Final Report
Phase I RCRA Facility Investigation for Appendix I Sites

VOLUME III-E

SWMU-24/32, Industrial Wastewater Treatment Plant/
Sanitary Wastewater Treatment Plant

Department of the Air Force
Oklahoma City Air Logistics Center
Tinker Air Force Base, Oklahoma

September 1994

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
AFLC	Air Force Logistics Command
AFMC	Air Force Materiel Command
AFSC	Air Force Systems Command
AMC	Air Materiel Command
AOC	Area of concern
API	American Petroleum Institute
AQUIS	Air Quality Utility Information System
ASTM	American Society for Testing and Materials
AWAC	Airborne Warning and Control
BF	Bioconcentration factor
bgs	Below ground surface
BNA	Base/neutral/acid - extractable
BTEX	Benzene, toluene, ethylbenzene, xylenes
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfm	Cubic feet per minute
CFR	Code of Federal Regulations
cm/sec	Centimeters per second
CME	Central Mine Equipment Company
CMS	Corrective measures study
COD	Chemical oxygen demand
COE	US Army Corps of Engineers or USACE
CWA	Clean Water Act
DCA	Dichloroethane
DCE	Dichloroethene

DCQAP	Data Collection Quality Assurance Plan
DNPH	Dinitrophenylhydrazine
DOD	US Department of Defense
DQO	Data quality objective
EM	Environmental Management
EPA	Environmental Protection Agency
ES	Engineering-Science, Inc.
ESC	East Soldier Creek
FAA	Federal Aviation Administration
FID	Flame ionization detector
GC	Gas chromatograph
gpd	Gallons per day
gpm	Gallons per minute
H_2S	Hydrogen sulfide
ICP	Inductively coupled plasma atomic emission spectroscopy
ID	Identification
IRP	Installation Restoration Program
IRPIMS	Installation Restoration Program information management systems
IWTP	Industrial wastewater treatment plant
K_H	Henry's Law constant
K_{oc}	Organic carbon partition coefficient
L/min	Liters per minute
LDR	Land disposal restrictions
LEL	Lower explosive limit
m^3	Cubic meter
MDL	Method detection limit
MEK	2-Butanone (methyl ethyl ketone)
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
mgd	Million gallons per day
min	Minute
mL	Milliliter

mL/min	Milliliters per minute
mph	Miles per hour
MQA	Method quantitation limit
MS/MSD	Matrix spike/matrix spike duplicate
NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
ng/m^3	Nanograms per cubic meter
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
OC-ALC	Oklahoma City Air Logistics Center
OCAMA	Oklahoma City Air Materiel Area
OSDH	Oklahoma State Department of Health
OSPC	Oklahoma State Planar Coordinates
OVA	Organic vapor analyzer
PAH	Polynuclear aromatic hydrocarbons
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PID	Photoionization detector
POTW	Publicly owned treatment works
ppb	Parts per billion
ppm	Parts per million
ppmv	Parts per million, volume per volume
PQL	Practical quantitation limit
PSI	Professional Service Industries, Inc.
PUF	Polyurethane foam filter
PVC	Polyvinyl chloride
QA	Quality assurance
QA/QC	Quality assurance/quality control
RAS	Return activated sludge
RCP	Recirculation pit
RCRA	Resource Conservation and Recovery Act

RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial investigation
RI/FS	Remedial investigation/feasibility study
SCC	Solids contact clarifier
SCFH	Standard cubic feet per hour
SGB	Bioenvironmental Engineering Office
SVOC	Semivolatile organic compound
SWD	Sidewall depth
SWMU	Solid waste management unit
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SWMU 32.3	Primary Clarifiers
SWMU 32.4	Trickling Filters
SWMU 32.5	Final Clarifiers
SWMU 32.6	Former Chlorine Contact Chamber
SWMU 32.8	Drying Beds
SWTP	Sanitary wastewater treatment plant
TAC	Tactical Air Command

TCA	Trichloroethane
TCE	Trichloroethene
TCLP	Toxicity characterization leaching procedure
TPH	Total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
TSP	Total suspended particles
USAF	United States Air Force
USGS	United States Geological Survey
VLF	Very low frequency
VOA	Volatile organic analysis
VOC	Volatile organic compound
WWTF	Wastewater treatment facility
µg/kg	Micrograms per kilogram
µg/L	Micrograms per liter
°C	Degrees Celsius
°F	Degrees Fahrenheit
(')	Feet below ground surface

Appendix L

Soil, Sediment, and Wastewater Laboratory Data Sheets

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: Tinker AFB RFI

CARRIER: [x] Federal Express [ ] UPS Other ____

PROJECT NUMBER: AV401.01

AIRBILL OR CARRIER ID #: 8010145371

SAMPLER(S): Julie Burdey Chris Vail

(Signature): Julie Burdey Christine Vail

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	PRESERVATIVE: Volatiles SW8240 ice	SVOA SW3050/SW8270 ice	Total metals SW3050/SW6010 ice	Total cyanide SW9010 ice	TPH SW3050/SW9071 ice	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
10/11/93	1000	I24.2551		N1	SO	G	0.17	0.25	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1015	I24.2552		N1	SO	G	0.17	0.5	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1015	I24.2552		FR1	SO	G	0.17	0.5	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1015	I24.2552		MS1	SO	G	0.17	0.5	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1015	I24.2552		SD1	SO	G	0.17	0.5	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1040	I24.2553		N1	SO	G	0.33	0.5	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1055	I24.2554		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1145	S32.1551		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1200	S32.3551		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1450	I24.3551		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓		0	0	1	A		
10/11/93	1450	I24.3551		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	✓	0	0	1	A		
10/11/93	1450	I24.3551		FR1	SO	G	0.17	0.33	1					✓	0	0	1	A		
10/11/93	1450	I24.3551		MS1	SO	G	0.17	0.33	1					✓	0	0	1	A		
10/11/93	1450	I24.3551		SD1	SO	G	0.17	0.33	1					✓	0	0	1	A		

Relinquished by: Julie Burdey (Signature) Date 10/11/93 Time 2000

Received by: ✓ (Signature) Date Time

Relinquished by: (Signature) Date Time

Received by: (Signature) Date Time

Relinquished by: (Signature) Date Time

Received by: (Signature) Date 10/12/93 Time 0900

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CHAIN OF CUSTODY RECORD

ENGINEERING—SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: Tinker AFB RFI

CARRIER: ☑ Federal Express ☐ UPS
Other

PROJECT NUMBER: AU401.01

AIRBILL OR CARRIER ID #: 8010145371

SAMPLER(S): Julie Burdey, Christina Vail
(Signature): Julie Burdey, Christina Vail

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	PRESERVATIVE	ANALYSIS REQUIRED: Volatiles SW8240 ICE	SV SW8270 ICE	Tot. metals SW3050/SW6010 ICE	Tot. cyanide SW3050/SW9010 ICE	TPH ICE	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
10/11/93	1510	I24.3552		N1	SO	G	0.33	0.5	2		✓	✓	✓	✓	✓	0	0	1	A		
10/11/93	1525	I24.3553		N1	SO	G	0.33	0.5	2		✓	✓	✓	✓	✓	0	0	1	A		
10/11/93	1540	RCPT551		N1	SO	G	0.17	0.33	2		✓	✓	✓	✓	✓	0	0	1	A		
10/11/93	1555	I24.5551		N1	SO	G	0.17	0.33	2		✓	✓	✓	✓		0	0	1	A		
10/11/93	1600	I24.5552		N1	SO	G	0.17	0.33	2		✓	✓	✓	✓		0	0	1	A		
10/11/93	—	FIELDQC		TB1	WQ	NA	0	0	2	✓						0	0	1	A		TB1 is preserved with HCl.

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time
Julie Burdey	10/11/93	2000						
Received by: (Signature)	**Date**	**Time**	**Received by:** (Signature)	**Date**	**Time**	**Received by:** (Signature)	**Date**	**Time**
							10/12/93	0900

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: Tinker AFB RFI

CARRIER: [✓] Federal Express [ ] UPS Other: _____

PROJECT NUMBER: AU401.01

AIRBILL OR CARRIER ID #: 8010145356

SAMPLER(S): Michelle Town, Julie Burdey

(Signature): Michelle Town, Julie Burdey

PRESERVATIVE: ice; ice; ice; ice

ANALYSIS REQUIRED: VOAs SW8240; SV SW8270; total metals SW6010; total cyanide SW9010

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOAs SW8240	SV SW8270	total metals SW6010	total cyanide SW9010	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
10/12/93	0810	I24.19551		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0815	I24.19552		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0825	I24.19553		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0844	I24.19554		N1	SO	G	0.17	0.5	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0855	S32.8551		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0922	S32.8552		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0922	S32.8552		FR1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0945	S32.8553		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	0955	S32.8554		N1	SO	G	0.17	0.33	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	1405	ESC1SE6		N1	SE	DS	0	0	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	1455	ESC1SE5		N1	SE	DS	0	0	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	1545	ESC1SE4E		N1	SE	DS	0	0	2	✓	✓	✓	✓	0	0	1	A		
10/12/93	1535	ESC1SE4W		N1	SE	DS	0	0	2	✓	✓	✓	✓	0	0	1	A	HOLD**	
														0	0	1	A	HOLD**	

Relinquished by: Julie Burdey (Signature) — Date 10/12/93 — Time 1900

Received by: K Hollis (Signature) — Date 10/13/93 — Time 0900

Relinquished by: (Signature) — Date — Time

Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time

Received by: (Signature) — Date — Time

Run PCB Aroclors on Michelle Town's samples 1-11-13 & Kevin Tyler 10/14/13 DJA

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: Tinker AFB RFI

CARRIER ☐ Federal Express ☐ UPS
Other _____

PROJECT NUMBER: AU401.01

AIRBILL OR CARRIER ID #: 8010145356

SAMPLER(S): Michelle Town (Signature) Julie Burdey (Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	PRESERVATIVE: ice	ANALYSIS REQUIRED: VOAs SW8240	SV SW8270/SW3050	Total metals SW6010/SW3050	Total Cyan. SW9010/SW3050	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
10/12/93	1650	ESC1SE3		N1	SE	DS	0	0	2	✓	✓	✓	✓		0	0	1	A		
10/12/93	1650	ESC1SE3		FR1	SE	DS	0	0	2	✓	✓	✓	✓		0	0	1	A		
10/12/93	1650	ESC1SE3		MS1	SE	DS	0	0	2	✓	✓	✓	✓		0	0	1	A		
10/12/93	1650	ESC1SE3		SD1	SE	DS	0	0	1	✓	✓	✓	✓		0	0	1	A		
10/12/93	—	FIELDQC		TB1	WQ	NA	0	0	2	✓					0	0	1	A		TB1 is preserved with HCl.

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time
Julie Burdey	10/12/93	1900						
Received by: (Signature)	**Date**	**Time**	**Received by:** (Signature)	**Date**	**Time**	**Received by:** (Signature)	**Date**	**Time**
[illegible] Hollis	10/13/93	0900						

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: Tinker AFB RFI

CARRIER: ☑ Federal Express ☐ UPS
Other _____

PROJECT NUMBER: AU401.07

AIRBILL OR CARRIER ID #: 801014536O

SAMPLER(S): Julie Burdey / Julie Burdey (Signature) — Michelle Town / Michelle Town (Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOAs SW8240 ice	SV SW8270 ice	total metals SW6010/SW3050 ice	total cyanides SW9010/SW3050 ice	PRESERVATIVE	ANALYSIS REQUIRED	FIELD LOT CONTROL NUMBER	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/13/93	0855	ESC1SE2		NI	SE	DS	0	0	2	✓	✓	✓	✓				0	0	1	A	
10/13/93	0950	ESC1SE1		NI	SE		0	0	2	✓	✓	✓	✓				0	0	1	A	
10/13/93	—	FIELDQC		TB1	WQ	NA	0	0	2	✓							0	0	1	A	TB1 is preserved with HCl.

Relinquished by: Julie Burdey (Signature) Date 10/13/93 Time 1130
Received by: (Signature) Date Time

Relinquished by: (Signature) Date Time
Received by: [signature] Date 10/14/93 Time 0900

Relinquished by: (Signature) Date Time
Received by: (Signature) Date Time

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.01

DATE: 11/16/93

SWLO #: 15873.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS1
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.25
DATE PREPARED : / /
DILUTION FACTOR: 1.04

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	5.2	U	CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.2	U	TETRACHLOROETHENE	5.8	
1,2-DICHLOROETHANE	5.2	U	TOLUENE	5.2	U
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE (TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	85%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.01

DATE: 11/16/93

SWLO #: 15873.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS1
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.25
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	144	J	DIETHYLPHTHALATE	71.8	J
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	96.7	J	PHENANTHRENE	73.1	J
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	70.4	J
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	98.3	J
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	865	B
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.01

DATE: 11/16/93

SWLO #: 15873.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS1
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.25
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	41%	2-FLUOROBIPHENYL	(30-115)	47%
TERPHENYL-D14	(18-137)	63%	PHENOL-D5	(24-113)	37%
2-FLUOROPHENOL	(25-121)	35%	2,4,6-TRIBROMOPHENOL	(19-122)	52%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.01

DATE: 11/16/93

SWLO #: 15873.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.25

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.982		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	26.8		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.04	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	317		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	49.2		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	945		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	104		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	1510		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.522	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	93.4		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.01

DATE: 11/16/93

SWLO #: 15873.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.25

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.43	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.02

DATE: 11/16/93

SWLO #: 15873.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	16		CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	63		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	2	JB	TETRACHLOROETHENE	1.8	J
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE (TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	116%	BROMOFLUOROBENZENE	(74-121)	79%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.02

DATE: 11/16/93

SWLO #: 15873.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	152	J	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	169	J	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	190	J
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	160	J
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	8850	B
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	1320	
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	61%
TERPHENYL-D14	(18-137)	65%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	47%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.2SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.161		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	16.1		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.15	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	171		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	16.2		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	254		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	37.4		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	370		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.574	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	262		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	3.68	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.03

DATE: 11/16/93

SWLO #: 15873.03 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	1.6	J	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	30		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	1.1	J
1,2-DICHLOROETHANE	5.5	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE (TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	79%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

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SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	247	J	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	150	J	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	156	J
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	129	J
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	6730	B
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	1060	
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	54%
TERPHENYL-D14	(18-137)	60%	PHENOL-D5	(24-113)	45%
2-FLUOROPHENOL	(25-121)	48%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.198		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	25.7		mg/kg	10/18/93	10/28/93	SW846-7761
ARSENIC	1.1	U	mg/kg	10/22/93	10/25/93	SW846-6010
BARIUM	257		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	25		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	412		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	43.2		mg/kg	10/22/93	10/25/93	SW846-6010
NICKEL	549		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.549	U	mg/kg	10/22/93	10/25/93	SW846-6010
ZINC	105		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 0.17
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	1.86	mg/kg	/ /	10/18/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 15873.04

DATE: 11/16/93

SWLO #: 15873.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	43	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	54	
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	64		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	41		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	1.7	JB	TETRACHLOROETHENE	8.6	
1,2-DICHLOROETHANE	5.5	U	TOLUENE	58	
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	50	
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE (TOTAL)	1.2	J
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 113%	BROMOFLUOROBENZENE	(74-121) 76%
1,2-DICHLOROETHANE-D4	(70-121) 102%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	7120		ACENAPHTHENE	3530	
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	6830		4-NITROPHENOL	10600	
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	2020		2,4-DINITROTOLUENE	3420	
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	3890	
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	3700		4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	7530	
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	4760	
BENZOIC ACID	218	J	ANTHRACENE	3690	
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	232	J
1,2,4-TRICHLOROBENZENE	3500		PYRENE	3370	
NAPHTHALENE	3540		BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	8200		BIS(2-ETHYLHEXYL)PHTHALATE	23700	EB
2-METHYLNAPHTHALENE	4270		CHRYSENE	83.4	J
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	1110	
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.04

DATE: 11/16/93

SWLO #: 15873.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
\CENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	53%	2-FLUOROBIPHENYL	(30-115)	55%
TERPHENYL-D14	(18-137)	60%	PHENOL-D5	(24-113)	51%
-FLUOROPHENOL	(25-121)	50%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/16/93

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SAMPLE #: I24.2SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.68	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	31.7	mg/kg	10/18/93	10/28/93	SW846-7761
ARSENIC	199	mg/kg	10/22/93	10/25/93	SW846-6010
BARIUM	579	mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	43	mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	511	mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	110	mg/kg	10/22/93	10/25/93	SW846-6010
NICKEL	779	mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	196	mg/kg	10/22/93	10/25/93	SW846-6010
ZINC	136	mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.2SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	7.35	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 15873.05

DATE: 11/16/93

SWLO #: 15873.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	49	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	58	
METHYLENE CHLORIDE	16		CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	48		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	46		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	1.8	JB	TETRACHLOROETHENE	7.1	
1,2-DICHLOROETHANE	5.5	U	TOLUENE	62	
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	55	
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE (TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 109%	BROMOFLUOROBENZENE	(74-121)	78%
1,2-DICHLOROETHANE-D4	(70-121) 100%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 15873.05 SD1
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SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	6530		ACENAPHTHENE	3410	
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	9040	
2-CHLOROPHENOL	6170		4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	2050		2,4-DINITROTOLUENE	3280	
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	3770	
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	2980		4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	7530	
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	4730	
BENZOIC ACID	127	J	ANTHRACENE	3560	
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	451	J
1,2,4-TRICHLOROBENZENE	3340		PYRENE	3340	
NAPHTHALENE	3510		BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	6660		BIS(2-ETHYLHEXYL)PHTHALATE	6300	B
2-METHYLNAPHTHALENE	3850		CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	815	
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

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REPORT: 15873.05

DATE: 11/16/93

SWLO #: 15873.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	48%	2-FLUOROBIPHENYL	(30-115)	56%
TERPHENYL-D14	(18-137)	63%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	41%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.05

DATE: 11/16/93

SWLO #: 15873.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.68	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	30.5	mg/kg	10/18/93	10/28/93	SW846-7761
ARSENIC	213	mg/kg	10/22/93	10/25/93	SW846-6010
BARIUM	462	mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	31	mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	399	mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	93.4	mg/kg	10/22/93	10/25/93	SW846-6010
NICKEL	617	mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	212	mg/kg	10/22/93	10/25/93	SW846-6010
ZINC	126	mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/16/93

SWLO #: 15873.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	9	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.06

DATE: 11/16/93

SWLO #: 15873.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS3
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	2	JB	TETRACHLOROETHENE	9.2	
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE (TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	110%	BROMOFLUOROBENZENE	(74-121) 82%
1,2-DICHLOROETHANE-D4	(70-121)	113%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.06

DATE: 11/16/93

SWLO #: 15873.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS3
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	237	J
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	454	J
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	397	J
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	204	J
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	223	JB
2-METHYLNAPHTHALENE	760	U	CHRYSENE	237	J
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	760	U
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	172	J

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DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	162	J
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	182	J
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	115	J
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	142	J
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	41%	2-FLUOROBIPHENYL	(30-115)	54%
TERPHENYL-D14	(18-137)	72%	PHENOL-D5	(24-113)	39%
2-FLUOROPHENOL	(25-121)	34%	2,4,6-TRIBROMOPHENOL	(19-122)	62%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/16/93

SWLO #: 15873.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS3
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	5.33		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	4.08		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	250		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	4.08		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	120		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	21		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	39.7		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.567	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	50.8		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.06

DATE: 11/16/93

SWLO #: 15873.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS3
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.567	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.07

DATE: 11/16/93

SWLO #: 15873.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS4
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	13		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	1.9	JB	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121) 91%
1,2-DICHLOROETHANE-D4	(70-121)	100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.07

DATE: 11/16/93

SWLO #: 15873.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS4
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	202	J
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	298	J
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	272	J
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	141	J
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	203	JB
2-METHYLNAPHTHALENE	730	U	CHRYSENE	151	J
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	730	U
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	89.4	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.07

DATE: 11/16/93

SWLO #: 15873.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS4
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	132	J
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	117	J
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	48%	2-FLUOROBIPHENYL	(30-115)	60%
TERPHENYL-D14	(18-137)	70%	PHENOL-D5	(24-113)	46%
2-FLUOROPHENOL	(25-121)	51%	2,4,6-TRIBROMOPHENOL	(19-122)	55%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
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REPORT: 15873.07

DATE: 11/16/93

SWLO #: 15873.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS4
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	6.43		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.63		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	208		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	31.5		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	343		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	46.7		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	102		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.545	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	39.7		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.07

DATE: 11/16/93

SWLO #: 15873.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.2SS4
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.763	mg/kg	/ /	10/18/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.08

DATE: 11/16/93

SWLO #: 15873.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SS1
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	10	U	BENZENE	5.3	U
METHYLENE CHLORIDE	9.1		CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.1	JB	TETRACHLOROETHENE	7.9	
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	10	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE (TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 87%
1,2-DICHLOROETHANE-D4	(70-121) 102%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.08

DATE: 11/16/93

SWLO #: 15873.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SS1
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	90.5	J
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	79.3	J
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	201	J
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	184	J
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	78.5	J
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	220	JB
2-METHYLNAPHTHALENE	690	U	CHRYSENE	117	J
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	77.2	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.08

DATE: 11/16/93

SWLO #: 15873.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SS1
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	93.5	J
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	81	J
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	45%	2-FLUOROBIPHENYL	(30-115)	51%
TERPHENYL-D14	(18-137)	68%	PHENOL-D5	(24-113)	40%
2-FLUOROPHENOL	(25-121)	37%	2,4,6-TRIBROMOPHENOL	(19-122)	57%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.08

DATE: 11/16/93

SWLO #: 15873.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.297		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	1.91		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	2.97		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	252		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	2.76		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	92.4		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	25		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	25.6		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.53	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	94.1		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.08

DATE: 11/16/93

SWLO #: 15873.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.53	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.09

DATE: 11/16/93

SWLO #: 15873.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SS1
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	1.8	JB	TETRACHLOROETHENE	7.8	
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE (TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	105%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.09

DATE: 11/16/93

SWLO #: 15873.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SS1
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	87.8	J
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	73.5	J
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	235	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.09

DATE: 11/16/93

SWLO #: 15873.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SS1
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	63%
TERPHENYL-D14	(18-137)	73%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	43%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.09

DATE: 11/16/93

SWLO #: 15873.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.106	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	1.06		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	4.15		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	286		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	2.13		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	52.2		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	12.4		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	35		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.532	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	31.9		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.3SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.532	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.10

DATE: 11/16/93

SWLO #: 15873.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS1
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.04

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	15		CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	30		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.7	JB	TETRACHLOROETHENE	7.5	
1,2-DICHLOROETHANE	5.2	U	TOLUENE	3.1	J
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE (TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 108%	BROMOFLUOROBENZENE	(74-121) 87%
1,2-DICHLOROETHANE-D4	(70-121) 106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/16/93

SWLO #: 15873.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS1
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	314	JB
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.10

DATE: 11/16/93

SWLO #: 15873.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS1
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	46%	2-FLUOROBIPHENYL	(30-115)	60%
TERPHENYL-D14	(18-137)	69%	PHENOL-D5	(24-113)	43%
2-FLUOROPHENOL	(25-121)	43%	2,4,6-TRIBROMOPHENOL	(19-122)	49%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.10

DATE: 11/16/93

SWLO #: 15873.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.104	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	1.04		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	3.34		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	300		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	1.88		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	85.3		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	11.6		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	26.2		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.521	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	46.1		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.10

DATE: 11/16/93

SWLO #: 15873.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.521	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.11

DATE: 11/16/93

SWLO #: 15873.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS2
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 5.57

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	56	U	TRICHLOROETHENE	28	U
BROMOMETHANE	56	U	DIBROMOCHLOROMETHANE	28	U
VINYL CHLORIDE	56	U	1,1,2-TRICHLOROETHANE	28	U
CHLOROETHANE	56	U	BENZENE	28	U
METHYLENE CHLORIDE	40		CIS-1,3-DICHLOROPROPENE	28	U
ACETONE	36	J	2-CHLOROETHYL VINYL ETHER	56	U
CARBON DISULFIDE	28	U	BROMOFORM	28	U
1,1-DICHLOROETHENE	28	U	2-HEXANONE	56	U
1,1-DICHLOROETHANE	28	U	4-METHYL-2-PENTANONE	56	U
CHLOROFORM	8.3	JB	TETRACHLOROETHENE	18	J
1,2-DICHLOROETHANE	28	U	TOLUENE	28	U
1,1,1-TRICHLOROETHANE	28	U	CHLOROBENZENE	28	U
CARBON TETRACHLORIDE	28	U	ETHYLBENZENE	28	U
VINYL ACETATE	56	U	STYRENE	28	U
BROMODICHLOROMETHANE	28	U	1,2-DICHLOROETHENE (TOTAL)	28	U
1,1,2,2-TETRACHLOROETHANE	28	U	XYLENE (TOTAL)	28	U
1,2-DICHLOROPROPANE	28	U	2-BUTANONE	56	U
TRANS-1,3-DICHLOROPROPENE	28	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	80%
1,2-DICHLOROETHANE-D4	(70-121)	71%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.11

DATE: 11/16/93

SWLO #: 15873.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	484	J
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	252	J
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	730	U
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	100	J
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	6060	B
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	152	J
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.11

DATE: 11/16/93

SWLO #: 15873.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	149% *	2-FLUOROBIPHENYL	(30-115)	71%
TERPHENYL-D14	(18-137)	70%	PHENOL-D5	(24-113)	49%
2-FLUOROPHENOL	(25-121)	54%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.11

DATE: 11/16/93

SWLO #: 15873.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.167		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	2		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	1.34		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	177		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	3.23		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	45.1		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	14.5		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	23.4		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.557	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	41.7		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.11

DATE: 11/16/93

SWLO #: 15873.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.557	U	mg/kg	/ /	10/18/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 131.25

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1300	U	TRICHLOROETHENE	660	U
BROMOMETHANE	1300	U	DIBROMOCHLOROMETHANE	660	U
VINYL CHLORIDE	1300	U	1,1,2-TRICHLOROETHANE	660	U
CHLOROETHANE	1300	U	BENZENE	660	U
METHYLENE CHLORIDE	660	U	CIS-1,3-DICHLOROPROPENE	660	U
ACETONE	1300	U	2-CHLOROETHYL VINYL ETHER	1300	U
CARBON DISULFIDE	660	U	BROMOFORM	660	U
1,1-DICHLOROETHENE	660	U	2-HEXANONE	3100	
1,1-DICHLOROETHANE	660	U	4-METHYL-2-PENTANONE	1300	U
CHLOROFORM	660	U	TETRACHLOROETHENE	660	U
1,2-DICHLOROETHANE	660	U	TOLUENE	170	J
1,1,1-TRICHLOROETHANE	660	U	CHLOROBENZENE	660	U
CARBON TETRACHLORIDE	660	U	ETHYLBENZENE	660	U
VINYL ACETATE	1300	U	STYRENE	660	U
BROMODICHLOROMETHANE	660	U	1,2-DICHLOROETHENE (TOTAL)	660	U
1,1,2,2-TETRACHLOROETHANE	660	U	XYLENE (TOTAL)	460	J
1,2-DICHLOROPROPANE	660	U	2-BUTANONE	1300	U
TRANS-1,3-DICHLOROPROPENE	660	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	80% *	BROMOFLUOROBENZENE	(74-121)	78%
1,2-DICHLOROETHANE-D4	(70-121)	76%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
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REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	181	J
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	118	J
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	151	J
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	2380	B
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	89	J
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	50%	2-FLUOROBIPHENYL	(30-115)	55%
TERPHENYL-D14	(18-137)	65%	PHENOL-D5	(24-113)	46%
2-FLUOROPHENOL	(25-121)	46%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	22.8		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	48% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/25/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1	U	NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U	MISCELLANEOUS C8-C24	94.6	1

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.105		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	7.87		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	7.66		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	304		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	8.92		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	180		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	71.3		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	335		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.525	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	494		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.12

DATE: 11/16/93

SWLO #: 15873.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.525	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.04

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	8.7		CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	12		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.7	JB	TETRACHLOROETHENE	2	J
1,2-DICHLOROETHANE	5.2	U	TOLUENE	5.2	U
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE (TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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Attn: KEVIN TYNES

REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	690	B
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	42%	2-FLUOROBIPHENYL	(30-115)	46%
TERPHENYL-D14	(18-137)	65%	PHENOL-D5	(24-113)	37%
2-FLUOROPHENOL	(25-121)	37%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:
DATE ANALYZED : 10/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10.4	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 51% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:
DATE ANALYZED : 10/25/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1	U	NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U	MISCELLANEOUS C12-C24	191	1

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	97%

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Attn: KEVIN TYNES

REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.104	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	1.04		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	1.56		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	69.5		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	0.935		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	44.1		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	80.7		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	36.6		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.52	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	71		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.13

DATE: 11/16/93

SWLO #: 15873.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS2
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.52	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 10/18/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	1.7	JB	TETRACHLOROETHENE	7.3	
1,2-DICHLOROETHANE	5.5	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE (TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121) 81%
1,2-DICHLOROETHANE-D4	(70-121)	91%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	287	J
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	134	J
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	730	U
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	730	U
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	656	J
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	4620	B
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	730	U
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	50%	2-FLUOROBIPHENYL	(30-115)	57%
TERPHENYL-D14	(18-137)	66%	PHENOL-D5	(24-113)	47%
-FLUOROPHENOL	(25-121)	49%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 10/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	11	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 50% *

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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Attn: KEVIN TYNES

REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:
DATE ANALYZED : 10/25/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50
DATE PREPARED : 10/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.1	U	NAPHTHA C6-C12	1.1	U
KEROSENE C9-C18	1.1	U	#6 FUEL OIL C12-C24	1.1	U
JP-4 C6-C14	1.1	U	MISCELLANEOUS C12-C24	112	1

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	9.98		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	3.77		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	354		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	7.88		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	212		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	31.6		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	212		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.555	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	51.1		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.14

DATE: 11/16/93

SWLO #: 15873.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS3
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.33
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.788	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	5.9	U	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	12	U	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	2.9	J
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE (TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	86%
1,2-DICHLOROETHANE-D4	(70-121)	120%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	266	J
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	8120		4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	760	U
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	760	U
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	1480	B
2-METHYLNAPHTHALENE	1010		CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	110	J
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	160% *	2-FLUOROBIPHENYL	(30-115)	55%
TERPHENYL-D14	(18-137)	68%	PHENOL-D5	(24-113)	35%
2-FLUOROPHENOL	(25-121)	48%	2,4,6-TRIBROMOPHENOL	(19-122)	84%

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:
DATE ANALYZED : 10/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1250.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	70000		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	93%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/18/93
DILUTION FACTOR: 50.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	59	U	NAPHTHA C6-C12	59	U
KEROSENE C9-C18	3100		#6 FUEL OIL C12-C24	59	U
JP-4 C6-C14	59	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166) D,I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.13		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	7.56		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.3		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	273		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	62.8		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	239		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	98.6		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	123		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.591	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	90.9		mg/kg	10/18/93	10/18/93	SW846-6010

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REPORT: 15873.15

DATE: 11/16/93

SWLO #: 15873.15 N1
PROJECT : TINKER AFB RFI
SAMPLE #: RCP1SS1
LOCATION:

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	1.66	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.16

DATE: 11/16/93

SWLO #: 15873.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/23/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	12.5		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 53% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.16

DATE: 11/16/93

SWLO #: 15873.16 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/26/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1	U	NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U	MISCELLANEOUS C8-C24	119	1

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.17

DATE: 11/16/93

SWLO #: 15873.17 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/23/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	50.7		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 43% *

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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Attn: KEVIN TYNES

REPORT: 15873.17

DATE: 11/16/93

SWLO #: 15873.17 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/26/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	344		NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U	MISCELLANEOUS C8-C24	105	1

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	99%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.18

DATE: 11/16/93

SWLO #: 15873.18 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/23/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	29.6		

QA/QC SURROGATE RECOVERIES

4-BROMOFLUOROBENZENE	(65-135)	40% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15873.18

DATE: 11/16/93

SWLO #: 15873.18 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.3SS1
LOCATION:
DATE ANALYZED : 10/26/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/18/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	340		NAPHTHA C6-C12	1	U
KEROSENE C9-C18	1	U	#6 FUEL OIL C12-C24	1	U
JP-4 C6-C14	1	U	MISCELLANEOUS C8-C24	96.9	1

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	91%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873.19

DATE: 11/16/93

SWLO #: 15873.19 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/11/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.01

DATE: 11/16/93

SWLO #: 15888.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	42		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121) 90%
1,2-DICHLOROETHANE-D4	(70-121)	93%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.01

DATE: 11/16/93

SWLO #: 15888.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	299	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.01

DATE: 11/16/93

SWLO #: 15888.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	52%
TERPHENYL-D14	(18-137)	55%	PHENOL-D5	(24-113)	43%
2-FLUOROPHENOL	(25-121)	36%	2,4,6-TRIBROMOPHENOL	(19-122)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.01

DATE: 11/16/93

SWLO #: 15888.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS1
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.214		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	16.6		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.07	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	263		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	60.6		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	2650		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	142		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	312		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.536	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	55.8		mg/kg	10/18/93	10/18/93	SW846-6010

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SAMPLE #: I24.19SS1
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.15	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.02

DATE: 11/16/93

SWLO #: 15888.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.05

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	10	U	BENZENE	5.3	U
METHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	1.4	J
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	10	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE (TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	89%	BROMOFLUOROBENZENE	(74-121)	83%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

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REPORT: 15888.02

DATE: 11/16/93

SWLO #: 15888.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	90.6	J
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	197	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.02

DATE: 11/16/93

SWLO #: 15888.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	49%	2-FLUOROBIPHENYL	(30-115)	52%
TERPHENYL-D14	(18-137)	54%	PHENOL-D5	(24-113)	41%
2-FLUOROPHENOL	(25-121)	36%	2,4,6-TRIBROMOPHENOL	(19-122)	62%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.02

DATE: 11/16/93

SWLO #: 15888.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.105	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	11.5		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.05	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	196		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	15.5		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	473		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	25.3		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	523		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.527	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	39.3		mg/kg	10/18/93	10/18/93	SW846-6010

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.03

DATE: 11/16/93

SWLO #: 15888.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS3
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 106%	BROMOFLUOROBENZENE	(74-121) 83%
1,2-DICHLOROETHANE-D4	(70-121) 100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.03

DATE: 11/16/93

SWLO #: 15888.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS3
LOCATION:
DATE ANALYZED : 10/22/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	611	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 0.17
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DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	62%	2-FLUOROBIPHENYL	(30-115)	96%
TERPHENYL-D14	(18-137)	94%	PHENOL-D5	(24-113)	58%
)-FLUOROPHENOL	(25-121)	46%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.19SS3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	2.14		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	1.07	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	538		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	2.89		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	78.6		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	13.4		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	562		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.536	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	24.9		mg/kg	10/18/93	10/18/93	SW846-6010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.03

DATE: 11/16/93

SWLO #: 15888.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.536	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.04

DATE: 11/16/93

SWLO #: 15888.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	2.8	J
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	3.4	J
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 99%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121) 104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.04

DATE: 11/16/93

SWLO #: 15888.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	514	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.04

DATE: 11/16/93

SWLO #: 15888.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	51%
TERPHENYL-D14	(18-137)	57%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	41%	2,4,6-TRIBROMOPHENOL	(19-122)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.04

DATE: 11/16/93

SWLO #: 15888.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107	U	mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	5.56		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.07	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	222		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	3.64		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	86.5		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	215		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	304		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.535	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	51.6		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.04

DATE: 11/16/93

SWLO #: 15888.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS4
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.535	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.05

DATE: 11/16/93

SWLO #: 15888.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS1
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	86		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	2.6	J
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE (TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121) 98%
1,2-DICHLOROETHANE-D4	(70-121)	108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.05

DATE: 11/16/93

SWLO #: 15888.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	690	U
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	72.7	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.05

DATE: 11/16/93

SWLO #: 15888.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	55%	2-FLUOROBIPHENYL	(30-115)	57%
TERPHENYL-D14	(18-137)	57%	PHENOL-D5	(24-113)	45%
-FLUOROPHENOL	(25-121)	40%	2,4,6-TRIBROMOPHENOL	(19-122)	51%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.05

DATE: 11/16/93

SWLO #: 15888.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS1
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.128		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	8.74		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.07	U	mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	428		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	9.06		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	322		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	19.8		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	63.3		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.533	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	40.5		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.05

DATE: 11/16/93

SWLO #: 15888.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS1
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.533	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 15888.06

DATE: 11/16/93

SWLO #: 15888.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.04

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	1.7	J	CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.2	U	TETRACHLOROETHENE	1.8	J
1,2-DICHLOROETHANE	5.2	U	TOLUENE	5.2	U
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE (TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.06

DATE: 11/16/93

SWLO #: 15888.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	119	J
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	74	J
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	217	J
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	310	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	89.4	J

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REPORT: 15888.06

DATE: 11/16/93

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SAMPLE #: S32.8SS2
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	52%	2-FLUOROBIPHENYL	(30-115)	57%
TERPHENYL-D14	(18-137)	58%	PHENOL-D5	(24-113)	48%
2-FLUOROPHENOL	(25-121)	42%	2,4,6-TRIBROMOPHENOL	(19-122)	70%

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SAMPLE #: S32.8SS2
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.415		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	1.56		mg/kg	10/18/93	10/25/93	SW846-7761
ARSENIC	1.14		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	400		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	1.66		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	59.4		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	48.1		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	46.3		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.519	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	41.6		mg/kg	10/18/93	10/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.519	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.07

DATE: 11/16/93

SWLO #: 15888.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.04

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.2	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.2	U
CHLOROETHANE	10	U	BENZENE	5.2	U
METHYLENE CHLORIDE	2.8	J	CIS-1,3-DICHLOROPROPENE	5.2	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.2	U	BROMOFORM	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.2	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.2	U	TETRACHLOROETHENE	1.8	J
1,2-DICHLOROETHANE	5.2	U	TOLUENE	5.2	U
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	1,2-DICHLOROETHENE (TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,2-DICHLOROPROPANE	5.2	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	80%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/16/93

SWLO #: 15888.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	690	U	ACENAPHTHENE	690	U
BIS(2-CHLOROETHYL)ETHER	690	U	2,4-DINITROPHENOL	3400	U
2-CHLOROPHENOL	690	U	4-NITROPHENOL	3400	U
1,3-DICHLOROBENZENE	690	U	DIBENZOFURAN	690	U
1,4-DICHLOROBENZENE	690	U	2,4-DINITROTOLUENE	690	U
BENZYL ALCOHOL	690	U	2,6-DINITROTOLUENE	690	U
1,2-DICHLOROBENZENE	690	U	DIETHYLPHTHALATE	690	U
2-METHYLPHENOL(O-CRESOL)	690	U	4-CHLOROPHENYL-PHENYLETHER	690	U
BIS(2-CHLOROISOPROPYL)ETHER	690	U	FLUORENE	690	U
4-METHYLPHENOL(P-CRESOL)	690	U	4-NITROANILINE	3400	U
N-NITROSO-DI-N-PROPYLAMINE	690	U	4,6-DINITRO-2-METHYLPHENOL	3400	U
HEXACHLOROETHANE	690	U	N-NITROSODIPHENYLAMINE(1)	690	U
NITROBENZENE	690	U	4-BROMOPHENYL-PHENYLETHER	690	U
ISOPHORONE	690	U	HEXACHLOROBENZENE	690	U
2-NITROPHENOL	690	U	PENTACHLOROPHENOL	3400	U
2,4-DIMETHYLPHENOL	690	U	PHENANTHRENE	690	U
BENZOIC ACID	3400	U	ANTHRACENE	690	U
BIS(2-CHLOROETHOXY)METHANE	690	U	DI-N-BUTYL PHTHALATE	690	U
2,4-DICHLOROPHENOL	690	U	FLUORANTHENE	90.1	J
1,2,4-TRICHLOROBENZENE	690	U	PYRENE	690	U
NAPHTHALENE	690	U	BUTYL BENZYL PHTHALATE	690	U
4-CHLOROANILINE	690	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	690	U	BENZO(A)ANTHRACENE	690	U
4-CHLORO-3-METHYLPHENOL	690	U	BIS(2-ETHYLHEXYL)PHTHALATE	578	J
2-METHYLNAPHTHALENE	690	U	CHRYSENE	690	U
HEXACHLOROCYCLOPENTADIENE	690	U	DI-N-OCTYL PHTHALATE	690	U
2,4,6-TRICHLOROPHENOL	690	U	BENZO(B)FLUORANTHENE	690	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.07

