to include coverage for third-party bodily injury and property damage (on and off-site). The environmental legal liability insurance shall also include clean-up, remediation, restoration costs, and other related costs and expenses.

   Both the professional and the environmental legal liability insurances shall be continuously in place during the full term of this Agreement, including any extensions or renewals thereof, and for a period of at least two (2) years after final termination of this Agreement. If this coverage is claims-made, the policy retro date shall be set and maintained not later than the inception date of this Agreement. Separate policies may be maintained for professional liability and environmental legal liability in the event they cannot be combined in one policy.

The above policies shall be endorsed to provide the following, as applicable: (i) in all liability policies, name as additional insureds the Town of Addison, Texas, and its officials, officers, agents, and employees, (ii) shall contain deductibles and exclusions acceptable to the City; (iii) in all liability policies, provide that such policies are primary insurance to any other insurance available to the additional insureds, with respect to any claims arising out of activities conducted hereunder, and that insurance applies separately to each insured against whom a claim is made or suit is brought; and (iv) a waiver of subrogation in favor of the Town of Addison, Texas must be included in all liability and workers compensation policies.

All insurance policies shall be issued by an insurance company with an A.M. Best's rating of not less than A-authorized to do business in Texas and satisfactory to the Town of Addison, Texas and in the standard form approved by the Texas Department of Insurance, and shall be endorsed to provide for at least 30 days advance written notice to the Town of Addison of a material change in, cancellation, or non-renewal of a policy. Certificates of insurance, satisfactory to the Town of Addison, evidencing all coverage above, shall be furnished to the Town of Addison prior to the inception date of this Agreement. The Town of Addison reserves the right to review and revise from time to time the types of insurance and limits of liability required herein.

(b) Washington shall defend and indemnify the Town of Addison, Texas, its officials, officers, employees and agents (together, for purposes of this section, the "Town") against, and hold harmless the Town from, any and all liability, actions, causes of action, lawsuits, judgements, clans, damages, costs or fees, including attorney's fees and cost of defense, for personal injury, property damage or destruction (including without limitation of loss of use of property not otherwise physically injured), breach of contract, or other harm for which recovery of damages is sought, suffered by any person or organization that may arise out of any negligent, grossly negligent, or willful act or omission of Washington, its officers, employees, contractors or agents under this Agreement. The provisions of this paragraph shall survive the expiration or termination of this Agreement.

(c) The work to be undertaken by Washington is at the Addison Airport fuel farm site, where aviation fuel and other products and materials (some of which may be hazardous) are stored and used for aviation purposes. However, in the event that unknown, unanticipated or unsuspected hazardous materials are discovered on or near the project site, Washington shall have the right to stop all work thereon immediately until (i) all proper authorities are notified, and all applicable laws, rules or regulations have been complied with, and (ii) if the scope of the work is increased from that originally anticipated under the terms of this Contract, the increased scope of the work and the fees to be paid as a result thereof have been accepted by Client and Washington in writing. In such an instance, Client shall have the right to terminate this agreement and Washington shall be compensated for all work properly performed to the point of termination (and Washington shall promptly give to Client all records, reports, documents and all other materials or information (in whatever format, whether electronic or otherwise) prepared or collected by Washington to the time of such termination). In the event that the discovery of unanticipated hazardous materials requires Washington to take immediate measures to protect health and safety, or to comply with applicable laws, rules or regulations, Client agrees to compensate Washington for expenses incurred in taking such action, including, but not limited to, expenses incurred for equipment decontamination and all other costs incident to the discovery, treatment and/or disposal of the hazardous waste, except to the extent that such expenses or costs result from the negligence, gross negligence, or willful act or omission of Washington. Washington shall immediately notify Client of its discovery of any unanticipated hazardous materials.

5. Any delay or failure of Washington in the performance of its required obligations hereunder shall be excused if and to the extent caused by acts of God, strike, acts of workman, fire, storm, flood, windstorm, discovery or uncovering of hazardous or toxic materials or historical artifacts at the project site, delays occasioned by Client's preconstruction approval or permitting activities, unusually severe weather, sabotage, embargo, wreck or delay in transportation, accidents in the handling and rigging of heavy equipment, explosion, riot, war, court injunction or order, delays by or acts or orders of any governmental body or changes in laws or governmental regulations, acts or omissions of the Client or its other contractors or any other cause or causes beyond the reasonable control of Washington provided that prompt written notice of such delay or suspension be given by Washington to the Client. Upon receipt of said notice, if necessary, the time for performing shall be extended for a period of time reasonably necessary to overcome the effect of such delays and Washington shall be reimbursed for the cost, if any, of such delays if such delays are caused directly by the Client.

   Washington shall perform its work hereunder in accordance with that degree of care and skill ordinarily exercised by members of the engineering profession existing as of the date that such services are performed. All reports, documents, drawings, designs, plans, or specifications made, prepared, or collected by Engineer in connection herewith belong to and remain the property of Client. Client shall be furnished with such reports, documents, drawings, designs, and specifications and reports.

6. The parties agree that the laws of the State of Texas shall apply to the interpretation, validity and enforcement of this Agreement; and, with respect to any conflict of law provisions, the parties agree that such conflict of law provisions shall not affect the application of the law of Texas (without reference to its conflict of law provisions) to the interpretation, validity and enforcement of this Agreement. This Agreement has been executed and delivered in the State of Texas and the validity, enforceability and interpretation of any of the clauses of this Agreement shall be determined and governed by the laws of the State of Texas. All duties and obligations of the parties created hereunder are performable in Dallas County and such County shall be the venue for any action or proceeding that may be brought or arise out of, in connection with, or by reason of this Agreement.

7. (a) *Termination without cause.* Either party may terminate this Agreement at any time by giving to the other party at least 30 days written notice of such termination. Termination shall have no effect upon the rights and obligations of the parties arising out of any transaction occurring prior to the effective date of such termination. In the event of termination, all finished or unfinished data, studies, reports and other materials and items (whether kept electronically, in writing, or otherwise) prepared or assembled by Washington shall be promptly delivered to Customer. Washington shall be paid for all work satisfactorily completed prior to the effective date of said termination.

   (b) *Termination with cause.* If Washington fails to perform Washington's duties to the satisfaction of the Customer, or if Washington fails to fulfill in a timely and professional manner Washington's obligations under this Agreement, or if Washington shall violate any of the terms of provisions of this Agreement, then Customer shall have the right to terminate this Agreement effective immediately upon the Customer giving written notice thereof to Washington. Termination shall have no effect upon the rights or obligations of the parties arising out of any transaction occurring prior to the effective date of such termination. In the event of termination, all finished or unfinished data, studies, reports and other items (whether kept electronically, in writing, or otherwise) prepared or assembled by Washington shall be

promptly delivered to Customer. Washington shall be paid for all work satisfactorily completed prior to the effective date of said termination.

8. Inasmuch as this Agreement is intended to secure the specialized services of Washington, Washington has no authority or power to and may not assign, transfer, delegate, subcontract or otherwise convey any interest herein without the prior written consent of Customer, and any such assignment, transfer, delegation, subcontract or other conveyance without the Customer's prior written consent shall be considered null and void.