DATE: 11/16/93

SWLO #: 15888.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3400	U	BENZO(K)FLUORANTHENE	690	U
2-CHLORONAPHTHALENE	690	U	BENZO(A)PYRENE	690	U
2-NITROANILINE	3400	U	INDENO(1,2,3-CD)PYRENE	690	U
DIMETHYL PHTHALATE	690	U	DIBENZ(A,H)ANTHRACENE	690	U
ACENAPHTHYLENE	690	U	BENZO(G,H,I)PERYLENE	690	U
3-NITROANILINE	3400	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	46%	2-FLUOROBIPHENYL	(30-115)	52%
TERPHENYL-D14	(18-137)	53%	PHENOL-D5	(24-113)	43%
2-FLUOROPHENOL	(25-121)	38%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 15888.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.312		mg/kg	10/18/93	10/18/93	SW846-7471
SILVER	5.3		mg/kg	10/18/93	10/26/93	SW846-7761
ARSENIC	1.66		mg/kg	10/18/93	10/19/93	SW846-6010
BARIUM	271		mg/kg	10/18/93	10/18/93	SW846-6010
CADMIUM	1.98		mg/kg	10/18/93	10/18/93	SW846-6010
CHROMIUM	67.4		mg/kg	10/18/93	10/18/93	SW846-6010
LEAD	40.3		mg/kg	10/18/93	10/19/93	SW846-6010
NICKEL	57.3		mg/kg	10/18/93	10/18/93	SW846-6010
SELENIUM	0.52	U	mg/kg	10/18/93	10/19/93	SW846-6010
ZINC	38.4		mg/kg	10/18/93	10/18/93	SW846-6010

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DATE: 11/16/93

SWLO #: 15888.07 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS2
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.52	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.08

DATE: 11/16/93

SWLO #: 15888.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS3
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	1.7	J	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	16		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	2.6	J
1,2-DICHLOROETHANE	5.3	U	TOLUENE	1.1	J
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	1,2-DICHLOROETHENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.08

DATE: 11/16/93

SWLO #: 15888.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS3
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	730	U
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	730	U
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	88.7	J
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	730	U
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.08

DATE: 11/16/93

SWLO #: 15888.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS3
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U			
3-NITROANILINE	3500	U	BENZO(G,H,I)PERYLENE	730	U

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	52%	2-FLUOROBIPHENYL	(30-115)	58%
TERPHENYL-D14	(18-137)	52%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	43%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.08

DATE: 11/16/93

SWLO #: 15888.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	1.06		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.06	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	343		mg/kg	10/21/93	10/21/93	SW846-6010
CADMIUM	19.4		mg/kg	10/21/93	10/21/93	SW846-6010
CHROMIUM	3050		mg/kg	10/21/93	10/21/93	SW846-6010
LEAD	32.1		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	54.4		mg/kg	10/21/93	10/21/93	SW846-6010
SELENIUM	0.638		mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	37		mg/kg	10/21/93	10/21/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.08

DATE: 11/16/93

SWLO #: 15888.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8883
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.936	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.09

DATE: 11/16/93

SWLO #: 15888.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS4
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	2.2	J
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121) 91%
1,2-DICHLOROETHANE-D4	(70-121)	102%		

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DATE: 11/16/93

SWLO #: 15888.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS4
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.60

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	860	U	ACENAPHTHENE	860	U
BIS(2-CHLOROETHYL)ETHER	860	U	2,4-DINITROPHENOL	4200	U
2-CHLOROPHENOL	860	U	4-NITROPHENOL	4200	U
1,3-DICHLOROBENZENE	860	U	DIBENZOFURAN	860	U
1,4-DICHLOROBENZENE	860	U	2,4-DINITROTOLUENE	860	U
BENZYL ALCOHOL	860	U	2,6-DINITROTOLUENE	860	U
1,2-DICHLOROBENZENE	860	U	DIETHYLPHTHALATE	860	U
2-METHYLPHENOL(O-CRESOL)	860	U	4-CHLOROPHENYL-PHENYLETHER	860	U
BIS(2-CHLOROISOPROPYL)ETHER	860	U	FLUORENE	860	U
4-METHYLPHENOL(P-CRESOL)	860	U	4-NITROANILINE	4200	U
N-NITROSO-DI-N-PROPYLAMINE	860	U	4,6-DINITRO-2-METHYLPHENOL	4200	U
HEXACHLOROETHANE	860	U	N-NITROSODIPHENYLAMINE(1)	860	U
NITROBENZENE	860	U	4-BROMOPHENYL-PHENYLETHER	860	U
ISOPHORONE	860	U	HEXACHLOROBENZENE	860	U
2-NITROPHENOL	860	U	PENTACHLOROPHENOL	4200	U
2,4-DIMETHYLPHENOL	860	U	PHENANTHRENE	860	U
BENZOIC ACID	4200	U	ANTHRACENE	860	U
BIS(2-CHLOROETHOXY)METHANE	860	U	DI-N-BUTYL PHTHALATE	860	U
2,4-DICHLOROPHENOL	860	U	FLUORANTHENE	860	U
1,2,4-TRICHLOROBENZENE	860	U	PYRENE	860	U
NAPHTHALENE	860	U	BUTYL BENZYL PHTHALATE	860	U
4-CHLOROANILINE	860	U	3,3'-DICHLOROBENZIDINE	1700	U
HEXACHLOROBUTADIENE	860	U	BENZO(A)ANTHRACENE	860	U
4-CHLORO-3-METHYLPHENOL	860	U	BIS(2-ETHYLHEXYL)PHTHALATE	206	J
2-METHYLNAPHTHALENE	860	U	CHRYSENE	860	U
HEXACHLOROCYCLOPENTADIENE	860	U	DI-N-OCTYL PHTHALATE	860	U
2,4,6-TRICHLOROPHENOL	860	U	BENZO(B)FLUORANTHENE	860	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 15888.09

DATE: 11/16/93

SWLO #: 15888.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS4
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.60

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4200	U	BENZO(K)FLUORANTHENE	860	U
2-CHLORONAPHTHALENE	860	U	BENZO(A)PYRENE	860	U
2-NITROANILINE	4200	U	INDENO(1,2,3-CD)PYRENE	860	U
DIMETHYL PHTHALATE	860	U	DIBENZ(A,H)ANTHRACENE	860	U
ACENAPHTHYLENE	860	U	BENZO(G,H,I)PERYLENE	860	U
3-NITROANILINE	4200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	55%	2-FLUOROBIPHENYL	(30-115)	58%
TERPHENYL-D14	(18-137)	54%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	43%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.09

DATE: 11/16/93

SWLO #: 15888.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS4
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.214		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	1.57		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	3.04		mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	228		mg/kg	10/21/93	10/21/93	SW846-6010
CADMIUM	2.47		mg/kg	10/21/93	10/21/93	SW846-6010
CHROMIUM	85.4		mg/kg	10/21/93	10/21/93	SW846-6010
LEAD	11.2		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	36.1		mg/kg	10/21/93	10/21/93	SW846-6010
SELENIUM	0.562	U	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	31.4		mg/kg	10/21/93	10/21/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/16/93

SWLO #: 15888.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SS4
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.562	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.10

DATE: 11/16/93

SWLO #: 15888.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.31

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	13	U	TRICHLOROETHENE	2.3	J
BROMOMETHANE	13	U	DIBROMOCHLOROMETHANE	6.6	U
VINYL CHLORIDE	13	U	1,1,2-TRICHLOROETHANE	6.6	U
CHLOROETHANE	13	U	BENZENE	6.6	U
METHYLENE CHLORIDE	6.6	U	CIS-1,3-DICHLOROPROPENE	6.6	U
ACETONE	38		2-CHLOROETHYL VINYL ETHER	13	U
CARBON DISULFIDE	6.6	U	BROMOFORM	6.6	U
1,1-DICHLOROETHENE	6.6	U	2-HEXANONE	13	U
1,1-DICHLOROETHANE	6.6	U	4-METHYL-2-PENTANONE	13	U
CHLOROFORM	6.6	U	TETRACHLOROETHENE	6.6	U
1,2-DICHLOROETHANE	6.6	U	TOLUENE	6.6	U
1,1,1-TRICHLOROETHANE	6.6	U	CHLOROBENZENE	6.6	U
CARBON TETRACHLORIDE	6.6	U	ETHYLBENZENE	6.6	U
VINYL ACETATE	13	U	STYRENE	6.6	U
BROMODICHLOROMETHANE	6.6	U	1,2-DICHLOROETHENE (TOTAL)	6.6	U
1,1,2,2-TETRACHLOROETHANE	6.6	U	XYLENE (TOTAL)	6.6	U
1,2-DICHLOROPROPANE	6.6	U	2-BUTANONE	13	U
TRANS-1,3-DICHLOROPROPENE	6.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 88%	BROMOFLUOROBENZENE	(74-121) 115%
1,2-DICHLOROETHANE-D4	(70-121) 142% *		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.10

DATE: 11/16/93

SWLO #: 15888.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.60

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	860	U	ACENAPHTHENE	860	U
BIS(2-CHLOROETHYL)ETHER	860	U	2,4-DINITROPHENOL	4200	U
2-CHLOROPHENOL	860	U	4-NITROPHENOL	4200	U
1,3-DICHLOROBENZENE	860	U	DIBENZOFURAN	860	U
1,4-DICHLOROBENZENE	860	U	2,4-DINITROTOLUENE	860	U
BENZYL ALCOHOL	860	U	2,6-DINITROTOLUENE	860	U
1,2-DICHLOROBENZENE	860	U	DIETHYLPHTHALATE	860	U
2-METHYLPHENOL(O-CRESOL)	860	U	4-CHLOROPHENYL-PHENYLETHER	860	U
BIS(2-CHLOROISOPROPYL)ETHER	860	U	FLUORENE	860	U
4-METHYLPHENOL(P-CRESOL)	860	U	4-NITROANILINE	4200	U
N-NITROSO-DI-N-PROPYLAMINE	860	U	4,6-DINITRO-2-METHYLPHENOL	4200	U
HEXACHLOROETHANE	860	U	N-NITROSODIPHENYLAMINE(1)	860	U
NITROBENZENE	860	U	4-BROMOPHENYL-PHENYLETHER	860	U
ISOPHORONE	860	U	HEXACHLOROBENZENE	860	U
2-NITROPHENOL	860	U	PENTACHLOROPHENOL	4200	U
2,4-DIMETHYLPHENOL	860	U	PHENANTHRENE	860	U
BENZOIC ACID	4200	U	ANTHRACENE	860	U
BIS(2-CHLOROETHOXY)METHANE	860	U	DI-N-BUTYL PHTHALATE	860	U
2,4-DICHLOROPHENOL	860	U	FLUORANTHENE	129	J
1,2,4-TRICHLOROBENZENE	860	U	PYRENE	860	U
NAPHTHALENE	860	U	BUTYL BENZYL PHTHALATE	860	U
4-CHLOROANILINE	860	U	3,3'-DICHLOROBENZIDINE	1700	U
HEXACHLOROBUTADIENE	860	U	BENZO(A)ANTHRACENE	860	U
4-CHLORO-3-METHYLPHENOL	860	U	BIS(2-ETHYLHEXYL)PHTHALATE	574	J
2-METHYLNAPHTHALENE	860	U	CHRYSENE	860	U
HEXACHLOROCYCLOPENTADIENE	860	U	DI-N-OCTYL PHTHALATE	860	U
2,4,6-TRICHLOROPHENOL	860	U	BENZO(B)FLUORANTHENE	860	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.10

DATE: 11/16/93

SWLO #: 15888.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.60

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4200	U	BENZO(K)FLUORANTHENE	860	U
2-CHLORONAPHTHALENE	860	U	BENZO(A)PYRENE	860	U
2-NITROANILINE	4200	U	INDENO(1,2,3-CD)PYRENE	860	U
DIMETHYL PHTHALATE	860	U	DIBENZ(A,H)ANTHRACENE	860	U
ACENAPHTHYLENE	860	U	BENZO(G,H,I)PERYLENE	860	U
3-NITROANILINE	4200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	48%	2-FLUOROBIPHENYL	(30-115)	52%
TERPHENYL-D14	(18-137)	56%	PHENOL-D5	(24-113)	44%
2-FLUOROPHENOL	(25-121)	39%	2,4,6-TRIBROMOPHENOL	(19-122)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.10

DATE: 11/16/93

SWLO #: 15888.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.17		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	0.524		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.31	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	170		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	3.15		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	38.3		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	48.1		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	8.52		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	0.656	U	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	21.5		mg/kg	10/21/93	10/22/93	SW846-6010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.10

DATE: 11/16/93

SWLO #: 15888.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE6
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.656	U	mg/kg	/ /	10/18/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.11

DATE: 11/16/93

SWLO #: 15888.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.32

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	13	U	TRICHLOROETHENE	6.6	U
BROMOMETHANE	13	U	DIBROMOCHLOROMETHANE	6.6	U
VINYL CHLORIDE	13	U	1,1,2-TRICHLOROETHANE	6.6	U
CHLOROETHANE	13	U	BENZENE	6.6	U
METHYLENE CHLORIDE	6.6	U	CIS-1,3-DICHLOROPROPENE	6.6	U
ACETONE	21		2-CHLOROETHYL VINYL ETHER	13	U
CARBON DISULFIDE	6.6	U	BROMOFORM	6.6	U
1,1-DICHLOROETHENE	6.6	U	2-HEXANONE	13	U
1,1-DICHLOROETHANE	6.6	U	4-METHYL-2-PENTANONE	13	U
CHLOROFORM	6.6	U	TETRACHLOROETHENE	6.6	U
1,2-DICHLOROETHANE	6.6	U	TOLUENE	6.6	U
1,1,1-TRICHLOROETHANE	6.6	U	CHLOROBENZENE	6.6	U
CARBON TETRACHLORIDE	6.6	U	ETHYLBENZENE	6.6	U
VINYL ACETATE	13	U	STYRENE	6.6	U
BROMODICHLOROMETHANE	6.6	U	1,2-DICHLOROETHENE (TOTAL)	6.6	U
1,1,2,2-TETRACHLOROETHANE	6.6	U	XYLENE (TOTAL)	6.6	U
1,2-DICHLOROPROPANE	6.6	U	2-BUTANONE	13	U
TRANS-1,3-DICHLOROPROPENE	6.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 101%	BROMOFLUOROBENZENE	(74-121) 105%
1,2-DICHLOROETHANE-D4	(70-121) 120%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.11

DATE: 11/16/93

SWLO #: 15888.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	125	J
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	354	J
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	164	J
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	70.9	J
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	2200	
2-METHYLNAPHTHALENE	760	U	CHRYSENE	127	J
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	253	J
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	167	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.11

DATE: 11/16/93

SWLO #: 15888.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	78.6	J
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	37%	2-FLUOROBIPHENYL	(30-115)	43%
TERPHENYL-D14	(18-137)	52%	PHENOL-D5	(24-113)	34%
2-FLUOROPHENOL	(25-121)	30%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.02

DATE: 11/16/93

SWLO #: 15888.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.19SS2
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.17
DEPTH TO : 0.33

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.875	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.11

DATE: 11/16/93

SWLO #: 15888.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.172		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	1.99		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.32	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	307		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	17		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	159		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	43.3		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	31.9		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	0.662	U	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	54.2		mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.11

DATE: 11/16/93

SWLO #: 15888.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE5
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.662	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.12

DATE: 11/16/93

SWLO #: 15888.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	1.4	J	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	23		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	54	
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 90%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 113%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.12

DATE: 11/16/93

SWLO #: 15888.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	269	J	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	214	J
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	83.1	J
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	846	
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	1010	
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 15888.12

DATE: 11/16/93

SWLO #: 15888.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	105	J
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	35%	2-FLUOROBIPHENYL	(30-115)	51%
TERPHENYL-D14	(18-137)	55%	PHENOL-D5	(24-113)	31%
2-FLUOROPHENOL	(25-121)	22% *	2,4,6-TRIBROMOPHENOL	(19-122)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.12

DATE: 11/17/93

SWLO #: 15888.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.12	U	mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	0.817		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.17	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	158		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	3.73		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	68.1		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	37.8		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	12.1		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	0.583		mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	12		mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.12

DATE: 11/16/93

SWLO #: 15888.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4E
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.583	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.13

DATE: 11/16/93

SWLO #: 15888.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.36

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	14	U	TRICHLOROETHENE	6.8	U
BROMOMETHANE	14	U	DIBROMOCHLOROMETHANE	6.8	U
VINYL CHLORIDE	14	U	1,1,2-TRICHLOROETHANE	6.8	U
CHLOROETHANE	14	U	BENZENE	6.8	U
METHYLENE CHLORIDE	6.8	U	CIS-1,3-DICHLOROPROPENE	6.8	U
ACETONE	28		2-CHLOROETHYL VINYL ETHER	14	U
CARBON DISULFIDE	6.8	U	BROMOFORM	6.8	U
1,1-DICHLOROETHENE	6.8	U	2-HEXANONE	14	U
1,1-DICHLOROETHANE	6.8	U	4-METHYL-2-PENTANONE	14	U
CHLOROFORM	6.8	U	TETRACHLOROETHENE	6.8	U
1,2-DICHLOROETHANE	6.8	U	TOLUENE	2.3	J
1,1,1-TRICHLOROETHANE	6.8	U	CHLOROBENZENE	6.8	U
CARBON TETRACHLORIDE	6.8	U	ETHYLBENZENE	6.8	U
VINYL ACETATE	14	U	STYRENE	6.8	U
BROMODICHLOROMETHANE	6.8	U	1,2-DICHLOROETHENE (TOTAL)	6.8	U
1,1,2,2-TETRACHLOROETHANE	6.8	U	XYLENE (TOTAL)	6.8	U
1,2-DICHLOROPROPANE	6.8	U	2-BUTANONE	14	U
TRANS-1,3-DICHLOROPROPENE	6.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	91%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	107%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 15888.13

DATE: 11/16/93

SWLO #: 15888.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.70

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	890	U	ACENAPHTHENE	890	U
BIS(2-CHLOROETHYL)ETHER	890	U	2,4-DINITROPHENOL	4300	U
2-CHLOROPHENOL	890	U	4-NITROPHENOL	4300	U
1,3-DICHLOROBENZENE	890	U	DIBENZOFURAN	890	U
1,4-DICHLOROBENZENE	890	U	2,4-DINITROTOLUENE	890	U
BENZYL ALCOHOL	890	U	2,6-DINITROTOLUENE	890	U
1,2-DICHLOROBENZENE	890	U	DIETHYLPHTHALATE	890	U
2-METHYLPHENOL(O-CRESOL)	890	U	4-CHLOROPHENYL-PHENYLETHER	890	U
BIS(2-CHLOROISOPROPYL)ETHER	890	U	FLUORENE	890	U
4-METHYLPHENOL(P-CRESOL)	890	U	4-NITROANILINE	4300	U
N-NITROSO-DI-N-PROPYLAMINE	890	U	4,6-DINITRO-2-METHYLPHENOL	4300	U
HEXACHLOROETHANE	890	U	N-NITROSODIPHENYLAMINE(1)	890	U
NITROBENZENE	890	U	4-BROMOPHENYL-PHENYLETHER	890	U
ISOPHORONE	890	U	HEXACHLOROBENZENE	890	U
2-NITROPHENOL	890	U	PENTACHLOROPHENOL	4300	U
2,4-DIMETHYLPHENOL	890	U	PHENANTHRENE	890	U
BENZOIC ACID	4300	U	ANTHRACENE	890	U
BIS(2-CHLOROETHOXY)METHANE	890	U	DI-N-BUTYL PHTHALATE	890	U
2,4-DICHLOROPHENOL	890	U	FLUORANTHENE	184	J
1,2,4-TRICHLOROBENZENE	890	U	PYRENE	117	J
NAPHTHALENE	890	U	BUTYL BENZYL PHTHALATE	890	U
4-CHLOROANILINE	890	U	3,3'-DICHLOROBENZIDINE	1800	U
HEXACHLOROBUTADIENE	890	U	BENZO(A)ANTHRACENE	890	U
4-CHLORO-3-METHYLPHENOL	890	U	BIS(2-ETHYLHEXYL)PHTHALATE	91	J
2-METHYLNAPHTHALENE	890	U	CHRYSENE	890	U
HEXACHLOROCYCLOPENTADIENE	890	U	DI-N-OCTYL PHTHALATE	890	U
2,4,6-TRICHLOROPHENOL	890	U	BENZO(B)FLUORANTHENE	118	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.13

DATE: 11/16/93

SWLO #: 15888.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.70

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4300	U	BENZO(K)FLUORANTHENE	890	U
2-CHLORONAPHTHALENE	890	U	BENZO(A)PYRENE	890	U
2-NITROANILINE	4300	U	INDENO(1,2,3-CD)PYRENE	890	U
DIMETHYL PHTHALATE	890	U	DIBENZ(A,H)ANTHRACENE	890	U
ACENAPHTHYLENE	890	U	BENZO(G,H,I)PERYLENE	890	U
3-NITROANILINE	4300	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	51%
TERPHENYL-D14	(18-137)	52%	PHENOL-D5	(24-113)	46%
2-FLUOROPHENOL	(25-121)	42%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.13

DATE: 11/16/93

SWLO #: 15888.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.136	U	mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	0.136	U	mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	2.31		mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	598		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	2.58		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	29.7		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	14.7		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	12.2		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	0.679	U	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	41.4		mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.13

DATE: 11/16/93

SWLO #: 15888.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE4W
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.679	U	mg/kg	/ /	10/18/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.14

DATE: 11/16/93

SWLO #: 15888.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.65

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	16	U	TRICHLOROETHENE	8.3	U
BROMOMETHANE	16	U	DIBROMOCHLOROMETHANE	8.3	U
VINYL CHLORIDE	16	U	1,1,2-TRICHLOROETHANE	8.3	U
CHLOROETHANE	16	U	BENZENE	8.3	U
METHYLENE CHLORIDE	8.3	U	CIS-1,3-DICHLOROPROPENE	8.3	U
ACETONE	290		2-CHLOROETHYL VINYL ETHER	16	U
CARBON DISULFIDE	8.3	U	BROMOFORM	8.3	U
1,1-DICHLOROETHENE	8.3	U	2-HEXANONE	16	U
1,1-DICHLOROETHANE	8.3	U	4-METHYL-2-PENTANONE	16	U
CHLOROFORM	8.3	U	TETRACHLOROETHENE	8.3	U
1,2-DICHLOROETHANE	8.3	U	TOLUENE	8.3	U
1,1,1-TRICHLOROETHANE	8.3	U	CHLOROBENZENE	8.3	U
CARBON TETRACHLORIDE	8.3	U	ETHYLBENZENE	8.3	U
VINYL ACETATE	16	U	STYRENE	8.3	U
BROMODICHLOROMETHANE	8.3	U	1,2-DICHLOROETHENE (TOTAL)	8.3	U
1,1,2,2-TETRACHLOROETHANE	8.3	U	XYLENE (TOTAL)	8.3	U
1,2-DICHLOROPROPANE	8.3	U	2-BUTANONE	2.2	J
TRANS-1,3-DICHLOROPROPENE	8.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	114%	BROMOFLUOROBENZENE	(74-121) 79%
1,2-DICHLOROETHANE-D4	(70-121)	108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.14

DATE: 11/16/93

SWLO #: 15888.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	1100	U	ACENAPHTHENE	1100	U
BIS(2-CHLOROETHYL)ETHER	1100	U	2,4-DINITROPHENOL	5300	U
2-CHLOROPHENOL	1100	U	4-NITROPHENOL	5300	U
1,3-DICHLOROBENZENE	1100	U	DIBENZOFURAN	1100	U
1,4-DICHLOROBENZENE	1100	U	2,4-DINITROTOLUENE	1100	U
BENZYL ALCOHOL	1100	U	2,6-DINITROTOLUENE	1100	U
1,2-DICHLOROBENZENE	1100	U	DIETHYLPHTHALATE	1100	U
2-METHYLPHENOL(O-CRESOL)	1100	U	4-CHLOROPHENYL-PHENYLETHER	1100	U
BIS(2-CHLOROISOPROPYL)ETHER	1100	U	FLUORENE	1100	U
4-METHYLPHENOL(P-CRESOL)	1100	U	4-NITROANILINE	5300	U
N-NITROSO-DI-N-PROPYLAMINE	1100	U	4,6-DINITRO-2-METHYLPHENOL	5300	U
HEXACHLOROETHANE	1100	U	N-NITROSODIPHENYLAMINE(1)	1100	U
NITROBENZENE	1100	U	4-BROMOPHENYL-PHENYLETHER	1100	U
ISOPHORONE	1100	U	HEXACHLOROBENZENE	1100	U
2-NITROPHENOL	1100	U	PENTACHLOROPHENOL	5300	U
2,4-DIMETHYLPHENOL	1100	U	PHENANTHRENE	249	J
BENZOIC ACID	5300	U	ANTHRACENE	1100	U
BIS(2-CHLOROETHOXY)METHANE	1100	U	DI-N-BUTYL PHTHALATE	1100	U
2,4-DICHLOROPHENOL	1100	U	FLUORANTHENE	965	J
1,2,4-TRICHLOROBENZENE	1100	U	PYRENE	956	J
NAPHTHALENE	1100	U	BUTYL BENZYL PHTHALATE	1100	U
4-CHLOROANILINE	1100	U	3,3'-DICHLOROBENZIDINE	2200	U
HEXACHLOROBUTADIENE	1100	U	BENZO(A)ANTHRACENE	192	J
4-CHLORO-3-METHYLPHENOL	1100	U	BIS(2-ETHYLHEXYL)PHTHALATE	15300	
2-METHYLNAPHTHALENE	1100	U	CHRYSENE	349	J
HEXACHLOROCYCLOPENTADIENE	1100	U	DI-N-OCTYL PHTHALATE	1540	
2,4,6-TRICHLOROPHENOL	1100	U	BENZO(B)FLUORANTHENE	344	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.14

DATE: 11/16/93

SWLO #: 15888.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	5300	U	BENZO(K)FLUORANTHENE	269	J
2-CHLORONAPHTHALENE	1100	U	BENZO(A)PYRENE	247	J
2-NITROANILINE	5300	U	INDENO(1,2,3-CD)PYRENE	204	J
DIMETHYL PHTHALATE	1100	U	DIBENZ(A,H)ANTHRACENE	1100	U
ACENAPHTHYLENE	1100	U	BENZO(G,H,I)PERYLENE	195	J
3-NITROANILINE	5300	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	45%	2-FLUOROBIPHENYL	(30-115)	47%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	40%
?-FLUOROPHENOL	(25-121)	37%	2,4,6-TRIBROMOPHENOL	(19-122)	41%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 15888.14

DATE: 11/16/93

SWLO #: 15888.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.248		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	2.48		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.65	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	478		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	14.2		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	382		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	42.5		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	61.7		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	1.32		mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	124		mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.14

DATE: 11/16/93

SWLO #: 15888.14 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.827	U	mg/kg	/ /	10/18/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.15

DATE: 11/16/93

SWLO #: 15888.15 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.52

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	7.6	U
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.6	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.6	U
CHLOROETHANE	15	U	BENZENE	7.6	U
METHYLENE CHLORIDE	7.6	U	CIS-1,3-DICHLOROPROPENE	7.6	U
ACETONE	310	E	2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.6	U	BROMOFORM	7.6	U
1,1-DICHLOROETHENE	7.6	U	2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.6	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.6	U	TETRACHLOROETHENE	7.6	U
1,2-DICHLOROETHANE	7.6	U	TOLUENE	7.6	U
1,1,1-TRICHLOROETHANE	7.6	U	CHLOROBENZENE	3.9	J
CARBON TETRACHLORIDE	7.6	U	ETHYLBENZENE	7.6	U
VINYL ACETATE	15	U	STYRENE	7.6	U
BROMODICHLOROMETHANE	7.6	U	1,2-DICHLOROETHENE (TOTAL)	7.6	U
1,1,2,2-TETRACHLOROETHANE	7.6	U	XYLENE (TOTAL)	7.6	U
1,2-DICHLOROPROPANE	7.6	U	2-BUTANONE	3	J
TRANS-1,3-DICHLOROPROPENE	7.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	115%	BROMOFLUOROBENZENE	(74-121)	74%
1,2-DICHLOROETHANE-D4	(70-121)	100%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.15

DATE: 11/16/93

SWLO #: 15888.15 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	990	U	ACENAPHTHENE	990	U
BIS(2-CHLOROETHYL)ETHER	990	U	2,4-DINITROPHENOL	4800	U
2-CHLOROPHENOL	990	U	4-NITROPHENOL	4800	U
1,3-DICHLOROBENZENE	990	U	DIBENZOFURAN	990	U
1,4-DICHLOROBENZENE	990	U	2,4-DINITROTOLUENE	990	U
BENZYL ALCOHOL	990	U	2,6-DINITROTOLUENE	990	U
1,2-DICHLOROBENZENE	990	U	DIETHYLPHTHALATE	990	U
2-METHYLPHENOL(O-CRESOL)	990	U	4-CHLOROPHENYL-PHENYLETHER	990	U
BIS(2-CHLOROISOPROPYL)ETHER	990	U	FLUORENE	990	U
4-METHYLPHENOL(P-CRESOL)	990	U	4-NITROANILINE	4800	U
N-NITROSO-DI-N-PROPYLAMINE	990	U	4,6-DINITRO-2-METHYLPHENOL	4800	U
HEXACHLOROETHANE	990	U	N-NITROSODIPHENYLAMINE(1)	990	U
NITROBENZENE	990	U	4-BROMOPHENYL-PHENYLETHER	990	U
ISOPHORONE	990	U	HEXACHLOROBENZENE	990	U
2-NITROPHENOL	990	U	PENTACHLOROPHENOL	4800	U
2,4-DIMETHYLPHENOL	990	U	PHENANTHRENE	371	J
BENZOIC ACID	4800	U	ANTHRACENE	990	U
BIS(2-CHLOROETHOXY)METHANE	990	U	DI-N-BUTYL PHTHALATE	990	U
2,4-DICHLOROPHENOL	990	U	FLUORANTHENE	1420	
1,2,4-TRICHLOROBENZENE	990	U	PYRENE	878	J
NAPHTHALENE	990	U	BUTYL BENZYL PHTHALATE	990	U
4-CHLOROANILINE	990	U	3,3'-DICHLOROBENZIDINE	2000	U
HEXACHLOROBUTADIENE	990	U	BENZO(A)ANTHRACENE	389	J
4-CHLORO-3-METHYLPHENOL	990	U	BIS(2-ETHYLHEXYL)PHTHALATE	11500	
2-METHYLNAPHTHALENE	990	U	CHRYSENE	616	J
HEXACHLOROCYCLOPENTADIENE	990	U	DI-N-OCTYL PHTHALATE	1310	
2,4,6-TRICHLOROPHENOL	990	U	BENZO(B)FLUORANTHENE	504	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4800	U	BENZO(K)FLUORANTHENE	990	U
2-CHLORONAPHTHALENE	990	U	BENZO(A)PYRENE	314	J
2-NITROANILINE	4800	U	INDENO(1,2,3-CD)PYRENE	274	J
DIMETHYL PHTHALATE	990	U	DIBENZ(A,H)ANTHRACENE	990	U
ACENAPHTHYLENE	990	U	BENZO(G,H,I)PERYLENE	297	J
3-NITROANILINE	4800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	46%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	104%	PHENOL-D5	(24-113)	41%
2-FLUOROPHENOL	(25-121)	28%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.213		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	2.13		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.52	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	384		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	10		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	270		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	35.9		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	49.4		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	1.06		mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	92.1		mg/kg	10/21/93	10/22/93	SW846-6010

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DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.76	U	mg/kg	/ /	10/22/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 15888.16

DATE: 11/16/93

SWLO #: 15888.16 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.52

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	56	
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.6	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.6	U
CHLOROETHANE	15	U	BENZENE	64	
METHYLENE CHLORIDE	7.6	U	CIS-1,3-DICHLOROPROPENE	7.6	U
ACETONE	160		2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.6	U	BROMOFORM	7.6	U
1,1-DICHLOROETHENE	58		2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.6	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.6	U	TETRACHLOROETHENE	7.6	U
1,2-DICHLOROETHANE	7.6	U	TOLUENE	69	
1,1,1-TRICHLOROETHANE	7.6	U	CHLOROBENZENE	62	
CARBON TETRACHLORIDE	7.6	U	ETHYLBENZENE	7.6	U
VINYL ACETATE	15	U	STYRENE	7.6	U
BROMODICHLOROMETHANE	7.6	U	1,2-DICHLOROETHENE (TOTAL)	7.6	U
1,1,2,2-TETRACHLOROETHANE	7.6	U	XYLENE (TOTAL)	7.6	U
1,2-DICHLOROPROPANE	7.6	U	2-BUTANONE	15	U
TRANS-1,3-DICHLOROPROPENE	7.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121) 81%
1,2-DICHLOROETHANE-D4	(70-121)	95%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/17/93

SWLO #: 15888.16 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	9390		ACENAPHTHENE	6750	
BIS(2-CHLOROETHYL)ETHER	990	U	2,4-DINITROPHENOL	4800	U
2-CHLOROPHENOL	9460		4-NITROPHENOL	13400	
1,3-DICHLOROBENZENE	990	U	DIBENZOFURAN	990	U
1,4-DICHLOROBENZENE	4340		2,4-DINITROTOLUENE	5310	
BENZYL ALCOHOL	990	U	2,6-DINITROTOLUENE	990	U
1,2-DICHLOROBENZENE	990	U	DIETHYLPHTHALATE	990	U
2-METHYLPHENOL(O-CRESOL)	990	U	4-CHLOROPHENYL-PHENYLETHER	990	U
BIS(2-CHLOROISOPROPYL)ETHER	990	U	FLUORENE	9520	
4-METHYLPHENOL(P-CRESOL)	990	U	4-NITROANILINE	4800	U
N-NITROSO-DI-N-PROPYLAMINE	6960		4,6-DINITRO-2-METHYLPHENOL	4800	U
HEXACHLOROETHANE	990	U	N-NITROSODIPHENYLAMINE(1)	990	U
NITROBENZENE	990	U	4-BROMOPHENYL-PHENYLETHER	990	U
ISOPHORONE	990	U	HEXACHLOROBENZENE	990	U
2-NITROPHENOL	990	U	PENTACHLOROPHENOL	14800	
2,4-DIMETHYLPHENOL	990	U	PHENANTHRENE	9810	
BENZOIC ACID	4800	U	ANTHRACENE	8250	
BIS(2-CHLOROETHOXY)METHANE	990	U	DI-N-BUTYL PHTHALATE	990	U
2,4-DICHLOROPHENOL	990	U	FLUORANTHENE	1510	
1,2,4-TRICHLOROBENZENE	5350		PYRENE	7390	
NAPHTHALENE	6210		BUTYL BENZYL PHTHALATE	990	U
4-CHLOROANILINE	990	U	3,3'-DICHLOROBENZIDINE	2000	U
HEXACHLOROBUTADIENE	990	U	BENZO(A)ANTHRACENE	360	J
4-CHLORO-3-METHYLPHENOL	10700		BIS(2-ETHYLHEXYL)PHTHALATE	11800	
2-METHYLNAPHTHALENE	5760		CHRYSENE	647	J
HEXACHLOROCYCLOPENTADIENE	990	U	DI-N-OCTYL PHTHALATE	1480	
2,4,6-TRICHLOROPHENOL	990	U	BENZO(B)FLUORANTHENE	517	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.16

DATE: 11/16/93

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LOCATION:
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4800	U	BENZO(K)FLUORANTHENE	990	U
2-CHLORONAPHTHALENE	990	U	BENZO(A)PYRENE	279	J
2-NITROANILINE	4800	U	INDENO(1,2,3-CD)PYRENE	277	J
DIMETHYL PHTHALATE	990	U	DIBENZ(A,H)ANTHRACENE	990	U
ACENAPHTHYLENE	990	U	BENZO(G,H,I)PERYLENE	273	J
3-NITROANILINE	4800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	56%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	94%	PHENOL-D5	(24-113)	42%
2-FLUOROPHENOL	(25-121)	36%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.851	mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	11.2	mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	280	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	549	mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	20.7	mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	298	mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	99.1	mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	113	mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	274	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	154	mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.78	mg/kg	/ /	10/22/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:
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METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.52

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	15	U	TRICHLOROETHENE	50	
BROMOMETHANE	15	U	DIBROMOCHLOROMETHANE	7.6	U
VINYL CHLORIDE	15	U	1,1,2-TRICHLOROETHANE	7.6	U
CHLOROETHANE	15	U	BENZENE	66	
METHYLENE CHLORIDE	7.6	U	CIS-1,3-DICHLOROPROPENE	7.6	U
ACETONE	290		2-CHLOROETHYL VINYL ETHER	15	U
CARBON DISULFIDE	7.6	U	BROMOFORM	7.6	U
1,1-DICHLOROETHENE	52		2-HEXANONE	15	U
1,1-DICHLOROETHANE	7.6	U	4-METHYL-2-PENTANONE	15	U
CHLOROFORM	7.6	U	TETRACHLOROETHENE	7.6	U
1,2-DICHLOROETHANE	7.6	U	TOLUENE	75	
1,1,1-TRICHLOROETHANE	7.6	U	CHLOROBENZENE	70	
CARBON TETRACHLORIDE	7.6	U	ETHYLBENZENE	7.6	U
VINYL ACETATE	15	U	STYRENE	7.6	U
BROMODICHLOROMETHANE	7.6	U	1,2-DICHLOROETHENE (TOTAL)	7.6	U
1,1,2,2-TETRACHLOROETHANE	7.6	U	XYLENE (TOTAL)	7.6	U
1,2-DICHLOROPROPANE	7.6	U	2-BUTANONE	3.3	J
TRANS-1,3-DICHLOROPROPENE	7.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	123% *	BROMOFLUOROBENZENE	(74-121)	68% *
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	9440		ACENAPHTHENE	6480	
BIS(2-CHLOROETHYL)ETHER	990	U	2,4-DINITROPHENOL	4800	U
2-CHLOROPHENOL	9440		4-NITROPHENOL	18200	E
1,3-DICHLOROBENZENE	990	U	DIBENZOFURAN	990	U
1,4-DICHLOROBENZENE	4300		2,4-DINITROTOLUENE	5460	
BENZYL ALCOHOL	990	U	2,6-DINITROTOLUENE	990	U
1,2-DICHLOROBENZENE	990	U	DIETHYLPHTHALATE	990	U
2-METHYLPHENOL(O-CRESOL)	990	U	4-CHLOROPHENYL-PHENYLETHER	990	U
BIS(2-CHLOROISOPROPYL)ETHER	990	U	FLUORENE	9210	
4-METHYLPHENOL(P-CRESOL)	990	U	4-NITROANILINE	4800	U
N-NITROSO-DI-N-PROPYLAMINE	7100		4,6-DINITRO-2-METHYLPHENOL	4800	U
HEXACHLOROETHANE	990	U	N-NITROSODIPHENYLAMINE(1)	990	U
NITROBENZENE	990	U	4-BROMOPHENYL-PHENYLETHER	990	U
ISOPHORONE	990	U	HEXACHLOROBENZENE	990	U
2-NITROPHENOL	990	U	PENTACHLOROPHENOL	14600	
2,4-DIMETHYLPHENOL	990	U	PHENANTHRENE	9480	
BENZOIC ACID	4800	U	ANTHRACENE	8360	
BIS(2-CHLOROETHOXY)METHANE	990	U	DI-N-BUTYL PHTHALATE	990	U
2,4-DICHLOROPHENOL	990	U	FLUORANTHENE	1500	
1,2,4-TRICHLOROBENZENE	5190		PYRENE	7050	
NAPHTHALENE	5900		BUTYL BENZYL PHTHALATE	990	U
4-CHLOROANILINE	990	U	3,3'-DICHLOROBENZIDINE	2000	U
HEXACHLOROBUTADIENE	990	U	BENZO(A)ANTHRACENE	402	J
4-CHLORO-3-METHYLPHENOL	10300		BIS(2-ETHYLHEXYL)PHTHALATE	10900	
2-METHYLNAPHTHALENE	6020		CHRYSENE	612	J
HEXACHLOROCYCLOPENTADIENE	990	U	DI-N-OCTYL PHTHALATE	1750	
2,4,6-TRICHLOROPHENOL	990	U	BENZO(B)FLUORANTHENE	731	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.17