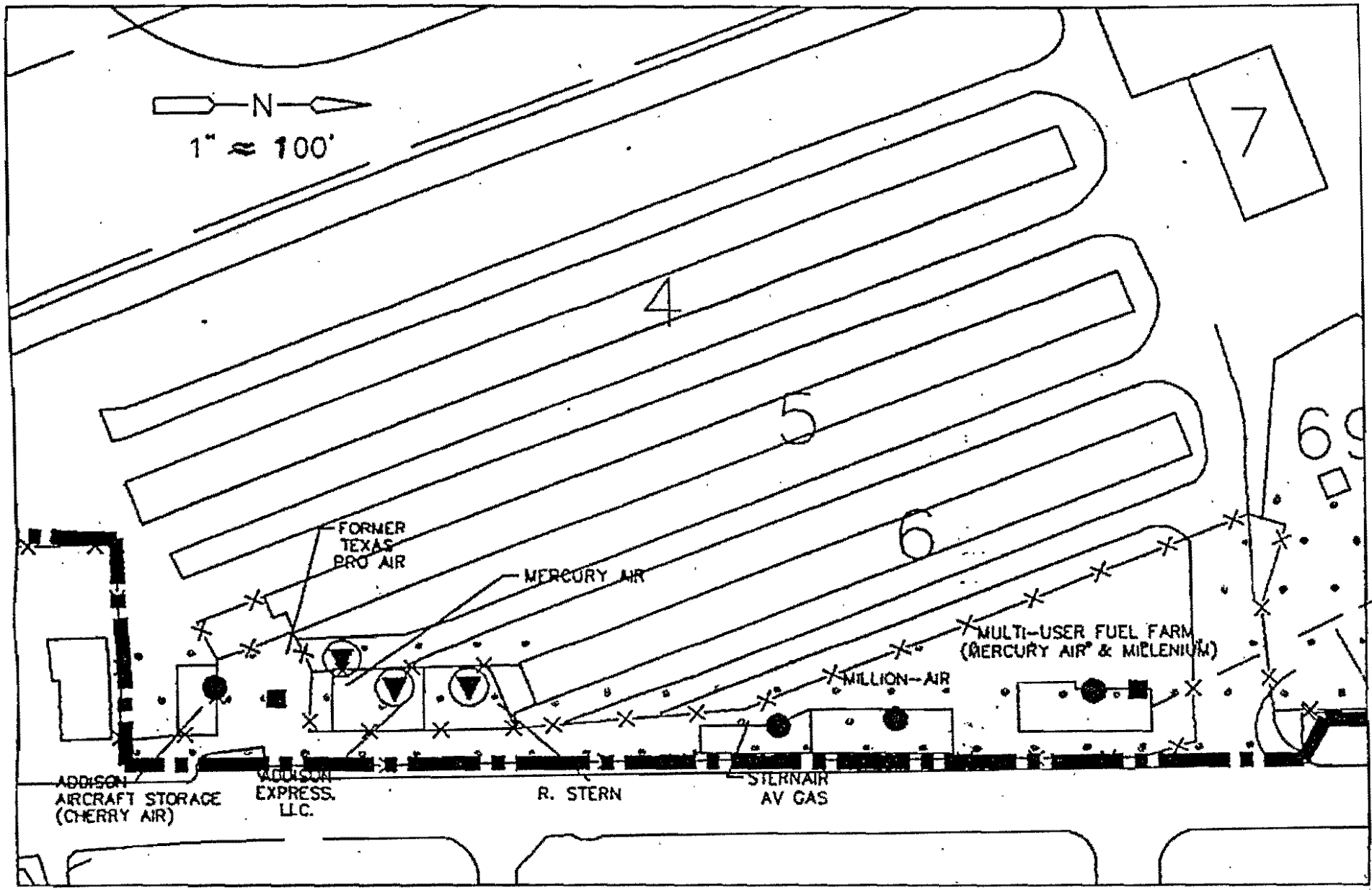
9. All payments, notices, demands, or requests from one party to another shall be personally delivered or sent by United States mail, postage prepaid, to the addresses below:

To Customer:

16801 Westgrove Road
Addison, Texas 75001-5190
Attn: Jim Pierce
Tel: 972-450-2879
Fax: 972-450-2837

To Washington:

1250 W. Sam Houston Parkway South
Houston, Texas 77042
Attn: Paul Wild
Tel: 281-529-8939
Fax: 281-529-8966



ENLARGED PLAN – FUEL FARMS

* MAP AFTER CDM FIG. 2 (2/4/98)

• PROPOSED SOIL VAPOR SAMPLE

12/11/01

Item #R3 - **PUBLIC HEARING** and consideration of an Ordinance changing the zoning from a Planned Development District to a Revised Planned Development District that includes residential uses, located on 30.72 acres at the southeast corner of Belt Line Road and the Dallas North Tollway, on application from KS Development, represented by Mr. Sam Ng.

Administrative Comment:

The applicant is working on revised plans. The Council should continue the public hearing on this item until the January 8, 2002 Council meeting.

Item #R4 - Consideration of a Resolution authorizing the City Manager to enter into a contract in an amount not to exceed $81,800.00 with Washington Group International to conduct Phase II Environmental Assessment of the Addison Airport Fuel Farm.

Attachments:

1. Council Agenda Item Overview
2. Proposal
3. Figure
4. Work Authorization Terms

Administrative Recommendation:

Administration recommends approval.

Item #R5 Consideration of a Resolution authorizing the City Manager to award incentive compensation to Washington Staubach Addison Airport Venture.

Attachments:

1. Council Agenda Item Overview
2. Staff Recommendations
3. Memorandum from Randy Moravec
4. FAA Letter
5. Exhibit 3

Administrative Recommendation:

Administration recommends approval.

DATE SUBMITTED: December 4, 2001
FOR COUNCIL MEETING: December 11, 2001

Council Agenda Item:_____

SUMMARY:

This Item is to award a contract to conduct a Phase II Environmental Assessment of the Addison Airport Fuel Farm.

FINANCIAL IMPACT:

Funds Available: $85,000

Cost: $81,800

Funding Source: Airport Fund

BACKGROUND:

The Airport Phase I Environmental Assessment Update of the Airport that was completed in August 2001 by Camp, Dresser and McKee, recommended that a Phase II Environmental Assessment be performed on the Airport Fuel Farm. The purpose of a Phase II is to determine the extent of soil and groundwater contamination, if any, as a result of operations at the fuel farm.

The Town solicited statements of qualifications from interested firms, and received ten responses. The Town evaluated the responses and selected Washington Group International to submit a proposal to do the work. A copy of Washington's proposal is attached.

RECOMMENDATION:

Staff recommends that the City Manager be authorized to contract with Washington Group International for Tasks 1 through 4 for a lump sum amount of $42,600, and for Tasks 5 and 6 on a time and materials basis, for a total amount not to exceed $81,800.