DATE: 11/16/93

SWLO #: 15888.17 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:
DATE ANALYZED : 11/06/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4800	U	BENZO(K)FLUORANTHENE	990	U
2-CHLORONAPHTHALENE	990	U	BENZO(A)PYRENE	323	J
2-NITROANILINE	4800	U	INDENO(1,2,3-CD)PYRENE	323	J
DIMETHYL PHTHALATE	990	U	DIBENZ(A,H)ANTHRACENE	990	U
ACENAPHTHYLENE	990	U	BENZO(G,H,I)PERYLENE	318	J
3-NITROANILINE	4800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	54%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	42%
2-FLUOROPHENOL	(25-121)	38%	2,4,6-TRIBROMOPHENOL	(19-122)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.17

DATE: 11/16/93

SWLO #: 15888.17 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.821	mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	10.3	mg/kg	10/21/93	10/26/93	SW846-7761
ARSENIC	289	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	705	mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	18.7	mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	315	mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	105	mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	115	mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	283	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	166	mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15888.17

DATE: 11/16/93

SWLO #: 15888.17 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE3
LOCATION:

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.62	mg/kg	/ /	10/22/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15888.18

DATE: 11/16/93

SWLO #: 15888.18 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 10/20/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/12/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 104%	BROMOFLUOROBENZENE	(86-115) 101%
1,2-DICHLOROETHANE-D4	(76-114) 101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.01

DATE: 11/16/93

SWLO #: 15906.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.97

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	20	U	TRICHLOROETHENE	9.8	U
BROMOMETHANE	20	U	DIBROMOCHLOROMETHANE	9.8	U
VINYL CHLORIDE	20	U	1,1,2-TRICHLOROETHANE	9.8	U
CHLOROETHANE	20	U	BENZENE	9.8	U
METHYLENE CHLORIDE	9.8	U	CIS-1,3-DICHLOROPROPENE	9.8	U
ACETONE	100		2-CHLOROETHYL VINYL ETHER	20	U
CARBON DISULFIDE	9.8	U	BROMOFORM	9.8	U
1,1-DICHLOROETHENE	9.8	U	2-HEXANONE	20	U
1,1-DICHLOROETHANE	9.8	U	4-METHYL-2-PENTANONE	20	U
CHLOROFORM	9.8	U	TETRACHLOROETHENE	9.8	U
1,2-DICHLOROETHANE	9.8	U	TOLUENE	9.8	U
1,1,1-TRICHLOROETHANE	9.8	U	CHLOROBENZENE	62	
CARBON TETRACHLORIDE	9.8	U	ETHYLBENZENE	9.8	U
VINYL ACETATE	20	U	STYRENE	9.8	U
BROMODICHLOROMETHANE	9.8	U	1,2-DICHLOROETHENE(TOTAL)	9.8	U
1,1,2,2-TETRACHLOROETHANE	9.8	U	XYLENE (TOTAL)	9.8	U
1,2-DICHLOROPROPANE	9.8	U	2-BUTANONE	20	U
TRANS-1,3-DICHLOROPROPENE	9.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	115%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	104%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.01

DATE: 11/16/93

SWLO #: 15906.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.90

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	1300	U	ACENAPHTHENE	592	J
BIS(2-CHLOROETHYL)ETHER	1300	U	2,4-DINITROPHENOL	6200	U
2-CHLOROPHENOL	1300	U	4-NITROPHENOL	6200	U
1,3-DICHLOROBENZENE	1300	U	DIBENZOFURAN	382	J
1,4-DICHLOROBENZENE	1300	U	2,4-DINITROTOLUENE	1300	U
BENZYL ALCOHOL	1300	U	2,6-DINITROTOLUENE	1300	U
1,2-DICHLOROBENZENE	1300	U	DIETHYLPHTHALATE	1300	U
2-METHYLPHENOL(O-CRESOL)	1300	U	4-CHLOROPHENYL-PHENYLETHER	1300	U
BIS(2-CHLOROISOPROPYL)ETHER	1300	U	FLUORENE	712	J
4-METHYLPHENOL(P-CRESOL)	1300	U	4-NITROANILINE	6200	U
N-NITROSO-DI-N-PROPYLAMINE	1300	U	4,6-DINITRO-2-METHYLPHENOL	6200	U
HEXACHLOROETHANE	1300	U	N-NITROSODIPHENYLAMINE(1)	1300	U
NITROBENZENE	1300	U	4-BROMOPHENYL-PHENYLETHER	1300	U
ISOPHORONE	1300	U	HEXACHLOROBENZENE	1300	U
2-NITROPHENOL	1300	U	PENTACHLOROPHENOL	6200	U
2,4-DIMETHYLPHENOL	1300	U	PHENANTHRENE	9240	
BENZOIC ACID	229	J	ANTHRACENE	1710	
BIS(2-CHLOROETHOXY)METHANE	1300	U	DI-N-BUTYL PHTHALATE	1300	U
2,4-DICHLOROPHENOL	1300	U	FLUORANTHENE	13400	
1,2,4-TRICHLOROBENZENE	1300	U	PYRENE	12500	
NAPHTHALENE	324	J	BUTYL BENZYL PHTHALATE	1300	U
4-CHLOROANILINE	1300	U	3,3'-DICHLOROBENZIDINE	2600	U
HEXACHLOROBUTADIENE	1300	U	BENZO(A)ANTHRACENE	7260	
4-CHLORO-3-METHYLPHENOL	1300	U	BIS(2-ETHYLHEXYL)PHTHALATE	5300	B
2-METHYLNAPHTHALENE	133	J	CHRYSENE	7830	
HEXACHLOROCYCLOPENTADIENE	1300	U	DI-N-OCTYL PHTHALATE	589	J
2,4,6-TRICHLOROPHENOL	1300	U	BENZO(B)FLUORANTHENE	7810	

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.01

DATE: 11/16/93

SWLO #: 15906.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 3.90

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	6200	U	BENZO(K)FLUORANTHENE	2970	
2-CHLORONAPHTHALENE	1300	U	BENZO(A)PYRENE	4640	
2-NITROANILINE	6200	U	INDENO(1,2,3-CD)PYRENE	678	J
DIMETHYL PHTHALATE	1300	U	DIBENZ(A,H)ANTHRACENE	616	J
ACENAPHTHYLENE	1300	U	BENZO(G,H,I)PERYLENE	192	J
3-NITROANILINE	6200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	106%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	76%	2,4,6-TRIBROMOPHENOL	(19-122)	99%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 15906.01

DATE: 11/17/93

SWLO #: 15906.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.354		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	3.94		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	5.91		mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	559		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	44.7		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	260		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	112		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	74.8		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	0.985	U	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	374		mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 15906.01

DATE: 11/16/93

SWLO #: 15906.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE2
LOCATION:

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.985	U	mg/kg	/ /	10/20/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.02

DATE: 11/16/93

SWLO #: 15906.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 10/21/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.36

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	14	U	TRICHLOROETHENE	6.8	U
BROMOMETHANE	14	U	DIBROMOCHLOROMETHANE	6.8	U
VINYL CHLORIDE	14	U	1,1,2-TRICHLOROETHANE	6.8	U
CHLOROETHANE	14	U	BENZENE	6.8	U
METHYLENE CHLORIDE	6.8	U	CIS-1,3-DICHLOROPROPENE	6.8	U
ACETONE	32		2-CHLOROETHYL VINYL ETHER	14	U
CARBON DISULFIDE	6.8	U	BROMOFORM	6.8	U
1,1-DICHLOROETHENE	6.8	U	2-HEXANONE	14	U
1,1-DICHLOROETHANE	6.8	U	4-METHYL-2-PENTANONE	14	U
CHLOROFORM	6.8	U	TETRACHLOROETHENE	6.8	U
1,2-DICHLOROETHANE	6.8	U	TOLUENE	6.8	U
1,1,1-TRICHLOROETHANE	6.8	U	CHLOROBENZENE	6.8	U
CARBON TETRACHLORIDE	6.8	U	ETHYLBENZENE	6.8	U
VINYL ACETATE	14	U	STYRENE	6.8	U
BROMODICHLOROMETHANE	6.8	U	1,2-DICHLOROETHENE(TOTAL)	6.8	U
1,1,2,2-TETRACHLOROETHANE	6.8	U	XYLENE (TOTAL)	6.8	U
1,2-DICHLOROPROPANE	6.8	U	2-BUTANONE	14	U
TRANS-1,3-DICHLOROPROPENE	6.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 113%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 95%		

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.02

DATE: 11/16/93

SWLO #: 15906.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.70

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	890	U	ACENAPHTHENE	262	J
BIS(2-CHLOROETHYL)ETHER	890	U	2,4-DINITROPHENOL	4300	U
2-CHLOROPHENOL	890	U	4-NITROPHENOL	4300	U
1,3-DICHLOROBENZENE	890	U	DIBENZOFURAN	140	J
1,4-DICHLOROBENZENE	890	U	2,4-DINITROTOLUENE	890	U
BENZYL ALCOHOL	890	U	2,6-DINITROTOLUENE	890	U
1,2-DICHLOROBENZENE	890	U	DIETHYLPHTHALATE	890	U
2-METHYLPHENOL(O-CRESOL)	890	U	4-CHLOROPHENYL-PHENYLETHER	890	U
BIS(2-CHLOROISOPROPYL)ETHER	890	U	FLUORENE	270	J
4-METHYLPHENOL(P-CRESOL)	890	U	4-NITROANILINE	4300	U
N-NITROSO-DI-N-PROPYLAMINE	890	U	4,6-DINITRO-2-METHYLPHENOL	4300	U
HEXACHLOROETHANE	890	U	N-NITROSODIPHENYLAMINE(1)	890	U
NITROBENZENE	890	U	4-BROMOPHENYL-PHENYLETHER	890	U
ISOPHORONE	890	U	HEXACHLOROBENZENE	890	U
2-NITROPHENOL	890	U	PENTACHLOROPHENOL	4300	U
2,4-DIMETHYLPHENOL	890	U	PHENANTHRENE	3940	
BENZOIC ACID	97.4	J	ANTHRACENE	782	J
BIS(2-CHLOROETHOXY)METHANE	890	U	DI-N-BUTYL PHTHALATE	890	U
2,4-DICHLOROPHENOL	890	U	FLUORANTHENE	7020	
1,2,4-TRICHLOROBENZENE	890	U	PYRENE	6380	
NAPHTHALENE	143	J	BUTYL BENZYL PHTHALATE	890	U
4-CHLOROANILINE	890	U	3,3'-DICHLOROBENZIDINE	1800	U
HEXACHLOROBUTADIENE	890	U	BENZO(A)ANTHRACENE	4050	
4-CHLORO-3-METHYLPHENOL	890	U	BIS(2-ETHYLHEXYL)PHTHALATE	3290	B
2-METHYLNAPHTHALENE	890	U	CHRYSENE	5500	
HEXACHLOROCYCLOPENTADIENE	890	U	DI-N-OCTYL PHTHALATE	890	U
2,4,6-TRICHLOROPHENOL	890	U	BENZO(B)FLUORANTHENE	4390	

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.02

DATE: 11/16/93

SWLO #: 15906.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.70

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	4300	U	BENZO(K)FLUORANTHENE	2960	
2-CHLORONAPHTHALENE	890	U	BENZO(A)PYRENE	3220	
2-NITROANILINE	4300	U	INDENO(1,2,3-CD)PYRENE	1950	
DIMETHYL PHTHALATE	890	U	DIBENZ(A,H)ANTHRACENE	719	J
ACENAPHTHYLENE	890	U	BENZO(G,H,I)PERYLENE	2020	
3-NITROANILINE	4300	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	104%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.02

DATE: 11/17/93

SWLO #: 15906.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.204		mg/kg	10/20/93	10/20/93	SW846-7471
SILVER	1.77		mg/kg	10/21/93	10/25/93	SW846-7761
ARSENIC	1.36	U	mg/kg	10/21/93	10/21/93	SW846-6010
BARIUM	268		mg/kg	10/21/93	10/22/93	SW846-6010
CADMIUM	3.54		mg/kg	10/21/93	10/22/93	SW846-6010
CHROMIUM	59.8		mg/kg	10/21/93	10/22/93	SW846-6010
LEAD	37.9		mg/kg	10/21/93	10/21/93	SW846-6010
NICKEL	26.8		mg/kg	10/21/93	10/22/93	SW846-6010
SELENIUM	0.681	U	mg/kg	10/21/93	10/21/93	SW846-6010
ZINC	89		mg/kg	10/21/93	10/22/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.02

DATE: 11/17/93

SWLO #: 15906.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: ESC1SE1
LOCATION:

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.681	U	mg/kg	/ /	10/20/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15906.03

DATE: 11/16/93

SWLO #: 15906.03 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/13/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	97%	BROMOFLUOROBENZENE	(86-115) 108%
1,2-DICHLOROETHANE-D4	(76-114)	107%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931018A
INST. BATCH: 931
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931018A
LOCATION:

PREPARED :
ANALYZED : 10/18/93 10:38
DILUTION : 1

MATRIX : SOIL
METHOD : SW 8240

%MOISTURE: 0.00
LEVEL : LOW

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND		1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	1.8	J	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121) 87%
1,2-DICHLOROETHANE-D4	(70-121)	90%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
^ = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
.A = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931018A
INST. BATCH: 931
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/18/93 11:11
ANALYZED : 10/18/93 11:39

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	53	106	54	108	2.52	16	60-141
BENZENE	50	49	99	46	92	7.68	13	79-128
TRICHLOROETHENE	50	50	101	46	92	8.64	21	71-134
TOLUENE	50	50	100	47	95	5.62	11	80-122
CHLOROBENZENE	50	50	101	46	93	8.3	10	80-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	110	101	81-117
BROMOFLUOROBENZENE	106	101	74-121
1,2-DICHLOROETHANE-D4	105	100	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931019A
INST. BATCH: 12736
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931019A
LOCATION:

PREPARED :
ANALYZED : 10/19/93 12:06
DILUTION : 1

MATRIX : WATER
METHOD : SW 8240

%MOISTURE: 0.00
LEVEL : LOW

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	1.1 J
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	91%	BROMOFLUOROBENZENE	(74-121)	105%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
□ = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
.. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931019A
INST. BATCH: 12736
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 10/19/93 13:50
ANALYZED : 10/19/93 14:16

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	44	88	50	100	13.2	32	54-161
BENZENE	50	43	87	51	103	16.8	46	70-134
TRICHLOROETHENE	50	42	84	47	94	11.1	38	67-149
TOLUENE	50	41	83	43	87	4.64	15	75-140
CHLOROBENZENE	50	42	85	45	91	6.69	14	72-135

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	93	94	81-117
BROMOFLUOROBENZENE	103	107	74-121
1,2-DICHLOROETHANE-D4	102	94	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931020A
INST. BATCH: 1155
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931020A
LOCATION:

PREPARED :
ANALYZED : 10/20/93 08:51
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
R = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931020A
INST. BATCH: 1155
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/20/93 09:14
ANALYZED : 10/20/93 09:38

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	44	88	43	86	2.44	16	60-141
BENZENE	50	40	81	38	78*	4.64	13	79-128
TRICHLOROETHENE	50	41	82	39	78	4.66	21	71-134
TOLUENE	50	42	86	41	82	4.44	11	80-122
CHLOROBENZENE	50	41	82	39	78*	5.43	10	80-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	101	98	88-110
BROMOFLUOROBENZENE	97	94	86-115
1,2-DICHLOROETHANE-D4	99	93	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931020A
INST. BATCH: 1206
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931020A
LOCATION:

PREPARED :
ANALYZED : 10/20/93 11:29
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	104%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	92%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931020A
INST. BATCH: 1206
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 10/20/93 12:08
ANALYZED : 10/20/93 12:32

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	58	116	55	111	4.59	32	54-161
BENZENE	50	53	106	53	106	< 1	46	70-134
TRICHLOROETHENE	50	54	108	54	108	< 1	38	67-149
TOLUENE	50	52	104	52	104	< 1	15	75-140
CHLOROBENZENE	50	51	103	51	102	1.29	14	72-135

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	104	88-110
BROMOFLUOROBENZENE	102	103	86-115
1,2-DICHLOROETHANE-D4	102	105	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931020A
INST. BATCH: 43
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931020A
LOCATION:

PREPARED :
ANALYZED : 10/20/93 11:31
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121) 95%
1,2-DICHLOROETHANE-D4	(70-121)	100%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
: UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931020A
INST. BATCH: 43
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 10/20/93 12:06
ANALYZED : 10/20/93 12:32

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	57	114	56	113	1.54	32	54-161
BENZENE	50	52	104	51	102	1.63	46	70-134
TRICHLOROETHENE	50	54	109	50	101	7.75	38	67-149
TOLUENE	50	53	106	49	98	7.86	15	75-140
CHLOROBENZENE	50	52	104	50	100	3.52	14	72-135

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	100	81-117
BROMOFLUOROBENZENE	97	100	74-121
1,2-DICHLOROETHANE-D4	102	103	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931021A
INST. BATCH: 1330
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931021A
LOCATION:

PREPARED :
ANALYZED : 10/21/93 08:53
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	97%	BROMOFLUOROBENZENE	(86-115)	95%
1,2-DICHLOROETHANE-D4	(76-114)	90%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931021A
INST. BATCH: 1330
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/21/93 09:17
ANALYZED : 10/21/93 09:40

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	42	85	44	88	3.49	16	60-141
BENZENE	50	40	80	42	84	3.93	13	79-128
TRICHLOROETHENE	50	40	80	42	84	4.11	21	71-134
TOLUENE	50	40	81	42	85	4.19	11	80-122
CHLOROBENZENE	50	40	80	42	84	4.49	10	80-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	93	88-110
BROMOFLUOROBENZENE	100	94	86-115
1,2-DICHLOROETHANE-D4	103	94	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931021A
INST. BATCH: 41
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931021A
LOCATION:

PREPARED :
ANALYZED : 10/21/93 10:12
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 101%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 106%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931021A
INST. BATCH: 41
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/21/93 11:11
ANALYZED : 10/21/93 11:33

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	51	102	47	95	6.74	16	60-141
BENZENE	50	53	107	49	98	8.59	13	79-128
TRICHLOROETHENE	50	53	107	53	106	< 1	21	71-134
TOLUENE	50	52	105	48	96	8.91	11	80-122
CHLOROBENZENE	50	52	105	52	105	< 1	10	80-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	96	88-110
BROMOFLUOROBENZENE	104	103	86-115
1,2-DICHLOROETHANE-D4	113	106	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931021B
INST. BATCH: 1376
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931021B
LOCATION:

PREPARED :
ANALYZED : 10/21/93 10:57
DILUTION : 1
%MOISTURE: 0.00
LEVEL : MED

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE (TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
n = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
\ = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931021A
INST. BATCH: 1376
REPORTED : 11/09/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 10/21/93 12:06
ANALYZED : 10/21/93 12:29

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	60	120	58	116	3.32	16	60-141
BENZENE	50	52	105	52	105	< 1	13	79-128
TRICHLOROETHENE	50	52	104	54	109	4.38	21	71-134
TOLUENE	50	52	106	53	106	< 1	11	80-122
CHLOROBENZENE	50	52	106	53	107	1.14	10	80-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	102	81-117
BROMOFLUOROBENZENE	100	100	74-121
1,2-DICHLOROETHANE-D4	100	102	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SDG: 15873

MATRIX : SOIL

SAMPLE : 15873.02	QAQC: U931018A	ANALYZED :	10/18/93 15:13
SPIKE SAMPLE : 15873.04	QAQC: U931018A	ANALYZED :	10/18/93 15:59
SPIKE DUP SAMPLE: 15873.05	QAQC: U931018A	ANALYZED :	10/18/93 16:23

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	55		41	76	46	85	11.6	22	59-172
TRICHLOROETHENE	55		43	79	49	90	12.7	24	62-137
BENZENE	55		54	99	58	105	6.34	21	66-142
TOLUENE	55		58	106	62	114	7.27	21	59-139
CHLOROBENZENE	55		50	92	55	101	9.81	21	60-133

QA/QC Surrogates

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	116	113	109	81-117
BROMOFLUOROBENZENE	78	76	78	74-121
1,2-DICHLOROETHANE-D4	98	102	100	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SDG: 15873

MATRIX : SOIL

SAMPLE	: 15888.14	QAQC: U931021A	ANALYZED : 10/21/93 13:38
SPIKE SAMPLE	: 15888.16	QAQC: U931021A	ANALYZED : 10/21/93 14:27
SPIKE DUP SAMPLE	: 15888.17	QAQC: U931021A	ANALYZED : 10/21/93 14:50

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	76		58	77	52	69	11.2	22	59-172
TRICHLOROETHENE	76		56	75	50	66	12.7	24	62-137
BENZENE	76		64	84	66	87	2.58	21	66-142
TOLUENE	76		69	92	75	99	7.45	21	59-139
CHLOROBENZENE	76		62	83	70	92	11.3	21	60-133

QA/QC Surrogates

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	114	106	123	81-117
BROMOFLUOROBENZENE	79	81	68	74-121
1,2-DICHLOROETHANE-D4	108	95	94	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/03/93

SWLO QAQC#: 931019-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	660	U	ACENAPHTHENE	660	U
BIS(2-CHLOROETHYL)ETHER	660	U	2,4-DINITROPHENOL	3200	U
2-CHLOROPHENOL	660	U	4-NITROPHENOL	3200	U
1,3-DICHLOROBENZENE	660	U	DIBENZOFURAN	660	U
1,4-DICHLOROBENZENE	660	U	2,4-DINITROTOLUENE	660	U
BENZYL ALCOHOL	660	U	2,6-DINITROTOLUENE	660	U
1,2-DICHLOROBENZENE	660	U	DIETHYLPHTHALATE	660	U
2-METHYLPHENOL(O-CRESOL)	660	U	4-CHLOROPHENYL-PHENYLETHER	660	U
BIS(2-CHLOROISOPROPYL)ETHER	660	U	FLUORENE	660	U
4-METHYLPHENOL(P-CRESOL)	660	U	4-NITROANILINE	3200	U
N-NITROSO-DI-N-PROPYLAMINE	660	U	4,6-DINITRO-2-METHYLPHENOL	3200	U
HEXACHLOROETHANE	660	U	N-NITROSODIPHENYLAMINE(1)	660	U
NITROBENZENE	660	U	4-BROMOPHENYL-PHENYLETHER	660	U
ISOPHORONE	660	U	HEXACHLOROBENZENE	660	U
2-NITROPHENOL	660	U	PENTACHLOROPHENOL	3200	U
2,4-DIMETHYLPHENOL	660	U	PHENANTHRENE	660	U
BENZOIC ACID	3200	U	ANTHRACENE	660	U
BIS(2-CHLOROETHOXY)METHANE	660	U	DI-N-BUTYL PHTHALATE	660	U
2,4-DICHLOROPHENOL	660	U	FLUORANTHENE	660	U
1,2,4-TRICHLOROBENZENE	660	U	PYRENE	660	U
NAPHTHALENE	660	U	BUTYL BENZYL PHTHALATE	660	U
4-CHLOROANILINE	660	U	3,3'-DICHLOROBENZIDINE	1300	U
HEXACHLOROBUTADIENE	660	U	BENZO(A)ANTHRACENE	660	U
4-CHLORO-3-METHYLPHENOL	660	U	BIS(2-ETHYLHEXYL)PHTHALATE	93	J
2-METHYLNAPHTHALENE	660	U	CHRYSENE	660	U
HEXACHLOROCYCLOPENTADIENE	660	U	DI-N-OCTYL PHTHALATE	660	U
2,4,6-TRICHLOROPHENOL	660	U	BENZO(B)FLUORANTHENE	660	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/03/93

SWLO QAQC#: 931019-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK LB1
LOCATION:
DATE ANALYZED : 10/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3200	U	BENZO(K)FLUORANTHENE	660	U
2-CHLORONAPHTHALENE	660	U	BENZO(A)PYRENE	660	U
2-NITROANILINE	3200	U	INDENO(1,2,3-CD)PYRENE	660	U
DIMETHYL PHTHALATE	660	U	DIBENZ(A,H)ANTHRACENE	660	U
ACENAPHTHYLENE	660	U	BENZO(G,H,I)PERYLENE	660	U
3-NITROANILINE	3200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	51%	2-FLUOROBIPHENYL	(30-115)	61%
TERPHENYL-D14	(18-137)	77%	PHENOL-D5	(24-113)	49%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	49%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 15873Ba

DATE: 11-12-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 10-14-93
DATE ANALYZED : 10-28-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	13333.3	6673.38	4	50.05	26 - 90
2-CHLOROPHENOL	13333.3	6633.58	6	49.75	25 - 102
1,4-DICHLOROBENZENE	6666.66	2351.63	3	35.27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	6666.66	2902.99	0	43.54	41 - 126
1,2,4-TRICHLOROBENZENE	6666.66	3566.51	0	53.50	38 - 107
4-CHLORO-3-METHYLPHENOL	13333.3	7057.30	2	52.93	26 - 103
ACENAPHTHENE	6666.66	3541.64	1	53.12	31 - 137
4-NITROPHENOL	13333.3	6241.34	9	46.81	11 - 114
2,4-DINITROTOLUENE	6666.66	3431.00	1	51.47	28 - 89
PENTACHLOROPHENOL	13333.3	5601.41	4	42.01	17 - 109
PYRENE	6666.66	4045.16	2	60.68	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	13333.3	6919.77	52	26 - 90
2-CHLOROPHENOL	13333.3	7016.30	52	25 - 102
1,4-DICHLOROBENZENE	6666.66	2434.56	37	28 - 104
N-NITROSO-di-n-PROPYLAMINE	6666.66	2889.85	43	41 - 126
1,2,4-TRICHLOROBENZENE	6666.66	3586.33	54	38 - 107
4-CHLORO-3-METHYLPHENOL	13333.3	7183.92	54	26 - 103
ACENAPHTHENE	6666.66	3508.59	53	31 - 137
4-NITROPHENOL	13333.3	6837.17	51	11 - 114
2,4-DINITROTOLUENE	6666.66	3467.45	52	28 - 89
PENTACHLOROPHENOL	13333.3	5827.14	44	17 - 109
PYRENE	6666.66	3951.34	59	35 - 142

QA/QC SURROGATE RECOVERIES

			LCS				
NITROBENZENE-d5	(23-120) 54%	2-FLUOROBIPHENYL	(30-115)	61%	TERPHENYL-d14	(18-137)	75%
PHENOL-d5	(24-113) 50%	2-FLUOROPHENOL	(25-121)	42%	2,4,6-TRIBROMOPHENOL	(19-122)	54%
			LCSD				
NITROBENZENE-d5	(23-120) 54%	2-FLUOROBIPHENYL	(30-115)	61%	TERPHENYL-d14	(18-137)	73%
PHENOL-d5	(24-113) 48%	2-FLUOROPHENOL	(25-121)	54%	2,4,6-TRIBROMOPHENOL	(19-122)	53%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/11/93

SWLO QAQC#: 931029-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLK LB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	660	U	ACENAPHTHENE	660	U
BIS(2-CHLOROETHYL)ETHER	660	U	2,4-DINITROPHENOL	3200	U
2-CHLOROPHENOL	660	U	4-NITROPHENOL	3200	U
1,3-DICHLOROBENZENE	660	U	DIBENZOFURAN	660	U
1,4-DICHLOROBENZENE	660	U	2,4-DINITROTOLUENE	660	U
BENZYL ALCOHOL	660	U	2,6-DINITROTOLUENE	660	U
1,2-DICHLOROBENZENE	660	U	DIETHYLPHTHALATE	660	U
2-METHYLPHENOL(O-CRESOL)	660	U	4-CHLOROPHENYL-PHENYLETHER	660	U
BIS(2-CHLOROISOPROPYL)ETHER	660	U	FLUORENE	660	U
4-METHYLPHENOL(P-CRESOL)	660	U	4-NITROANILINE	3200	U
N-NITROSO-DI-N-PROPYLAMINE	660	U	4,6-DINITRO-2-METHYLPHENOL	3200	U
HEXACHLOROETHANE	660	U	N-NITROSODIPHENYLAMINE(1)	660	U
NITROBENZENE	660	U	4-BROMOPHENYL-PHENYLETHER	660	U
ISOPHORONE	660	U	HEXACHLOROBENZENE	660	U
2-NITROPHENOL	660	U	PENTACHLOROPHENOL	3200	U
2,4-DIMETHYLPHENOL	660	U	PHENANTHRENE	660	U
BENZOIC ACID	3200	U	ANTHRACENE	660	U
BIS(2-CHLOROETHOXY)METHANE	660	U	DI-N-BUTYL PHTHALATE	660	U
2,4-DICHLOROPHENOL	660	U	FLUORANTHENE	660	U
1,2,4-TRICHLOROBENZENE	660	U	PYRENE	660	U
NAPHTHALENE	660	U	BUTYL BENZYL PHTHALATE	660	U
4-CHLOROANILINE	660	U	3,3'-DICHLOROBENZIDINE	1300	U
HEXACHLOROBUTADIENE	660	U	BENZO(A)ANTHRACENE	660	U
4-CHLORO-3-METHYLPHENOL	660	U	BIS(2-ETHYLHEXYL)PHTHALATE	660	U
2-METHYLNAPHTHALENE	660	U	CHRYSENE	660	U
HEXACHLOROCYCLOPENTADIENE	660	U	DI-N-OCTYL PHTHALATE	660	U
2,4,6-TRICHLOROPHENOL	660	U	BENZO(B)FLUORANTHENE	660	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/11/93

SWLO QAQC#: 931029-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLK LB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3200	U	BENZO(K)FLUORANTHENE	660	U
2-CHLORONAPHTHALENE	660	U	BENZO(A)PYRENE	660	U
2-NITROANILINE	3200	U	INDENO(1,2,3-CD)PYRENE	660	U
DIMETHYL PHTHALATE	660	U	DIBENZ(A,H)ANTHRACENE	660	U
ACENAPHTHYLENE	660	U	BENZO(G,H,I)PERYLENE	660	U
3-NITROANILINE	3200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	55%	2-FLUOROBIPHENYL	(30-115)	53%
TERPHENYL-D14	(18-137)	57%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	46%	2,4,6-TRIBROMOPHENOL	(19-122)	52%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/11/93

SWLO QAQC#: 931102-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLK LB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	660	U	ACENAPHTHENE	660	U
BIS(2-CHLOROETHYL)ETHER	660	U	2,4-DINITROPHENOL	3200	U
2-CHLOROPHENOL	660	U	4-NITROPHENOL	3200	U
1,3-DICHLOROBENZENE	660	U	DIBENZOFURAN	660	U
1,4-DICHLOROBENZENE	660	U	2,4-DINITROTOLUENE	660	U
BENZYL ALCOHOL	660	U	2,6-DINITROTOLUENE	660	U
1,2-DICHLOROBENZENE	660	U	DIETHYLPHTHALATE	660	U
2-METHYLPHENOL(O-CRESOL)	660	U	4-CHLOROPHENYL-PHENYLETHER	660	U
BIS(2-CHLOROISOPROPYL)ETHER	660	U	FLUORENE	660	U
4-METHYLPHENOL(P-CRESOL)	660	U	4-NITROANILINE	3200	U
N-NITROSO-DI-N-PROPYLAMINE	660	U	4,6-DINITRO-2-METHYLPHENOL	3200	U
HEXACHLOROETHANE	660	U	N-NITROSODIPHENYLAMINE(1)	660	U
NITROBENZENE	660	U	4-BROMOPHENYL-PHENYLETHER	660	U
ISOPHORONE	660	U	HEXACHLOROBENZENE	660	U
2-NITROPHENOL	660	U	PENTACHLOROPHENOL	3200	U
2,4-DIMETHYLPHENOL	660	U	PHENANTHRENE	660	U
BENZOIC ACID	3200	U	ANTHRACENE	660	U
BIS(2-CHLOROETHOXY)METHANE	660	U	DI-N-BUTYL PHTHALATE	660	U
2,4-DICHLOROPHENOL	660	U	FLUORANTHENE	660	U
1,2,4-TRICHLOROBENZENE	660	U	PYRENE	660	U
NAPHTHALENE	660	U	BUTYL BENZYL PHTHALATE	660	U
4-CHLOROANILINE	660	U	3,3'-DICHLOROBENZIDINE	1300	U
HEXACHLOROBUTADIENE	660	U	BENZO(A)ANTHRACENE	660	U
4-CHLORO-3-METHYLPHENOL	660	U	BIS(2-ETHYLHEXYL)PHTHALATE	109	J
2-METHYLNAPHTHALENE	660	U	CHRYSENE	660	U
HEXACHLOROCYCLOPENTADIENE	660	U	DI-N-OCTYL PHTHALATE	660	U
2,4,6-TRICHLOROPHENOL	660	U	BENZO(B)FLUORANTHENE	660	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/11/93

SWLO QAQC#: 931102-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLK LB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/14/93
DILUTION FACTOR: 2.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3200	U	BENZO(K)FLUORANTHENE	660	U
2-CHLORONAPHTHALENE	660	U	BENZO(A)PYRENE	660	U
2-NITROANILINE	3200	U	INDENO(1,2,3-CD)PYRENE	660	U
DIMETHYL PHTHALATE	660	U	DIBENZ(A,H)ANTHRACENE	660	U
ACENAPHTHYLENE	660	U	BENZO(G,H,I)PERYLENE	660	U
3-NITROANILINE	3200	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	121%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	86%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 15873Bb

DATE: 11-12-93

SAMPLE MATRIX: SOIL
SWLO # 15873.04/15873.05
METHOD REFERENCE: SW846-8270
SAMPLE ID: I24.2SS2 (MS/MSD)

DATE EXTRACTED: 10-14-93
DATE ANALYZED : 10-28-93

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	FOUND IN SAMPLE	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	14492.7		6525.41	8	45.03	26 - 90
2-CHLOROPHENOL	14492.7		6173.05	9	42.59	25 - 102
1,4-DICHLOROBENZENE	7246.37		2054.85	3	28.36	28 - 104
N-NITROSO-di-n-PROPYLAMINE	7246.37		2979.17	18	41.11	41 - 126
1,2,4-TRICHLOROBENZENE	7246.37		3344.58	4	46.16	38 - 107
4-CHLORO-3-METHYLPHENOL	14492.7		6657.26	20	45.94	26 - 103
ACENAPHTHENE	7246.37		3407.11	2	47.02	31 - 137
4-NITROPHENOL	14492.7		9038.73	15	62.37	11 - 114
2,4-DINITROTOLUENE	7246.37		3281.34	3	45.28	28 - 89
PENTACHLOROPHENOL	14492.7		7530.90	1	51.96	17 - 109
PYRENE	7246.37	129.91	3335.97	0	44.24	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	FOUND IN SAMPLE	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	14652.0		7116.83	49	26 - 90
2-CHLOROPHENOL	14652.0		6831.24	47	25 - 102
1,4-DICHLOROBENZENE	7326.00		2019.53	28*	28 - 104
N-NITROSO-di-n-PROPYLAMINE	7326.00		3695.85	50	41 - 126
1,2,4-TRICHLOROBENZENE	7326.00		3504.56	48	38 - 107
4-CHLORO-3-METHYLPHENOL	14652.0		8196.09	56	26 - 103
ACENAPHTHENE	7326.00		3539.10	48	31 - 137
4-NITROPHENOL	14652.0		10601.1	72	11 - 114
2,4-DINITROTOLUENE	7326.00		3418.17	47	28 - 89
PENTACHLOROPHENOL	14652.0		7529.35	51	17 - 109
PYRENE	7326.00	129.91	3366.54	44	35 - 142

QA/QC SURROGATE RECOVERIES

			MS				
NITROBENZENE-d5	(23-120) 48%	2-FLUOROBIPHENYL	(30-115)	56%	TERPHENYL-d14	(18-137)	63%
PHENOL-d5	(24-113) 47%	2-FLUOROPHENOL	(25-121)	41%	2,4,6-TRIBROMOPHENOL	(19-122)	60%
			MSD				
NITROBENZENE-d5	(23-120) 53%	2-FLUOROBIPHENYL	(30-115)	55%	TERPHENYL-d14	(18-137)	60%
PHENOL-d5	(24-113) 51%	2-FLUOROPHENOL	(25-121)	50%	2,4,6-TRIBROMOPHENOL	(19-122)	6[illegible]

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/16/93

SWLO QAQC#: 931022-001
PROJECT : TINKER AFB RFI
SAMPLE #: TPH PURGE BLANK LB1
LOCATION:
DATE ANALYZED : 10/22/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 99%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/11/93

SWLO QAQC#: 931022-001
PROJECT : TINKER AFB RFI
SAMPLE #: TPH PURGE N1
LOCATION: LABQC
DATE ANALYZED : 10/22/93
METHOD REFERENCE: CALIF. MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	13.8		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 109%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 15873Gb

DATE: 11-11-93

SAMPLE MATRIX: SOIL
SWLO #: CONFIDENTIAL SAMPLE ID (MS/MSD)
DATE ANALYZED: 10-22-93
METHOD REFERENCE: SW846-8015 MODIFIED CALIFORNIA METHOD
SAMPLE ID: CONFIDENTIAL SAMPLE ID

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/Kg)	SAMPLE CONC. (ug/Kg)*	MS CONC. (ug/Kg)*	MS PERCENT RECOVERY
GASOLINE	500.0	13.8	407.0	78.6%

	MSD CONC. (ug/Kg)*	MSD PERCENT RECOVERY	RECOVERY PERCENT DIFFERENCE
GASOLINE	391.0	75.4%	4.2%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 15873

DATE: 11/03/93

SWLO QAQC#: 931025-001
PROJECT : TINKER AFB RFI
SAMPLE #: TPHCAL BLANK LB1
LOCATION:
DATE ANALYZED : 10/25/93
METHOD REFERENCE: CALIF. MODIFIED 8015

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN mg/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	1.00	U	NAPHTHA C6-C12	1.00	U
KEROSENE C9-C18	1.00	U	#6 FUEL OIL C12-C24	1.00	U
JP-4 C6-C14	1.00	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(21-166)	99%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 15873Tb

DATE: 11-12-93

SAMPLE MATRIX: SOIL
SWLO #: 15873.17/15873.18
DATE EXTRACTED: 10-18-93
DATE ANALYZED: 10-25-93
METHOD REFERENCE: MODIFIED 8015 (CALIFORNIA)
SAMPLE ID: I24.3SS1 (MS/MSD)

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (mg/Kg)	SAMPLE CONC. (mg/Kg)*	MS CONC. (mg/Kg)*	MS PERCENT RECOVERY
DIESEL	260.0	119	344.0	87.0%

	MSD CONC. (mg/Kg)*	MSD PERCENT RECOVERY	RECOVERY PERCENT DIFFERENCE
DIESEL	340.0	85.0%	2.0%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

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CLIENT: ENGINEERING SCIENCE

SDG: 15873a
REPORT DATE: 11/12/93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	10/19/93	101893I1	1.0	mg/Kg	< 1.0
LEAD	10/19/93	101893I1	0.3	mg/Kg	< 0.3
SELENIUM	10/19/93	101893I1	0.5	mg/Kg	< 0.5
ARSENIC	10/21/93	102193I5	1.0	mg/Kg	< 1.0
LEAD	10/21/93	102193I5	0.3	mg/Kg	< 0.3
SELENIUM	10/21/93	102193I5	0.5	mg/Kg	< 0.5
ARSENIC	10/25/93	102293I2	1.0	mg/Kg	< 1.0
LEAD	10/25/93	102293I2	0.3	mg/Kg	< 0.3
SELENIUM	10/25/93	102293I2	0.5	mg/Kg	< 0.5
BARIUM	10/18/93	101893I1	0.5	mg/Kg	< 0.5
CADMIUM	10/18/93	101893I1	0.3	mg/Kg	< 0.3
CHROMIUM	10/18/93	101893I1	0.5	mg/Kg	< 0.5
NICKEL	10/18/93	101893I1	1.0	mg/Kg	< 1.0
ZINC	10/18/93	101893I1	1.5	mg/Kg	< 1.5
BARIUM	10/22/93	102193I5	0.5	mg/Kg	< 0.5
CADMIUM	10/22/93	102193I5	0.3	mg/Kg	< 0.3
CHROMIUM	10/22/93	102193I5	0.5	mg/Kg	< 0.5
NICKEL	10/22/93	102193I5	1.0	mg/Kg	< 1.0
ZINC	10/22/93	102193I5	1.5	mg/Kg	< 1.5
MERCURY	10/18/93	101893HG01	0.1	mg/Kg	< 0.1
MERCURY	10/20/93	102093HG02	0.1	mg/Kg	< 0.1
SILVER	10/25/93	102193F5	0.1	mg/Kg	< 0.1
SILVER	10/25/93	101893F1	0.1	mg/Kg	< 0.1
TOTAL CN-	10/18/93	101693CN	0.5	mg/Kg	< 0.5
TOTAL CN-	10/20/93	101893CN	0.5	mg/Kg	< 0.5

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CLIENT: ENGINEERING SCIENCE

SDG: 15873b
REPORT DATE: 11/12/93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	10/19/93	200	215	108	80-120
LEAD	10/19/93	50	51	102	80-120
SELENIUM	10/19/93	200	223	112	80-120
ARSENIC	10/21/93	200	211.1	106	80-120
LEAD	10/21/93	50	50.0	100	80-120
SELENIUM	10/21/93	200	207.6	104	80-120
ARSENIC	10/25/93	200	218	109	80-120
LEAD	10/25/93	50	51.6	108	80-120
SELENIUM	10/25/93	200	222	111	80-120
MERCURY	10/18/93	2.4	2.6	108	80-120
BARIUM	10/18/93	200	196	98	80-120
CADMIUM	10/18/93	5.0	4.5	90	80-120
CHROMIUM	10/18/93	20.0	19.4	97	80-120
NICKEL	10/18/93	50.0	48.5	97	80-120
ZINC	10/18/93	50.0	47.1	94	80-120
BARIUM	10/22/93	200	198	99	80-120
CADMIUM	10/22/93	5.0	5.6	112	80-120
CHROMIUM	10/22/93	20.0	20.0	100	80-120
NICKEL	10/22/93	50.0	50.7	101	80-120
ZINC	10/22/93	50.0	48.0	96	80-120
MERCURY	10/18/93	2.4	2.6	108	80-120
MERCURY	10/20/93	2.4	2.2	92	80-120
SILVER	10/25/93	5.0	4.7	94	80-120
SILVER	10/25/93	5.0	5.7	114	80-120
TOTAL CN-	10/18/93	5.0	4.78	96	80-120
TOTAL CN-	10/20/93	5.0	5.11	102	80-120

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CLIENT: ENGINEERING SCIENCE

SDG: 15873c
REPORT DATE: 11/15/93

MATRIX: SOIL
SAMPLE ID: I24.2SS2 MS1

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/kg)	SPIKE CONC. (mg/kg)	MS CONC. (mg/kg)	MS % RECOVERY	CONTROL LIMITS
BARIUM	10/18/93	171	220	579	185*	75-125
CADMIUM	10/18/93	16.2	5.5	43.0	487*	75-125
CHROMIUM	10/18/93	254	22.0	511	1168*	75-125
NICKEL	10/18/93	370	55.0	779	743*	75-125
ZINC	10/18/93	262	55.0	136	0*	75-125
SILVER	10/26/93	16.1	5.5	31.7	284*	75-125
ARSENIC	10/19/93	<1.2	220	199	90	75-125
LEAD	10/19/93	37.4	55	110	132*	75-125
SELENIUM	10/19/93	<0.6	220	196	89	75-125
MERCURY	10/18/93	0.16	0.55	0.68	95	75-125
TOTAL CN-	10/18/93	3.7	5.5	7.4	66*	75-125
SAMPLE ID: ESC1SE3 MS1						
BARIUM	10/22/93	478	304	549	23*	75-125
CADMIUM	10/22/93	14.2	7.6	20.7	86	75-125
CHROMIUM	10/22/93	382	30.4	298	0*	75-125
NICKEL	10/22/93	61.7	76	113	68*	75-125
ZINC	10/22/93	124	76	154	39*	75-125
SILVER	10/25/93	2.5	7.6	11.2	114	75-125
ARSENIC	10/21/93	<1.7	304	280	92	75-125
LEAD	10/21/93	42.5	76	99.1	75	75-125
SELENIUM	10/21/93	1.3	304	274	90	75-125
MERCURY	10/20/93	0.25	0.76	0.85	79	75-125
TOTAL CN-	10/18/93	<0.76	7.6	5.8	76	75-125

*OUTSIDE QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE

SDG: 15873d
REPORT DATE: 11/15/93

MATRIX: **SOIL**
SAMPLE ID: **I24.2SS2 SD1**

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/kg)	MSD CONC. (mg/kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
BARIUM	579	462	22*	20
CADMIUM	43.0	31.0	32*	20
CHROMIUM	511	399	25*	20
NICKEL	779	617	23*	20
ZINC	136	126	7.6	20
SILVER	31.7	30.5	3.9	20
ARSENIC	199	213	6.8	20
LEAD	110	93.4	16	20
SELENIUM	196	212	7.8	20
MERCURY	0.68	0.68	0.0	20
TOTAL CN-	7.4	9.0	20	20

SAMPLE ID: **ESC1SE3 SD1**

BARIUM	549	705	25*	20
CADMIUM	20.7	18.7	10	20
CHROMIUM	298	315	5.6	20
NICKEL	113	115	1.8	20
ZINC	154	166	7.5	20
SILVER	11.2	10.3	8.4	20
ARSENIC	280	289	3.2	20
LEAD	99.1	105	5.8	20
SELENIUM	274	283	3.2	20
MERCURY	0.85	0.82	3.6	20
TOTAL CN-	5.8	5.6	3.5	20

*OUTSIDE QC LIMITS

CHAIN OF CUSTODY RECORD

ENGINEERING—SCIENCE
AUSTIN, TEXAS

ES

PROJECT NAME/LOCATION: TINKER AFB

CARRIER: [X] Federal Express [ ] UPS

Other: 8010145404

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #:

SAMPLER(S): M. HARDER (Signature) [signature] J OSWEILLER [signature]

PRESERVATIVE

ANALYSIS REQUIRED

FIELD LOT CONTROL NUMBER

Date	Time	Loc. ID 10/23/93	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOAs (8240)	Semi VOAs (8270)	Metals (6010)	CN (9010)								Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/22/93	1025	S32.8SB2		N1	SO	SS	12'	12.7'	3	x	x	x	x								0	0	1	A	
	~~095~~ CS													CS											
10/22/93	1605	I24.12SB1		N1	SO	SS	9 ~~12'~~	14 ~~12.7'~~	3	x	x	x	x								0	0	1	A	
	1635	I24.12SB1 CS		N1	SO	SS	17'	18'	3	x	x	x	x								0	0	1	A	
	1510	I24.8SB1		N1	SO	SS	5'	7'	3	x	x	x	x								0	0	1	A	
	1550	I24.8SB1		FR1	SO	SS	14'	16'	3	x	x	x	x								0	0	1	A	
	1550	I24.8SB1		N1	SO	SS	14'	16'	3	x	x	x	x								0	0	1	A	
	0900	S32.4SB5		N1	SO	SS	5'	7'	3	x	x	x	x								0	0	1	A	
	1020	S32.4SB5		N1	SO	SS	13'	15'	3	x	x	x	x								0	0	1	A	
	1055	S32.4SB5		N1	SO	SS	15'	16'	3	x	x	x	x								0	0	1	A	
	–	FIELDQC		TB1	WQ	NA	0	0	2	x											0	0	1	A	

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	10/22/93		(Signature)			(Signature)		
Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time
(Signature) [signature]	10/23/93	0910	(Signature)			(Signature)		

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chaino.dwg

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS

Other: _____

PROJECT NUMBER: AV401.08

AIRBILL OR CARRIER ID #: 8010145522

SAMPLER(S): M. HARDER J. OSWEILER

(Signature): Mark Harder John Osweiler

PRESERVATIVE

ANALYSIS REQUIRED

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (8240)	Metals (6010)	CN (9010)	SMVOA (8270)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
~~10/20/93~~	~~1205~~	~~532.4~~	~~532.4SB3~~	~~N1~~	~~SO~~	~~SS~~	~~6'~~	~~8'~~	~~3~~	~~X~~	~~X~~	~~X~~	~~X~~	~~0~~	~~0~~	~~1~~	~~A~~		~~CS~~
~~10/20/93~~	~~1410~~	~~532.4~~	~~532.4SB3~~	~~N1~~	~~SO~~	~~SS~~	~~14'~~	~~16'~~	~~3~~	~~X~~	~~X~~	~~X~~	~~X~~	~~0~~	~~0~~	~~1~~	~~A~~		~~CS~~
~~10/20/93~~	~~-~~	~~FIELDQC~~	~~TRIP BLANK~~	~~TB1~~	~~WQ~~	~~NA~~	~~0~~	~~0~~	~~2~~	~~X~~				~~0~~	~~0~~	~~X~~	~~A~~		~~CS~~
10/20/93	1205	532.4SB3		N1	SO	SS	6'	8'	3	X	X	X	X	0	0	1	A		
↓	1410	532.4SB3	CS	N1	SO	SS	14'	16'	3	X	X	X	X	0	0	1	A		
↓	-	FIELDQC		TB1	WQ	NA	0	0	2	X				0	0	1	A		

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time
Mark Harder	10/20/93	1640						
Received by: (Signature)	**Date**	**Time**	**Received by:** (Signature)	**Date**	**Time**	**Received by:** (Signature)	**Date**	**Time**
						Kim Wilson	10/21/93	0930

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [X] Federal Express [ ] UPS
Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8010145382

SAMPLER(S): M. HARDER J. OSWEILER

(Signature) Mark Harder John C. Osweiler

Date	Time	Loc ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (SW8240)	METALS (6010)	SEMI VOA (8270)	CN (9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/21/93	1122	SB2		N1	SO	SS	4'	6'	3	X	X	X	X					
	0950	SB2		N1	SO	SS	0'	2'	3	X	X	X	X					
	1045	SB2		N1	SO	SS	7.5'	9.0'	3	X	X	X	X					
	1507	SB4		N1	SO	SS	10'	12'	3	X	X	X	X					
	1600	SB4		N1	SO	SS	15'	16'	3	X	X	X	X					
	-	FIELDQC		TB1	WQ	NA	0	0	2	X								

PRESERVATIVE

ANALYSIS REQUIRED

FIELD LOT CONTROL NUMBER

Relinquished by:	Date	Time
Mark Harder (Signature)	10/21/93	6:00pm
Received by: (Signature)	10/22/93	0900

Relinquished by:	Date	Time
(Signature)		
Received by: (Signature)		

Relinquished by:	Date	Time
(Signature)		
Received by: (Signature)		

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chainc.dwg

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS **ES**

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS
Other ~~8010145415~~ CS

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8010145415

SAMPLER(S): M. HARDER J. OSWEILER

(Signature) M. W. Harder John C. Osweiler

PRESERVATIVE

ANALYSIS REQUIRED

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	SW8240--VOA	SW6010--METALS	SW9010--CN	SW8270--SEMIVOA	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
10/25/93	—	FIELDQC		TB1	WQ	NA	0	0	2	X				0	0	1	A		
	1000	I24.12SB3		N1	SO	SS	4	6	3	X	X	X	X	0	0	1	A		
	1116	I24.12SB3		N1	SO	SS	14	16	3	X	X	X	X	0	0	1	A		
	1330	I24.10SB2		N1	SO	SS	9	10.5	3	X	X	X	X	0	0	1	A		
	1025	I24.12SB2		N1	SO	SS	8'	9.5'	3	X	X	X	X	0	0	1	A		
	1100	I24.12SB2		N1	SO	SS	14.5'	16'	3	X	X	X	X	0	0	1	A		
	1340	I24.10SB1		N1	SO	SS	4'	6'	3	X	X	X	X	0	0	1	A		
	1532	I24.10SB2		N1	SO	SS	16'	18'	3	X	X	X	X	0	0	1	A		
↓	1500	I24.10SB1		N1	SO	SS	13'	15'	3	X	X	X	X	0	0	1	A		

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time
M. W. Harder	10/25/93	1706						
Received by: (Signature)	Date	Time	**Received by:** (Signature)	Date	Time	**Received by:** (Signature)	Date	Time
						K. Collis	10/26/93	0715

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chainc.dwg

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013.01

DATE: 11/24/93

SWLO #: 16013.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:
DATE ANALYZED : 10/25/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	25	B	1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	240	E	BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	1.8	J
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013.01

DATE: 11/24/93

SWLO #: 16013.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	46	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013.01

DATE: 11/24/93

SWLO #: 16013.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	62%	2-FLUOROBIPHENYL	(30-115)	52%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	51%
2-FLUOROPHENOL	(25-121)	54%	2,4,6-TRIBROMOPHENOL	(19-122)	50%

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REPORT: 16013.01

DATE: 11/24/93

SWLO #: 16013.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.107	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	4.08		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	92.6		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.43		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	11.5		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	3.44		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	6.56		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.537	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	9.57		mg/kg	10/26/93	10/26/93	SW846-6010

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DATE: 11/24/93

SWLO #: 16013.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.537	U	mg/kg	10/22/93	10/25/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013.02

DATE: 11/24/93

SWLO #: 16013.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:
DATE ANALYZED : 10/25/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	31	B	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	76		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	2.3	J
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 106%
1,2-DICHLOROETHANE-D4	(70-121) 109%		

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REPORT: 16013.02

DATE: 11/24/93

SWLO #: 16013.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	49	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16013.02

DATE: 11/24/93

SWLO #: 16013.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	63%
TERPHENYL-D14	(18-137)	92%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013.02

DATE: 11/24/93

SWLO #: 16013.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.114	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	1.94		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	22.2		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.456		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	6.5		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	1.6		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	4.33		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	11.4	U	mg/kg	10/26/93	10/26/93	SW846-6010
ZINC	5.93		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013.02

DATE: 11/24/93

SWLO #: 16013.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.57	U	mg/kg	/ /	10/25/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013.04

DATE: 11/24/93

SWLO #: 16013.04 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.59	ug/kg	10/22/93	10/25/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013.05

DATE: 11/24/93

SWLO #: 16013.05 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB3
LOCATION:

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.59	ug/kg	10/22/93	10/25/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013.03

DATE: 11/24/93

SWLO #: 16013.03 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 10/26/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/20/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	2.8	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.6	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	1.3	J
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 103%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16039.01

DATE: 11/24/93

SWLO #: 16039.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	13		CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	190		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	1.1	J
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	1.5	J
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 105%
1,2-DICHLOROETHANE-D4	(70-121) 106%		

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16039.01

DATE: 11/24/93

SWLO #: 16039.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	224	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	71	J
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	153	J

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Attn: KEVIN TYNES

REPORT: 16039.01

DATE: 11/24/93

SWLO #: 16039.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	74	J
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	42	J
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	105	J
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	141% *	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16039.01

DATE: 11/24/93

SWLO #: 16039.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.109	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	4.04		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	77.4		ug/l	10/26/93	10/26/93	SW846-6010
CADMIUM	0.764		ug/l	10/26/93	10/26/93	SW846-6010
CHROMIUM	24.7		ug/l	10/26/93	10/26/93	SW846-6010
LEAD	8.84		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	15.9		ug/l	10/26/93	10/26/93	SW846-6010
SELENIUM	0.546	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	105		ug/l	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/24/93

SWLO #: 16039.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.546	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16039.07

DATE: 11/24/93

SWLO #: 16039.07 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.27	ug/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16039.08

DATE: 11/24/93

SWLO #: 16039.08 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.16	ug/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16039.02

DATE: 11/24/93

SWLO #: 16039.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00
DATE PREPARED : / /
DILUTION FACTOR: 1.05

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	10	U	BENZENE	5.3	U
METHYLENE CHLORIDE	14		CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	58		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	3.7	J
1,2-DICHLOROETHANE	5.3	U	TOLUENE	1.9	J
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	10	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121) 98%
1,2-DICHLOROETHANE-D4	(70-121)	100%		

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DATE: 11/24/93

SWLO #: 16039.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	37	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

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REPORT: 16039.02

DATE: 11/24/93

SWLO #: 16039.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	71%
TERPHENYL-D14	(18-137)	121%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	59%

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LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.105	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.105	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	3.26		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	374		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.842		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	19.2		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	5.37		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	13.5		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.526	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	17.9		mg/kg	10/26/93	10/26/93	SW846-6010

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PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.526	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16039.03

DATE: 11/24/93

SWLO #: 16039.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	13		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	84		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	100%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16039.03

DATE: 11/24/93

SWLO #: 16039.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 9.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	160	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16039.03

DATE: 11/24/93

SWLO #: 16039.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 9.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	123%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.112	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	20.2		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	52		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.893		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	27.7		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	6.03		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	21.7		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.558	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	27		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.4SB2
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.50
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.558	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16039.04

DATE: 11/24/93

SWLO #: 16039.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 12.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	11		CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	69		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 99%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/24/93

SWLO #: 16039.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 12.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1700	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1700	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1700	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1700	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1700	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1700	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	710	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	270	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16039.04

DATE: 11/24/93

SWLO #: 16039.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 12.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1700	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1700	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	125%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.4SB4
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 12.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.108	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	1.08	U	mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	34.2		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.43		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	5.6		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	2.15		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	5.27		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.538	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	5.06		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.4SB4
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 12.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.538	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16039.05

DATE: 11/24/93

SWLO #: 16039.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:
DATE ANALYZED : 10/28/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	34		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	1.6	J
1,2-DICHLOROETHANE	5.8	U	TOLUENE	1.8	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	69	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16039.05

DATE: 11/24/93

SWLO #: 16039.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	72%
TERPHENYL-D14	(18-137)	118%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16039.05

DATE: 11/24/93

SWLO #: 16039.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.115	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.115	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	1.96		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	41.7		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.576		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	13.8		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	1.5		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	5.76		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.576		mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	6.91		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16039.05

DATE: 11/24/93

SWLO #: 16039.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB4
LOCATION:

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.576	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16039.06

DATE: 11/24/93

SWLO #: 16039.06 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 10/27/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/21/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	2.9	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 101%	BROMOFLUOROBENZENE	(86-115) 100%
1,2-DICHLOROETHANE-D4	(76-114) 106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.01

DATE: 11/24/93

SWLO #: 16063.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 12.70
DATE PREPARED : / /
DILUTION FACTOR: 5.52

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	55	U	TRICHLOROETHENE	28	U
BROMOMETHANE	55	U	DIBROMOCHLOROMETHANE	28	U
VINYL CHLORIDE	55	U	1,1,2-TRICHLOROETHANE	28	U
CHLOROETHANE	55	U	BENZENE	28	U
METHYLENE CHLORIDE	32		CIS-1,3-DICHLOROPROPENE	28	U
ACETONE	1100		2-CHLOROETHYL VINYL ETHER	55	U
CARBON DISULFIDE	28	U	BROMOFORM	28	U
1,1-DICHLOROETHENE	28	U	2-HEXANONE	55	U
1,1-DICHLOROETHANE	28	U	4-METHYL-2-PENTANONE	55	U
CHLOROFORM	28	U	TETRACHLOROETHENE	28	U
1,2-DICHLOROETHANE	28	U	TOLUENE	28	U
1,1,1-TRICHLOROETHANE	28	U	CHLOROBENZENE	28	U
CARBON TETRACHLORIDE	28	U	ETHYLBENZENE	28	U
VINYL ACETATE	55	U	STYRENE	28	U
BROMODICHLOROMETHANE	28	U	1,2-DICHLOROETHENE(TOTAL)	28	U
1,1,2,2-TETRACHLOROETHANE	28	U	XYLENE (TOTAL)	28	U
1,2-DICHLOROPROPANE	28	U	2-BUTANONE	55	U
TRANS-1,3-DICHLOROPROPENE	28	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.01

DATE: 11/24/93

SWLO #: 16063.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 12.70
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	730	U
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	730	U
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	210	JB
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	730	U
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.01

DATE: 11/24/93

SWLO #: 16063.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 12.70
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	85%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	102%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	86%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.01

DATE: 11/24/93

SWLO #: 16063.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 12.70

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.11	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	2.65		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	61.1		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.773		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	14.8		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	4.75		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	8.17		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.552	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	12.6		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.01

DATE: 11/24/93

SWLO #: 16063.01 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.3SB2
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 12.70

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.552	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.02

DATE: 11/24/93

SWLO #: 16063.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.19

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	12	U	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.02

DATE: 11/24/93

SWLO #: 16063.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 14.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	790	U	ACENAPHTHENE	790	U
BIS(2-CHLOROETHYL)ETHER	790	U	2,4-DINITROPHENOL	3800	U
2-CHLOROPHENOL	790	U	4-NITROPHENOL	3800	U
1,3-DICHLOROBENZENE	790	U	DIBENZOFURAN	790	U
1,4-DICHLOROBENZENE	790	U	2,4-DINITROTOLUENE	790	U
BENZYL ALCOHOL	790	U	2,6-DINITROTOLUENE	790	U
1,2-DICHLOROBENZENE	790	U	DIETHYLPHTHALATE	790	U
2-METHYLPHENOL(O-CRESOL)	790	U	4-CHLOROPHENYL-PHENYLETHER	790	U
BIS(2-CHLOROISOPROPYL)ETHER	790	U	FLUORENE	790	U
4-METHYLPHENOL(P-CRESOL)	790	U	4-NITROANILINE	3800	U
N-NITROSO-DI-N-PROPYLAMINE	790	U	4,6-DINITRO-2-METHYLPHENOL	3800	U
HEXACHLOROETHANE	790	U	N-NITROSODIPHENYLAMINE(1)	790	U
NITROBENZENE	790	U	4-BROMOPHENYL-PHENYLETHER	790	U
ISOPHORONE	790	U	HEXACHLOROBENZENE	790	U
2-NITROPHENOL	790	U	PENTACHLOROPHENOL	3800	U
2,4-DIMETHYLPHENOL	790	U	PHENANTHRENE	790	U
BENZOIC ACID	3800	U	ANTHRACENE	790	U
BIS(2-CHLOROETHOXY)METHANE	790	U	DI-N-BUTYL PHTHALATE	790	U
2,4-DICHLOROPHENOL	790	U	FLUORANTHENE	790	U
1,2,4-TRICHLOROBENZENE	790	U	PYRENE	790	U
NAPHTHALENE	790	U	BUTYL BENZYL PHTHALATE	790	U
4-CHLOROANILINE	790	U	3,3'-DICHLOROBENZIDINE	1600	U
HEXACHLOROBUTADIENE	790	U	BENZO(A)ANTHRACENE	790	U
4-CHLORO-3-METHYLPHENOL	790	U	BIS(2-ETHYLHEXYL)PHTHALATE	41	JB
2-METHYLNAPHTHALENE	790	U	CHRYSENE	790	U
HEXACHLOROCYCLOPENTADIENE	790	U	DI-N-OCTYL PHTHALATE	790	U
2,4,6-TRICHLOROPHENOL	790	U	BENZO(B)FLUORANTHENE	790	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.02

DATE: 11/24/93

SWLO #: 16063.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 14.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.40

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3800	U	BENZO(K)FLUORANTHENE	790	U
2-CHLORONAPHTHALENE	790	U	BENZO(A)PYRENE	790	U
2-NITROANILINE	3800	U	INDENO(1,2,3-CD)PYRENE	790	U
DIMETHYL PHTHALATE	790	U	DIBENZ(A,H)ANTHRACENE	790	U
ACENAPHTHYLENE	790	U	BENZO(G,H,I)PERYLENE	790	U
3-NITROANILINE	3800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	84%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/24/93

SWLO #: 16063.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.119	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.119	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	2.74		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	920		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	3.81		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	14.8		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	5.72		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	12.9		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.595	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	18.2		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/24/93

SWLO #: 16063.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.595	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.03

DATE: 11/24/93

SWLO #: 16063.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	16		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	61		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	82%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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DATE: 11/24/93

SWLO #: 16063.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	760	U
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	760	U
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	64	JB
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	760	U
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.03

DATE: 11/24/93

SWLO #: 16063.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	85%	2-FLUOROBIPHENYL	(30-115)	90%
TERPHENYL-D14	(18-137)	107%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	89%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16063.03

DATE: 11/24/93

SWLO #: 16063.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.117	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	5.87		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	733		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.704		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	10.3		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	4.58		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	6.92		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.587	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	10.1		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.12SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.587	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16063.04

DATE: 11/24/93

SWLO #: 16063.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	42		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121) 89%
1,2-DICHLOROETHANE-D4	(70-121)	84%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.04

DATE: 11/24/93

SWLO #: 16063.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	730	U
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	730	U
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	40	JB
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	730	U
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	82%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.04

DATE: 11/24/93

SWLO #: 16063.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.111	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	3		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	236		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.889		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	13.1		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	4.89		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	7.45		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.556	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	11.1		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.04

DATE: 11/24/93

SWLO #: 16063.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.556	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.05

DATE: 11/24/93

SWLO #: 16063.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	84		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	95%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.05

DATE: 11/24/93

SWLO #: 16063.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	760	U
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	760	U
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	89	JB
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	760	U
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.05

DATE: 11/24/93

SWLO #: 16063.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	85%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	104%	PHENOL-D5	(24-113)	72%
2-FLUOROPHENOL	(25-121)	88%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.05

DATE: 11/24/93

SWLO #: 16063.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.112	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	4.13		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	204		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.781		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	8.93		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	4.35		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	6.69		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.558	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	8.37		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.05

DATE: 11/24/93

SWLO #: 16063.05 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.558	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.06

DATE: 11/24/93

SWLO #: 16063.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	9.2		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	110		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16063.06

DATE: 11/24/93

SWLO #: 16063.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	760	U
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	760	U
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	760	U
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	760	U
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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DATE: 11/24/93

SWLO #: 16063.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	84%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	73%
2-FLUOROPHENOL	(25-121)	86%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 11/24/93

SWLO #: 16063.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.113	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	3.16		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	173		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.678		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	7.68		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	3.39		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	5.99		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.565	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	6.78		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.06

DATE: 11/24/93

SWLO #: 16063.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.565	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.07

DATE: 11/24/93

SWLO #: 16063.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	32		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	88%	BROMOFLUOROBENZENE	(74-121)	85%
1,2-DICHLOROETHANE-D4	(70-121)	78%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16063.07

DATE: 11/24/93

SWLO #: 16063.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	760	U
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	760	U
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	59	JB
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	760	U
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.07

DATE: 11/24/93

SWLO #: 16063.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	90%
TERPHENYL-D14	(18-137)	102%	PHENOL-D5	(24-113)	72%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	73%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16063.07

DATE: 11/24/93

SWLO #: 16063.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.114	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	2.41		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	296		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.458		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	7.45		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	2.86		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	10.8		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.573	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	12.3		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16063.07

DATE: 11/24/93

SWLO #: 16063.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.573	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.08

DATE: 11/24/93

SWLO #: 16063.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	75		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16063.08

DATE: 11/24/93

SWLO #: 16063.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	730	U	ACENAPHTHENE	730	U
BIS(2-CHLOROETHYL)ETHER	730	U	2,4-DINITROPHENOL	3500	U
2-CHLOROPHENOL	730	U	4-NITROPHENOL	3500	U
1,3-DICHLOROBENZENE	730	U	DIBENZOFURAN	730	U
1,4-DICHLOROBENZENE	730	U	2,4-DINITROTOLUENE	730	U
BENZYL ALCOHOL	730	U	2,6-DINITROTOLUENE	730	U
1,2-DICHLOROBENZENE	730	U	DIETHYLPHTHALATE	730	U
2-METHYLPHENOL(O-CRESOL)	730	U	4-CHLOROPHENYL-PHENYLETHER	730	U
BIS(2-CHLOROISOPROPYL)ETHER	730	U	FLUORENE	730	U
4-METHYLPHENOL(P-CRESOL)	730	U	4-NITROANILINE	3500	U
N-NITROSO-DI-N-PROPYLAMINE	730	U	4,6-DINITRO-2-METHYLPHENOL	3500	U
HEXACHLOROETHANE	730	U	N-NITROSODIPHENYLAMINE(1)	730	U
NITROBENZENE	730	U	4-BROMOPHENYL-PHENYLETHER	730	U
ISOPHORONE	730	U	HEXACHLOROBENZENE	730	U
2-NITROPHENOL	730	U	PENTACHLOROPHENOL	3500	U
2,4-DIMETHYLPHENOL	730	U	PHENANTHRENE	730	U
BENZOIC ACID	3500	U	ANTHRACENE	730	U
BIS(2-CHLOROETHOXY)METHANE	730	U	DI-N-BUTYL PHTHALATE	730	U
2,4-DICHLOROPHENOL	730	U	FLUORANTHENE	730	U
1,2,4-TRICHLOROBENZENE	730	U	PYRENE	730	U
NAPHTHALENE	730	U	BUTYL BENZYL PHTHALATE	730	U
4-CHLOROANILINE	730	U	3,3'-DICHLOROBENZIDINE	1400	U
HEXACHLOROBUTADIENE	730	U	BENZO(A)ANTHRACENE	730	U
4-CHLORO-3-METHYLPHENOL	730	U	BIS(2-ETHYLHEXYL)PHTHALATE	730	U
2-METHYLNAPHTHALENE	730	U	CHRYSENE	730	U
HEXACHLOROCYCLOPENTADIENE	730	U	DI-N-OCTYL PHTHALATE	730	U
2,4,6-TRICHLOROPHENOL	730	U	BENZO(B)FLUORANTHENE	730	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.08

DATE: 11/24/93

SWLO #: 16063.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3500	U	BENZO(K)FLUORANTHENE	730	U
2-CHLORONAPHTHALENE	730	U	BENZO(A)PYRENE	730	U
2-NITROANILINE	3500	U	INDENO(1,2,3-CD)PYRENE	730	U
DIMETHYL PHTHALATE	730	U	DIBENZ(A,H)ANTHRACENE	730	U
ACENAPHTHYLENE	730	U	BENZO(G,H,I)PERYLENE	730	U
3-NITROANILINE	3500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	90%
TERPHENYL-D14	(18-137)	106%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16063.08

DATE: 11/24/93

SWLO #: 16063.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.113	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	1.13	U	mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	64		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.451		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	3.49		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	0.789		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	4.84		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.563	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	5.41		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16063.08

DATE: 11/24/93

SWLO #: 16063.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.563	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.09

DATE: 11/24/93

SWLO #: 16063.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	60		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.09

DATE: 11/24/93

SWLO #: 16063.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	760	U	ACENAPHTHENE	760	U
BIS(2-CHLOROETHYL)ETHER	760	U	2,4-DINITROPHENOL	3700	U
2-CHLOROPHENOL	760	U	4-NITROPHENOL	3700	U
1,3-DICHLOROBENZENE	760	U	DIBENZOFURAN	760	U
1,4-DICHLOROBENZENE	760	U	2,4-DINITROTOLUENE	760	U
BENZYL ALCOHOL	760	U	2,6-DINITROTOLUENE	760	U
1,2-DICHLOROBENZENE	760	U	DIETHYLPHTHALATE	760	U
2-METHYLPHENOL(O-CRESOL)	760	U	4-CHLOROPHENYL-PHENYLETHER	760	U
BIS(2-CHLOROISOPROPYL)ETHER	760	U	FLUORENE	760	U
4-METHYLPHENOL(P-CRESOL)	760	U	4-NITROANILINE	3700	U
N-NITROSO-DI-N-PROPYLAMINE	760	U	4,6-DINITRO-2-METHYLPHENOL	3700	U
HEXACHLOROETHANE	760	U	N-NITROSODIPHENYLAMINE(1)	760	U
NITROBENZENE	760	U	4-BROMOPHENYL-PHENYLETHER	760	U
ISOPHORONE	760	U	HEXACHLOROBENZENE	760	U
2-NITROPHENOL	760	U	PENTACHLOROPHENOL	3700	U
2,4-DIMETHYLPHENOL	760	U	PHENANTHRENE	760	U
BENZOIC ACID	3700	U	ANTHRACENE	760	U
BIS(2-CHLOROETHOXY)METHANE	760	U	DI-N-BUTYL PHTHALATE	760	U
2,4-DICHLOROPHENOL	760	U	FLUORANTHENE	760	U
1,2,4-TRICHLOROBENZENE	760	U	PYRENE	760	U
NAPHTHALENE	760	U	BUTYL BENZYL PHTHALATE	760	U
4-CHLOROANILINE	760	U	3,3'-DICHLOROBENZIDINE	1500	U
HEXACHLOROBUTADIENE	760	U	BENZO(A)ANTHRACENE	760	U
4-CHLORO-3-METHYLPHENOL	760	U	BIS(2-ETHYLHEXYL)PHTHALATE	57	JB
2-METHYLNAPHTHALENE	760	U	CHRYSENE	760	U
HEXACHLOROCYCLOPENTADIENE	760	U	DI-N-OCTYL PHTHALATE	760	U
2,4,6-TRICHLOROPHENOL	760	U	BENZO(B)FLUORANTHENE	760	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.09

DATE: 11/24/93

SWLO #: 16063.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 2.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	3700	U	BENZO(K)FLUORANTHENE	760	U
2-CHLORONAPHTHALENE	760	U	BENZO(A)PYRENE	760	U
2-NITROANILINE	3700	U	INDENO(1,2,3-CD)PYRENE	760	U
DIMETHYL PHTHALATE	760	U	DIBENZ(A,H)ANTHRACENE	760	U
ACENAPHTHYLENE	760	U	BENZO(G,H,I)PERYLENE	760	U
3-NITROANILINE	3700	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	92%
TERPHENYL-D14	(18-137)	106%	PHENOL-D5	(24-113)	74%
2-FLUOROPHENOL	(25-121)	79%	2,4,6-TRIBROMOPHENOL	(19-122)	73%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.09

DATE: 11/24/93

SWLO #: 16063.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.114	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	1.14	U	mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	32.3		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	0.342	U	mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	2.28		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	0.456		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	3.88		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	0.57	U	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	3.54		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.09

DATE: 11/24/93

SWLO #: 16063.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.57	U	mg/kg	10/27/93	10/28/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.10

DATE: 11/24/93

SWLO #: 16063.10 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 10/27/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	2.1	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.4	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	100%	BROMOFLUOROBENZENE	(86-115)	96%
1,2-DICHLOROETHANE-D4	(76-114)	105%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.11

DATE: 11/24/93

SWLO #: 16063.11 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.52		mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	0.1	U	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	231		mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	258		mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	5.59		mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	24.4		mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	57.4		mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	55.8		mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	226		mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	55.7		mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16063.12

DATE: 11/24/93

SWLO #: 16063.12 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.4SB5
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.52	mg/kg	10/26/93	10/26/93	SW846-7471
SILVER	5.8	mg/kg	10/26/93	10/28/93	SW846-7761
ARSENIC	228	mg/kg	10/26/93	10/27/93	SW846-6010
BARIUM	242	mg/kg	10/26/93	10/26/93	SW846-6010
CADMIUM	5.36	mg/kg	10/26/93	10/26/93	SW846-6010
CHROMIUM	23.3	mg/kg	10/26/93	10/26/93	SW846-6010
LEAD	57	mg/kg	10/26/93	10/27/93	SW846-6010
NICKEL	55.4	mg/kg	10/26/93	10/26/93	SW846-6010
SELENIUM	224	mg/kg	10/26/93	10/27/93	SW846-6010
ZINC	54.7	mg/kg	10/26/93	10/26/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16088.01

DATE: 11/24/93

SWLO #: 16088.01 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	3.4	JB	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.8	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	98%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.02

DATE: 11/24/93

SWLO #: 16088.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	11		CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	29	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	33	
1,2-DICHLOROETHANE	5.5	U	TOLUENE	1.4	J
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 100%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 104%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.02

DATE: 11/24/93

SWLO #: 16088.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.02

DATE: 11/24/93

SWLO #: 16088.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	63%	2-FLUOROBIPHENYL	(30-115)	55%
TERPHENYL-D14	(18-137)	75%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	46%	2,4,6-TRIBROMOPHENOL	(19-122)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.02

DATE: 11/24/93

SWLO #: 16088.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.11	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	1.65		mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	229		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.329	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	9.33		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	5.6		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	8.24		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.549	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	10.4		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.02

DATE: 11/24/93

SWLO #: 16088.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.549	U	mg/kg	10/28/93	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.03

DATE: 11/24/93

SWLO #: 16088.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.19

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	42	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	1.9	J
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 100%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.03

DATE: 11/24/93

SWLO #: 16088.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.03

DATE: 11/24/93

SWLO #: 16088.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.03

DATE: 11/24/93

SWLO #: 16088.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.119	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.119	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	7.72		mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	827		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.356	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	9.27		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	8.91		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	10.1		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.594	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	12.7		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.03

DATE: 11/24/93

SWLO #: 16088.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB3
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.594	U	mg/kg	10/28/93	10/29/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.04

DATE: 11/24/93

SWLO #: 16088.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	10		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	69	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16088.04

DATE: 11/24/93

SWLO #: 16088.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.50
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.04

DATE: 11/24/93

SWLO #: 16088.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.50
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16088.04

DATE: 11/24/93

SWLO #: 16088.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.112	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	1.12	U	mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	288		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.337	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	4.49		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	1.91		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	3.37		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.562	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	5.05		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.04

DATE: 11/24/93

SWLO #: 16088.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.562	U	mg/kg	/ /	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.05

DATE: 11/24/93

SWLO #: 16088.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.50
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	15		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	58	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	1.7	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 99%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.05

DATE: 11/24/93

SWLO #: 16088.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.50
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.05

DATE: 11/24/93

SWLO #: 16088.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.50
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	72%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	72%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.05

DATE: 11/24/93

SWLO #: 16088.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.116	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	1.16	U	mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	324		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.348	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	6.27		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	3.71		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	9.05		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.58	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	10.6		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.05

DATE: 11/24/93

SWLO #: 16088.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.58	U	mg/kg	/ /	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.06

DATE: 11/24/93

SWLO #: 16088.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	11		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	54	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	1.3	J
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121) 96%
1,2-DICHLOROETHANE-D4	(70-121)	101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.06

DATE: 11/24/93

SWLO #: 16088.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	61	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.06

DATE: 11/24/93

SWLO #: 16088.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	63%
TERPHENYL-D14	(18-137)	80%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	55%	2,4,6-TRIBROMOPHENOL	(19-122)	57%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.06

DATE: 11/24/93

SWLO #: 16088.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.118	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	2.36		mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	440		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.355	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	8.98		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	2.36		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	6.62		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.591	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	10		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16088.06

DATE: 11/24/93

SWLO #: 16088.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB2
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.591	U	mg/kg	10/28/93	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.07

DATE: 11/24/93

SWLO #: 16088.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB1
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	10	U	BENZENE	5.3	U
METHYLENE CHLORIDE	12		CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	16	B	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	7.4	
1,2-DICHLOROETHANE	5.3	U	TOLUENE	1.2	J
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	10	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	105%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.07

DATE: 11/24/93

SWLO #: 16088.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	89	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	67%	2-FLUOROBIPHENYL	(30-115)	65%
TERPHENYL-D14	(18-137)	91%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	57%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.10SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.106	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.212		mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	1.59		mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	240		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.317	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	16.8		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	2.86		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	8.46		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.529	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	9.31		mg/kg	10/29/93	10/29/93	SW846-6010

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SAMPLE #: I24.10SB1
LOCATION:

DATE SAMPLED: 10/22/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.00
DEPTH TO : 6.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.529	U	mg/kg	10/28/93	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16088.08

DATE: 11/24/93

SWLO #: 16088.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	15		CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	48	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	5.6	J
1,2-DICHLOROETHANE	6	U	TOLUENE	1.8	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 105%
1,2-DICHLOROETHANE-D4	(70-121) 112%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.08

DATE: 11/24/93

SWLO #: 16088.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	65%
TERPHENYL-D14	(18-137)	79%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	72%	2,4,6-TRIBROMOPHENOL	(19-122)	52%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.10SB2
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.12	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.12	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	1.2	U	mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	124		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.36	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	4.92		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	1.08		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	5.16		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.601	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	4.8		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.601	U	mg/kg	/ /	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16088.09

DATE: 11/24/93

SWLO #: 16088.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB1
LOCATION:
DATE ANALYZED : 11/01/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	16		CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	37	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	1.3	J
1,2-DICHLOROETHANE	6	U	TOLUENE	2	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	104%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	50	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.09

DATE: 11/24/93

SWLO #: 16088.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	65%
TERPHENYL-D14	(18-137)	89%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	38%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16088.09

DATE: 11/24/93

SWLO #: 16088.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB1
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.12	U	mg/kg	10/27/93	10/27/93	SW846-7471
SILVER	0.12	U	mg/kg	10/29/93	11/02/93	SW846-7761
ARSENIC	1.2	U	mg/kg	10/29/93	11/03/93	SW846-6010
BARIUM	114		mg/kg	10/29/93	10/29/93	SW846-6010
CADMIUM	0.361	U	mg/kg	10/29/93	10/29/93	SW846-6010
CHROMIUM	2.52		mg/kg	10/29/93	10/29/93	SW846-6010
LEAD	0.722		mg/kg	10/29/93	11/03/93	SW846-6010
NICKEL	1.8		mg/kg	10/29/93	10/29/93	SW846-6010
SELENIUM	0.601	U	mg/kg	10/29/93	11/03/93	SW846-6010
ZINC	2.04		mg/kg	10/29/93	10/29/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16088.09