Washington
Industrial/Process

November 30, 2001
WGI Proposal No. 80805-1 (Rev.2)
QP&ES 01-E005

Mr. James C. Pierce, Jr., P.E.
Assistant Director of Public Works
Town of Addison
P.O. Box 9010
Addison, Texas 75001-9010

PROPOSED SCOPE OF WORK
FOR
PHASE II ENVIRONMENTAL SITE ASSESSMENT
ADDISON AIRPORT FUEL FARM
ADDISON, TEXAS

Dear Mr. Pierce:

Presented here is Revision 2 of our proposed scope of work for the Phase II Environmental Site Assessment of the fuel farm at Addison Airport in Addison, Texas. This proposed scope of work is submitted in accordance with our conversation on August 20, 2001, as authorized by the notice of award from the Town of Addison to Washington Group International, dated August 15, 2001, and subsequent letters and conversations. This proposal supercedes any previous proposals or revisions.

Background

The Town of Addison retained Washington-Staubach to provide management services at Addison Airport beginning January 2001. Another entity managed the airport before 2001 under a lease agreement with the Town. As part of the Town's contract with Washington-Staubach, the Town will establish current, baseline conditions in the subsurface in the fuel farm area, specifically the presence or absence of hydrocarbon contamination. The baseline data will be provided to Washington-Staubach so they can develop, in concert with the Town, a compliance strategy suitable for the fuel farm that is based on an understanding of current conditions. This proposed scope of work is designed to address the Town's need to establish these baseline environmental conditions at the fuel farm and to develop a compliance strategy.

Site Location and Description

Addison Airport, located in Addison, Texas, has several fuel farms located in the southeastern corner of the airport. From the best information available, and according to a Phase I Environmental Site Assessment Update developed by Camp Dresser & McKee (CDM), there are 29 registered Underground Storage Tanks (USTs) and one unregistered above-ground storage tank located at the airport. Fifteen of these USTs are currently inactive. The remaining 14 active USTs and the above-ground storage tank must remain in-service until a new bulk fuel storage and dispensing facility has been constructed or

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www.wgint.com

suitable temporary alternatives are available. There is also concern that additional unregistered aboveground and underground fuel storage tanks may be on the airport property. During an April 11, 2001 inspection of the fuel farm areas, Washington personnel observed another area suspected to have once contained a UST with associated fuel lines that is not documented in the Phase I Update report. This area shows surface evidence of the previous presence of a tank and associated fuel lines. It is located north across the driveway from Fuel Area #1. Washington personnel also observed several monitoring well covers but did not conduct a thorough inventory to obtain an accurate count of wells.

According to Town of Addison Fire Department drawings, dated February 28, 2001, there are four fuel farms operated by six operators, Mercury Air, Million Air, Addison Air, Stern Air, R. Stern, and Cherry Air. However, current airport management personnel indicate that only Million Air, Mercury Air, Addison Air, and Cherry Air are currently operating tanks at the airport. The Fire Department drawings indicate that four fuel areas, termed Fuel Areas #1 to #4, are located at the airport. Therefore, including the suspected area observed by Washington, there are five Fuel Areas at Addison Airport that will be included in the project.

Technical Approach and Project Overview

The objective of this project is defined to obtain sufficient data to delineate the extent of contamination at the Fuel Farm area. Our technical approach consists of a combination of documents analysis, interviews with knowledgeable persons, and invasive field exploration. The objective will be to establish an understanding of the environmental and physical conditions of the tank farms and adjacent areas at the airport. We will review regulatory documents and consultants' reports, speak with airport operations personnel and private operators, conduct subsurface soil vapor analysis, and conduct soil and groundwater sampling and analysis.

Scope of Work

The scope of work consists of six tasks. Tasks 1 through 4 are necessary to establish the areal extent of subsurface contamination. Tasks 5 and 6 are related to additional data gathering activities to further quantify the extent and level of potential contamination in the soil and groundwater. The tasks detailed below will be managed by a TNRCC-registered Corrective Action Project Manager under the employ of Washington. Washington is a Registered Corrective Action Specialist. The tasks will be conducted in accordance with a project-specific Health and Safety Plan (HSP) that we will develop after given Notice To Proceed and before conducting fieldwork. We will forward the HSP to the Town for review and approval.

Task 1 — Soil Vapor Survey. Washington will oversee the execution of a soil vapor survey that will encompass the four known Fuel Areas and the fifth suspected Fuel Area. We will retain the services of Exploration Technologies, Inc., (ETI) to conduct the survey. ETI specializes in soil vapor surveys and is highly regarded by both the regulated and regulatory communities for their work.

The work plan includes the collection of up to 80 soil vapor samples on a grid spacing containing approximately 40 feet between sampling locations. The number of samples required to evaluate the area on this grid spacing is based on a CDM map (Figure 2, dated 2/4/98) supplied to ETI. The modified CDM map showing the proposed soil vapor sample locations is attached. The locations of individual samples may be adjusted in the field during field operations to allow for buildings, piping, utility chases, etc. The proposed locations of the soil vapor samples are on the airport property and do not go off site into the Addison Road right-of-way (ROW) or other properties. Based upon the results of this survey, infill (higher density) or off-site sampling can be performed in anomalous parts of the study area (if required to better delineate the plume(s)); costs have not been included for infill or off-site sampling and would only be conducted with Town approval. For sampling in the Addison Road ROW or other properties, we would require Town permission and/or assistance gaining access for sampling those locations.

Soil vapor samples will be collected from depths of four feet using ETI's proprietary collection system. At each sampling location, a field blank (ambient air) sample will be collected through the sampling probe into an evacuated 125-cc septum top glass bottle prior to inserting the probe into near-surface soils. Following the collection of the blank, a manually operated ½-inch OD steel pounder-bar will be advanced to a depth of four feet below ground surface. Upon removal of the pounder-bar, a ½-inch OD stainless steel sampling probe with a perforated tip will be inserted into the sampling hole.

After purging the probe of ambient air, an evacuated 125-cc septum top glass bottle will be placed on a needle affixed to a three-way valve on the top of the probe to collect the soil vapor sample. Following collection of the sample, the bottle will be removed from the needle and the puncture hole in the septum will be sealed with a silicone rubber adhesive sealant. All samples will be recorded on chain of custody logs immediately following collection.

The steel pounder-bar will be washed with a biodegradable soap solution and rinsed with tap water prior to collecting a soil vapor sample at each location. The stainless steel sampling probe will be similarly washed outside, and inside by injecting the biodegradable soap solution (through the probe) followed by a water rinse. The probe will be then flushed internally with compressed breathing air for 10 seconds at a pressure of about 25-psi.

Vapor samples will be analyzed (screened) in the field during sample collection for methane, carbon dioxide, and oxygen using an infrared gas analyzer. The results of these analyses will aid the field crew in adjusting the sampling grid (if necessary) and determining the location(s) of possible "hot spots" during sample collection.

All soil vapor samples will be analyzed in ETI's Houston, Texas laboratory utilizing standard QA/QC procedures. Samples will be analyzed for C1-C4 (methane, ethane, propane, and butanes) and C5+ (pentane-xylenes+) hydrocarbons using two flame ionization detector (FID) gas chromatographs. The FID gas chromatograph utilized for C5+ hydrocarbon analyses contains a capillary column, allowing for high resolution (and separation) of individual compounds (such as BTEX, etc.) and identification of specific product signatures. Our project price does not include the additional cost for the high-

resolution capillary analyses/interpretation; however, the chromatograms will be archived in the event specific samples require additional review at a later date. Results of the C1-C4 and C5+ analyses will be tabulated and presented in parts per million by volume (ppmv).