DATE: 11/24/93

SWLO #: 16088.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB1
LOCATION:

DATE SAMPLED: 10/25/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.601	U	mg/kg	10/28/93	10/29/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931025A
INST. BATCH: 207
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931025A
LOCATION:

PREPARED :
ANALYZED : 10/25/93 12:40
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	2	J	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 108%
1,2-DICHLOROETHANE-D4	(70-121) 100%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
N/A = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931025A
INST. BATCH: 207
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/25/93 13:09
ANALYZED : 10/25/93 13:39

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	50	100	51	102	2.9	18	21-170
BROMOMETHANE	50	49	99	51	103	3.63	36	46-161
VINYL CHLORIDE	50	50	101	51	103	2.18	26	31-168
CHLOROETHANE	50	50	100	51	103	3.26	54	44-154
METHYLENE CHLORIDE	50	62	125	57	114	8.63	21	77-141
ACETONE	50	64	128	70	141	10.1	59	30-160
CARBON DISULFIDE	50	51	103	52	105	2.49	29	52-129
1,1-DICHLOROETHENE	50	50	101	51	103	1.64	16	60-141
1,1-DICHLOROETHANE	50	50	100	53	106	5.86	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	100	102	110	107	5.19	21	72-133
CHLOROFORM	50	50	102	54	108	6.56	17	79-129
1,2-DICHLOROETHANE	50	51	102	56	112	9.52	19	81-132
2-BUTANONE	50	57	115	58	116	< 1	91	16-130
1,1,1-TRICHLOROETHANE	50	51	102	54	108	6.03	45	66-140
CARBON TETRACHLORIDE	50	53	106	55	111	4.59	21	65-140
VINYL ACETATE	50	49	98	55	111	11.8	72	17-153
BROMODICHLOROMETHANE	50	51	103	56	112	8.44	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	52	104	59	118	12.9	78	49-127
1,2-DICHLOROPROPANE	50	50	100	54	109	8.85	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	51	102	57	114	11.1	41	48-141
TRICHLOROETHENE	50	51	102	54	108	5.76	21	71-134
DIBROMOCHLOROMETHANE	50	51	103	58	116	11.5	25	68-120
1,1,2-TRICHLOROETHANE	50	51	102	57	115	11.2	28	68-120
BENZENE	50	50	100	54	109	8.25	13	79-128
CIS-1,3-DICHLOROPROPENE	50	50	101	56	112	10.3	29	63-123
2-CHLOROETHYL VINYL ETHE	50	51	102	60	120	16.2	45	0-146
BROMOFORM	50	53	106	60	121*	13.3	37	58-119
2-HEXANONE	50	57	115	69	139	18.9	60	20-181
4-METHYL-2-PENTANONE	50	54	108	65	130	18.2	54	33-163
TETRACHLOROETHENE	50	51	103	54	109	5.78	21	80-125
TOLUENE	50	51	103	55	111	7.44	11	80-122
CHLOROBENZENE	50	50	100	54	110	9.01	10	80-125
ETHYLBENZENE	50	50	100	53	107	7.49	19	82-123
STYRENE	50	49	99	54	108	9.35	13	71-129
XYLENE (TOTAL)	150	160	104	170	113	8.28	21	81-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	109	81-117
BROMOFLUOROBENZENE	102	112	74-121
1,2-DICHLOROETHANE-D4	102	111	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931026A
INST. BATCH: 1683
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931026A
LOCATION:

PREPARED :
ANALYZED : 10/26/93 10:24
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	99%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931026A
INST. BATCH: 1683
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 10/26/93 10:58
ANALYZED : 10/26/93 11:22

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	63	127	62	124	2.72	28	32-161
BROMOMETHANE	50	58	117	58	117	< 1	23	50-191
VINYL CHLORIDE	50	58	116	58	116	< 1	25	65-167
CHLOROETHANE	50	53	106	56	113	6.95	28	32-212
METHYLENE CHLORIDE	50	49	99	50	100	1.31	43	52-168
ACETONE	50	41	82	44	88	7.21	50	53-146
CARBON DISULFIDE	50	52	105	53	107	1.82	31	50-162
1,1-DICHLOROETHENE	50	51	103	52	105	1.39	32	54-161
1,1-DICHLOROETHANE	50	47	95	48	96	< 1	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	100	104	100	103	< 1	35	74-162
CHLOROFORM	50	48	96	48	96	< 1	19	57-152
1,2-DICHLOROETHANE	50	50	100	50	101	1.16	26	59-151
2-BUTANONE	50	51	102	50	100	2.62	29	42-173
1,1,1-TRICHLOROETHANE	50	49	98	50	100	1.28	51	38-179
CARBON TETRACHLORIDE	50	47	95	48	98	2.48	49	37-182
VINYL ACETATE	50	62	124*	66	133*	6.42	60	22-122
BROMODICHLOROMETHANE	50	51	103	51	103	< 1	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	51	103	58	116	11.9	95	14-157
1,2-DICHLOROPROPANE	50	49	98	50	100	1.91	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	52	105	52	104	< 1	42	10-164
TRICHLOROETHENE	50	46	92	48	96	4.45	38	67-149
DIBROMOCHLOROMETHANE	50	51	103	52	105	2.41	21	43-157
1,1,2-TRICHLOROETHANE	50	51	102	52	104	2.3	31	40-179
BENZENE	50	48	96	49	98	2.3	46	70-134
CIS-1,3-DICHLOROPROPENE	50	50	102	51	103	1.14	33	34-199
BROMOFORM	50	45	90	47	95	5.08	52	34-151
2-HEXANONE	50	53	107	63	127	17.4	97	27-176
4-METHYL-2-PENTANONE	50	50	101	57	115	13.0	62	23-208
TETRACHLOROETHENE	50	48	97	50	100	2.2	24	61-141
TOLUENE	50	47	94	48	96	2.08	15	75-140
CHLOROBENZENE	50	46	93	47	95	1.45	14	72-135
ETHYLBENZENE	50	47	95	48	97	2.01	17	55-147
STYRENE	50	47	94	47	95	< 1	27	64-147
XYLENE (TOTAL)	150	150	103	150	103	< 1	16	55-151

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	97	101	88-110
BROMOFLUOROBENZENE	98	100	86-115
1,2-DICHLOROETHANE-D4	100	103	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931028A
INST. BATCH: 1915
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931028A
LOCATION:

PREPARED :
ANALYZED : 10/28/93 09:14
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	96%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931028A
INST. BATCH: 1915
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/28/93 09:37
ANALYZED : 10/28/93 10:00

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	49	98	47	94	4.15	18	21-170
BROMOMETHANE	50	52	104	48	97	6.1	36	46-161
VINYL CHLORIDE	50	47	94	45	90	3.42	26	31-168
CHLOROETHANE	50	52	105	48	96	9.49	54	44-154
METHYLENE CHLORIDE	50	61	122	56	112	8.49	21	77-141
ACETONE	50	51	102	55	110	8.03	59	30-160
CARBON DISULFIDE	50	48	97	45	91	6.28	29	52-129
1,1-DICHLOROETHENE	50	48	96	46	93	3.96	16	60-141
1,1-DICHLOROETHANE	50	49	98	47	95	3.5	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	95	96	91	92	4.12	21	72-133
CHLOROFORM	50	49	98	48	96	1.71	17	79-129
1,2-DICHLOROETHANE	50	49	98	50	100	1.42	19	81-132
2-BUTANONE	50	46	92	48	97	5.35	91	16-130
1,1,1-TRICHLOROETHANE	50	48	98	48	96	1.37	45	66-140
CARBON TETRACHLORIDE	50	48	98	48	97	< 1	21	65-140
VINYL ACETATE	50	46	93	45	91	1.7	72	17-153
BROMODICHLOROMETHANE	50	48	96	49	99	2.87	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	47	94	48	97	3.11	78	49-127
1,2-DICHLOROPROPANE	50	48	96	48	96	< 1	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	47	94	49	98	4.06	41	48-141
TRICHLOROETHENE	50	48	97	48	96	< 1	21	71-134
DIBROMOCHLOROMETHANE	50	47	95	49	98	3.13	25	68-120
1,1,2-TRICHLOROETHANE	50	46	92	48	96	3.42	28	68-120
BENZENE	50	48	96	46	93	3.43	13	79-128
CIS-1,3-DICHLOROPROPENE	50	47	95	48	97	1.65	29	63-123
2-CHLOROETHYL VINYL ETHE	50	55	111	52	104	6.63	45	0-146
BROMOFORM	50	46	93	49	98	5.62	37	58-119
2-HEXANONE	50	45	91	50	101	10.1	60	20-181
4-METHYL-2-PENTANONE	50	46	92	47	95	2.4	54	33-163
TETRACHLOROETHENE	50	49	98	47	94	4	21	80-125
TOLUENE	50	47	94	46	93	1.03	11	80-122
CHLOROBENZENE	50	49	98	47	95	2.62	10	80-125
ETHYLBENZENE	50	49	98	46	93	5.33	19	82-123
STYRENE	50	48	96	47	95	1.13	13	71-129
XYLENE (TOTAL)	150	150	101	150	98	3.41	21	81-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	101	95	81-117
BROMOFLUOROBENZENE	98	95	74-121
1,2-DICHLOROETHANE-D4	102	99	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931027A
INST. BATCH: 13118
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931027A
LOCATION:

PREPARED :
ANALYZED : 10/27/93 14:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	103%	BROMOFLUOROBENZENE	(86-115) 97%
1,2-DICHLOROETHANE-D4	(76-114)	103%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
P = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931027A
INST. BATCH: 13118
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 10/27/93 15:01
ANALYZED : 10/27/93 15:27

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	57	115	67	135	16.4	28	32-161
BROMOMETHANE	50	44	88	57	114	25.4*	23	50-191
VINYL CHLORIDE	50	39	78	48	97	20.8	25	65-167
CHLOROETHANE	50	43	87	52	106	19.4	28	32-212
METHYLENE CHLORIDE	50	46	92	50	100	8.49	43	52-168
ACETONE	50	51	102	45	91	11.6	50	53-146
CARBON DISULFIDE	50	44	89	50	101	12.1	31	50-162
1,1-DICHLOROETHENE	50	45	91	50	101	10.4	32	54-161
1,1-DICHLOROETHANE	50	48	96	52	104	8.17	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	94	95	100	101	6.63	35	74-162
CHLOROFORM	50	47	95	53	106	10.8	19	57-152
1,2-DICHLOROETHANE	50	52	104	57	114	8.99	26	59-151
2-BUTANONE	50	51	102	49	98	3.66	29	42-173
1,1,1-TRICHLOROETHANE	50	42	85	46	92	8.75	51	38-179
CARBON TETRACHLORIDE	50	39	79	44	89	12.0	49	37-182
VINYL ACETATE	50	40	80	29	59	30.5	60	22-122
BROMODICHLOROMETHANE	50	47	94	53	107	12.6	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	47	95	58	117	21.0	95	14-157
1,2-DICHLOROPROPANE	50	47	94	52	105	11.0	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	50	101	57	114	12.0	42	10-164
TRICHLOROETHENE	50	45	91	47	94	2.84	38	67-149
DIBROMOCHLOROMETHANE	50	47	94	54	108	13.8	21	43-157
1,1,2-TRICHLOROETHANE	50	49	99	55	110	10.7	31	40-179
BENZENE	50	44	89	48	96	7.55	46	70-134
CIS-1,3-DICHLOROPROPENE	50	50	100	64	129	25.3	33	34-199
2-CHLOROETHYL VINYL ETHE	50	61	122	79	159*	26.6	61	73-156
BROMOFORM	50	45	91	53	107	15.8	52	34-151
2-HEXANONE	50	51	102	52	104	1.74	97	27-176
4-METHYL-2-PENTANONE	50	44	89	54	109	20.4	62	23-208
TETRACHLOROETHENE	50	47	95	52	104	8.6	24	61-141
TOLUENE	50	43	87	51	103	17.0*	15	75-140
CHLOROBENZENE	50	47	95	51	103	7.72	14	72-135
ETHYLBENZENE	50	46	93	50	100	7.26	17	55-147
STYRENE	50	50	100	52	104	4.26	27	64-147
XYLENE (TOTAL)	150	130	89	140	95	6.77	16	55-151

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	88	103	88-110
BROMOFLUOROBENZENE	100	97	86-115
1,2-DICHLOROETHANE-D4	104	107	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931101A
INST. BATCH: 13360
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931101A
LOCATION:

PREPARED :
ANALYZED : 11/01/93 09:31
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
' UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931101A
INST. BATCH: 13360
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/01/93 09:53
ANALYZED : 11/01/93 15:49

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	43	87	33	66	26.9*	18	21-170
BROMOMETHANE	50	48	96	34	69	33.0	36	46-161
VINYL CHLORIDE	50	34	68	28	57	17.9	26	31-168
CHLOROETHANE	50	44	88	25	51	53.5	54	44-154
METHYLENE CHLORIDE	50	47	95	50	100	5.35	21	77-141
ACETONE	50	26	53	53	107	67.4*	59	30-160
CARBON DISULFIDE	50	46	92	40	80	13.5	29	52-129
1,1-DICHLOROETHENE	50	50	101	44	90	12.3	16	60-141
1,1-DICHLOROETHANE	50	45	90	41	83	8.38	19	75-129
1,2-DICHLOROETHENE(TOTAL	50	95	191*	87	175*	8.76	21	72-133
CHLOROFORM	50	51	102	47	95	7.25	17	79-129
1,2-DICHLOROETHANE	50	48	97	48	96	< 1	19	81-132
2-BUTANONE	50	38	77	25	50	42.4	91	16-130
1,1,1-TRICHLOROETHANE	50	50	102	51	102	< 1	45	66-140
CARBON TETRACHLORIDE	50	57	115	55	111	3.72	21	65-140
VINYL ACETATE	50	40	81	28	57	35.1	72	17-153
BROMODICHLOROMETHANE	50	53	107	51	102	4.77	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	50	100	50	100	< 1	78	49-127
1,2-DICHLOROPROPANE	50	44	89	43	86	3.46	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	39	79	47	94	18.1	41	48-141
TRICHLOROETHENE	50	53	106	52	104	1.68	21	71-134
DIBROMOCHLOROMETHANE	50	55	111	53	106	4.47	25	68-120
1,1,2-TRICHLOROETHANE	50	52	104	54	109	4.88	28	68-120
BENZENE	50	48	96	44	88	8.36	13	79-128
CIS-1,3-DICHLOROPROPENE	50	47	95	46	92	2.71	29	63-123
2-CHLOROETHYL VINYL ETHE	50	88	177	45	91	64.6*	45	0-146
BROMOFORM	50	53	107	63	126*	16.1	37	58-119
2-HEXANONE	50	39	78	35	71	9.85	60	20-181
4-METHYL-2-PENTANONE	50	40	80	40	80	< 1	54	33-163
TETRACHLOROETHENE	50	54	108	51	103	4.34	21	80-125
TOLUENE	50	49	99	45	90	10.2	11	80-122
CHLOROBENZENE	50	52	104	49	99	4.93	10	80-125
ETHYLBENZENE	50	50	102	48	96	6.28	19	82-123
STYRENE	50	53	107	51	102	5.4	13	71-129
XYLENE (TOTAL)	150	150	101	140	96	4.46	21	81-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	92	81-117
BROMOFLUOROBENZENE	101	97	74-121
1,2-DICHLOROETHANE-D4	97	96	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931029A
INST. BATCH: 13296
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931029A
LOCATION:

PREPARED :
ANALYZED : 10/29/93 08:18
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	93%	BROMOFLUOROBENZENE	(74-121)	81%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931029A
INST. BATCH: 13296
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 10/29/93 09:03
ANALYZED : 10/29/93 14:19

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	32	64	24	48	29.5*	18	21-170
BROMOMETHANE	50	61	122	34	68	57.3*	36	46-161
VINYL CHLORIDE	50	34	68	20	40	51.7*	26	31-168
CHLOROETHANE	50	70	140	29	59	82.6*	54	44-154
METHYLENE CHLORIDE	50	50	100	40	81	20.7	21	77-141
ACETONE	50	37	74	30	60	20.9	59	30-160
CARBON DISULFIDE	50	49	99	35	70	34.3*	29	52-129
1,1-DICHLOROETHENE	50	52	104	40	80	26.6*	16	60-141
1,1-DICHLOROETHANE	50	50	101	37	74*	30.8*	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	95	96	81	82	15.7	21	72-133
CHLOROFORM	50	51	102	43	86	16.4	17	79-129
1,2-DICHLOROETHANE	50	51	102	43	86	17.8	19	81-132
2-BUTANONE	50	35	71	42	84	16.4	91	16-130
1,1,1-TRICHLOROETHANE	50	51	102	52	105	2.09	45	66-140
CARBON TETRACHLORIDE	50	52	106	55	110	4.21	21	65-140
VINYL ACETATE	50	37	75	35	71	4.66	72	17-153
BROMODICHLOROMETHANE	50	49	98	49	98	< 1	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	38	76	54	108	34.8	78	49-127
1,2-DICHLOROPROPANE	50	47	95	40	81	15.7	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	42	84	45	90	7.92	41	48-141
TRICHLOROETHENE	50	51	102	50	100	1.98	21	71-134
DIBROMOCHLOROMETHANE	50	52	104	63	126*	19.3	25	68-120
1,1,2-TRICHLOROETHANE	50	45	91	52	104	13.3	28	68-120
BENZENE	50	48	97	42	85	13.0*	13	79-128
CIS-1,3-DICHLOROPROPENE	50	47	94	44	88	6.43	29	63-123
2-CHLOROETHYL VINYL ETHE	50	38	76	110	230	100.*	45	0-146
BROMOFORM	50	48	98	45	90	7.51	37	58-119
2-HEXANONE	50	28	57	49	98	53.4	60	20-181
4-METHYL-2-PENTANONE	50	32	65	50	101	43.2	54	33-163
TETRACHLOROETHENE	50	47	94	51	103	8.7	21	80-125
TOLUENE	50	44	88	43	87	< 1	11	80-122
CHLOROBENZENE	50	50	100	48	97	3.07	10	80-125
ETHYLBENZENE	50	51	102	48	97	5.62	19	82-123
STYRENE	50	80	160*	73	146*	8.59	13	71-129
XYLENE (TOTAL)	150	150	100	140	92	8.56	21	81-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	92	93	81-117
BROMOFLUOROBENZENE	92	92	74-121
1,2-DICHLOROETHANE-D4	99	82	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931101B
INST. BATCH: 13453
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931101B
LOCATION:

PREPARED :
ANALYZED : 11/01/93 09:31
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
HLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	83%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
- UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
- NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931101B
INST. BATCH: 13453
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/01/93 09:53
ANALYZED : 11/01/93 15:49

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
VINYL CHLORIDE	50	34	68	27	55	20.4	26	31-168
METHYLENE CHLORIDE	50	47	95	50	100	5.35	21	77-141
ACETONE	50	26	53	53	107	67.4*	59	30-160
1,1-DICHLOROETHENE	50	50	101	44	90	12.3	16	60-141
1,1-DICHLOROETHANE	50	45	90	41	83	8.38	19	75-129
CHLOROFORM	50	51	102	47	95	7.25	17	79-129
2-BUTANONE	50	38	77	25	50	42.4	91	16-130
1,1,1-TRICHLOROETHANE	50	50	102	51	102	< 1	45	66-140
CARBON TETRACHLORIDE	50	57	115	55	111	3.72	21	65-140
BROMODICHLOROMETHANE	50	53	107	51	102	4.77	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	50	100	50	100	< 1	78	49-127
TRICHLOROETHENE	50	53	106	52	104	1.68	21	71-134
1,1,2-TRICHLOROETHANE	50	52	104	54	109	4.88	28	68-120
BENZENE	50	48	96	44	88	8.36	13	79-128
TETRACHLOROETHENE	50	54	108	51	103	4.35	21	80-125
TOLUENE	50	49	99	44	89	10.2	11	80-122
ETHYLBENZENE	50	50	101	47	95	6.28	19	82-123
XYLENE (TOTAL)	150	150	101	140	96	4.47	21	81-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	91	81-117
BROMOFLUOROBENZENE	100	97	74-121
1,2-DICHLOROETHANE-D4	97	96	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931103A
INST. BATCH: 2351
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931103A
LOCATION:

PREPARED : 10/27/93
ANALYZED : 11/03/93 10:55
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	1.5	J	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115) 100%
1,2-DICHLOROETHANE-D4	(76-114)	95%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
A = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931103A
INST. BATCH: 2351
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/03/93 12:08
ANALYZED : 11/03/93 12:31

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	69	139	72	144	3.42	28	32-161
BROMOMETHANE	50	54	108	57	115	6.67	23	50-191
VINYL CHLORIDE	50	51	102	53	107	4.93	25	65-167
CHLOROETHANE	50	53	106	57	115	8.85	28	32-212
METHYLENE CHLORIDE	50	52	104	55	110	5.03	43	52-168
ACETONE	50	54	108	48	96	11.3	50	53-146
CARBON DISULFIDE	50	53	107	56	114	5.75	31	50-162
1,1-DICHLOROETHENE	50	54	108	57	114	5.32	32	54-161
1,1-DICHLOROETHANE	50	51	102	53	107	4.73	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	110	109	110	114	3.82	35	74-162
CHLOROFORM	50	51	103	53	107	3.99	19	57-152
1,2-DICHLOROETHANE	50	51	102	54	108	5.14	26	59-151
2-BUTANONE	50	58	118	57	115	2.37	29	42-173
1,1,1-TRICHLOROETHANE	50	52	105	55	111	5.84	51	38-179
CARBON TETRACHLORIDE	50	52	104	56	112	6.94	49	37-182
VINYL ACETATE	50	62	126*	65	130*	3.41	60	22-122
BROMODICHLOROMETHANE	50	53	106	57	115	8.17	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	49	99	57	114	13.9	95	14-157
1,2-DICHLOROPROPANE	50	50	102	54	109	6.98	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	50	101	56	112	9.53	42	10-164
TRICHLOROETHENE	50	48	96	53	107	10.8	38	67-149
DIBROMOCHLOROMETHANE	50	50	101	56	112	10.5	21	43-157
1,1,2-TRICHLOROETHANE	50	49	98	53	106	7.96	31	40-179
BENZENE	50	51	102	54	108	5.62	46	70-134
CIS-1,3-DICHLOROPROPENE	50	51	103	55	111	7.52	33	34-199
BROMOFORM	50	50	100	57	115	13.3	52	34-151
2-HEXANONE	50	50	101	56	112	10.1	97	27-176
4-METHYL-2-PENTANONE	50	50	100	55	110	9.22	62	23-208
TETRACHLOROETHENE	50	50	101	52	105	4.17	24	61-141
TOLUENE	50	49	98	52	104	5.08	15	75-140
CHLOROBENZENE	50	49	98	52	104	5.93	14	72-135
ETHYLBENZENE	50	49	99	52	105	6.42	17	55-147
STYRENE	50	50	101	53	106	5.53	27	64-147
XYLENE (TOTAL)	150	160	107	170	115	7.52	16	55-151

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	102	88-110
BROMOFLUOROBENZENE	100	101	86-115
1,2-DICHLOROETHANE-D4	101	104	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931101A
INST. BATCH: 2139
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931101A
LOCATION:

PREPARED : 10/27/93
ANALYZED : 11/01/93 11:12
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND		1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	9.3	J	BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

= NOT DETECTED ABOVE QUANTITATION LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931101A
INST. BATCH: 2139
REPORTED : 11/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/01/93 11:52
ANALYZED : 11/01/93 12:16

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	45	90	47	94	4.14	18	21-170
BROMOMETHANE	50	45	90	48	96	6.65	36	46-161
VINYL CHLORIDE	50	42	85	48	96	11.6	26	31-168
CHLOROETHANE	50	45	91	51	103	12.1	54	44-154
METHYLENE CHLORIDE	50	51	102	54	108	5.88	21	77-141
ACETONE	50	63	127	68	136	7.13	59	30-160
CARBON DISULFIDE	50	44	89	47	95	6.22	29	52-129
1,1-DICHLOROETHENE	50	44	89	46	93	4.32	16	60-141
1,1-DICHLOROETHANE	50	46	92	49	99	6.72	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	90	91	95	96	5.36	21	72-133
CHLOROFORM	50	47	94	49	99	5.54	17	79-129
1,2-DICHLOROETHANE	50	48	96	50	102	5.07	19	81-132
2-BUTANONE	50	54	108	54	109	1.31	91	16-130
1,1,1-TRICHLOROETHANE	50	47	95	49	98	3.16	45	66-140
CARBON TETRACHLORIDE	50	47	94	48	97	3.11	21	65-140
VINYL ACETATE	50	50	100	52	105	4.21	72	17-153
BROMODICHLOROMETHANE	50	47	95	49	98	2.48	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	50	100	50	101	1.42	78	49-127
1,2-DICHLOROPROPANE	50	47	94	47	95	1.57	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	48	96	49	98	1.99	41	48-141
TRICHLOROETHENE	50	46	93	48	96	2.8	21	71-134
DIBROMOCHLOROMETHANE	50	48	97	49	98	1.36	25	68-120
1,1,2-TRICHLOROETHANE	50	48	96	48	97	1.22	28	68-120
BENZENE	50	46	93	47	95	1.98	13	79-128
CIS-1,3-DICHLOROPROPENE	50	47	95	48	97	1.84	29	63-123
2-CHLOROETHYL VINYL ETHE	50	52	104	53	106	1.84	45	0-146
BROMOFORM	50	50	100	50	101	1.54	37	58-119
2-HEXANONE	50	56	112	56	114	1.3	60	20-181
4-METHYL-2-PENTANONE	50	53	107	54	108	< 1	54	33-163
TETRACHLOROETHENE	50	46	92	48	96	4.67	21	80-125
TOLUENE	50	46	93	48	96	3.35	11	80-122
CHLOROBENZENE	50	46	93	48	98	5	10	80-125
ETHYLBENZENE	50	46	93	48	98	5.16	19	82-123
STYRENE	50	46	94	48	97	3.42	13	71-129
XYLENE (TOTAL)	150	150	98	150	102	3.84	21	81-125

QA/QC Surrogates

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	103	101	81-117
BROMOFLUOROBENZENE	104	103	74-121
1,2-DICHLOROETHANE-D4	110	109	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931023-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931023-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	86%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931023-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS BS1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4400		ACENAPHTHENE	3100	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	5400		4-NITROPHENOL	3600	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2600		2,4-DINITROTOLUENE	1400	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	3100	
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	2900		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4900	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	3200	
BENZOIC ACID	1600	U	ANTHRACENE	2500	
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2800		PYRENE	2800	
NAPHTHALENE	2000		BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	5600		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	2900		CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931023-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS BS1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	42%	2-FLUOROBIPHENYL	(30-115)	35%
TERPHENYL-D14	(18-137)	52%	PHENOL-D5	(24-113)	32%
2-FLUOROPHENOL	(25-121)	41%	2,4,6-TRIBROMOPHENOL	(19-122)	32%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931023-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD BD1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4400		ACENAPHTHENE	3100	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	5500		4-NITROPHENOL	3600	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2600		2,4-DINITROTOLUENE	1700	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	3100	
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	2800		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	5400	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	2800	
BENZOIC ACID	1600	U	ANTHRACENE	2400	
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2800		PYRENE	2800	
NAPHTHALENE	2000		BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	5100		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	2900		CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931023-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD BD1
LOCATION:
DATE ANALYZED : 10/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/23/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	43%	2-FLUOROBIPHENYL	(30-115)	34%
TERPHENYL-D14	(18-137)	52%	PHENOL-D5	(24-113)	31%
2-FLUOROPHENOL	(25-121)	40%	2,4,6-TRIBROMOPHENOL	(19-122)	32%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK1 LB1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK1 LB1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	129%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	81%	2,4,6-TRIBROMOPHENOL	(19-122)	86%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS1 BS1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5900		ACENAPHTHENE	2800	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	5300		4-NITROPHENOL	4400	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2800		2,4-DINITROTOLUENE	2600	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	2800	
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	2400		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4800	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	3200	
BENZOIC ACID	1600	U	ANTHRACENE	2900	
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2900		PYRENE	3600	
NAPHTHALENE	3000		BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	5200		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	3300		CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS1 BS1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	94%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	122%	PHENOL-D5	(24-113)	78%
2-FLUOROPHENOL	(25-121)	91%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD1 BD1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5900		ACENAPHTHENE	2700	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	5200		4-NITROPHENOL	4200	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2900		2,4-DINITROTOLUENE	2500	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	2600	
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	2500		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4500	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	3100	
BENZOIC ACID	1600	U	ANTHRACENE	2800	
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2700		PYRENE	3600	
NAPHTHALENE	2800		BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	4800		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	3200		CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD1 BD1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	88%	2-FLUOROBIPHENYL	(30-115)	88%
TERPHENYL-D14	(18-137)	112%	PHENOL-D5	(24-113)	75%
2-FLUOROPHENOL	(25-121)	83%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-002
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK2 LB2
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	123	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-002
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK2 LB2
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	105%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	79%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-002
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS2 BS2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4800		ACENAPHTHENE	3000	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	5300		4-NITROPHENOL	4900	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2500		2,4-DINITROTOLUENE	2200	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	3200		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4300	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2800		PYRENE	2700	
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	4900		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-002
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS2 BS2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	98%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	83%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-002
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD2 BD2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4900		ACENAPHTHENE	3000	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	5400		4-NITROPHENOL	4900	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2600		2,4-DINITROTOLUENE	2800	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	3300		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4300	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2800		PYRENE	2700	
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	4900		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931026-002
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD2 BD2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/26/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	104%	2-FLUOROBIPHENYL	(30-115)	91%
TERPHENYL-D14	(18-137)	102%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	89%	2,4,6-TRIBROMOPHENOL	(19-122)	90%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931027-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	83	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931027-001
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	64%
TERPHENYL-D14	(18-137)	96%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122)	57%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931027-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS BS1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4600		ACENAPHTHENE	3100	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	4600		4-NITROPHENOL	5200	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2300		2,4-DINITROTOLUENE	3000	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	2600		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4000	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2500		PYRENE	2900	
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	4200		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931027-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCS BS1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	92%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931027-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD BD1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4400		ACENAPHTHENE	2600	
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	4600		4-NITROPHENOL	4500	
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	2300		2,4-DINITROTOLUENE	2600	
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	2400		4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	4100	
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	2400		PYRENE	2900	
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	3900		BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16013

DATE: 11/18/93

SWLO QAQC#: 931027-001
PROJECT : TINKER AFB-RFI
SAMPLE #: LCSD BD1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/27/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	78%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD, SUITE 222-W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16013Bb

DATE: 12-14-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 10-23-93
DATE ANALYZED : 10-29-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	6700	0	4400	66	26 - 90
2-CHLOROPHENOL	6700	0	5400	81	25 - 102
1,4-DICHLOROBENZENE	3300	0	2600	77	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	0	2900	87	41 - 126
1,2,4-TRICHLOROBENZENE	3300	0	2800	83	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	0	5700	85	26 - 103
ACENAPHTHENE	3300	0	3100	93	31 - 137
4-NITROPHENOL	6700	0	3600	54	11 - 114
2,4-DINITROTOLUENE	3300	0	1400	42	28 - 89
PENTACHLOROPHENOL	6700	0	4900	74	17 - 109
PYRENE	3300	0	2800	84	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	6700	4400	66	0	35	26 - 90
2-CHLOROPHENOL	6700	5500	82	1	50	25 - 102
1,4-DICHLOROBENZENE	3300	2600	79	2	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2800	84	2	38	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2800	84	1	23	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	5100	77	10	33	26 - 103
ACENAPHTHENE	3300	3100	93	0	19	31 - 137
4-NITROPHENOL	6700	3600	55	2	50	11 - 114
2,4-DINITROTOLUENE	3300	1700	51	19	47	28 - 89
PENTACHLOROPHENOL	6700	5400	81	9	47	17 - 109
PYRENE	3300	2800	85	1	36	35 - 142

QA/QC SURROGATE RECOVERIES

LCS					
NITROBENZENE-d5	(23-120) 42%	2-FLUOROBIPHENYL	(30-115) 35%	TERPHENYL-d14	(18-137) 52%
PHENOL-d5	(24-113) 32%	2-FLUOROPHENOL	(25-121) 41%	2,4,6-TRIBROMOPHENOL	(19-122) 32%
LCSD					
NITROBENZENE-d5	(23-120) 43%	2-FLUOROBIPHENYL	(30-115) 34%	TERPHENYL-d14	(18-137) 52%
PHENOL-d5	(24-113) 31%	2-FLUOROPHENOL	(25-121) 40%	2,4,6-TRIBROMOPHENOL	(19-122) 32%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD, SUITE 222-W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16039Bb

DATE: 12-14-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 10-26-93
DATE ANALYZED : 11-04-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	6700	0	5900	88	26 - 90
2-CHLOROPHENOL	6700	0	5300	79	25 - 102
1,4-DICHLOROBENZENE	3300	0	2800	84	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	0	2400	71	41 - 126
1,2,4-TRICHLOROBENZENE	3300	0	2900	86	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	0	5200	79	26 - 103
ACENAPHTHENE	3300	0	2800	83	31 - 137
4-NITROPHENOL	6700	0	4400	67	11 - 114
2,4-DINITROTOLUENE	3300	0	2600	77	28 - 89
PENTACHLOROPHENOL	6700	0	4800	72	17 - 109
PYRENE	3300	0	3600	108	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	6700	5900	88	3	35	26 - 90
2-CHLOROPHENOL	6700	5200	78	2	50	25 - 102
1,4-DICHLOROBENZENE	3300	2900	86	2	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2500	74	4	38	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2700	82	4	23	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4800	72	9	33	26 - 103
ACENAPHTHENE	3300	2700	81	3	19	31 - 137
4-NITROPHENOL	6700	4200	64	4	50	11 - 114
2,4-DINITROTOLUENE	3300	2500	76	2	47	28 - 89
PENTACHLOROPHENOL	6700	4500	68	5	47	17 - 109
PYRENE	3300	3600	110	1	36	35 - 142

QA/QC SURROGATE RECOVERIES

LCS

NITROBENZENE-d5	(23-120) 94%	2-FLUOROBIPHENYL	(30-115) 88%	TERPHENYL-d14	(18-137) 122%		
PHENOL-d5	(24-113) 78%	2-FLUOROPHENOL	(25-121) 91%	2,4,6-TRIBROMOPHENOL	(19-122) 83%		

LCSD

NITROBENZENE-d5	(23-120) 88%	2-FLUOROBIPHENYL	(30-115) 88%	TERPHENYL-d14	(18-137) 1.		
PHENOL-d5	(24-113) 75%	2-FLUOROPHENOL	(25-121) 83%	2,4,6-TRIBROMOPHENOL	(19-122) 7.		