Soil vapor samples will also be analyzed for carbon dioxide (CO_2) using a gas chromatograph equipped with a thermal conductivity detector (TCD). Results will be reported in percent (%) by volume. When petroleum hydrocarbon products are released to subsurface soils and/or groundwater, biodegradation of the hydrocarbon compounds commonly occurs. The degradation of hydrocarbon compounds by aerobic and/or anaerobic bacteria can generate significant concentrations of carbon dioxide and/or methane in the subsurface environment. Measurements of methane and CO_2, therefore, provide additional site-specific information regarding the presence of hydrocarbon compounds, and the likelihood and degree to which intrinsic bioremediation (both aerobic and anaerobic) occurs in the subsurface environment.

Hydrocarbon and biogenic gas constituent concentrations will be tabulated and utilized to construct various contoured plume maps delineating the areal extent of individual constituents. Each map will include the specific constituent concentrations at all sampling locations. Areas (between contour lines) within the respective plumes will be color-coded based upon the concentrations of the respective hydrocarbon or biogenic gas constituent. These colored plume maps will graphically depict the boundaries of the contaminant plume, as well as the "hot spot(s)" and concentration gradients within the contaminated area.

Using the various constituent plume maps, conclusions will be formulated regarding source area(s), plume configuration, and migration pathways. The plume maps accurately exhibit the areal extent of the subsurface contamination, and are invaluable in determining locations for drilling/installation of bore holes and/or monitoring wells necessary to define the vertical extent of the contamination.

ETI will prepare a report including tabulated data, colored plume maps for the various hydrocarbon/biogenic gas constituents, and an interpretation of the data/maps. The work program will require up to five field days, based upon the map supplied to ETI. Washington personnel will coordinate with the Town for clearing and marking all utilities and obtaining permission to collect samples on properties and/or right-of-ways included in the survey area (if applicable) prior to the commencement of field activities.

Task 2 — Push Probe Soil Sampling. Based on records of soil conditions at the airport it is anticipated that push probe technology will be adequate for the collection of subsurface soil samples. If during implementation of this task it is found that site-specific conditions are not conducive to push probe boring, it will be necessary to reevaluate this sampling program using hollow-stem auger techniques. Hollow-stem auger is a more costly technique, therefore yielding fewer sampling locations.

We will conduct a one-day push probe boring program, following the soil vapor survey, to collect soil samples for analysis and evaluate the viability of push probe boring program in the predominant lithology (limestone and weathered limestone) of that area. We will attempt to bore as many locations as possible during the day of operation. Borings will be pushed until achieving bedrock refusal or a maximum of 25 feet. Final depths of each borings will be determined in the field based on visual observation, olfactory

sensation, and soil sample headspace analysis with a portable vapor analyzer. Samples will be collected continuously, with a maximum of 10 samples selected for analytical testing. If groundwater is encountered, a maximum of five (5) groundwater samples will also be collected for analysis. Both the soil and groundwater samples will be tested only for BTEX (benzene, toluene, ethylbenzene, and total xylenes) and TPH (total petroleum hydrocarbons). Push probe boring locations will be based on qualitative results from field screening during the soil vapor survey. Based on the data we will recommend to the Town the preferred drilling method for Task 5.

We will place soil samples in laboratory-cleaned glass jars with appropriate labels and place them in an ice-filled chest for transport to our laboratory. Chain-of-custody documents will accompany the samples. All sample handling equipment will be decontaminated between soil sample intervals. After boring completion, we will grout all borings with cement, bentonite, or other acceptable material to inhibit stratigraphic cross contamination. Drilling and sampling wastes will be collected in drums for later characterization testing and proper disposal. Costs to conduct the characterization testing, identification of a suitable disposal firm, disposal costs, and waste manifesting on behalf of the Town have not been included in this cost proposal. The Town may elect to conduct this activity itself.

Task 3 — Documents Review, Site Reconnaissance, and Personnel Interviews. The CDM Phase I ESA Update report of February 1, 2001, cites their own previous Phase I ESA report and leaking registered storage tank files maintained by TNRCC. We will attempt to gather these documents and any others that the Town indicates may be useful for understanding the historical and current conditions of the Fuel Areas. We will conduct a detailed site reconnaissance to document visually observable conditions of the Fuel Area to identify possible mechanical, electrical, and chemical hazards; equipment locations, orientations, and dimensions; and operational parameters, such as fueling. We will also interview the tank operators currently operating at the airport to obtain their understanding of the tanks and operational issues.

The purpose of gathering these data is not to conduct an audit to evaluate compliance with Texas Natural Resource Conservation Commission (TNRCC) regulations but rather to help understand the magnitude of environmental media (soil, sediment, surface water, groundwater) contamination and site-specific arrangements. We will also use the data to evaluate the need for further field exploration to assess the extent and magnitude of environmental media contamination. However, if the data indicate obvious non-compliance with TNRCC regulations (e.g. reporting requirements, overfill protection, tank inventory practices, etc.), we will document the apparent non-compliance(s) and report it to the Town, but that is secondary to the effort to understand the current conditions.

Our objective is to identify the following items, including but not limited to:

- Historical fuel spills, leaks, and response actions, tank tightness testing, including engineered remediation systems
- Tank dimensions, orientation, contents, mechanical condition (integrity), materials of construction, and all the aforesaid for piping and ancillary equipment

- Operational data for hours of operation (times of day), refueling frequencies, fuel suppliers, and safety considerations

Task 4 — Report. We will compile the information from Task 1 through Task 3 into a report that documents the methods of data gathering, summarizes the primary findings, and provides conclusions and recommendations for the later tasks. We will include supporting documents such as the ETI report, TNRCC file data, interview conversation logs, figures, and other supporting documents, as appropriate. We will provide four copies of the report.

Task 5 — Soil Borings and Monitoring Well Installation. Based on the results presented to the Town in Task 4, we will develop a soil boring and monitoring well program designed to complete the delineation of the lateral and vertical extent of contamination within the weathered subsurface. This program does not take into account assessing the extent of contamination in the underlying bedrock formation, if present. This information will be combined with the horizontal boundary data from the soil vapor survey to define the extent of contamination. This program will be conducted only after consultation with and prior approval of the Town.

The preferred soil boring method is push probe drilling. This program is developed on the assumption that the subsurface stratigraphy will be conducive to push probe boring. However, if push probe borings appear infeasible, hollow-stem drilling may be necessary, and will be conducted in conjunction with installation of the monitoring wells.

Ten (10) push probe borings will be strategically located based on the results of the soil vapor survey. As in the previous boring task, soil samples will be collected and logged continuously to a maximum depth of 25 feet or until bedrock refusal. Actual depths of borings will be determined in the field based on visual observation, olfactory sensation, and soil sample headspace analysis with a portable vapor analyzer. We will document soil type, groundwater, evidence of contamination, and other pertinent information on soil boring logs and a field notebook. One soil sample will be selected from each boring location for BTEX and TPH analysis. Five (5) samples will be selected for polyaromatic hydrocarbon analysis (PAH). In-situ groundwater samples will be selected at five (5) push probe boring locations and analyzed for BTEX and TPH.

We will place the soil samples in laboratory-cleaned glass jars with appropriate labels and place them in an ice-filled chest for transport to our laboratory. Chain-of-custody documents will accompany the samples. All sample handling equipment will be decontaminated between soil sample intervals. After boring completion, we will grout all borings with cement, bentonite, or other acceptable material to inhibit stratigraphic cross contamination. Drilling and sampling wastes will be collected in drums for later characterization testing and disposal.

If groundwater is encountered, we will install and sample up to six (6) monitoring wells to bedrock refusal, or a maximum depth of 25 feet. Hollow-stem auger techniques will be required for monitoring well installation. The locations will be determined using the soil vapor data and the soil boring data to optimize the locations, taking into account hydrogeologic and contamination considerations. Actual depths will be determined in the field based on stratigraphy and the depths of hydrocarbon-impacted zones. We will

construct the wells with 2-in. ID, flush-joint-threaded, Schedule PVC, using 0.010-in. slotted casing. Filter pack sand will be placed around the well screen, followed by a bentonite seal and grout to surface. The wells will be flush-mounted relative to ground surface with a protective, locked cover. We will develop the wells to remove cuttings and sediments that could affect hydraulic communication between the well screen and the formation fluids.

After well development, we will purge the wells of stagnant water and collect groundwater samples for analytical testing. Groundwater collected from the monitoring wells will be analyzed for BTEX, TPH, and PAH. We will place groundwater samples in laboratory-cleaned glass jars with appropriate labels and place them in an ice-filled chest for transport to our laboratory. One method blank, a duplicate, and a trip blank to evaluate cross contamination will be included with each sample lot for QA/QC control. Chain-of-custody documents will accompany the samples. Sample handling equipment will be decontaminated between wells. Sampling wastes will be collected in drums for later characterization testing and disposal.

Upon completion of soil boring and monitoring well installation we will retain a Registered Public Land Surveyor (RPLS) to locate all the newly-installed wells and borings. The survey will provide an elevation relative to a local benchmark to provide accurate vertical and horizontal control data that will be necessary for subsequent hydrogeologic characterization. The RPLS will provide a digitized drawing and electronic file in AutoCAD for use in our reports.

Task 6 — Final Report and Recommendations. We will develop a report using TNRCC standardized forms, where required, that are mandatory under their LPST program. These reports include field activity reports, well monitoring reports, site investigation reports, correspondence forms, and others, as appropriate. The final report will incorporate all the data collected from the earlier tasks and include a recommendation directed toward natural attenuation as the preferred remedial alternative. We will also include in the report an estimated cost, $^{+}$/- 30% to 40%, on what the Town could expect for bringing the site to closure under a natural attenuation scenario. However, it is our experience that the TNRCC may require additional information before agreeing to a natural attenuation alternative.

Schedule

Upon receipt of both a signed Work Authorization and Notice to Proceed (NTP), we will begin preparations to mobilize to the site to begin Tasks 1 and 2. We will complete the fieldwork for Tasks 1 and 2 within two weeks of notification, followed by another two weeks to allow for completion of the ETI report. Task 3 will begin the week of receipt of the NTP and will be completed within three to four weeks, depending on availability of documents and knowledgeable persons. We will complete Task 4 two weeks after completion of Tasks 1 through 3, for a total duration of about six weeks after NTP. The schedule for Tasks 5 and 6 will be developed after consultation with the Town; however, we anticipate that Task 5 borings and monitoring wells could begin within two weeks of submission of the Task 4 report, if the Town chooses to move quickly. We estimate the entire process from initiation of Task 1 to completion of the Task 6 report to be 3 to 4 months.

Price

This section presents: (1) a Lump Sum price for Tasks 1 through 4, work that we have confidence has a very well defined scope and (2), Time and Materials estimated prices for Tasks 4 and 5, work where the defined scope may change based on the results of earlier tasks and uncertainties in site subsurface conditions. However, we have attempted to provide reasonable scopes of work for the Time and Materials estimated prices based on experience and generally accepted scientific and engineering practices.

The **Lump Sum** price to conduct Task 1 through Task 4 as one program is $42,500. This price includes provisions for a Kickoff Meeting with the Town attended by the Washington Project Manager, the Washington Client Coordinator/Airport Engineer, and the Washington Field Manager. The Lump Sum price has been developed based on the following assumptions:

1. Washington-Staubach, the Town's airport management agent, will provide unrestricted access to Fuel Areas and will provide notification to tank operators of our intent to conduct work in those areas and to conduct interviews of operational personnel. Town will make good-faith efforts to provide relevant documents in its possession or within its ability to obtain and will assist Washington in its efforts to obtain relevant documents from others.
2. Town will make a good faith effort to identify locations of their buried utility lines. Washington-Staubach will make a good faith effort to identify other utility lines or other buried objects in the Fuel Areas for Washington. It is common for the identification of buried utilities and objects to take many days by the time personnel, equipment, maps, and the field visit are completed. Because of this, it is critical to our schedule that all entities identify their known buried utilities before mobilization. Provisions have been made to use geophysics to identify unknown buried objects.
3. Prices include costs related to routine project meetings and discussions or meetings with the Town. However, the prices include a reasonable timeframe for progressive completion of the tasks without extensive delays between tasks beyond the control of Washington.
4. Prices have been developed on standard 8-hour workdays, 40-hour weeks, assuming normal, nationally recognized holidays with no provision for overtime.

A summary of estimated prices for the work proposed in Tasks 5 and 6, and total estimated cost for all tasks is presented in Table 1 below. These prices are presented as **Time and Materials.** Table 2 presents the rates used in estimating Tasks 5 and 6, and would apply to any change orders requested by the Town.

Table 1 - Task-Specific Estimates	
Description	**Estimated Price[1,2]**
Task 5 – Borings/Wells/Analytical/Survey	$23,900.
Task 6 – Report	$15,400.
Total for Tasks 5 and 6	**$39,300.**
Total for Tasks 1 through 6	**$81,800.**
Notes: (1) A 10% contingency has been included to account for changes in labor rates, inflation, and other unforeseeable circumstances. (2) includes 10% markup on expenses.	

Table 2 - Labor Rates		
Personnel	**Title**	**Labor Rate, $/Hr**
Paul R. Wild	Project Manager	110.
Ron Bowlin	Field Manager	80.
Barry Chamberlain	Project Geologist	70.
Ron Forest	CADD Specialist	70.
Various	Clerical/Secretarial	50.
Various	Field Technician	35.

For the same reason as stated for labor, Tables 3 and 4 present unit rates for Task 5 push probe boring and monitoring wells, and analytical costs for the proposed program, respectively.