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD, SUITE 222-W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16063Bb

DATE: 12-14-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 10-26-93
DATE ANALYZED : 11-11-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	6700	0	4800	72	26 - 90
2-CHLOROPHENOL	6700	0	5300	80	25 - 102
1,4-DICHLOROBENZENE	3300	0	2500	76	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	0	3200	97	41 - 126
1,2,4-TRICHLOROBENZENE	3300	0	2800	84	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	0	4900	74	26 - 103
ACENAPHTHENE	3300	0	3000	90	31 - 137
4-NITROPHENOL	6700	0	4900	74	11 - 114
2,4-DINITROTOLUENE	3300	0	2200	65	28 - 89
PENTACHLOROPHENOL	6700	0	4300	64	17 - 109
PYRENE	3300	0	2700	82	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	6700	4900	73	1	35	26 - 90
2-CHLOROPHENOL	6700	5400	82	2	50	25 - 102
1,4-DICHLOROBENZENE	3300	2600	79	4	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	3300	100	2	38	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2800	85	1	23	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4900	74	0	33	26 - 103
ACENAPHTHENE	3300	3000	91	1	19	31 - 137
4-NITROPHENOL	6700	4900	73	1	50	11 - 114
2,4-DINITROTOLUENE	3300	2800	84	26	47	28 - 89
PENTACHLOROPHENOL	6700	4300	64	0	47	17 - 109
PYRENE	3300	2700	82	0	36	35 - 142

QA/QC SURROGATE RECOVERIES

LCS

NITROBENZENE-d5	(23-120)	98%	2-FLUOROBIPHENYL	(30-115)	87%	TERPHENYL-d14	(18-137) 98%
PHENOL-d5	(24-113)	66%	2-FLUOROPHENOL	(25-121)	83%	2,4,6-TRIBROMOPHENOL	(19-122) 82%

LCSD

NITROBENZENE-d5	(23-120)	104%	2-FLUOROBIPHENYL	(30-115)	91%	TERPHENYL-d14	(18-137) 102%
PHENOL-d5	(24-113)	70%	2-FLUOROPHENOL	(25-121)	89%	2,4,6-TRIBROMOPHENOL	(19-122) 90%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD, SUITE 222-W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16088Bb

DATE: 12-14-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 10-27-93
DATE ANALYZED : 11-09-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	6700	0	4600	70	26 - 90
2-CHLOROPHENOL	6700	0	4600	70	25 - 102
1,4-DICHLOROBENZENE	3300	0	2300	69	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	0	2600	77	41 - 126
1,2,4-TRICHLOROBENZENE	3300	0	2500	74	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	0	4200	63	26 - 103
ACENAPHTHENE	3300	0	3100	93	31 - 137
4-NITROPHENOL	6700	0	5200	79	11 - 114
2,4-DINITROTOLUENE	3300	0	3000	88	28 - 89
PENTACHLOROPHENOL	6700	0	4000	60	17 - 109
PYRENE	3300	0	2900	86	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	6700	4400	66	5	35	26 - 90
2-CHLOROPHENOL	6700	4600	69	0	50	25 - 102
1,4-DICHLOROBENZENE	3300	2300	69	0	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2400	71	7	38	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2400	72	3	23	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	3800	58	8	33	26 - 103
ACENAPHTHENE	3300	2600	77	19	19	31 - 137
4-NITROPHENOL	6700	4500	67	16	50	11 - 114
2,4-DINITROTOLUENE	3300	2600	78	12	47	28 - 89
PENTACHLOROPHENOL	6700	4100	61	1	47	17 - 109
PYRENE	3300	2900	87	2	36	35 - 142

QA/QC SURROGATE RECOVERIES

LCS							
NITROBENZENE-d5	(23-120) 76%	2-FLUOROBIPHENYL	(30-115) 92%	TERPHENYL-d14	(18-137) 86%		
PHENOL-d5	(24-113) 67%	2-FLUOROPHENOL	(25-121) 69%	2,4,6-TRIBROMOPHENOL	(19-122) 78%		
LCSD							
NITROBENZENE-d5	(23-120) 78%	2-FLUOROBIPHENYL	(30-115) 74%	TERPHENYL-d14	(18-137)		
PHENOL-d5	(24-113) 66%	2-FLUOROPHENOL	(25-121) 70%	2,4,6-TRIBROMOPHENOL	(19-122)		

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16013ad
REPORT DATE: 11-22-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/03/93	102993I1	1.0	mg/Kg	< 1.0
LEAD	11/03/93	102993I1	0.3	mg/Kg	< 0.3
SELENIUM	11/03/93	102993I1	0.5	mg/Kg	< 0.5
BARIUM	10/29/93	102993I1	0.5	mg/Kg	< 0.5
CADMIUM	10/29/93	102993I1	0.3	mg/Kg	< 0.3
CHROMIUM	10/29/93	102993I1	0.5	mg/Kg	< 0.5
NICKEL	10/29/93	102993I1	1.0	mg/Kg	< 1.0
ZINC	10/29/93	102993I1	1.5	mg/Kg	< 1.5
SILVER	11/02/93	102993F1	0.1	mg/Kg	< 0.1
MERCURY	10/27/93	102793HG04	0.1	mg/Kg	< 0.1
ARSENIC	10/27/93	102693I5	1.0	mg/Kg	< 1.0
LEAD	10/27/93	102693I5	0.3	mg/Kg	< 0.3
SELENIUM	10/27/93	102693I5	0.5	mg/Kg	< 0.5
BARIUM	10/26/93	102693I5	0.5	mg/Kg	< 0.5
CADMIUM	10/26/93	102693I5	0.3	mg/Kg	< 0.3
CHROMIUM	10/26/93	102693I5	0.5	mg/Kg	< 0.5
NICKEL	10/26/93	102693I5	1.0	mg/Kg	< 1.0
ZINC	10/26/93	102693I5	1.5	mg/Kg	< 1.5
SILVER	10/28/93	102693F5	0.1	mg/Kg	< 0.1
MERCURY	10/26/93	102693HG04	0.1	mg/Kg	< 0.1
TOTAL CN	10/29/93	102893CN	0.5	mg/Kg	< 0.5
TOTAL CN	10/28/93	102793CN	0.5	mg/Kg	< 0.5
TOTAL CN	10/25/93	102293CN	0.5	mg/Kg	< 0.5

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16013bd
REPORT DATE: 11-22-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/03/93	200	200.4	100	80-120
LEAD	11/03/93	50.0	47.5	95	80-120
SELENIUM	11/03/93	200	195.7	98	80-120
BARIUM	10/29/93	200	197	99	80-120
CADMIUM	10/29/93	5.0	4.9	98	80-120
CHROMIUM	10/29/93	20.0	20.4	102	80-120
NICKEL	10/29/93	50.0	50.0	100	80-120
ZINC	10/29/93	50.0	48.8	97	80-120
SILVER	11/02/93	100	94.5	94	80-120
MERCURY	10/27/93	2.45	2.50	102	80-120
ARSENIC	10/27/93	200	209.4	105	80-120
LEAD	10/27/93	50.0	50.2	100	80-120
SELENIUM	10/27/93	200	205	102	80-120
BARIUM	10/26/93	200	187	94	80-120
CADMIUM	10/26/93	5.0	4.8	96	80-120
CHROMIUM	10/26/93	20.0	20.3	102	80-120
NICKEL	10/26/93	50.0	46.2	92	80-120
ZINC	10/26/93	50.0	45.2	90	80-120
SILVER	10/28/93	5.0	5.8	116	80-120
MERCURY	10/26/93	2.45	2.56	104	80-120
TOTAL CN	10/29/93	5.6	5.91	106	80-120
TOTAL CN	10/28/93	5.6	5.52	99	80-120
TOTAL CN	10/25/93	5.0	5.1	103	80-120

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16013cd
REPORT DATE: 11-22-93

MATRIX: **SOIL**
SAMPLE ID: **S32.4SB5 N1 15-16**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	10/27/93	< 1.14	228	231	101	75-125
LEAD	10/27/93	0.456	57.0	57.4	100	75-125
SELENIUM	10/27/93	< 0.57	228	226	99	75-125
BARIUM	10/26/93	32.3	228	258	99	75-125
CADMIUM	10/26/93	< 0.34	5.70	5.59	98	75-125
CHROMIUM	10/26/93	2.28	22.8	24.4	97	75-125
NICKEL	10/26/93	3.88	57.0	55.8	98	75-125
ZINC	10/26/93	3.54	57.0	55.7	91	75-125
SILVER	10/28/93	< 0.114	5.70	6.61	116	75-125
MERCURY	10/26/93	< 0.114	0.57	0.52	91	75-125
SAMPLE ID: **S32-3SB2 N1 4-6**						
TOTAL CN	10/28/93	< 0.55	5.46	5.27	97	75-125
SAMPLE ID: **S32.4SB3 N1 14-16**						
TOTAL CN	10/25/93	0.57	5.70	5.59	98	75-125

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16013dd
REPORT DATE: 11-22-93

MATRIX: **SOIL**
SAMPLE ID: **S32.4SB5 N1 15-16**
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	231	228	1.3	20
LEAD	57.4	57.0	0.7	20
SELENIUM	226	224	0.9	20
BARIUM	258	242	6.4	20
CADMIUM	5.59	5.36	4.2	20
CHROMIUM	24.4	23.3	4.6	20
NICKEL	55.8	55.4	0.7	20
ZINC	55.7	54.7	1.8	20
SILVER	6.61	5.70	14.8	20
MERCURY	0.52	0.52	0	20
SAMPLE ID: **S32.4SB3 N1 14-16**				
TOTAL CN	5.59	5.59	0	20
SAMPLE ID: **S32-3SB2 N1 4-6**				
TOTAL CN	5.27	5.16	2.1	20

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS
Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8010145393

SAMPLER(S): M. HARDER J. OSWEILER

(Signature): M. W. Harder John C. Osweiler

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	ANALYSIS REQUIRED: VOA (SW8240)	ANALYSIS REQUIRED: SEMIVOA (SW8270)	ANALYSIS REQUIRED: METALS (SW6010)	ANALYSIS REQUIRED: CN (SW9010)	PRESERVATIVE	FIELD LOT CONTROL NUMBER: Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/26/93	-	FIELDQC		TB1	WQ	NA	0	0	2	X					0	0	1	A	
	0935	I24.12SB4		N1	SO	SS	6.5'	8'	3	X	X	X	X		0	0	1	A	
	0935	I24.12SB4		FR1	SO	SS	6.5'	8'	3	X	X	X	X		0	0	1	A	
	1004	I24.12SB4		N1	SO	SS	12.5'	14'	3	X	X	X	X		0	0	1	A	
	1537	S32.1SB2		N1	SO	SS	6.5	8	3	X	X	X	X		0	0	1	A	
↓	1700	S32.1SB2		N1	SO	SS	16'	18'	3	X	X	X	X		0	0	1	A	

No IRPIMS diskette included in todays shipment - information for 25 OCT & 27 OCT WILL BE INCLUDED IN 27 OCT SHIPMENT

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
M. W. Harder	10/26/93	1730			
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)	10/27/93	0845

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chaino.dwg

COOLER ID.

COC 1 OF 2

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB

CARRIER: ☒ Federal Express ☐ UPS

Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #

SAMPLER(S): M. HARDER R. NELSON

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	PRESERVATIVE	ANALYSIS REQUIRED: VOA (SW8240)	METALS (SW6010)	SEMIVOA (SW8270)	CN (SW9010)	FIELD LOT CONTROL NUMBER: Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/27/93	—	FIELDQC		TB1	WQ	NA	0	0	2	X					0	0	2X	A	
	0900	S32.1SB1		N1	SO	SS	5'	5.5'	3	X	X	X	X		0	0	2X	A	
	1010	S32.1SB1		N1	SO	SS	14.5'	15.5	3	X	X	X	X		0	0	2X	A	
	0920	S32.1SB1		N1	SO	SS	8.5	9	3	X	X	X	X		0	0	2X	A	
	1010	S32.1SB1		FR1	SO	SS	14.5	15.5	3	X	X	X	X		0	0	2X	A	
	1010	S32.1SB1		MS1	SO	SS	14.5	15.5	3	X	X	X	X		0	0	2X	A	
	1240	S32.1SB3		N1	SO	SS	8	8.5	3	X	X	X	X		0	0	2X	A	
	1010	S32.1SB1		SD1	SO	SS	14.5	15.5	3	X	X	X	X		0	0	2X	A	
	NOTE: SAMPLES SHIPPED ON 10/21/93 labeled S32.2 SB2 Depth 4-6' TIME 1122 WAS Labeled incorrectly SAMPLE SHOULD BE S32.3SB2. ALSO SAMPLES SHIPPED ON 10/22/93 labeled S32.2 SB2 Depth 12'-12.7' TIME 1025 SHOULD BE RELABELED S32.3SB2. Please make necessary changes on COC and on the IRPIMS data diskette.																		

Relinquished by: (Signature)	Date	Time
	10/27/93	1800
Received by: (Signature)	10/28/93	0845

Relinquished by: (Signature)	Date	Time
Received by: (Signature)	Date	Time

Relinquished by: (Signature)	Date	Time
Received by: (Signature)	Date	Time

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COOLER [illegible]
COC 2[illegible]

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB

CARRIER: [X] Federal Express [ ] UPS
Other
AIRBILL OR CARRIER ID #

PROJECT NUMBER: AU401.08

SAMPLER(S): M. HARDER R. NELSON
(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	SW8240	SW6010	SW8270	SW9010	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
10/27/93	-	FIELDQC		TB	WQ	NA	0	0	1	X									
10/27/93	1615	SB2.3SB4		N1	SO	SS	6	6.5	3	X	X	X	X	0	0	2	B		
10/27/93	1715	SB2.3SB4		N1	SO	SS	17	17.5	3	X	X	X	X	0	0	2	B		
	1410	SB2.1SB3		N1	SO	SS	17.5	18	3	X	X	X	X	0	0	2	B		
	0950	SB2.2SB2		N1	SO	SS	5	7	3	X	X	X	X	0	0	2	B		
	1100	SB2.2SB2		N1	SO	SS	12.5	15	3	X	X	X	X	0	0	2	B		
	0950	SB2.2SB2		FR1	SO	SS	5	7	3	X	X	X	X	0	0	2	B		
	1100	SB2.2SB2		MS1	SO	SS	12.5	15	3	X	X	X	X	0	0	2	B		
	1100	SB2.2SB2		SD1	SO	SS	12.5	15	3	X	X	X	X	0	0	2	B		
	1310	SB2.2SB3		N1	SO	SS	6	8	3	X	X	X	X	0	0	2	B		
	1400	SB2.2SB3		N1	SO	SS	16	18	3	X	X	X	X	0	0	2	B		

PRESERVATIVE

ANALYSIS REQUIRED

Relinquished by: (Signature) — Date 10/27/93 — Time 1800
Received by: (Signature) — Date 10/28/93 — Time 0845

Relinquished by: (Signature) — Date — Time
Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time
Received by: (Signature) — Date — Time

White laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chainc.dwg

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

PROJECT NUMBER: AU401.08

CARRIER: ☒ Federal Express ☐ UPS — Other _____

AIRBILL OR CARRIER ID #

SAMPLER(S): M. HARDER R. NELSON

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	SW8240	SW6010	SW9010	SW8270	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/28/93	—	FIELDQC		FD2	WQ	NA	0	0	2	X				0	0	2	B	
	1125	I24.6SB1		N1	SO	SS	14	16	3	X	X	X	X	0	0	2	B	
	1125	I24.6SB1		FR1	SO	SS	14	16	3	X	X	X	X	0	0	2	B	
	1540	S32.8SB1		N1	SO	SS	5.5	7.5	3	X	X	X	X	0	0	2	B	
	1630	S32.8SB1		N1	SO	SS	14.5	16.5	3	X	X	X	X	0	0	2	B	
	0910	I24.5SB3		N1	SO	SS	3.5'	5'	3	X	X	X	X	0	0	2	B	
	1035	I24.6SB3		N1	SO	SS	7	8.5	3	X	X	X	X	0	0	2	B	

Relinquished by: (Signature)	Date	Time
M. W. Harder	10/28/93	1755
Received by: (Signature) K. Gallis	10/29/93	0915

Relinquished by: (Signature)	Date	Time
Received by: (Signature)	Date	Time

Relinquished by: (Signature)	Date	Time
Received by: (Signature)	Date	Time

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

PROJECT NUMBER: AU401.08

CARRIER: [X] Federal Express [ ] UPS

Other _____

AIRBILL OR CARRIER ID #

SAMPLER(S): M. HARDER R. NELSON

(Signature) M.W. [signature] [signature]

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	SW8240 (VOA)	SW9010 (CN)	SW8270 (Semi VOA)	SW6010 (Metals)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
10/28/93	--	FIELDQC		TB1	WQ	NA	0	0	2	X				0	0	2	A	
	1115	I24.5SB2		N1	SO	SS	3	3.5	3	X	X	X	X	0	0	2	A	
	1503	I24.5SB2		N1	SO	SS	15	16	3	X	X	X	X	0	0	2	A	
	1503	I24.5SB2		FR1	SO	SS	15	16	3	X	X	X	X	0	0	2	A	
	0830	I24.4SB1		N1	SO	SS	4.5	5	3	X	X	X	X	0	0	2	A	
	0930	I24.4SB1		N1	SO	SS	10	11	3	X	X	X	X	0	0	2	A	

NOTE: SAMPLES SHIPPED 10/22/93 WERE INCORRECTLY MARKED I24.12SB2, 12-12.7 & I24.12SB2 17'-18' - THEY SHOULD BE I24.12SB1, 9-14 & I24.12SB1 17'-18, RESPECTIVELY

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) M.W. [signature]	10/29/93	1755	(Signature)			(Signature)		
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	**Received by:**	**Date**	**Time**
(Signature) K. Collis	10/29/93	0915	(Signature)			(Signature)		

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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40

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.01

DATE: 12/01/93

SWLO #: 16111.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	11	B	1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	37		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	102%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.01

DATE: 12/01/93

SWLO #: 16111.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	51.3	J
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	61.9	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.01

DATE: 12/01/93

SWLO #: 16111.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	67%
TERPHENYL-D14	(18-137)	91%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	59%

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SAMPLE #: I24.12SB4
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.109	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.74		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	270		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.326	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	10.2		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	3.8		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	8.15		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.544	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	12.5		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.12SB4
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DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.544	U	mg/kg	/ /	11/02/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16111.02

DATE: 12/01/93

SWLO #: 16111.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	9.3		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	32		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
TOTAL 1,2-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

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DATE: 12/01/93

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SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	104	J
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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REPORT: 16111.02

DATE: 12/01/93

SWLO #: 16111.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	65%
TERPHENYL-D14	(18-137)	79%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	58%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16111.02 FR1
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SAMPLE #: I24.12SB4
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.116	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.16	U	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	355		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.349	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	6.87		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	2.91		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	8.62		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.582	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	10.7		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.582	U	mg/kg	/ /	11/02/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16111.03

DATE: 12/02/93

SWLO #: 16111.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	12		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	92		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
TOTAL 1,2-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	1.7	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 105%	BROMOFLUOROBENZENE	(74-121) 104%
1,2-DICHLOROETHANE-D4	(70-121) 105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16111.03

DATE: 12/01/93

SWLO #: 16111.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	87.9	J
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	74.5	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH TO : 14.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.03

DATE: 12/01/93

SWLO #: 16111.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.117	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	2.11		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	235		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.351	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	10.4		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	1.64		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	7.02		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.585	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	10.6		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.03

DATE: 12/01/93

SWLO #: 16111.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.12SB4
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.585	U	mg/kg	/ /	11/02/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.04

DATE: 12/01/93

SWLO #: 16111.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	11		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	46		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
TOTAL 1,2-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	1.4	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 101%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121) 101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16111.04

DATE: 12/01/93

SWLO #: 16111.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	172	J
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	40.7	J
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	81.4	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.04

DATE: 12/01/93

SWLO #: 16111.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

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DATE: 12/01/93

SWLO #: 16111.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.117	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	3.74		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	215		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.35	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	13.2		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	6.54		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	8.87		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.584		mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	18.9		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16111.04

DATE: 12/01/93

SWLO #: 16111.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.50
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.584	U	mg/kg	/ /	11/02/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16111.05

DATE: 12/01/93

SWLO #: 16111.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	10		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	33		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	1.4	J
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16111.05

DATE: 12/01/93

SWLO #: 16111.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	115	J
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	39.7	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16111.05

DATE: 12/01/93

SWLO #: 16111.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	73%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.109	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.31		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	470		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.328	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	7.33		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	2.3		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	6.46		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.547	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	6.68		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.05

DATE: 12/01/93

SWLO #: 16111.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB2
LOCATION:

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.547	U	mg/kg	/ /	11/02/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111.06

DATE: 12/01/93

SWLO #: 16111.06 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/26/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
TOTAL 1,2-DICHLOROETHENE	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
METHYL ETHYL KETONE(2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	91%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114)	102%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/01/93

SWLO #: 16144.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	32		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	56		BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
TOTAL 1,2-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/01/93

SWLO #: 16144.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	70.8	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/01/93

SWLO #: 16144.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	100%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/01/93

SWLO #: 16144.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.112	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	2.59		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	430		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.338	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	33.5		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	8.89		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	18.9		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.563	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	26.3		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/01/93

SWLO #: 16144.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.563	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/02/93

SWLO #: 16144.01 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.562	mg/kg	11/01/93	11/01/93	SW846-7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/02/93

SWLO #: 16144.01 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.55	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/02/93

SWLO #: 16144.01 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.562	mg/kg	11/01/93	11/01/93	SW846-7470

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.01

DATE: 12/02/93

SWLO #: 16144.01 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 5.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.53	ug/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.02

DATE: 12/01/93

SWLO #: 16144.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	28		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	11	U	BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
TOTAL 1,2-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	110%	BROMOFLUOROBENZENE	(74-121)	107%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16144.02

DATE: 12/01/93

SWLO #: 16144.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	77.7	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	61.7	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16144.02

DATE: 12/01/93

SWLO #: 16144.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL	(19-122)	63%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.02

DATE: 12/01/93

SWLO #: 16144.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.112	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	2.69		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	230		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.336	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	19.6		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	7.05		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	15.1		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.56	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	19.6		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.02

DATE: 12/01/93

SWLO #: 16144.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.50
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.56	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.03

DATE: 12/01/93

SWLO #: 16144.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	24		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	65		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 107%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121) 88%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.03

DATE: 12/01/93

SWLO #: 16144.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	59.3	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	56.8	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.03

DATE: 12/01/93

SWLO #: 16144.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	71%	2,4,6-TRIBROMOPHENOL	(19-122)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16144.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.109	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.09	U	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	72.4		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.328	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	7.76		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	3.28		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	5.9		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.547	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	7.11		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.03

DATE: 12/01/93

SWLO #: 16144.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.547	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.04

DATE: 12/01/93

SWLO #: 16144.04 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	24		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	73		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	103%
1,2-DICHLOROETHANE-D4	(70-121)	81%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.04

DATE: 12/01/93

SWLO #: 16144.04 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	59.2	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.04

DATE: 12/01/93

SWLO #: 16144.04 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	72%
2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122)	70%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.108	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.08	U	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	79.7		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.325	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	9.42		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	4.33		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	8.55		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.541	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	9.42		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.04

DATE: 12/01/93

SWLO #: 16144.04 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.541	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.05

DATE: 12/01/93

SWLO #: 16144.05 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	57.7	
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	26		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	60		BENZENE	48.3	
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	46.9		2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	55.6	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	57.9	
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 92%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.05

DATE: 12/01/93

SWLO #: 16144.05 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5290		ACENAPHTHENE	3160	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5790		4-NITROPHENOL	5070	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2640		2,4-DINITROTOLUENE	2880	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3310		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4050	
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2500		PYRENE	3080	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4770		BIS(2-ETHYLHEXYL)PHTHALATE	84.1	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.05

DATE: 12/01/93

SWLO #: 16144.05 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	79%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	72%
2-FLUOROPHENOL	(25-121)	83%	2,4,6-TRIBROMOPHENOL	(19-122)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.05

DATE: 12/02/93

SWLO #: 16144.05 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
SILVER	4.87	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	195	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	254	mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	4.87	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	20.8	mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	48.5	mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	53.4	mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	192	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	52.2	mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.05

DATE: 12/02/93

SWLO #: 16144.05 LR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	11/01/93	11/01/93	SW846-7471

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.05

DATE: 12/02/93

SWLO #: 16144.05 LR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.541	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.06

DATE: 12/01/93

SWLO #: 16144.06 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	60.1	
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	23		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	60		BENZENE	49.6	
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	42.2		2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	54.7	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	58	
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 101%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121) 86%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.06

DATE: 12/01/93

SWLO #: 16144.06 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5650		ACENAPHTHENE	3160	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5810		4-NITROPHENOL	4050	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2670		2,4-DINITROTOLUENE	2540	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3110		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4430	
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2540		PYRENE	3150	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4720		BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.06

DATE: 12/02/93

SWLO #: 16144.06 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
SILVER	4.66	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	202	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	268	mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	4.98	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	22.2	mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	50.7	mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	56	mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	201	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	54.4	mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.06

DATE: 12/02/93

SWLO #: 16144.06 LR2
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	11/01/93	11/01/93	SW846-7471

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.06

DATE: 12/02/93

SWLO #: 16144.06 LR2
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB1
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.541	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.07

DATE: 12/01/93

SWLO #: 16144.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	19		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	19		BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
TOTAL 1,2-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	91%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	80%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.07

DATE: 12/01/93

SWLO #: 16144.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	44	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	112	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	94%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	62%

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DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.113	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	3.96		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	226		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.339	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	26.6		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	9.38		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	19.1		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.565	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	25.8		mg/kg	11/03/93	11/08/93	SW846-6010

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SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.565	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.08

DATE: 12/01/93

SWLO #: 16144.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SB4
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 6.50
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	10		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	42		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
TOTAL 1,2-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

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SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 6.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	53.8	JB
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	59.3	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

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DEPTH FROM : 6.00
DEPTH TO : 6.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.116	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.62		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	84.7		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	11.5		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	4.64		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	12.1		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.696		mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	14.4		mg/kg	11/03/93	11/08/93	SW846-6010

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DEPTH TO : 6.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.58	U	mg/kg	/ /	11/03/93	SW846-9010

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DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	8.8		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	27		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121) 104%
1,2-DICHLOROETHANE-D4	(70-121)	86%		

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DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	39	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	60	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.09

DATE: 12/01/93

SWLO #: 16144.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SB4
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.09

DATE: 12/01/93

SWLO #: 16144.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SB4
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.108	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.18		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	66.7		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.323	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	6.46		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	1.94		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	7.97		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.539	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	8.08		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16144.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.3SB4
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.539	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.10

DATE: 12/01/93

SWLO #: 16144.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	13		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	24		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.10

DATE: 12/01/93

SWLO #: 16144.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	47.5	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZEME	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	265	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	60.2	J
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.10

DATE: 12/01/93

SWLO #: 16144.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	97%	PHENOL-D5	(24-113)	59%
?-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.10

DATE: 12/01/93

SWLO #: 16144.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.11	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.1	U	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	53.2		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.329	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	8.12		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	2.74		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	7.46		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.549	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	8.56		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16144.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.1SB3
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.50
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.549	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.11

DATE: 12/01/93

SWLO #: 16144.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	12		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	59		BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
TOTAL 1,2-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	93%	BROMOFLUOROBENZENE	(74-121)	81%
1,2-DICHLOROETHANE-D4	(70-121)	93%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.11

DATE: 12/01/93

SWLO #: 16144.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	79.4	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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SAMPLE #: S32.2SB2
LOCATION:
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16144.11

DATE: 12/01/93

SWLO #: 16144.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.112	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	12.8		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	300		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.338	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	23.8		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	5.4		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	29.1		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.563	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	40.2		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.11

DATE: 12/01/93

SWLO #: 16144.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.563	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.12

DATE: 12/01/93

SWLO #: 16144.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.6	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.6	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.6	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
METHYLENE CHLORIDE	8.7		1,1,2-TRICHLOROETHANE	5.6	U
ACETONE	24		BENZENE	5.6	U
CARBON DISULFIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.6	U	BROMOFORM	5.6	U
TOTAL 1,2-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
CHLOROFORM	5.6	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.6	U	TETRACHLOROETHENE	5.6	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 90%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.12

DATE: 12/01/93

SWLO #: 16144.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	38	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	52.5	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.12

DATE: 12/01/93

SWLO #: 16144.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	86%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16144.12 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.112	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	13.1		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	272		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.336	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	20.5		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	5.27		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	28.8		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.561		mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	37.6		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.561	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.13

DATE: 12/01/93

SWLO #: 16144.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	7.3		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	32		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	105%	BROMOFLUOROBENZENE	(74-121) 99%
1,2-DICHLOROETHANE-D4	(70-121)	86%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.13

DATE: 12/01/93

SWLO #: 16144.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.13

DATE: 12/01/93

SWLO #: 16144.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	104%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.13

DATE: 12/01/93

SWLO #: 16144.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.109	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.09	U	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	27.4		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.328	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	4.37		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	0.328	U	mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	3.71		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.546	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	3.6		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.13

DATE: 12/01/93

SWLO #: 16144.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.546	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.14

DATE: 12/01/93

SWLO #: 16144.14 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	58.9	
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	8		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	37		BENZENE	47	
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	43		2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	54.9	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	58.2	
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 102%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121) 86%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.14

DATE: 12/01/93

SWLO #: 16144.14 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5400		ACENAPHTHENE	3210	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5550		4-NITROPHENOL	4620	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2450		2,4-DINITROTOLUENE	2460	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	2700		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4260	
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2620		PYRENE	3120	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4830		BIS(2-ETHYLHEXYL)PHTHALATE	41	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.14

DATE: 12/01/93

SWLO #: 16144.14 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	73%	2,4,6-TRIBROMOPHENOL	(19-122)	84%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

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PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.786	mg/kg	11/01/93	11/03/93	SW846-7471
SILVER	4.91	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	211	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	233	mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	5.35	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	23.5	mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	50.3	mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	55.7	mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	217	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	54	mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.14

DATE: 12/02/93

SWLO #: 16144.14 LR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.546	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.15

DATE: 12/01/93

SWLO #: 16144.15 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.09

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	57.1	
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	9		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	68		BENZENE	45.8	
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	38.8		2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	49.1	
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	55.5	
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 100%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 86%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.15

DATE: 12/01/93

SWLO #: 16144.15 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	5410		ACENAPHTHENE	3300	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5740		4-NITROPHENOL	4700	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2500		2,4-DINITROTOLUENE	2490	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	2840		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	4380	
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2620		PYRENE	3120	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	4890		BIS(2-ETHYLHEXYL)PHTHALATE	55.9	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.15

DATE: 12/01/93

SWLO #: 16144.15 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	89%
TERPHENYL-D14	(18-137)	105%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	79%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16144.15

DATE: 12/01/93

SWLO #: 16144.15 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.83	mg/kg	11/01/93	11/03/93	SW846-7471
SILVER	4.8	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	211	mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	236	mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	4.91	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	22.6	mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	50	mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	55.7	mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	218	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	54	mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.15

DATE: 12/02/93

SWLO #: 16144.15 LR2
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB2
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.546	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.16

DATE: 12/01/93

SWLO #: 16144.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	13		1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	36		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
TOTAL 1,2-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	5.8	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	89%	BROMOFLUOROBENZENE	(74-121)	85%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.16

DATE: 12/01/93

SWLO #: 16144.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	85.8	JB
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	67.5	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.16

DATE: 12/01/93

SWLO #: 16144.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	66%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.16

DATE: 12/01/93

SWLO #: 16144.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.118	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	2.83		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	324		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	0.354	U	mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	8.37		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	5.3		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	5.77		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.589	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	120		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.16

DATE: 12/01/93

SWLO #: 16144.16 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.589	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.17

DATE: 12/01/93

SWLO #: 16144.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.3	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.3	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.3	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
METHYLENE CHLORIDE	7.5		1,1,2-TRICHLOROETHANE	5.3	U
ACETONE	150		BENZENE	5.3	U
CARBON DISULFIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.3	U	BROMOFORM	5.3	U
TOTAL 1,2-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
CHLOROFORM	5.3	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.3	U	TETRACHLOROETHENE	5.3	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.17

DATE: 12/01/93

SWLO #: 16144.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	90.4	JB
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	57.4	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.17

DATE: 12/01/93

SWLO #: 16144.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	101%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16144.17

DATE: 12/01/93

SWLO #: 16144.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107	U	mg/kg	11/01/93	11/01/93	SW846-7471
SILVER	0.107	U	mg/kg	11/03/93	11/11/93	SW846-7761
ARSENIC	1.17		mg/kg	11/03/93	11/04/93	SW846-6010
BARIUM	53.6		mg/kg	11/03/93	11/08/93	SW846-6010
CADMIUM	102		mg/kg	11/03/93	11/08/93	SW846-6010
CHROMIUM	50.6		mg/kg	11/03/93	11/08/93	SW846-6010
LEAD	3.73		mg/kg	11/03/93	11/04/93	SW846-6010
NICKEL	98.8		mg/kg	11/03/93	11/08/93	SW846-6010
SELENIUM	0.533	U	mg/kg	11/03/93	11/04/93	SW846-6010
ZINC	109		mg/kg	11/03/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16144.17

DATE: 12/01/93

SWLO #: 16144.17 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.2SB3
LOCATION:

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.533	U	mg/kg	/ /	11/03/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.18

DATE: 12/01/93

SWLO #: 16144.18 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
TOTAL 1,2-DICHLOROETHENE	5	U	2-HEXANONE	10	U
CHLOROFORM	1	J	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
METHYL ETHYL KETONE(2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 102%	BROMOFLUOROBENZENE	(86-115) 105%
1,2-DICHLOROETHANE-D4	(76-114) 92%		

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16144.19

DATE: 12/01/93

SWLO #: 16144.19 TB2
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/27/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
TOTAL 1,2-DICHLOROETHENE	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
METHYL ETHYL KETONE(2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	103%
1,2-DICHLOROETHANE-D4	(76-114)	103%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16168.01

DATE: 12/01/93

SWLO #: 16168.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	8.5		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	37		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.01

DATE: 12/01/93

SWLO #: 16168.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	56.2	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	98%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.109	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.109	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	1.52		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	29		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.326	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	9.79		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	3.59		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	7.5		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.544	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	10.2		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.6SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.544	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.02

DATE: 12/01/93

SWLO #: 16168.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	10		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	58		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 108%	BROMOFLUOROBENZENE	(74-121) 110%
1,2-DICHLOROETHANE-D4	(70-121) 108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16168.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	37.4	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.02

DATE: 12/01/93

SWLO #: 16168.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16168.02 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.108	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	1.74		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	45.8		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.325	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	10.4		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	3.36		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	7.7		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.542	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	10.6		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.02

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PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.542	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.03

DATE: 12/01/93

SWLO #: 16168.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 7.50
DATE PREPARED : / /
DILUTION FACTOR: 1.21

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	6	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	6	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	6	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
METHYLENE CHLORIDE	9.3		1,1,2-TRICHLOROETHANE	6	U
ACETONE	23		BENZENE	6	U
CARBON DISULFIDE	6	U	CIS-1,3-DICHLOROPROPENE	6	U
1,1-DICHLOROETHENE	6	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	6	U	BROMOFORM	6	U
TOTAL 1,2-DICHLOROETHENE	6	U	2-HEXANONE	12	U
CHLOROFORM	6	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	6	U	TETRACHLOROETHENE	6	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	XYLENE (TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.03

DATE: 12/01/93

SWLO #: 16168.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 7.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	49.7	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.03

DATE: 12/01/93

SWLO #: 16168.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 7.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	60%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	56%
-FLUOROPHENOL	(25-121)	56%	2,4,6-TRIBROMOPHENOL	(19-122)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.03

DATE: 12/01/93

SWLO #: 16168.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 7.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.121	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.121	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	1.21	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	34.8		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.363	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	5.33		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.21		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	4.48		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.606	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	5.69		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.03

DATE: 12/01/93

SWLO #: 16168.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 5.50
DEPTH TO : 7.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.606	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.04

DATE: 12/01/93

SWLO #: 16168.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.50
DATE PREPARED : / /
DILUTION FACTOR: 1.05

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5.2	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5.2	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5.2	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5.2	U
METHYLENE CHLORIDE	11		1,1,2-TRICHLOROETHANE	5.2	U
ACETONE	32		BENZENE	5.2	U
CARBON DISULFIDE	5.2	U	CIS-1,3-DICHLOROPROPENE	5.2	U
1,1-DICHLOROETHENE	5.2	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5.2	U	BROMOFORM	5.2	U
TOTAL 1,2-DICHLOROETHENE	5.2	U	2-HEXANONE	10	U
CHLOROFORM	5.2	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5.2	U	TETRACHLOROETHENE	1.5	J
METHYL ETHYL KETONE(2-BUTANONE	10	U	TOLUENE	1.5	J
1,1,1-TRICHLOROETHANE	5.2	U	CHLOROBENZENE	5.2	U
CARBON TETRACHLORIDE	5.2	U	ETHYLBENZENE	5.2	U
VINYL ACETATE	10	U	STYRENE	5.2	U
BROMODICHLOROMETHANE	5.2	U	XYLENE (TOTAL)	5.2	U
1,1,2,2-TETRACHLOROETHANE	5.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.04

DATE: 12/01/93

SWLO #: 16168.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	48.1	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.04

DATE: 12/01/93

SWLO #: 16168.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	85%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.04

DATE: 12/01/93

SWLO #: 16168.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.105	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.105	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	1.05	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	36.1		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.315	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	5.25		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	0.525		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.78		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.525	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	4.1		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.04

DATE: 12/01/93

SWLO #: 16168.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.525	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.05

DATE: 12/01/93

SWLO #: 16168.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB3
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.50
DEPTH TO : 5.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.9	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.9	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.9	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
METHYLENE CHLORIDE	9.6		1,1,2-TRICHLOROETHANE	5.9	U
ACETONE	56		BENZENE	5.9	U
CARBON DISULFIDE	5.9	U	CIS-1,3-DICHLOROPROPENE	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.9	U	BROMOFORM	5.9	U
TOTAL 1,2-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
CHLOROFORM	5.9	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.9	U	TETRACHLOROETHENE	5.9	U
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 103%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.05

DATE: 12/01/93

SWLO #: 16168.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.50
DEPTH TO : 5.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	65.3	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.05

DATE: 12/01/93

SWLO #: 16168.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.50
DEPTH TO : 5.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	102%	PHENOL-D5	(24-113)	64%
-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.05

DATE: 12/01/93

SWLO #: 16168.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB3
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.50
DEPTH TO : 5.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.119	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.119	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	1.19	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	78.1		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.392		mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	7.85		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.07		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.21		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.595	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.92		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.05

DATE: 12/01/93

SWLO #: 16168.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB3
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.50
DEPTH TO : 5.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.595	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.06

DATE: 12/01/93

SWLO #: 16168.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 8.50
DATE PREPARED : / /
DILUTION FACTOR: 1.08

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.4	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.4	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.4	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
METHYLENE CHLORIDE	10		1,1,2-TRICHLOROETHANE	5.4	U
ACETONE	26		BENZENE	5.4	U
CARBON DISULFIDE	5.4	U	CIS-1,3-DICHLOROPROPENE	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.4	U	BROMOFORM	5.4	U
TOTAL 1,2-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
CHLOROFORM	5.4	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.4	U	TETRACHLOROETHENE	5.4	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	1.1	J
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.06

DATE: 12/01/93

SWLO #: 16168.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 8.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.06

DATE: 12/01/93

SWLO #: 16168.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 8.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	87%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.06

DATE: 12/01/93

SWLO #: 16168.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 8.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.108	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.108	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	3.67		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	60.7		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.324	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	13.3		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	4.64		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	9.29		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.648		mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	12.6		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.06

DATE: 12/01/93

SWLO #: 16168.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.6SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 8.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.54	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.07

DATE: 12/01/93

SWLO #: 16168.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.00
DEPTH TO : 3.50
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	1,2-DICHLOROPROPANE	5.8	U
BROMOMETHANE	12	U	TRANS-1,3-DICHLOROPROPENE	5.8	U
VINYL CHLORIDE	12	U	TRICHLOROETHENE	5.8	U
CHLOROETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
METHYLENE CHLORIDE	30	B	1,1,2-TRICHLOROETHANE	5.8	U
ACETONE	390		BENZENE	5.8	U
CARBON DISULFIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-CHLOROETHYL VINYL ETHER	12	U
1,1-DICHLOROETHANE	5.8	U	BROMOFORM	5.8	U
TOTAL 1,2-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
CHLOROFORM	5.8	U	4-METHYL-2-PENTANONE	12	U
1,2-DICHLOROETHANE	5.8	U	TETRACHLOROETHENE	3.8	J
METHYL ETHYL KETONE(2-BUTANONE	12	U	TOLUENE	3.3	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	99%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.07

DATE: 12/01/93

SWLO #: 16168.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.00
DEPTH TO : 3.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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REPORT: 16168.07

DATE: 12/01/93

SWLO #: 16168.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.00
DEPTH TO : 3.50
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	76%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	102%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16168.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.00
DEPTH TO : 3.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.116	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	3.13		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	695		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	34.6		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	4.18		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	18.9		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.812		mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	25.3		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16168.07

DATE: 12/01/93

SWLO #: 16168.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 3.00
DEPTH TO : 3.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.58	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.08

DATE: 12/01/93

SWLO #: 16168.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.62

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	16	U	1,2-DICHLOROPROPANE	8.1	U
BROMOMETHANE	16	U	TRANS-1,3-DICHLOROPROPENE	8.1	U
VINYL CHLORIDE	16	U	TRICHLOROETHENE	8.1	U
CHLOROETHANE	16	U	DIBROMOCHLOROMETHANE	8.1	U
METHYLENE CHLORIDE	13		1,1,2-TRICHLOROETHANE	8.1	U
ACETONE	28		BENZENE	8.1	U
CARBON DISULFIDE	8.1	U	CIS-1,3-DICHLOROPROPENE	8.1	U
1,1-DICHLOROETHENE	8.1	U	2-CHLOROETHYL VINYL ETHER	16	U
1,1-DICHLOROETHANE	8.1	U	BROMOFORM	8.1	U
TOTAL 1,2-DICHLOROETHENE	8.1	U	2-HEXANONE	16	U
CHLOROFORM	8.1	U	4-METHYL-2-PENTANONE	16	U
1,2-DICHLOROETHANE	8.1	U	TETRACHLOROETHENE	8.1	U
METHYL ETHYL KETONE(2-BUTANONE	16	U	TOLUENE	1.9	J
1,1,1-TRICHLOROETHANE	8.1	U	CHLOROBENZENE	8.1	U
CARBON TETRACHLORIDE	8.1	U	ETHYLBENZENE	8.1	U
VINYL ACETATE	16	U	STYRENE	8.1	U
BROMODICHLOROMETHANE	8.1	U	XYLENE (TOTAL)	8.1	U
1,1,2,2-TETRACHLOROETHANE	8.1	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 100%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16168.08

DATE: 12/01/93

SWLO #: 16168.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.60

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	530	U	ACENAPHTHENE	530	U
BIS(2-CHLOROETHYL)ETHER	530	U	2,4-DINITROPHENOL	2600	U
2-CHLOROPHENOL	530	U	4-NITROPHENOL	2600	U
1,3-DICHLOROBENZENE	530	U	DIBENZOFURAN	530	U
1,4-DICHLOROBENZENE	530	U	2,4-DINITROTOLUENE	530	U
BENZYL ALCOHOL	530	U	2,6-DINITROTOLUENE	530	U
1,2-DICHLOROBENZENE	530	U	DIETHYLPHTHALATE	530	U
2-METHYLPHENOL(O-CRESOL)	530	U	4-CHLOROPHENYL-PHENYLETHER	530	U
BIS(2-CHLOROISOPROPYL)ETHER	530	U	FLUORENE	530	U
4-METHYLPHENOL(P-CRESOL)	530	U	4-NITROANILINE	2600	U
N-NITROSO-DI-N-PROPYLAMINE	530	U	4,6-DINITRO-2-METHYLPHENOL	2600	U
HEXACHLOROETHANE	530	U	N-NITROSODIPHENYLAMINE(1)	530	U
NITROBENZENE	530	U	4-BROMOPHENYL-PHENYLETHER	530	U
ISOPHORONE	530	U	HEXACHLOROBENZENE	530	U
2-NITROPHENOL	530	U	PENTACHLOROPHENOL	2600	U
2,4-DIMETHYLPHENOL	530	U	PHENANTHRENE	530	U
BENZOIC ACID	2600	U	ANTHRACENE	530	U
BIS(2-CHLOROETHOXY)METHANE	530	U	DI-N-BUTYL PHTHALATE	530	U
2,4-DICHLOROPHENOL	530	U	FLUORANTHENE	530	U
1,2,4-TRICHLOROBENZENE	530	U	PYRENE	530	U
NAPHTHALENE	530	U	BUTYL BENZYL PHTHALATE	530	U
4-CHLOROANILINE	530	U	3,3'-DICHLOROBENZIDINE	1000	U
HEXACHLOROBUTADIENE	530	U	BENZO(A)ANTHRACENE	530	U
4-CHLORO-3-METHYLPHENOL	530	U	BIS(2-ETHYLHEXYL)PHTHALATE	67.2	J
2-METHYLNAPHTHALENE	530	U	CHRYSENE	530	U
HEXACHLOROCYCLOPENTADIENE	530	U	DI-N-OCTYL PHTHALATE	530	U
2,4,6-TRICHLOROPHENOL	530	U	BENZO(B)FLUORANTHENE	530	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.08