Table 3 - Boring and Well Rates	
Description	**Unit Rate, $/Item**
Hollow-Stem Auger Boring, 25-ft depth	$22/ft (25 ft minimum)
Direct Push Boring	$1700/day
Monitoring Well, 25-ft depth, 2-in. ID PVC	$40/ft (25 ft minimum)

Table 4 - Analytical Testing Rates			
Medium	**Analyte**	**Method**	**Unit Rate, $/Test**
Soil/Water	Total Petroleum Hydrocarbons (TPH)	TNRCC 1005	75.
	Polynuclear Aromatic Hydrocarbons (PAH)	EPA 8270	140.
	Benzene, Toluene, Ethylbenzene, Xylene (BTEX)	EPA 8020 or 8260	45.

Scope of Work Acceptance

If you accept this scope of work, and upon receipt of mutually-agreeable terms and conditions that are currently being developed, please forward us a signed Purchase Order or similar authorizing document that references this Scope of Work and the agreed terms and conditions.

Closing Remarks

We are pleased to have this opportunity to serve the Town of Addison and to demonstrate our breadth of capabilities. We look forward to working with you.

Sincerely,
WASHINGTON GROUP INTERNATIONAL
TNRCC RCAS 00169

Paul R. Wild
Manager of Environmental Services
TNRCC CAPM00385

Attachments: Soil Vapor Sample Location Map

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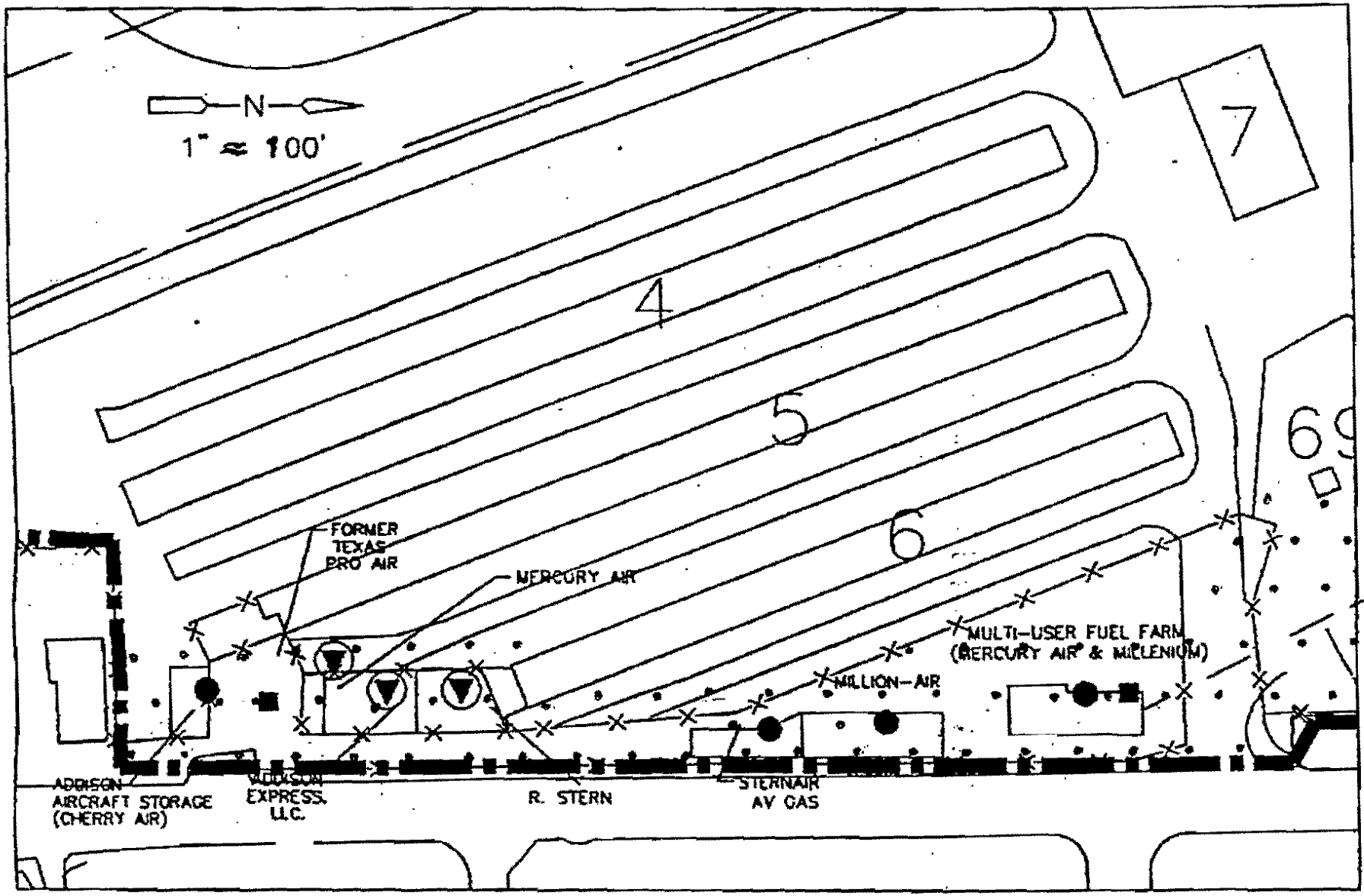

ENLARGED PLAN – FUEL FARMS

* MAP AFTER CDM FIG. 2 (2/4/98)

• PROPOSED SOIL VAPOR SAMPLE

WORK AUTHORIZATION TERMS

1. The work shall be as described in the Washington Group International, Inc. ("Washington") proposed Scope of Work referenced on the face hereof.

2. Unless otherwise agreed in writing, Client shall pay Washington for the work on the basis described in Washington's Scope of Work. Payment shall be due within thirty (30) days of invoice. Payment not received within such time period will be subject to interest of 1% per month for the unpaid balance.

3. Confidentiality obligations related to the work, if any, shall be as set forth in such confidentiality agreements as may be concluded between the parties.

4. (a) During the work, Washington shall maintain at its sole cost and expense insurance as set forth and described in Item 1.26 (as hereafter amended) of the Standard Specifications for Public Works Construction, North Central Texas Council of Governments, a true and copy of which Item is attached hereto as Exhibit A and incorporated herein. For the purposes of this contract, the said Item 1.26 is amended by amending 1.26.1 by adding the new subparagraphs (d) and (e) relating to the provision of professional liability insurance and pollution liability insurance, to read:

   (d) Professional liability insurance to protect from liability arising out of the performance of professional services under this contract. Such coverage shall be in the sum of not less than One Million and No/100 dollars ($1,000,000); and

   (e) Pollution liability insurance to include coverage for third-party bodily injury and property damage (on and off-site) with a limit of $1,000,000 per claim. The pollution liability insurance shall also include clean-up, remediation, restoration costs, and other related costs and expenses. This insurance shall be continuously in place during the full term of this Agreement, including any extensions or renewals thereof, and for a period of at least one year after final termination of this Agreement.

   The policies shall be endorsed to provide the following, as applicable: (i) in all liability policies, name the Town of Addison, Texas as an additional insured; (ii) in all liability policies, provide that such policies are primary insurance to any other insurance available to the additional insureds, with respect to any claims arising out of activities conducted hereunder, and that insurance applies separately to each insured against whom claim is made or suit is brought; and (iii) a waiver of subrogation in favor of the Town of Addison, Texas, its officials, officers, agents, and employees must be included in all such policies. All insurance policies shall be issued by an insurance company with an A.M. Best's rating of not less than A- and authorized to do business in Texas and in the standard form approved by the Texas Department of Insurance, and shall be endorsed to provide for at least 30 days advanced written notice to the Town of Addison, Texas of a material change in or cancellation of a policy. Certificates of insurance, satisfactory to the Town, evidencing all coverage above, shall be furnished to the Town prior to the performance of any work by Washington, with complete copies of policies furnished to the Town upon request.

   (b) Washington shall defend and indemnify the Town of Addison, Texas, its officials, officers, employees and agents (together, for purposes of this section, the "Town")

against, and hold harmless the Town from, any and all liability, actions, causes of action, lawsuits, judgements, clans, damages, costs or fees, including attorney's fees and cost of defense, for personal injury, property damage or destruction (including without limitation of loss of use of property not otherwise physically injured), breach of contract, or other harm for which recovery of damages is sought, suffered by any person or organization that may arise out of any negligent, grossly negligent, or willful act or omission of Washington, its officers, employees, contractors or agents under this Agreement. The provisions of this paragraph shall survive the expiration or termination of this Agreement.

(c) The work to be undertaken by Washington is at the Addison Airport fuel farm site, where aviation fuel and other products and materials (some of which may be hazardous) are stored and used for aviation purposes. However, in the event that unknown, unanticipated or unsuspected hazardous materials are discovered on or near the project site, Washington shall have the right to stop all work thereon immediately until (i) all proper authorities are notified, and all applicable laws, rules or regulations have been complied with, and (ii) if the scope of the work is increased from that originally anticipated under the terms of this Contract, the increased scope of the work and the fees to be paid as a result thereof have been accepted by Client and Washington in writing. In such an instance, Client shall have the right to terminate this agreement and Washington shall be compensated for all work properly performed to the point of termination (and Washington shall promptly give to Client all records, reports, documents and all other materials or information (in whatever format, whether electronic or otherwise) prepared or collected by Washington to the time of such termination). In the event that the discovery of unanticipated hazardous materials requires Washington to take immediate measures to protect health and safety, or to comply with applicable laws, rules or regulations, Client agrees to compensate Washington for expenses incurred in taking such action, including, but not limited to, expenses incurred for equipment decontamination and all other costs incident to the discovery, treatment and/or disposal of the hazardous waste, except to the extent that such expenses or costs result from the negligence, gross negligence, or willful act or omission of Washington. Washington shall immediately notify Client of its discovery of any unanticipated hazardous materials.

5. Any delay or failure of Washington in the performance of its required obligations hereunder shall be excused if and to the extent caused by acts of God, strike, acts of workman, fire, storm, flood, windstorm, discovery or uncovering of hazardous or toxic materials or historical artifacts at the project site, delays occasioned by Client's preconstruction approval or permitting activities, unusually severe weather, sabotage, embargo, wreck or delay in transportation, accidents in the handling and rigging of heavy equipment, explosion, riot, war, court injunction or order, delays by or acts or orders of any governmental body or changes in laws or governmental regulations, acts or omissions of the Client or its other contractors or any other cause or causes beyond the reasonable control of Washington provided that prompt written notice of such delay or suspension be given by Washington to the Client. Upon receipt of said notice, if necessary, the time for performing shall be extended for a period of time reasonably necessary to overcome the effect of such delays and Washington shall be reimbursed for the cost, if any, of such delays if such delays are caused directly by the Client.

Washington shall perform its work hereunder in accordance with that degree of care and skill ordinarily exercised by members of the engineering profession existing as of the date that such services are performed. All reports, documents, drawings, designs, plans, or specifications made, prepared, or collected by Engineer in connection herewith belong to and

remain the property of Client. Client shall be furnished with such reports, documents, drawings, designs, and specifications and reports.

6. The parties agree that the laws of the State of Texas shall apply to the interpretation, validity and enforcement of this Agreement; and, with respect to any conflict of law provisions, the parties agree that such conflict of law provisions shall not affect the application of the law of Texas (without reference to its conflict of law provisions) to the interpretation, validity and enforcement of this Agreement. This Agreement has been executed and delivered in the State of Texas and the validity, enforceability and interpretation of any of the clauses of this Agreement shall be determined and governed by the laws of the State of Texas. All duties and obligations of the parties created hereunder are performable in Dallas County and such County shall be the venue for any action or proceeding that may be brought or arise out of, in connection with, or by reason of this Agreement.

7. (a) *Termination without cause.* Either party may terminate this Agreement at any time by giving to the other party at least 30 days written notice of such termination. Termination shall have no effect upon the rights and obligations of the parties arising out of any transaction occurring prior to the effective date of such termination. In the event of termination, all finished or unfinished data, studies, reports and other materials and items (whether kept electronically, in writing, or otherwise) prepared or assembled by Washington shall be promptly delivered to Customer. Washington shall be paid for all work satisfactorily completed prior to the effective date of said termination.

   (b) *Termination with cause.* If Washington fails to perform Washington's duties to the satisfaction of the Customer, or if Washington fails to fulfill in a timely and professional manner Washington's obligations under this Agreement, or if Washington shall violate any of the terms of provisions of this Agreement, then Customer shall have the right to terminate this Agreement effective immediately upon the Customer giving written notice thereof to Washington. Termination shall have no effect upon the rights or obligations of the parties arising out of any transaction occurring prior to the effective date of such termination. In the event of termination, all finished or unfinished data, studies, reports and other items (whether kept electronically, in writing, or otherwise) prepared or assembled by Washington shall be promptly delivered to Customer. Washington shall be paid for all work satisfactorily completed prior to the effective date of said termination.

8. Inasmuch as this Agreement is intended to secure the specialized services of Washington, Washington has no authority or power to and may not assign, transfer, delegate, subcontract or otherwise convey any interest herein without the prior written consent of Customer, and any such assignment, transfer, delegation, subcontract or other conveyance without the Customer's prior written consent shall be considered null and void.

9. All payments, notices, demands, or requests from one party to another shall be personally delivered or sent by United States mail, postage prepaid, to the addresses below:

To Customer:	To Washington:
16801 Westgrove Road Addison, Texas 75001-5190 Attn: Jim Pierce Tel: 972-450-2879 Fax: 972-450-2837	1250 W. Sam Houston Parkway South Houston, Texas 77042 Attn: Paul Wild Tel: 281-529-8939 Fax: 281-529-8966

EXHIBIT A — NCTCOG GENERAL PROVISIONS

ITEM 1.26. INSURANCE

1.26.1 CONTRACTOR's INSURANCE

Without limiting any of the other obligations or liabilities of the CONTRACTOR, during the term of the contract the CONTRACTOR and each subcontractor at their own expense shall purchase and maintain the herein stipulated minimum insurance with companies duly approved to do business in the State of Texas and satisfactory to the OWNER. Certificates of each policy shall be delivered to the OWNER before any work is started, along with a written statement from the issuing company stating that said policy shall not be cancelled, nonrenewed or materially changed without 30 days advance written notice being given to the OWNER, except when the policy is being canceled for nonpayment of premium, in which case 10 days advance written notice is required. Prior to the effective date of cancellation, the CONTRACTOR must deliver to the OWNER a replacement certificate of insurance or proof or reinstatement. Coverage shall be of the following types and not less than the specified amounts:

(a) workers' compensation as required by Texas law, with the policy endorsed to provide a waiver of subrogation as to the OWNER; employer's liability insurance of not less than $100,000 for each accident, $100,000 disease — each employee, $500,000 disease-policy limit.