DATE: 12/01/93

SWLO #: 16168.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.60

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2600	U	BENZO(K)FLUORANTHENE	530	U
2-CHLORONAPHTHALENE	530	U	BENZO(A)PYRENE	530	U
2-NITROANILINE	2600	U	INDENO(1,2,3-CD)PYRENE	530	U
DIMETHYL PHTHALATE	530	U	DIBENZ(A,H)ANTHRACENE	530	U
ACENAPHTHYLENE	530	U	BENZO(G,H,I)PERYLENE	530	U
3-NITROANILINE	2600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	69%
TERPHENYL-D14	(18-137)	76%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	115%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.08

DATE: 12/01/93

SWLO #: 16168.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.162	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.162	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	4.06		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	48.6		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.487	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	17		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	5.85		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	16.9		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.812	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	22.6		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.08

DATE: 12/01/93

SWLO #: 16168.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.812	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.09

DATE: 12/01/93

SWLO #: 16168.09 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/02/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	1,2-DICHLOROPROPANE	5.5	U
BROMOMETHANE	11	U	TRANS-1,3-DICHLOROPROPENE	5.5	U
VINYL CHLORIDE	11	U	TRICHLOROETHENE	5.5	U
CHLOROETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
METHYLENE CHLORIDE	12		1,1,2-TRICHLOROETHANE	5.5	U
ACETONE	26		BENZENE	5.5	U
CARBON DISULFIDE	5.5	U	CIS-1,3-DICHLOROPROPENE	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-CHLOROETHYL VINYL ETHER	11	U
1,1-DICHLOROETHANE	5.5	U	BROMOFORM	5.5	U
TOTAL 1,2-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
CHLOROFORM	5.5	U	4-METHYL-2-PENTANONE	11	U
1,2-DICHLOROETHANE	5.5	U	TETRACHLOROETHENE	5.5	U
METHYL ETHYL KETONE(2-BUTANONE	11	U	TOLUENE	1.5	J
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 103%
1,2-DICHLOROETHANE-D4	(70-121) 103%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.09

DATE: 12/01/93

SWLO #: 16168.09 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.09

DATE: 12/01/93

SWLO #: 16168.09 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	73%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	116%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16168.09 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.11	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	2.09		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	31.9		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.33	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	8.92		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.76		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	9.03		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.55	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	9.8		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.09

DATE: 12/01/93

SWLO #: 16168.09 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.5SB2
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.55	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.10

DATE: 12/01/93

SWLO #: 16168.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 5.00
DATE PREPARED : / /
DILUTION FACTOR: 6.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	61	U	TRICHLOROETHENE	31	U
BROMOMETHANE	61	U	DIBROMOCHLOROMETHANE	31	U
VINYL CHLORIDE	61	U	1,1,2-TRICHLOROETHANE	31	U
CHLOROETHANE	61	U	BENZENE	31	U
METHYLENE CHLORIDE	60	B	CIS-1,3-DICHLOROPROPENE	31	U
ACETONE	980		2-CHLOROETHYL VINYL ETHER	61	U
CARBON DISULFIDE	31	U	BROMOFORM	31	U
1,1-DICHLOROETHENE	31	U	2-HEXANONE	61	U
1,1-DICHLOROETHANE	31	U	4-METHYL-2-PENTANONE	61	U
CHLOROFORM	31	U	TETRACHLOROETHENE	31	U
1,2-DICHLOROETHANE	31	U	TOLUENE	7	J
1,1,1-TRICHLOROETHANE	31	U	CHLOROBENZENE	31	U
CARBON TETRACHLORIDE	31	U	ETHYLBENZENE	31	U
VINYL ACETATE	61	U	STYRENE	31	U
BROMODICHLOROMETHANE	31	U	1,2-DICHLOROETHENE(TOTAL)	31	U
1,1,2,2-TETRACHLOROETHANE	31	U	XYLENE (TOTAL)	31	U
1,2-DICHLOROPROPANE	31	U	2-BUTANONE	61	U
TRANS-1,3-DICHLOROPROPENE	31	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	100%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.10

DATE: 12/01/93

SWLO #: 16168.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 5.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	56	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.10

DATE: 12/01/93

SWLO #: 16168.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 5.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	67%
TERPHENYL-D14	(18-137)	71%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	123% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.10

DATE: 12/01/93

SWLO #: 16168.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 5.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.123	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.123	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	1.84		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	224		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.369	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	9.96		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	4.55		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	6.76		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.614	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	10.2		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.10

DATE: 12/01/93

SWLO #: 16168.10 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 4.50
DEPTH TO : 5.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.614	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.11

DATE: 12/02/93

SWLO #: 16168.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW 8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00
DATE PREPARED : / /
DILUTION FACTOR: 142.22

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/Kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	1400	U	TRICHLOROETHENE	710	U
BROMOMETHANE	1400	U	DIBROMOCHLOROMETHANE	710	U
VINYL CHLORIDE	1400	U	1,1,2-TRICHLOROETHANE	710	U
CHLOROETHANE	1400	U	BENZENE	710	U
METHYLENE CHLORIDE	710	U	CIS-1,3-DICHLOROPROPENE	710	U
ACETONE	4200		2-CHLOROETHYL VINYL ETHER	1400	U
CARBON DISULFIDE	710	U	BROMOFORM	710	U
1,1-DICHLOROETHENE	710	U	2-HEXANONE	1400	U
1,1-DICHLOROETHANE	710	U	4-METHYL-2-PENTANONE	1400	U
CHLOROFORM	710	U	TETRACHLOROETHENE	710	U
1,2-DICHLOROETHANE	710	U	TOLUENE	710	U
1,1,1-TRICHLOROETHANE	710	U	CHLOROBENZENE	710	U
CARBON TETRACHLORIDE	710	U	ETHYLBENZENE	710	U
VINYL ACETATE	1400	U	STYRENE	710	U
BROMODICHLOROMETHANE	710	U	1,2-DICHLOROETHENE(TOTAL)	710	U
1,1,2,2-TETRACHLOROETHANE	710	U	XYLENE (TOTAL)	710	U
1,2-DICHLOROPROPANE	710	U	2-BUTANONE	1400	U
TRANS-1,3-DICHLOROPROPENE	710	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	88%	BROMOFLUOROBENZENE	(74-121)	87%
1,2-DICHLOROETHANE-D4	(70-121)	85%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.11

DATE: 12/01/93

SWLO #: 16168.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	65.4	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/01/93

SWLO #: 16168.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	62%
TERPHENYL-D14	(18-137)	68%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	107%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16168.11

DATE: 12/01/93

SWLO #: 16168.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	11/03/93	11/03/93	SW846-7471
SILVER	0.114	U	mg/kg	11/05/93	11/11/93	SW846-7761
ARSENIC	3.41		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	116		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.341	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	12.7		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.73		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	14.6		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.569	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	17.1		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16168.11

DATE: 12/01/93

SWLO #: 16168.11 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.4SB1
LOCATION:

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.569	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.12

DATE: 12/01/93

SWLO #: 16168.12 TB2
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
TOTAL 1,2-DICHLOROETHENE	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
METHYL ETHYL KETONE(2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	102%	BROMOFLUOROBENZENE	(86-115)	104%
1,2-DICHLOROETHANE-D4	(76-114)	108%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16168.13

DATE: 12/01/93

SWLO #: 16168.13 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/28/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	1,2-DICHLOROPROPANE	5	U
BROMOMETHANE	10	U	TRANS-1,3-DICHLOROPROPENE	5	U
VINYL CHLORIDE	10	U	TRICHLOROETHENE	5	U
CHLOROETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
METHYLENE CHLORIDE	5	U	1,1,2-TRICHLOROETHANE	5	U
ACETONE	10	U	BENZENE	5	U
CARBON DISULFIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
1,1-DICHLOROETHENE	5	U	2-CHLOROETHYL VINYL ETHER	10	U
1,1-DICHLOROETHANE	5	U	BROMOFORM	5	U
TOTAL 1,2-DICHLOROETHENE	5	U	2-HEXANONE	10	U
CHLOROFORM	5	U	4-METHYL-2-PENTANONE	10	U
1,2-DICHLOROETHANE	5	U	TETRACHLOROETHENE	5	U
METHYL ETHYL KETONE(2-BUTANONE	10	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 98%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114) 108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931102B
INST. BATCH: 13515
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931102B
LOCATION:

ANALYZED : 11/02/93 09:33
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931102B
INST. BATCH: 13515
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/02/93 09:56
ANALYZED : 11/02/93 10:18

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	49	99	42	84	16.4*	16	60-141
1,2-DICHLOROETHENE(TOTAL	100	94	94	83	84	12.0	21	72-133
TRICHLOROETHENE	50	54	109	55	111	2.27	21	71-134
BENZENE	50	46	93	44	89	3.98	13	79-128
TOLUENE	50	53	107	48	98	8.77	11	80-122
CHLOROBENZENE	50	53	106	52	104	1.95	10	80-125
XYLENE (TOTAL)	150	160	110	160	108	2.39	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	104	102	81-117
BROMOFLUOROBENZENE	106	106	74-121
1,2-DICHLOROETHANE-D4	99	90	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931102A
INST. BATCH: 2227
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931102A
LOCATION:

ANALYZED : 11/02/93 10:32
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121)	98%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
ª = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
• UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931102A
INST. BATCH: 2227
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/02/93 11:02
ANALYZED : 11/02/93 11:38

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	48	96	50	102	5.74	18	21-170
BROMOMETHANE	50	50	100	53	106	6.07	36	46-161
VINYL CHLORIDE	50	47	95	49	99	3.71	26	31-168
CHLOROETHANE	50	48	97	50	100	3.34	54	44-154
METHYLENE CHLORIDE	50	57	115	65	130	12.5	21	77-141
ACETONE	50	72	145	98	196*	30.2	59	30-160
CARBON DISULFIDE	50	47	95	50	101	6.35	29	52-129
1,1-DICHLOROETHENE	50	48	96	50	100	3.8	16	60-141
1,1-DICHLOROETHANE	50	48	97	49	98	1.5	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	95	95	97	98	2.77	21	72-133
CHLOROFORM	50	48	97	50	101	4.65	17	79-129
1,2-DICHLOROETHANE	50	48	96	50	101	4.74	19	81-132
2-BUTANONE	50	50	100	47	94	5.41	91	16-130
1,1,1-TRICHLOROETHANE	50	48	98	50	100	2.58	45	66-140
CARBON TETRACHLORIDE	50	46	94	50	101	7.8	21	65-140
VINYL ACETATE	50	47	95	49	98	3.91	72	17-153
BROMODICHLOROMETHANE	50	47	95	50	101	5.72	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	45	90	46	92	2.48	78	49-127
1,2-DICHLOROPROPANE	50	48	98	49	98	< 1	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	47	95	50	100	4.61	41	48-141
TRICHLOROETHENE	50	48	97	51	102	4.87	21	71-134
DIBROMOCHLOROMETHANE	50	47	94	50	100	6.05	25	68-120
1,1,2-TRICHLOROETHANE	50	48	96	49	99	3.47	28	68-120
BENZENE	50	47	95	49	99	3.9	13	79-128
CIS-1,3-DICHLOROPROPENE	50	47	95	49	99	3.82	29	63-123
2-CHLOROETHYL VINYL ETHE	50	47	94	46	92	2.4	45	0-146
BROMOFORM	50	46	92	49	98	6.92	37	58-119
2-HEXANONE	50	46	93	46	92	1.04	60	20-181
4-METHYL-2-PENTANONE	50	49	98	46	92	5.97	54	33-163
TETRACHLOROETHENE	50	47	95	49	98	3.86	21	80-125
TOLUENE	50	49	98	50	100	1.67	11	80-122
CHLOROBENZENE	50	47	95	49	99	4.09	10	80-125
ETHYLBENZENE	50	47	94	49	98	4.57	19	82-123
STYRENE	50	48	96	49	99	3.3	13	71-129
XYLENE (TOTAL)	150	150	100	150	103	3.01	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	99	81-117
BROMOFLUOROBENZENE	97	101	74-121
1,2-DICHLOROETHANE-D4	98	98	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931103A
INST. BATCH: 13536
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931103A
LOCATION:

ANALYZED : 11/03/93 08:53
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
- = NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931103A
INST. BATCH: 13536
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/03/93 09:16
ANALYZED : 11/03/93 09:39

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	36	72	31	63	12.9	18	21-170
BROMOMETHANE	50	42	84	31	62	29.9	36	46-161
VINYL CHLORIDE	50	32	64	26	52	21.9	26	31-168
CHLOROETHANE	50	39	79	28	56	33.8	54	44-154
METHYLENE CHLORIDE	50	45	90	42	85	6.27	21	77-141
ACETONE	50	30	61	34	70	12.9	59	30-160
CARBON DISULFIDE	50	43	86	36	72	16.9	29	52-129
1,1-DICHLOROETHENE	50	47	95	42	84	12.4	16	60-141
1,1-DICHLOROETHANE	50	42	85	38	76	10.4	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	91	91	84	84	7.77	21	72-133
CHLOROFORM	50	48	96	43	87	9.09	17	79-129
1,2-DICHLOROETHANE	50	47	94	46	94	< 1	19	81-132
2-BUTANONE	50	47	95	58	116	19.5	91	16-130
1,1,1-TRICHLOROETHANE	50	49	99	48	97	2.83	45	66-140
CARBON TETRACHLORIDE	50	53	107	51	103	3.82	21	65-140
VINYL ACETATE	50	49	98	51	103	4.95	72	17-153
BROMODICHLOROMETHANE	50	51	102	50	100	1.84	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	55	110	62	126	12.8	78	49-127
1,2-DICHLOROPROPANE	50	43	86	42	84	3.08	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	45	91	41	83	9.52	41	48-141
TRICHLOROETHENE	50	53	106	52	104	1.85	21	71-134
DIBROMOCHLOROMETHANE	50	57	115	62	124*	7.88	25	68-120
1,1,2-TRICHLOROETHANE	50	55	111	59	119	7.19	28	68-120
BENZENE	50	44	89	42	84	6.07	13	79-128
CIS-1,3-DICHLOROPROPENE	50	46	93	45	90	3.02	29	63-123
2-CHLOROETHYL VINYL ETHE	50	120	243	120	250	3.02	45	0-146
BROMOFORM	50	60	120*	73	146*	20.2	37	58-119
2-HEXANONE	50	49	98	62	125	23.6	60	20-181
4-METHYL-2-PENTANONE	50	54	108	65	131	19.5	54	33-163
TETRACHLOROETHENE	50	51	103	48	96	7.44	21	80-125
TOLUENE	50	44	89	40	80*	10.7	11	80-122
CHLOROBENZENE	50	50	100	48	96	4.03	10	80-125
ETHYLBENZENE	50	48	97	46	92	5.98	19	82-123
STYRENE	50	49	99	47	94	4.82	13	71-129
XYLENE (TOTAL)	150	140	96	130	89	7.48	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	92	81-117
BROMOFLUOROBENZENE	98	95	74-121
1,2-DICHLOROETHANE-D4	97	97	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931103A
INST. BATCH: 2349
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931103A
LOCATION:

ANALYZED : 11/03/93 11:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	1.6	J	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
N = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931103A
INST. BATCH: 2349
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/03/93 12:06
ANALYZED : 11/03/93 12:29

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	43	86	47	94	8.18	18	21-170
BROMOMETHANE	50	47	95	46	93	1.73	36	46-161
VINYL CHLORIDE	50	44	88	49	99	11.5	26	31-168
CHLOROETHANE	50	54	109	49	99	9.67	54	44-154
METHYLENE CHLORIDE	50	53	106	58	116	8.2	21	77-141
ACETONE	50	60	121	67	134	10.1	59	30-160
CARBON DISULFIDE	50	44	90	46	92	2.44	29	52-129
1,1-DICHLOROETHENE	50	45	90	46	92	2.5	16	60-141
1,1-DICHLOROETHANE	50	45	91	46	94	3.25	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	89	89	93	94	4.82	21	72-133
CHLOROFORM	50	44	89	46	93	3.99	17	79-129
1,2-DICHLOROETHANE	50	48	96	50	101	5.74	19	81-132
2-BUTANONE	50	54	108	58	117	8.37	91	16-130
1,1,1-TRICHLOROETHANE	50	47	94	50	100	5.71	45	66-140
CARBON TETRACHLORIDE	50	46	93	50	100	7.12	21	65-140
VINYL ACETATE	50	49	99	52	104	5.53	72	17-153
BROMODICHLOROMETHANE	50	47	95	50	101	5.91	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	54	108	59	118	8.26	78	49-127
1,2-DICHLOROPROPANE	50	48	96	50	101	5.71	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	50	100	53	106	6.22	41	48-141
TRICHLOROETHENE	50	46	93	48	97	4.54	21	71-134
DIBROMOCHLOROMETHANE	50	50	101	52	105	4.29	25	68-120
1,1,2-TRICHLOROETHANE	50	51	103	54	108	4.61	28	68-120
BENZENE	50	47	95	50	100	5.55	13	79-128
CIS-1,3-DICHLOROPROPENE	50	48	96	51	102	5.92	29	63-123
2-CHLOROETHYL VINYL ETHE	50	53	107	56	114	5.97	45	0-146
BROMOFORM	50	52	106	57	114	7.4	37	58-119
2-HEXANONE	50	57	115	65	130	12.8	60	20-181
4-METHYL-2-PENTANONE	50	55	111	64	128	14.4	54	33-163
TETRACHLOROETHENE	50	46	93	48	96	3.24	21	80-125
TOLUENE	50	47	95	48	98	2.56	11	80-122
CHLOROBENZENE	50	47	94	48	97	3.45	10	80-125
ETHYLBENZENE	50	46	92	48	98	5.68	19	82-123
STYRENE	50	46	94	49	98	4.61	13	71-129
XYLENE (TOTAL)	150	140	96	150	100	4.02	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	99	81-117
BROMOFLUOROBENZENE	101	102	74-121
1,2-DICHLOROETHANE-D4	100	103	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931104A
INST. BATCH: 13655
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931104A
LOCATION:

ANALYZED : 11/04/93 10:29
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/l

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114)	99%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931104A
INST. BATCH: 13655
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/04/93 11:18
ANALYZED : 11/04/93 11:44

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/l	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	67	134	74	148	9.98	28	32-161
BROMOMETHANE	50	46	93	52	105	12.0	23	50-191
VINYL CHLORIDE	50	49	99	57	115	15.4	25	65-167
CHLOROETHANE	50	48	96	56	112	14.7	28	32-212
METHYLENE CHLORIDE	50	47	95	52	104	9.51	43	52-168
ACETONE	50	42	86	53	107	22.8	50	53-146
CARBON DISULFIDE	50	48	97	54	108	10.8	31	50-162
1,1-DICHLOROETHENE	50	51	102	55	111	7.97	32	54-161
1,1-DICHLOROETHANE	50	50	102	54	109	6.89	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	100	102	110	109	6.23	35	74-162
CHLOROFORM	50	48	96	52	104	8.36	19	57-152
1,2-DICHLOROETHANE	50	48	96	54	108	12.7	26	59-151
2-BUTANONE	50	45	91	48	97	6.78	29	42-173
1,1,1-TRICHLOROETHANE	50	46	92	50	102	9.53	51	38-179
CARBON TETRACHLORIDE	50	45	91	50	100	9.18	49	37-182
VINYL ACETATE	50	130	258*	110	218*	16.9	60	22-122
BROMODICHLOROMETHANE	50	46	92	54	108	16.2	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	43	86	58	116	30.0	95	14-157
1,2-DICHLOROPROPANE	50	45	90	52	104	14.2	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	44	88	51	102	15.4	42	10-164
TRICHLOROETHENE	50	45	90	48	97	7.46	38	67-149
DIBROMOCHLOROMETHANE	50	43	86	52	106	20.7	21	43-157
1,1,2-TRICHLOROETHANE	50	42	85	51	102	18.6	31	40-179
BENZENE	50	45	91	51	103	11.9	46	70-134
CIS-1,3-DICHLOROPROPENE	50	43	87	52	105	19.2	33	34-199
2-CHLOROETHYL VINYL ETHE	50	39	79	55	110	33.3	61	73-156
BROMOFORM	50	42	86	56	112	26.8	52	34-151
2-HEXANONE	50	42	85	55	111	25.9	97	27-176
4-METHYL-2-PENTANONE	50	42	86	54	109	24.2	62	23-208
TETRACHLOROETHENE	50	46	93	48	97	4.45	24	61-141
TOLUENE	50	44	88	47	95	7.46	15	75-140
CHLOROBENZENE	50	45	90	48	96	6.79	14	72-135
ETHYLBENZENE	50	46	92	50	100	7.95	17	55-147
STYRENE	50	47	95	49	99	4.28	27	64-147
XYLENE (TOTAL)	150	140	94	150	99	4.79	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	100	88-110
BROMOFLUOROBENZENE	104	102	86-115
1,2-DICHLOROETHANE-D4	105	105	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931104B
INST. BATCH: 2478
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : R931104B
LOCATION:

ANALYZED : 11/04/93 12:12
DILUTION : 1
%MOISTURE: 0.00
LEVEL : MED

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	98%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : R931104A
INST. BATCH: 2478
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/04/93 12:37
ANALYZED : 11/04/93 13:01

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	66	132	62	124	5.92	28	32-161
BROMOMETHANE	50	55	111	51	103	7.37	23	50-191
VINYL CHLORIDE	50	48	97	45	91	6.49	25	65-167
CHLOROETHANE	50	53	106	48	96	9.23	28	32-212
METHYLENE CHLORIDE	50	51	102	49	99	3.03	43	52-168
ACETONE	50	48	97	50	100	3.1	50	53-146
CARBON DISULFIDE	50	50	100	48	96	4.19	31	50-162
1,1-DICHLOROETHENE	50	51	103	50	100	3.78	32	54-161
1,1-DICHLOROETHANE	50	52	104	48	98	6.36	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	110	107	100	102	4.95	35	74-162
CHLOROFORM	50	51	103	48	97	6.1	19	57-152
1,2-DICHLOROETHANE	50	51	102	48	98	4.51	26	59-151
2-BUTANONE	50	52	106	51	102	3.6	29	42-173
1,1,1-TRICHLOROETHANE	50	50	101	48	96	5.17	51	38-179
CARBON TETRACHLORIDE	50	49	99	48	96	3.47	49	37-182
VINYL ACETATE	50	72	144*	60	120	17.9	60	22-122
BROMODICHLOROMETHANE	50	52	105	50	101	3.45	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	55	110	49	99	10.8	95	14-157
1,2-DICHLOROPROPANE	50	51	103	49	99	4.55	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	52	106	50	100	5.89	42	10-164
TRICHLOROETHENE	50	48	96	50	102	5.76	38	67-149
DIBROMOCHLOROMETHANE	50	51	102	49	99	3.27	21	43-157
1,1,2-TRICHLOROETHANE	50	51	103	50	100	2.6	31	40-179
BENZENE	50	50	101	49	98	3.05	46	70-134
CIS-1,3-DICHLOROPROPENE	50	51	102	49	98	4.39	33	34-199
BROMOFORM	50	51	103	51	103	< 1	52	34-151
2-HEXANONE	50	54	109	51	103	5.2	97	27-176
4-METHYL-2-PENTANONE	50	55	110	58	116	5.46	62	23-208
TETRACHLOROETHENE	50	51	102	48	97	5.66	24	61-141
TOLUENE	50	49	99	47	94	5.63	15	75-140
CHLOROBENZENE	50	50	100	47	94	6.08	14	72-135
ETHYLBENZENE	50	50	100	48	96	4.12	17	55-147
STYRENE	50	52	104	49	99	4.9	27	64-147
XYLENE (TOTAL)	150	160	110	160	104	5.42	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	96	81-117
BROMOFLUOROBENZENE	99	96	74-121
1,2-DICHLOROETHANE-D4	98	97	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931105A
INST. BATCH: 13728
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931105A
LOCATION:

ANALYZED : 11/05/93 10:24
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 102%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 100%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
N.A. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931105A
INST. BATCH: 13728
REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/05/93 11:03
ANALYZED : 11/05/93 11:29

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
CHLOROMETHANE	50	65	130	70	140	7.57	28	32-161
BROMOMETHANE	50	55	110	59	118	7.37	23	50-191
VINYL CHLORIDE	50	50	100	52	105	4.98	25	65-167
CHLOROETHANE	50	62	125	63	127	1.83	28	32-212
METHYLENE CHLORIDE	50	51	103	52	104	< 1	43	52-168
ACETONE	50	38	77	46	93	18.9	50	53-146
CARBON DISULFIDE	50	51	103	51	103	< 1	31	50-162
1,1-DICHLOROETHENE	50	54	109	53	106	2.37	32	54-161
1,1-DICHLOROETHANE	50	55	111	55	111	< 1	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	120	117	110	114	2.2	35	74-162
CHLOROFORM	50	54	108	54	108	< 1	19	57-152
1,2-DICHLOROETHANE	50	50	101	53	106	4.89	26	59-151
2-BUTANONE	50	44	89	48	96	8.14	29	42-173
1,1,1-TRICHLOROETHANE	50	52	105	52	105	< 1	51	38-179
CARBON TETRACHLORIDE	50	52	104	53	107	3.3	49	37-182
VINYL ACETATE	50	78	156*	56	113	32.0	60	22-122
BROMODICHLOROMETHANE	50	49	98	54	108	9.11	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	39	78	49	98	22.2	95	14-157
1,2-DICHLOROPROPANE	50	49	98	51	103	5	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	47	94	50	100	5.5	42	10-164
TRICHLOROETHENE	50	54	108	52	104	3.83	38	67-149
DIBROMOCHLOROMETHANE	50	47	94	52	104	9.09	21	43-157
1,1,2-TRICHLOROETHANE	50	46	94	49	99	6.04	31	40-179
BENZENE	50	51	103	51	102	< 1	46	70-134
CIS-1,3-DICHLOROPROPENE	50	48	96	52	104	8.2	33	34-199
2-CHLOROETHYL VINYL ETHE	50	35	71*	44	90	23.9	61	73-156
BROMOFORM	50	43	86	50	101	16.1	52	34-151
2-HEXANONE	50	37	74	44	88	16.4	97	27-176
4-METHYL-2-PENTANONE	50	41	83	48	96	14.5	62	23-208
TETRACHLOROETHENE	50	52	105	51	103	1.24	24	61-141
TOLUENE	50	49	98	49	99	< 1	15	75-140
CHLOROBENZENE	50	51	102	51	102	< 1	14	72-135
ETHYLBENZENE	50	50	101	50	101	< 1	17	55-147
STYRENE	50	51	103	51	103	< 1	27	64-147
XYLENE (TOTAL)	150	160	105	160	104	< 1	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	104	88-110
BROMOFLUOROBENZENE	102	102	86-115
1,2-DICHLOROETHANE-D4	102	107	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SDG: 16111

MATRIX : SOIL

SAMPLE	: 16144.03	QAQC: K931102B	ANALYZED : 11/02/93 13:35
SPIKE SAMPLE	: 16144.05	QAQC: K931102B	ANALYZED : 11/02/93 14:22
SPIKE DUP SAMPLE	: 16144.06	QAQC: K931102B	ANALYZED : 11/02/93 14:44

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	54		46	86	42	78	10.4	22	59-172
TRICHLOROETHENE	54		57	106	59	110	3.99	24	62-137
BENZENE	54		48	89	49	91	2.72	21	66-142
TOLUENE	54		55	102	54	100	1.27	21	59-139
CHLOROBENZENE	54		57	106	57	107	< 1	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	107	104	101	81-117
BROMOFLUOROBENZENE	101	102	101	74-121
1,2-DICHLOROETHANE-D4	88	92	86	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 11/22/93

PROJECT : TINKER AFB RFI
SDG: 16111

MATRIX : SOIL

SAMPLE : 16144.13	QAQC: K931102B	ANALYZED :	11/02/93 17:49
SPIKE SAMPLE : 16144.14	QAQC: K931102B	ANALYZED :	11/02/93 18:11
SPIKE DUP SAMPLE: 16144.15	QAQC: K931102B	ANALYZED :	11/02/93 18:35

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	%RPD	MAX %RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	55		43	79	39	72	10.3	22	59-172
TRICHLOROETHENE	55		59	108	57	105	3.09	24	62-137
BENZENE	55		47	86	46	84	2.52	21	66-142
TOLUENE	55		55	101	49	90	11.0	21	59-139
CHLOROBENZENE	55		58	107	55	102	4.8	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	105	102	100	81-
BROMOFLUOROBENZENE	99	101	100	74-
1,2-DICHLOROETHANE-D4	86	86	86	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111

DATE: 11/19/93

SWLO QAQC#: 931028-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK6111 LB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	39.5	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111

DATE: 11/19/93

SWLO QAQC#: 931028-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK6111 LB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/28/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	68%
TERPHENYL-D14	(18-137)	103%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	71%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16111Ba

DATE: 12-01-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 10-28-93
DATE ANALYZED : 11-10-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6666.66	4285.43	64.28	26 - 90
2-CHLOROPHENOL	6666.66	4921.64	73.82	25 - 102
1,4-DICHLOROBENZENE	3333.33	2367.20	71.02	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2567.17	77.02	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	2421.72	72.65	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	4748.49	71.23	26 - 103
ACENAPHTHENE	3333.33	3257.12	97.71	31 - 137
4-NITROPHENOL	6666.66	4374.27	65.61	11 - 114
2,4-DINITROTOLUENE	3333.33	2690.60	80.72	28 - 89
PENTACHLOROPHENOL	6666.66	2271.22	34.07	17 - 109
PYRENE	3333.33	2601.16	78.03	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	6666.66	4369.65	2	65.54	26 - 90
2-CHLOROPHENOL	6666.66	4681.37	5	70.22	25 - 102
1,4-DICHLOROBENZENE	3333.33	2300.52	3	69.02	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2322.82	10	69.68	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	2299.77	5	68.99	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	4825.02	2	72.38	26 - 103
ACENAPHTHENE	3333.33	3114.73	4	93.44	31 - 137
4-NITROPHENOL	6666.66	4535.99	4	68.04	11 - 114
2,4-DINITROTOLUENE	3333.33	2980.41	10	89.41*	28 - 89
PENTACHLOROPHENOL	6666.66	2873.20	23	43.10	17 - 109
PYRENE	3333.33	2711.89	4	81.36	35 - 142

QA/QC SURROGATE RECOVERIES

			LCS				
NITROBENZENE-d5	(23-120) 81%	2-FLUOROBIPHENYL	(30-115)	68%	TERPHENYL-d14	(18-137)	77%
PHENOL-d5	(24-113) 72%	2-FLUOROPHENOL	(25-121)	69%	2,4,6-TRIBROMOPHENOL	(19-122)	57%
			LCSD				
NITROBENZENE-d5	(23-120) 81%	2-FLUOROBIPHENYL	(30-115)	71%	TERPHENYL-d14	(18-137)	82%
PHENOL-d5	(24-113) 65%	2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	58%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111

DATE: 11/19/93

SWLO QAQC#: 931029-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK6144 LB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	75.8	J
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111

DATE: 11/19/93

SWLO QAQC#: 931029-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK6144 LB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 10/29/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	84%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	94%	PHENOL-D5	(24-113)	78%
2-FLUOROPHENOL	(25-121)	75%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111

DATE: 11/19/93

SWLO QAQC#: 931102-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK6168 LB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16111

DATE: 11/19/93

SWLO QAQC#: 931102-001
PROJECT : TINKER AFB RFI
SAMPLE #: BNA BLANK6168 LB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	70%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	99%	PHENOL-D5	(24-113)	63%
-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16144Bb

DATE: 12-02-93

SAMPLE MATRIX: SOIL
SWLO # 16144.05/16144.06
METHOD REFERENCE: SW846-8270
SAMPLE ID: S32.1SB1 (MS/MSD)

DATE EXTRACTED: 10-29-93
DATE ANALYZED : 11-11-93

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	7246.37	5291.23	73.02	26 - 90
2-CHLOROPHENOL	7246.37	5786.97	79.86	25 - 102
1,4-DICHLOROBENZENE	3623.18	2639.51	72.85	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3623.18	3305.04	91.22	41 - 126
1,2,4-TRICHLOROBENZENE	3623.18	2498.56	68.96	38 - 107
4-CHLORO-3-METHYLPHENOL	7246.37	4770.79	65.84	26 - 103
ACENAPHTHENE	3623.18	3156.55	87.12	31 - 137
4-NITROPHENOL	7246.37	5073.35	70.01	11 - 114
2,4-DINITROTOLUENE	3623.18	2883.90	79.60	28 - 89
PENTACHLOROPHENOL	7246.37	4050.53	55.90	17 - 109
PYRENE	3623.18	3077.98	84.95	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	7246.37	5650.14	4	77.97	26 - 90
2-CHLOROPHENOL	7246.37	5813.00	1	80.22	25 - 102
1,4-DICHLOROBENZENE	3623.18	2673.58	1	73.79	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3623.18	3110.27	4	85.84	41 - 126
1,2,4-TRICHLOROBENZENE	3623.18	2541.44	2	70.14	38 - 107
4-CHLORO-3-METHYLPHENOL	7246.37	4723.84	5	65.19	26 - 103
ACENAPHTHENE	3623.18	3156.11	1	87.11	31 - 137
4-NITROPHENOL	7246.37	4045.77	6	55.83	11 - 114
2,4-DINITROTOLUENE	3623.18	2538.66	9	70.07	28 - 89
PENTACHLOROPHENOL	7246.37	4428.93	2	61.12	17 - 109
PYRENE	3623.18	3145.01	2	86.80	35 - 142

QA/QC SURROGATE RECOVERIES

			MS				
NITROBENZENE-d5	(23-120) 79%	2-FLUOROBIPHENYL	(30-115)	85%	TERPHENYL-d14	(18-137)	101%
PHENOL-d5	(24-113) 72%	2-FLUOROPHENOL	(25-121)	84%	2,4,6-TRIBROMOPHENOL	(19-122)	76%
			MSD				
NITROBENZENE-d5	(23-120) 80%	2-FLUOROBIPHENYL	(30-115)	82%	TERPHENYL-d14	(18-137)	99%
PHENOL-d5	(24-113) 71%	2-FLUOROPHENOL	(25-121)	82%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE

SDG: 16111ad
REPORT DATE: 11-29-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
TOTAL CN	11/02/93	110193CN	0.5	mg/Kg	< 0.5
ARSENIC	11/08/93	110593I2	1.0	mg/Kg	< 1.0
LEAD	11/08/93	110593I2	0.3	mg/Kg	< 0.3
SELENIUM	11/08/93	110593I2	0.5	mg/Kg	< 0.5
BARIUM	11/06/93	110593I2	0.50	mg/Kg	< 0.50
CADMIUM	11/06/93	110593I2	0.30	mg/Kg	< 0.30
CHROMIUM	11/06/93	110593I2	0.50	mg/Kg	< 0.50
NICKEL	11/06/93	110593I2	1.0	mg/Kg	< 1.0
ZINC	11/06/93	110593I2	1.5	mg/Kg	< 1.5
MERCURY	11/03/93	110393HG01	0.1	mg/Kg	< 0.1
SILVER	11/11/93	110593F2	0.1	mg/Kg	< 0.1
TOTAL CN	11/04/93	110393CN	0.5	mg/Kg	< 0.5
SILVER	11/11/93	110393F5	0.1	mg/Kg	< 0.1
ARSENIC	11/04/93	110393I5	1.0	mg/Kg	< 1.0
LEAD	11/04/93	110393I5	0.3	mg/Kg	< 0.3
SELENIUM	11/04/93	110393I5	0.5	mg/Kg	< 0.5
BARIUM	11/08/93	110393I5	0.50	mg/Kg	< 0.50
CADMIUM	11/08/93	110393I5	0.30	mg/Kg	< 0.30
CHROMIUM	11/08/93	110393I5	0.50	mg/Kg	< 0.50
NICKEL	11/08/93	110393I5	1.0	mg/Kg	< 1.0
ZINC	11/08/93	110393I5	1.5	mg/Kg	< 1.5
MERCURY	11/01/93	110193HG02	0.1	mg/Kg	< 0.1
TOTAL CN	11/02/93	110293CN	0.5	mg/Kg	< 0.5

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CLIENT: ENGINEERING-SCIENCE

SDG: 16111bd
REPORT DATE: 11-29-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
TOTAL CN	11/02/93	5.6	6.155	110	80-120
ARSENIC	11/08/93	200	189	95	80-120
LEAD	11/08/93	50	43.1	86	80-120
SELENIUM	11/08/93	200	191.3	96	80-120
BARIUM	11/06/93	200	189	95	80-120
CADMIUM	11/06/93	5.0	4.5	90	80-120
CHROMIUM	11/06/93	20.0	19.2	96	80-120
NICKEL	11/06/93	50.0	46.2	92	80-120
ZINC	11/06/93	50.0	45.4	91	80-120
MERCURY	11/03/93	2.45	2.67	109	80-120
SILVER	11/11/93	5.00	4.57	91	80-120
TOTAL CN	11/04/93	5.0	4.715	94	80-120
SILVER	11/11/93	5.00	4.27	85	80-120
ARSENIC	11/04/93	200	210.8	105	80-120
LEAD	11/04/93	50	48.7	97	80-120
SELENIUM	11/04/93	200	220.5	110	80-120
BARIUM	11/08/93	200	200	100	80-120
CADMIUM	11/08/93	5.0	4.9	98	80-120
CHROMIUM	11/08/93	20.0	20.1	100	80-120
NICKEL	11/08/93	50.0	50.9	102	80-120
ZINC	11/08/93	50.0	49.1	98	80-120
MERCURY	11/01/93	2.45	2.46	101	80-120
TOTAL CN	11/03/93	5.6	5.92	106	80-120

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CLIENT: ENGINEERING SCIENCE

SDG: 16111dd
REPORT DATE: 11-29-93

MATRIX: **SOIL**
SAMPLE ID: **S32.2SB2 SD1 12.5-15**
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
SILVER	4.91	4.80	2.3	20
ARSENIC	211	211	0	20
LEAD	50.3	50.0	0.6	20
SELENIUM	217	218	0.5	20
BARIUM	233	236	1.3	20
CADMIUM	5.35	4.91	8.6	20
CHROMIUM	23.5	22.6	3.9	20
NICKEL	55.7	55.7	0	20
ZINC	54.0	54.0	0	20
MERCURY	0.786	0.830	5.5	20
SPIKE DUPLICATE	**S32.1SB1SD114.4-15.5**			
SILVER	4.87	4.66	4.4	20
ARSENIC	195	202	3.5	20
LEAD	48.5	50.7	4.4	20
SELENIUM	192	201	4.6	20
BARIUM	254	268	5.4	20
CADMIUM	4.87	4.98	2.2	20
CHROMIUM	20.8	22.2	6.5	20
NICKEL	53.4	56.0	4.8	20
ZINC	52.2	54.4	4.1	20
SPIKE DUPLICATE	**S32.1SB1 N1 5-5.5**			
MERCURY	0.562	0.562	0	20
TOTAL CN	5.55	5.53	0.4	20

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CLIENT: ENGINEERING SCIENCE

SDG: 16111cd
REPORT DATE: 11-29-93

MATRIX: **SOIL**
SAMPLE ID: **S32.2SB2 MS1**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
SILVER	11/11/93	< 0.109	5.46	4.91	90	75-125
ARSENIC	11/04/93	< 1.09	218	211	97	75-125
LEAD	11/04/93	< 0.328	54.6	50.3	92	75-125
SELENIUM	11/04/93	< 0.546	218	217	100	75-125
BARIUM	11/08/93	27.4	218	233	94	75-125
CADMIUM	11/08/93	< 0.328	5.46	5.35	98	75-125
CHROMIUM	11/08/93	4.37	21.8	23.5	88	75-125
NICKEL	11/08/93	3.71	54.6	55.7	95	75-125
ZINC	11/08/93	3.6	54.6	54.0	92	75-125
MERCURY	11/1/93	< 0.109	0.546	0.786	144*	75-125
MATRIX SPIKE	**S32.1SB1MS1 14.5-15.5**					
SILVER	11/11/93	< 0.109	5.41	4.87	90	75-125
ARSENIC	11/04/93	< 1.09	217	195	90	75-125
LEAD	11/04/93	3.28	54.1	48.5	84	75-125
SELENIUM	11/04/93	< 0.547	217	192	88	75-125
BARIUM	11/08/93	72.4	217	254	84	75-125
CADMIUM	11/08/93	< 0.328	5.41	4.87	90	75-125
CHROMIUM	11/08/93	7.76	21.7	20.8	60*	75-125
NICKEL	11/08/93	5.9	54.1	53.4	88	75-125
ZINC	11/08/93	7.11	54.1	52.2	83	75-125
MATRIX SPIKE	**S32.1SB1 N1 5-5.5**					
MERCURY	11/01/93	< 0.112	0.562	0.562	100	75-125
TOTAL CN	11/03/93	< 0.563	5.62	5.55	99	75-125