(b) Commercial general liability insurance, including independent CONTRACTOR's liability, completed operations and contractual liability, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, full insuring CONTRACTOR's (or subcontractor's) liability for injury to or death of OWNER's employees and third parties, extended to include personal injury liability coverage with damage to property of third parties, with minimum limits as set forth below:

General Aggregate	$1,000,000
Products — Components/Operations Aggregate	$1,000,000
Personal and Advertising Injury	$ 600,000
Each Occurrence	$ 600,000
Fire Damage (any one fire)	$ 50,000
Medical Expense (any one person)	$ 5,000

The policy shall include coverage extended to apply to completed operations, asbestos hazards (if this project involves work with asbestos) and XCU (explosion, collapse and underground) hazards. The completed operations coverage must be maintained for a minimum of one year after final completion and acceptance of the work, with evidence of same filed with OWNER.

(c) Comprehensive automobile and truck liability insurance, covering owned, hire, and non-owned vehicles, with a combined bodily injury and property damage minimum limit of $600,000 per occurrence; or separate limits of $250,000 for bodily injury (per person), $500,000 for bodily injury (per accident) and $100,000 for property damage. Such insurance shall include coverage for loading and unloading hazards.

1.26.2 OWNER'S PROTECTIVE LIABILITY INSURANCE

CONTRACTOR shall obtain, pay for and maintain at all times during the prosecution of the work under this contract an OWNER's protective liability insurance policy naming the OWNER and the Engineer and insured for property damage and bodily injury, which may arise in the

prosecution of the work or CONTRACTOR's operations under this contract. Coverage shall be on an "occurrence" basis, and the policy shall be issued by the same insurance company that carries the CONTRACTOR's liability insurance with a combined bodily injury and property damage minimum limit of $600,000 per occurrence and $1,000,000 aggregate.

1.26.3 "UMBRELLA" LIABILITY INSURANCE

If required by OWNER, CONTRACTOR shall obtain, pay for and maintain umbrella liability insurance during the contract term, insuring CONTRACTOR for an amount of not less than $1,000,000 per occurrence combined limit for bodily injury and property damage that follows from and applies in excess of the primary liability coverages required hereinabove. The policy shall provide "drop down" coverage where underlying primary insurance coverage limits are insufficient or exhausted. OWNER and Engineer shall be named as additional insureds.

1.26.4 RAILROAD PROTECTIVE INSURANCE

When required in the Special Provisions, CONTRACTOR shall obtain, maintain and present evidence of railroad protective insurance (RPI). The policy shall be in the name of the railroad company having jurisdiction over the right-of-way involved. The minimum limit of coverage shall meet the specifications provided by the railroad company. The OWNER shall specify the amount of RPI necessary.

1.26.5 POLICY ENDORSEMENTS AND SPECIAL CONDITIONS

(a) Each insurance policy to be furnished by CONTRACTOR shall include the following conditions by endorsement to the policy:
   (1) each policy shall name OWNER as an additional insured as to all applicable coverage;
   (2) each policy shall require that 30 days prior to the cancellation, nonrenewal, or and any material change in coverage, a notice thereof shall be given to OWNER by certified mail. If the policy is canceled for nonpayment of premium, only 10 days written notice to OWNER is required;
   (3) the term "OWNER" shall include all authorities, boards, bureaus, commissions, divisions, departments and offices of the OWNER and individual members, employees and agents thereof in their official capacities and/or while acting on behalf of the OWNER;
   (4) the policy phrase "other insurance" shall not apply to OWNER where the OWNER is an additional insured on the policy; and
   (5) all provisions of the contract concerning liability, duty and standard of care together with the indemnification provision shall be underwritten by contractual liability coverage sufficient to include such obligations within applicable policies.

(b) Insurance furnished by CONTRACTOR shall be in accordance with the following requirements:
   (1) any policy submitted shall not be subject to limitations, conditions, or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by the CONTRACTOR. The OWNER's decision thereon shall be final;
   (2) all policies are to be written through companies duly licensed to transact that class of insurance in the State of Texas; and
   (3) all liability policies required herein shall be written with an "occurrence" basis coverage trigger.

(c) CONTRACTOR agrees to the following:
   (1) CONTRACTOR hereby waives subrogation rights for loss or damage to the extent same are covered by insurance. Insurers shall have no right of recovery or subrogation against

the OWNER, it being the intention that the insurance policies shall protect all parties to the contract and be primary coverage for all losses covered by the policies;

(2) Companies issuing the insurance policies and CONTRACTOR shall have no recourse against the OWNER for payment of any premiums or assessments for any deductibles, as all such premiums and deductibles are the sole responsibility and risk of the CONTRACTOR;

(3) Approval, disapproval or failure to act by the OWNER regarding any insurance supplied by the CONTRACTOR (or any subcontractor's) shall not relieve the CONTRACTOR of full responsibility or liability for damages and accidents as set forth in the contract documents. Neither shall the bankruptcy, insolvency or denial of liability by the insurance company exonerate the CONTRACTOR from liability; and

(4) No special payments shall be made for any insurance that the CONTRACTOR and subcontractor's are required to carry; all are included in the contract price and the contract unit prices.

Any of such insurance policies required under this section may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

DATE SUBMITTED: December 3, 2001
FOR COUNCIL MEETING: December 11, 2001

Council Agenda Item:

SUMMARY:

This item is for the Award of a Contract to Lindamood Construction Co., Inc., for the Nile Properties Demolition Project.

FINANCIAL IMPACT:

Budgeted Amount: Not specifically budgeted, but funds are available as part of the Arapaho Road, Phase II/III project totaling $20.5 million.

Cost: $42,500.00

BACKGROUND:

In conjunction with the proposed construction of Phase II of Arapaho Road, from Marsh Lane to Surveyor Blvd., it is necessary to perform demolition of an existing office/warehouse structure on property that was recently acquired by the Town through the eminent domain process. The previous owner, Nile Properties, vacated the structure that is located on the west side of Surveyor Blvd, and bids were received on December 3, 2001 for demolition and grading of the site.

Five contractors picked up plans and specifications for the project and attended a mandatory pre-bid meeting at the site. These five contractors submitted bids for the project. Attached is a bid tabulation for the proposed improvements. Lindamood Construction Co., Inc., submitted the lowest responsive bid, in the amount of $42,500.00. Satisfactory references were received regarding the quality of work on this contractor. The demolition and site grading is scheduled for completion within 75 calendar days. The contractor has successfully completed work of similar scope in other municipalities in the area.

RECOMMENDATION:

Staff recommends that Council authorize the City Manager to enter into a contract with Lindamood Construction Co., Inc. for the Nile Properties Demolition project, in the amount of $42,500.00.