*OUTSIDE QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16144Ba

DATE: 11-18-93

SAMPLE MATRIX: SOIL
SWLO # 16144.14/16144.15
METHOD REFERENCE: SW846-8270
SAMPLE ID: S32.2SB2 (MS/MSD)

DATE EXTRACTED: 10-29-93
DATE ANALYZED : 11-11-93

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	7246.37	5401.56	74.54	26 - 90
2-CHLOROPHENOL	7246.37	5549.31	76.58	25 - 102
1,4-DICHLOROBENZENE	3623.18	2445.44	67.49	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3623.18	2695.17	74.39	41 - 126
1,2,4-TRICHLOROBENZENE	3623.18	2618.12	72.26	38 - 107
4-CHLORO-3-METHYLPHENOL	7246.37	4832.84	66.69	26 - 103
ACENAPHTHENE	3623.18	3210.62	88.61	31 - 137
4-NITROPHENOL	7246.37	4619.03	63.74	11 - 114
2,4-DINITROTOLUENE	3623.18	2458.63	67.86	28 - 89
PENTACHLOROPHENOL	7246.37	4258.75	58.77	17 - 109
PYRENE	3623.18	3115.18	85.98	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	7246.37	5406.73	1	74.61	26 - 90
2-CHLOROPHENOL	7246.37	5741.04	4	79.23	25 - 102
1,4-DICHLOROBENZENE	3623.18	2498.24	3	68.95	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3623.18	2837.65	5	78.32	41 - 126
1,2,4-TRICHLOROBENZENE	3623.18	2620.92	0	72.34	38 - 107
4-CHLORO-3-METHYLPHENOL	7246.37	4889.97	0	67.48	26 - 103
ACENAPHTHENE	3623.18	3303.55	2	91.48	31 - 137
4-NITROPHENOL	7246.37	4699.48	2	64.85	11 - 114
2,4-DINITROTOLUENE	3623.18	2491.08	1	68.75	28 - 89
PENTACHLOROPHENOL	7246.37	4382.38	2	60.48	17 - 109
PYRENE	3623.18	3116.74	0	86.02	35 - 142

QA/QC SURROGATE RECOVERIES

			MS				
NITROBENZENE-d5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	85%	TERPHENYL-d14	(18-137) 101%
PHENOL-d5	(24-113)	67%	2-FLUOROPHENOL	(25-121)	74%	2,4,6-TRIBROMOPHENOL	(19-122) 84%
			MSD				
NITROBENZENE-d5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	89%	TERPHENYL-d14	(18-137) 105%
PHENOL-d5	(24-113)	70%	2-FLUOROPHENOL	(25-121)	79%	2,4,6-TRIBROMOPHENOL	(19-122) 81%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

PAGE 1 OF

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS

Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8010145500

SAMPLER(S): M. HARDER R. NELSON

(Signature) [signature] [signature]

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (8240)	Semi VOA (8270)	Metals (6010)	CN (9010)								Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/2/93	-	FIELDQC		TB1	WQ	NA	0	0	2	X											0	0	1	A	
	0930	I24.8SB3		N1	SO	H	6	7	3	X	X	X	X								0	0	1	A	
	1130	↓		N1	SO	H	17	18	3	X	X	X	X								0	0	1	A	
	1520	I24.10SB4		N1	SO	H	9	10	3	X	X	X	X								0	0	1	A	
	1620	↓		N1	SO	H	13.5	14	3	X	X	X	X								0	0	1	A	
	0940	S32.8SB14		N1	SO	H	9.5	11.5	3	X	X	X	X								0	0	1	A	
	0940	↓		FR1	SO	H	9.5	11.5	3	X	X	X	X								0	0	1	A	
	1020	↓		N1	SO	H	16.5	18	3	X	X	X	X								0	0	1	A	
	1230	S32.8SB13		N1	SO	H	13	14.5	3	X	X	X	X								0	0	1	A	
	1250	↓		N1	SO	H	16	18	3	X	X	X	X								0	0	1	A	
	1250	↓		MS1	SO	H	16	18	3	X	X	X	X								0	0	1	A	
	1250	↓		SD1	SO	H	16	18	2	X	X	X	X								0	0	1	A	only one VOA bottle for SO1

CS

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) [signature]	11/02/93	1700	(Signature)			(Signature)		
Received by:	Date	Time	Received by:	Date	Time	Received by:	Date	Time
(Signature)			(Signature)			(Signature) [signature]	11/3/93	0845

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

chaino.dwg

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS **ES**

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS
Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8010145500

SAMPLER(S): M. HARDER R. NELSON

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	PRESERVATIVE	ANALYSIS REQUIRED: VOA (8240)	ANALYSIS REQUIRED: semi VOA (8270)	ANALYSIS REQUIRED: Metals (6010)	ANALYSIS REQUIRED: CN (9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
11/2/93	1540	S32.8SB12		N1	SO	H	10	11.5	3		X	X	X	X						
	1615	↓		N1	SO	H	17	18	3		X	X	X	X						
															0	0	1	A		
															0	0	1	A		

NOTE: In the IRPIMS database for 27 Oct 93, S32.2SB2 was incorrectly entered as S32.3SB2. Please make the appropriate changes. -CS

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	11/02/93	1700			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
			K Kallis	11/3/93	0845

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

coino.dwg

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

METHODOLOGY

SM	=	Standard Methods, 16th Edition, 1985
EPA	=	#EPA600/4-79-020, March 1985
SW	=	EPA Methodology, "#SW846", 3rd Edition, November, 1986

GENERAL QUALIFIER FLAGS

- B - Analyte is detected in blank as well as sample.
- J - Estimated value: concentration is below limit of quantitation
- T - Trace Amount
- U - Not detected above quantitation limit
- > - Concentration greater than value reported
- E - Compound exceeds calibration range
- D - Sample dilution run or surrogates diluted out sample run at secondary dilution
- I - Not quantifiable due to matrix interference
- * - Surrogate outside of QC limits on both original and re-analysis

TEST SPECIFIC FOOTNOTES

TPH 8015

- 1 - Analysis shows miscellaneous peaks which cannot be identified as any specific pattern. Response factor for nearest eluting hydrocarbon standard was used to calculate concentration. Numbers indicate the approximate carbon chain length.
- 2 - Pattern is similar to, but not identical to standard.
- 3 - May be a weathered gasoline.

APPENDIX IX SEMIVOLATILES

- 1 - Detected as Diphenylamine
- 2 - Coelute on GC Column

ORGANOPHOSPHORUS PESTICIDES

- 1 - No detection limit established, value given is at the quantitation limit

TCLP SEMIVOLATILES

- 1 - 2-Methyl Phenol
- 2 - Compounds Co-elute (3&4-Methylphenol)
- 3 - Combination of O,M, & P Cresols

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.01

DATE: 12/03/93

SWLO #: 16176.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	55	B	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	110		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	4.2	J
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	106%	BROMOFLUOROBENZENE	(74-121) 106%
1,2-DICHLOROETHANE-D4	(70-121)	106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.01

DATE: 12/03/93

SWLO #: 16176.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.01

DATE: 12/03/93

SWLO #: 16176.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	69%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	50%	2,4,6-TRIBROMOPHENOL	(19-122)	89%

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DATE: 12/03/93

SWLO #: 16176.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.11	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.2		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	199		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.33	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	23.1		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	4.4		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	11.1		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.55		mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	14.4		mg/kg	11/05/93	11/06/93	SW846-6010

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SAMPLE #: S32.8SB2
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 0.00
DEPTH TO : 2.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.55	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.02

DATE: 12/03/93

SWLO #: 16176.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 12.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	56	B	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	100		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	4.5	J
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 105%
,2-DICHLOROETHANE-D4	(70-121) 105%		

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PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 12.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 12.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	71%	2-FLUOROBIPHENYL	(30-115)	71%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	76%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16176.02

DATE: 12/03/93

SWLO #: 16176.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 12.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.115	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.115	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.65		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	66		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.346	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	7.61		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.73		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	5.19		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.576	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	6.34		mg/kg	11/05/93	11/06/93	SW846-6010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16176.02

DATE: 12/03/93

SWLO #: 16176.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 12.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.576	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.03

DATE: 12/03/93

SWLO #: 16176.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 15.00
DATE PREPARED : / /
DILUTION FACTOR: 1.19

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	56	B	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	88		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	4.6	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16176.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 15.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 15.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	78%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	86%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.03

DATE: 12/03/93

SWLO #: 16176.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 15.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.119	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.119	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.19		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	17.4		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.357	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	11		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	0.953		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	2.74		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.595	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.45		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.03

DATE: 12/03/93

SWLO #: 16176.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB2
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 15.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.595	U	mg/kg	/ /	11/04/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.04

DATE: 12/03/93

SWLO #: 16176.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	50	B	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	58		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	4.2	J
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 103%	BROMOFLUOROBENZENE	(74-121) 104%
1,2-DICHLOROETHANE-D4	(70-121) 103%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.04

DATE: 12/03/93

SWLO #: 16176.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	110	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.04

DATE: 12/03/93

SWLO #: 16176.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	63%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	74%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	52%	2,4,6-TRIBROMOPHENOL	(19-122)	79%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16176.04

DATE: 12/03/93

SWLO #: 16176.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.112	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.23		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	152		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.402	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	8.83		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	3.24		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	7.49		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.559	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	50		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.04

DATE: 12/03/93

SWLO #: 16176.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 8.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.559	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.05

DATE: 12/03/93

SWLO #: 16176.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	54	B	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	300	E	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	1.8	J
1,2-DICHLOROETHANE	6	U	TOLUENE	4.6	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	104%	BROMOFLUOROBENZENE	(74-121) 103%
1,2-DICHLOROETHANE-D4	(70-121)	103%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.05

DATE: 12/03/93

SWLO #: 16176.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.05

DATE: 12/07/93

SWLO #: 16176.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	54	B	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	300	E	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	1.8	J
1,2-DICHLOROETHANE	6	U	TOLUENE	4.6	J
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 103%
1,2-DICHLOROETHANE-D4	(70-121) 103%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16176.05

DATE: 12/03/93

SWLO #: 16176.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.12	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.12	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.56		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	30.1		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.36	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	22.4		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.32		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	4.2		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.6		mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	6.12		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.05

DATE: 12/03/93

SWLO #: 16176.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB3
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : SO
DEPTH FROM : 12.50
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.6	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.06

DATE: 12/03/93

SWLO #: 16176.06 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	240	E	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	4.3	J	TETRACHLOROETHENE	1.6	J
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 99%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114) 100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.06

DATE: 12/03/93

SWLO #: 16176.06 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/01/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.06

DATE: 12/03/93

SWLO #: 16176.06 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/01/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	62%	2-FLUOROBIPHENYL	(43-116)	53%
TERPHENYL-D14	(33-141)	85%	PHENOL-D5	(10- 94)	55%
2-FLUOROPHENOL	(21-100)	51%	2,4,6-TRIBROMOPHENOL	(10-123)	70%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.06

DATE: 12/03/93

SWLO #: 16176.06 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.2	U	ug/l	11/04/93	11/04/93	SW846-7470
SILVER	1	U	ug/l	11/04/93	11/12/93	SW846-7761
ARSENIC	10	U	ug/l	11/04/93	11/04/93	SW846-6010
BARIUM	5	U	ug/l	11/04/93	11/05/93	SW846-6010
CADMIUM	3	U	ug/l	11/04/93	11/05/93	SW846-6010
CHROMIUM	5	U	ug/l	11/04/93	11/05/93	SW846-6010
LEAD	3	U	ug/l	11/04/93	11/04/93	SW846-6010
NICKEL	10	U	ug/l	11/04/93	11/05/93	SW846-6010
SELENIUM	5	U	ug/l	11/04/93	11/04/93	SW846-6010
ZINC	15	U	ug/l	11/04/93	11/05/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.06

DATE: 12/03/93

SWLO #: 16176.06 EB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	10	U	ug/l	/ /	11/02/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176.07

DATE: 12/03/93

SWLO #: 16176.07 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 10/29/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	260	E	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 102%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114) 102%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.01

DATE: 12/03/93

SWLO #: 16195.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	38		CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	55		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	109%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.01

DATE: 12/03/93

SWLO #: 16195.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	88	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.01

DATE: 12/03/93

SWLO #: 16195.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	55%	2,4,6-TRIBROMOPHENOL	(19-122)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.01

DATE: 12/03/93

SWLO #: 16195.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.118	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.66		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	30.5		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.355	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	5.09		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.54		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.08		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.592	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	4.02		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.01

DATE: 12/03/93

SWLO #: 16195.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.592	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.02

DATE: 12/03/93

SWLO #: 16195.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	30		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	24		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	86%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	100%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
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REPORT: 16195.02

DATE: 12/03/93

SWLO #: 16195.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	47	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.02

DATE: 12/03/93

SWLO #: 16195.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	84%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	52%	2,4,6-TRIBROMOPHENOL	(19-122)	88%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.02

DATE: 12/03/93

SWLO #: 16195.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.112	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.12	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	23.1		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.337	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	4.82		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	0.561		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.7		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.561	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.37		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.02

DATE: 12/03/93

SWLO #: 16195.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 14.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.561	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.03

DATE: 12/03/93

SWLO #: 16195.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 11.00
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	27		CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	37		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	5.3	U
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	93%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.03

DATE: 12/03/93

SWLO #: 16195.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 11.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16195.03

DATE: 12/03/93

SWLO #: 16195.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 11.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	60%
2-FLUOROPHENOL	(25-121)	57%	2,4,6-TRIBROMOPHENOL	(19-122)	89%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.03

DATE: 12/03/93

SWLO #: 16195.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 11.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.107	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.88		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	91.4		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.321	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	6.3		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.6		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	8.87		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.534	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	9.51		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.03

DATE: 12/03/93

SWLO #: 16195.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB17
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 11.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.534	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.04

DATE: 12/03/93

SWLO #: 16195.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.00
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
METHYLENE CHLORIDE	22		CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	23		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	5.3	U
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.04

DATE: 12/03/93

SWLO #: 16195.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	82%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.8SB15
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107	U	mg/kg	11/05/93	11/05/93	SW846-7471
SILVER	0.107	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.5		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	77.3		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.491		mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	107		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	6.52		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	285		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.534	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	8.22		mg/kg	11/05/93	11/06/93	SW846-6010

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LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.534	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.05

DATE: 12/03/93

SWLO #: 16195.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 5.58

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	56	U	TRICHLOROETHENE	28	U
BROMOMETHANE	56	U	DIBROMOCHLOROMETHANE	28	U
VINYL CHLORIDE	56	U	1,1,2-TRICHLOROETHANE	28	U
CHLOROETHANE	56	U	BENZENE	28	U
METHYLENE CHLORIDE	28	U	CIS-1,3-DICHLOROPROPENE	28	U
ACETONE	1100		2-CHLOROETHYL VINYL ETHER	56	U
CARBON DISULFIDE	28	U	BROMOFORM	28	U
1,1-DICHLOROETHENE	28	U	2-HEXANONE	56	U
1,1-DICHLOROETHANE	28	U	4-METHYL-2-PENTANONE	56	U
CHLOROFORM	28	U	TETRACHLOROETHENE	28	U
1,2-DICHLOROETHANE	28	U	TOLUENE	28	U
1,1,1-TRICHLOROETHANE	28	U	CHLOROBENZENE	28	U
CARBON TETRACHLORIDE	28	U	ETHYLBENZENE	28	U
VINYL ACETATE	56	U	STYRENE	28	U
BROMODICHLOROMETHANE	28	U	1,2-DICHLOROETHENE(TOTAL)	28	U
1,1,2,2-TETRACHLOROETHANE	28	U	XYLENE (TOTAL)	28	U
1,2-DICHLOROPROPANE	28	U	2-BUTANONE	56	U
TRANS-1,3-DICHLOROPROPENE	28	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 105%	BROMOFLUOROBENZENE	(74-121) 115%
1,2-DICHLOROETHANE-D4	(70-121) 108%		

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SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16195.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	68%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	62%
?-FLUOROPHENOL	(25-121)	52%	2,4,6-TRIBROMOPHENOL	(19-122)	93%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.8SB15
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.112	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.79		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	42.1		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.335	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	99.8		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.79		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	13.5		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.558	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	6.58		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.558	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.06

DATE: 12/03/93

SWLO #: 16195.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	4	JB	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	61		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	81%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16195.06 N1
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LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	205	J	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	41.7	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.06

DATE: 12/03/93

SWLO #: 16195.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	87%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16195.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.115	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.115	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.19		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	17.6		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.345	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	61.4		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.53		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	15.1		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.576	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.68		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16195.06 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB15
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 15.50
DEPTH TO : 17.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.576	U	mg/kg	/ /	11/04/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16195.07

DATE: 12/03/93

SWLO #: 16195.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	3.8	JB	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	56		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	101%
1,2-DICHLOROETHANE-D4	(70-121)	82%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16195.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	41.2	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

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REPORT: 16195.07

DATE: 12/03/93

SWLO #: 16195.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	77%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16195.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.111	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	4		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	111		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.334	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	11.2		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	4.78		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	11.4		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.556	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	14.9		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16195.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.556	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.08

DATE: 12/03/93

SWLO #: 16195.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:
DATE ANALYZED : 11/04/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	4.3	JB	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	43		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	85%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.08

DATE: 12/03/93

SWLO #: 16195.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	74%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	47%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.08

DATE: 12/03/93

SWLO #: 16195.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.114	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.06		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	32.5		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.343	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	4.23		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.83		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.09		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.572	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.77		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.08

DATE: 12/03/93

SWLO #: 16195.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB5
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.572	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.09

DATE: 12/03/93

SWLO #: 16195.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.4SB1
LOCATION:
DATE ANALYZED : 11/03/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 7.50
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	31		CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	30		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	84%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16195.09

DATE: 12/03/93

SWLO #: 16195.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.4SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 7.50
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.09

DATE: 12/03/93

SWLO #: 16195.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.4SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 7.50
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	76%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	49%	2,4,6-TRIBROMOPHENOL	(19-122)	66%

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REPORT: 16195.09

DATE: 12/03/93

SWLO #: 16195.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.4SB1
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 7.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.116	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	4.87		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	371		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	15.5		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	4.52		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	14.6		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.58	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	18.3		mg/kg	11/05/93	11/06/93	SW846-6010

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REPORT: 16195.09

DATE: 12/03/93

SWLO #: 16195.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.4SB1
LOCATION:

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : SO
DEPTH FROM : 7.00
DEPTH TO : 7.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.58	U	mg/kg	/ /	11/04/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16195.10

DATE: 12/03/93

SWLO #: 16195.10 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/01/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	1.5	J	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114)	102%		

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Attn: KEVIN TYNES

REPORT: 16205.01

DATE: 12/03/93

SWLO #: 16205.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.06

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.3	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.3	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.3	U
CHLOROETHANE	11	U	BENZENE	5.3	U
ETHYLENE CHLORIDE	5.3	U	CIS-1,3-DICHLOROPROPENE	5.3	U
ACETONE	22		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.3	U	BROMOFORM	5.3	U
1,1-DICHLOROETHENE	5.3	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.3	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.3	U	TETRACHLOROETHENE	5.3	U
1,2-DICHLOROETHANE	5.3	U	TOLUENE	5.3	U
1,1,1-TRICHLOROETHANE	5.3	U	CHLOROBENZENE	5.3	U
CARBON TETRACHLORIDE	5.3	U	ETHYLBENZENE	5.3	U
VINYL ACETATE	11	U	STYRENE	5.3	U
BROMODICHLOROMETHANE	5.3	U	1,2-DICHLOROETHENE(TOTAL)	5.3	U
1,1,2,2-TETRACHLOROETHANE	5.3	U	XYLENE (TOTAL)	5.3	U
1,2-DICHLOROPROPANE	5.3	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.3	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 106%	BROMOFLUOROBENZENE	(74-121) 99%
1,2-DICHLOROETHANE-D4	(70-121) 95%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16205.01

DATE: 12/03/93

SWLO #: 16205.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.01

DATE: 12/03/93

SWLO #: 16205.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	79%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16205.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.106	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.106	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.06	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	71.8		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.383		mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	2.77		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.17		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.3		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.532	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.51		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.01

DATE: 12/03/93

SWLO #: 16205.01 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.532	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.02

DATE: 12/03/93

SWLO #: 16205.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	5.9	U	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	34		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 107%	BROMOFLUOROBENZENE	(74-121) 105%
1,2-DICHLOROETHANE-D4	(70-121) 89%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.02

DATE: 12/03/93

SWLO #: 16205.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.02

DATE: 12/03/93

SWLO #: 16205.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	60%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.02

DATE: 12/03/93

SWLO #: 16205.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.118	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.36		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	41		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.354	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	9.08		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	3.66		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	2.71		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.59	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	3.89		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.02

DATE: 12/03/93

SWLO #: 16205.02 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.8SB3
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.59	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.03

DATE: 12/03/93

SWLO #: 16205.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	5.5	U	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	11		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 102%	BROMOFLUOROBENZENE	(74-121) 110%
1,2-DICHLOROETHANE-D4	(70-121) 111%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.03

DATE: 12/03/93

SWLO #: 16205.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.03

DATE: 12/03/93

SWLO #: 16205.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.03

DATE: 12/03/93

SWLO #: 16205.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.11	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.65		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	99.4		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.33	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	5.84		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.42		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	6.28		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.551	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	7.16		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.03

DATE: 12/03/93

SWLO #: 16205.03 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.00
DEPTH TO : 10.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.551	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.04

DATE: 12/03/93

SWLO #: 16205.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.50
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.04

DATE: 12/03/93

SWLO #: 16205.04 N1
PROJECT : TINKER AFB RFI
SAMPLE #: I24.10SB4
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.50
DEPTH TO : 14.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
.,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH TO : 14.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	79%
TERPHENYL-D14	(18-137)	83%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	57%	2,4,6-TRIBROMOPHENOL	(19-122)	53%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.10SB4
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.50
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.111	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.11	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	28.2		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.4	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	9.23		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	0.89		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	3.67		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.556	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	2.56		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.50
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.556	U	mg/kg	/ /	11/08/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16205.05

DATE: 12/03/93

SWLO #: 16205.05 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	43		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 103%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 86%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 9.50
DEPTH TO : 11.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	54%	2,4,6-TRIBROMOPHENOL	(19-122)	56%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.112	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.12	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	142		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.336	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	28.2		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.57		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	5.94		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.56	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	4.48		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DEPTH FROM : 9.50
DEPTH TO : 11.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.56	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.06

DATE: 12/03/93

SWLO #: 16205.06 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	31	B	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	98	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	89%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.06

DATE: 12/03/93

SWLO #: 16205.06 FR1
PROJECT : TINKER AFB RFI
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LOCATION:
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DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	62	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.06

DATE: 12/03/93

SWLO #: 16205.06 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	102%	2,4,6-TRIBROMOPHENOL	(19-122)	71%

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DATE: 12/03/93

SWLO #: 16205.06 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.114	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.14	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	127		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.344	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	26.9		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.29		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	6.76		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.573	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	5.61		mg/kg	11/05/93	11/06/93	SW846-6010

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SAMPLE #: S32.8SB14
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 9.50
DEPTH TO : 11.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.573	U	mg/kg	/ /	11/08/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.07

DATE: 12/03/93

SWLO #: 16205.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.24

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6.2	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6.2	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6.2	U
CHLOROETHANE	12	U	BENZENE	6.2	U
METHYLENE CHLORIDE	36	B	CIS-1,3-DICHLOROPROPENE	6.2	U
ACETONE	160	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6.2	U	BROMOFORM	6.2	U
1,1-DICHLOROETHENE	6.2	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6.2	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6.2	U	TETRACHLOROETHENE	6.2	U
1,2-DICHLOROETHANE	6.2	U	TOLUENE	6.2	U
1,1,1-TRICHLOROETHANE	6.2	U	CHLOROBENZENE	6.2	U
CARBON TETRACHLORIDE	6.2	U	ETHYLBENZENE	6.2	U
VINYL ACETATE	12	U	STYRENE	6.2	U
BROMODICHLOROMETHANE	6.2	U	1,2-DICHLOROETHENE(TOTAL)	6.2	U
1,1,2,2-TETRACHLOROETHANE	6.2	U	XYLENE (TOTAL)	6.2	U
1,2-DICHLOROPROPANE	6.2	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

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SAMPLE #: S32.8SB14
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16205.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	83%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	85%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	104%	2,4,6-TRIBROMOPHENOL	(19-122)	80%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.07

DATE: 12/03/93

SWLO #: 16205.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.124	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.124	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.49		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	28.1		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.373	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	16.5		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	0.871		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	6.59		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.622	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	2.86		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16205.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB14
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.622	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.08

DATE: 12/03/93

SWLO #: 16205.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.50
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	30	B	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	100	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	5.5	U
1,2-DICHLOROETHANE	5.5	U	TOLUENE	5.5	U
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	85%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.08

DATE: 12/07/93

SWLO #: 16205.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	43	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	96%	PHENOL-D5	(24-113)	71%
2-FLUOROPHENOL	(25-121)	111%	2,4,6-TRIBROMOPHENOL	(19-122)	94%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.08

DATE: 12/03/93

SWLO #: 16205.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.11	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.2		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	52.2		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.33	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	6.71		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.86		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	4.29		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.55	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	6.16		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.08

DATE: 12/03/93

SWLO #: 16205.08 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.55	U	mg/kg	/ /	11/08/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.09

DATE: 12/03/93

SWLO #: 16205.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	80		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	81%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.09

DATE: 12/03/93

SWLO #: 16205.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.09

DATE: 12/03/93

SWLO #: 16205.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	81%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	69%
2-FLUOROPHENOL	(25-121)	115%	2,4,6-TRIBROMOPHENOL	(19-122)	102%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.09

DATE: 12/03/93

SWLO #: 16205.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.116	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	3.14		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	34.8		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	12		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.67		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	4.42		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.581	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	5.93		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.09

DATE: 12/03/93

SWLO #: 16205.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.581	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.10

DATE: 12/03/93

SWLO #: 16205.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	55	
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	51	
METHYLENE CHLORIDE	5.7	U	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	75		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	53		2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	54	
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	55	
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	97%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	83%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16205.10

DATE: 12/03/93

SWLO #: 16205.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16205.10

DATE: 12/03/93

SWLO #: 16205.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	80%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	85%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	105%	2,4,6-TRIBROMOPHENOL	(19-122)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.10

DATE: 12/07/93

SWLO #: 16205.10 MS9
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4980	B	ACENAPHTHENE	3320	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5130	B	4-NITROPHENOL	6030	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2630		2,4-DINITROTOLUENE	2520	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3310		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	5150	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2810		PYRENE	2580	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	6160	EB	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.10

DATE: 12/03/93

SWLO #: 16205.10 MS9
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	82%	2-FLUOROBIPHENYL	(30-115)	80%
TERPHENYL-D14	(18-137)	73%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.10

DATE: 12/03/93

SWLO #: 16205.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.585	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	4.7	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	204	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	251	mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	4.93	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	26.7	mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	49.7	mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	54	mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	200	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	54.2	mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.10

DATE: 12/03/93

SWLO #: 16205.10 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.62	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	53	
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	50	
METHYLENE CHLORIDE	5.8	U	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	76		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	48		2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	53	
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	53	
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	83%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	73%
TERPHENYL-D14	(18-137)	93%	PHENOL-D5	(24-113)	70%
2-FLUOROPHENOL	(25-121)	111%	2,4,6-TRIBROMOPHENOL	(19-122)	94%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD9
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4750	B	ACENAPHTHENE	3390	
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	5660	B	4-NITROPHENOL	5550	
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	2750		2,4-DINITROTOLUENE	2610	
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	3650		4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	5360	B
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	2940		PYRENE	2600	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	6030	B	BIS(2-ETHYLHEXYL)PHTHALATE	43	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD9
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	84%	2-FLUOROBIPHENYL	(30-115)	81%
TERPHENYL-D14	(18-137)	71%	PHENOL-D5	(24-113)	57%
2-FLUOROPHENOL	(25-121)	67%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.599	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	4.84	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	199	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	236	mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	4.95	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	25	mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	48.5	mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	52.1	mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	195	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	51.6	mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16205.11

DATE: 12/03/93

SWLO #: 16205.11 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB13
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.41	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.12

DATE: 12/03/93

SWLO #: 16205.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:
DATE ANALYZED : 11/05/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6	U	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	44		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	94%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	87%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.12

DATE: 12/03/93

SWLO #: 16205.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
.,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	52	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.12

DATE: 12/03/93

SWLO #: 16205.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.50
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	50%
TERPHENYL-D14	(18-137)	70%	PHENOL-D5	(24-113)	50%
2-FLUOROPHENOL	(25-121)	79%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.12

DATE: 12/03/93

SWLO #: 16205.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.111	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	2.22		mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	176		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	1.56		mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	11.1		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	2.67		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	14.6		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.556	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	10.1		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.8SB12
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.556	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.13

DATE: 12/03/93

SWLO #: 16205.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	28	B	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	100	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	89%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/03/93

SWLO #: 16205.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.13

DATE: 12/03/93

SWLO #: 16205.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	78%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	64%
2-FLUOROPHENOL	(25-121)	101%	2,4,6-TRIBROMOPHENOL	(19-122)	94%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.13

DATE: 12/03/93

SWLO #: 16205.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/08/93	11/08/93	SW846-7471
SILVER	0.118	U	mg/kg	11/05/93	11/12/93	SW846-7761
ARSENIC	1.18	U	mg/kg	11/05/93	11/08/93	SW846-6010
BARIUM	45.7		mg/kg	11/05/93	11/06/93	SW846-6010
CADMIUM	0.354	U	mg/kg	11/05/93	11/06/93	SW846-6010
CHROMIUM	5.67		mg/kg	11/05/93	11/06/93	SW846-6010
LEAD	1.42		mg/kg	11/05/93	11/08/93	SW846-6010
NICKEL	6.02		mg/kg	11/05/93	11/06/93	SW846-6010
SELENIUM	0.59	U	mg/kg	11/05/93	11/08/93	SW846-6010
ZINC	4.13		mg/kg	11/05/93	11/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16205.13

DATE: 12/03/93

SWLO #: 16205.13 N1
PROJECT : TINKER AFB RFI
SAMPLE #: S32.8SB12
LOCATION:

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.59	U	mg/kg	/ /	11/08/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16205.14

DATE: 12/03/93

SWLO #: 16205.14 TB1
PROJECT : TINKER AFB RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/02/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	99%	BROMOFLUOROBENZENE	(86-115)	102%
1,2-DICHLOROETHANE-D4	(76-114)	101%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931103A
INST. BATCH: 2349
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931103A
LOCATION:

ANALYZED : 11/03/93 11:25
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	1.6	J	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
HLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
R = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
/ NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931103A
INST. BATCH: 2349
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/03/93 12:06
ANALYZED : 11/03/93 12:29

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	43	86	47	94	8.18	18	21-170
BROMOMETHANE	50	47	95	46	93	1.73	36	46-161
VINYL CHLORIDE	50	44	88	49	99	11.5	26	31-168
CHLOROETHANE	50	54	109	49	99	9.67	54	44-154
METHYLENE CHLORIDE	50	53	106	58	116	8.2	21	77-141
ACETONE	50	60	121	67	134	10.1	59	30-160
CARBON DISULFIDE	50	44	90	46	92	2.44	29	52-129
1,1-DICHLOROETHENE	50	45	90	46	92	2.5	16	60-141
1,1-DICHLOROETHANE	50	45	91	46	94	3.25	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	89	89	93	94	4.82	21	72-133
CHLOROFORM	50	44	89	46	93	3.99	17	79-129
1,2-DICHLOROETHANE	50	48	96	50	101	5.74	19	81-132
2-BUTANONE	50	54	108	58	117	8.37	91	16-130
1,1,1-TRICHLOROETHANE	50	47	94	50	100	5.71	45	66-140
CARBON TETRACHLORIDE	50	46	93	50	100	7.12	21	65-140
VINYL ACETATE	50	49	99	52	104	5.53	72	17-153
BROMODICHLOROMETHANE	50	47	95	50	101	5.91	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	54	108	59	118	8.26	78	49-127
1,2-DICHLOROPROPANE	50	48	96	50	101	5.71	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	50	100	53	106	6.22	41	48-141
TRICHLOROETHENE	50	46	93	48	97	4.54	21	71-134
DIBROMOCHLOROMETHANE	50	50	101	52	105	4.29	25	68-120
1,1,2-TRICHLOROETHANE	50	51	103	54	108	4.61	28	68-120
BENZENE	50	47	95	50	100	5.55	13	79-128
CIS-1,3-DICHLOROPROPENE	50	48	96	51	102	5.92	29	63-123
2-CHLOROETHYL VINYL ETHE	50	53	107	56	114	5.97	45	0-146
BROMOFORM	50	52	106	57	114	7.4	37	58-119
2-HEXANONE	50	57	115	65	130	12.8	60	20-181
4-METHYL-2-PENTANONE	50	55	111	64	128	14.4	54	33-163
TETRACHLOROETHENE	50	46	93	48	96	3.24	21	80-125
TOLUENE	50	47	95	48	98	2.56	11	80-122
CHLOROBENZENE	50	47	94	48	97	3.45	10	80-125
ETHYLBENZENE	50	46	92	48	98	5.68	19	82-123
STYRENE	50	46	94	49	98	4.61	13	71-129
XYLENE (TOTAL)	150	140	96	150	100	4.02	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	99	81-117
BROMOFLUOROBENZENE	101	102	74-121
1,2-DICHLOROETHANE-D4	100	103	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931105A
INST. BATCH: 13728
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931105A
LOCATION:

ANALYZED : 11/05/93 10:24
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 102%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 100%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931105A
INST. BATCH: 13728
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/05/93 11:03
ANALYZED : 11/05/93 11:29

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	65	130	70	140	7.57	28	32-161
BROMOMETHANE	50	55	110	59	118	7.37	23	50-191
VINYL CHLORIDE	50	50	100	52	105	4.98	25	65-167
CHLOROETHANE	50	62	125	63	127	1.83	28	32-212
METHYLENE CHLORIDE	50	51	103	52	104	< 1	43	52-168
ACETONE	50	38	77	46	93	18.9	50	53-146
CARBON DISULFIDE	50	51	103	51	103	< 1	31	50-162
1,1-DICHLOROETHENE	50	54	109	53	106	2.37	32	54-161
1,1-DICHLOROETHANE	50	55	111	55	111	< 1	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	120	117	110	114	2.2	35	74-162
CHLOROFORM	50	54	108	54	108	< 1	19	57-152
1,2-DICHLOROETHANE	50	50	101	53	106	4.89	26	59-151
2-BUTANONE	50	44	89	48	96	8.14	29	42-173
1,1,1-TRICHLOROETHANE	50	52	105	52	105	< 1	51	38-179
CARBON TETRACHLORIDE	50	52	104	53	107	3.3	49	37-182
VINYL ACETATE	50	78	156*	56	113	32.0	60	22-122
BROMODICHLOROMETHANE	50	49	98	54	108	9.11	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	39	78	49	98	22.2	95	14-157
1,2-DICHLOROPROPANE	50	49	98	51	103	5	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	47	94	50	100	5.5	42	10-164
TRICHLOROETHENE	50	54	108	52	104	3.83	38	67-149
DIBROMOCHLOROMETHANE	50	47	94	52	104	9.09	21	43-157
1,1,2-TRICHLOROETHANE	50	46	94	49	99	6.04	31	40-179
BENZENE	50	51	103	51	102	< 1	46	70-134
CIS-1,3-DICHLOROPROPENE	50	48	96	52	104	8.2	33	34-199
2-CHLOROETHYL VINYL ETHE	50	35	71*	44	90	23.9	61	73-156
BROMOFORM	50	43	86	50	101	16.1	52	34-151
2-HEXANONE	50	37	74	44	88	16.4	97	27-176
4-METHYL-2-PENTANONE	50	41	83	48	96	14.5	62	23-208
TETRACHLOROETHENE	50	52	105	51	103	1.24	24	61-141
TOLUENE	50	49	98	49	99	< 1	15	75-140
CHLOROBENZENE	50	51	102	51	102	< 1	14	72-135
ETHYLBENZENE	50	50	101	50	101	< 1	17	55-147
STYRENE	50	51	103	51	103	< 1	27	64-147
XYLENE (TOTAL)	150	160	105	160	104	< 1	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	104	88-110
BROMOFLUOROBENZENE	102	102	86-115
1,2-DICHLOROETHANE-D4	102	107	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931103A
INST. BATCH: 13536
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931103A
LOCATION:

ANALYZED : 11/03/93 08:53
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
" = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
... = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931103A
INST. BATCH: 13536
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/03/93 09:16
ANALYZED : 11/03/93 09:39

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	36	72	31	63	12.9	18	21-170
BROMOMETHANE	50	42	84	31	62	29.9	36	46-161
VINYL CHLORIDE	50	32	64	26	52	21.9	26	31-168
CHLOROETHANE	50	39	79	28	56	33.8	54	44-154
METHYLENE CHLORIDE	50	45	90	42	85	6.27	21	77-141
ACETONE	50	30	61	34	70	12.9	59	30-160
CARBON DISULFIDE	50	43	86	36	72	16.9	29	52-129
1,1-DICHLOROETHENE	50	47	95	42	84	12.4	16	60-141
1,1-DICHLOROETHANE	50	42	85	38	76	10.4	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	91	91	84	84	7.77	21	72-133
CHLOROFORM	50	48	96	43	87	9.09	17	79-129
1,2-DICHLOROETHANE	50	47	94	46	94	< 1	19	81-132
2-BUTANONE	50	47	95	58	116	19.5	91	16-130
1,1,1-TRICHLOROETHANE	50	49	99	48	97	2.83	45	66-140
CARBON TETRACHLORIDE	50	53	107	51	103	3.82	21	65-140
VINYL ACETATE	50	49	98	51	103	4.95	72	17-153
BROMODICHLOROMETHANE	50	51	102	50	100	1.84	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	55	110	62	126	12.8	78	49-127
1,2-DICHLOROPROPANE	50	43	86	42	84	3.08	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	45	91	41	83	9.52	41	48-141
TRICHLOROETHENE	50	53	106	52	104	1.85	21	71-134
DIBROMOCHLOROMETHANE	50	57	115	62	124*	7.88	25	68-120
1,1,2-TRICHLOROETHANE	50	55	111	59	119	7.19	28	68-120
BENZENE	50	44	89	42	84	6.07	13	79-128
CIS-1,3-DICHLOROPROPENE	50	46	93	45	90	3.02	29	63-123
2-CHLOROETHYL VINYL ETHE	50	120	243	120	250	3.02	45	0-146
BROMOFORM	50	60	120*	73	146*	20.2	37	58-119
2-HEXANONE	50	49	98	62	125	23.6	60	20-181
4-METHYL-2-PENTANONE	50	54	108	65	131	19.5	54	33-163
TETRACHLOROETHENE	50	51	103	48	96	7.44	21	80-125
TOLUENE	50	44	89	40	80*	10.7	11	80-122
CHLOROBENZENE	50	50	100	48	96	4.03	10	80-125
ETHYLBENZENE	50	48	97	46	92	5.98	19	82-123
STYRENE	50	49	99	47	94	4.82	13	71-129
XYLENE (TOTAL)	150	140	96	130	89	7.48	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	92	81-117
BROMOFLUOROBENZENE	98	95	74-121
1,2-DICHLOROETHANE-D4	97	97	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931104A
INST. BATCH: 13690
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931104A
LOCATION:

ANALYZED : 11/04/93 15:18
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	5.1	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	100%
1,2-DICHLOROETHANE-D4	(70-121)	92%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
~ = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
.. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931104A
INST. BATCH: 13690
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/04/93 15:40
ANALYZED : 11/04/93 16:03

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	41	83	40	80	4.33	16	60-141
1,2-DICHLOROETHENE(TOTAL	100	85	85	79	80	6.36	21	72-133
TRICHLOROETHENE	50	52	104	54	108	3.44	21	71-134
BENZENE	50	44	89	41	83	6.86	13	79-128
TOLUENE	50	48	96	45	90	6.32	11	80-122
CHLOROBENZENE	50	50	102	52	104	1.98	10	80-125
XYLENE (TOTAL)	150	150	102	160	106	3.77	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	98	95	81-117
BROMOFLUOROBENZENE	104	108	74-121
1,2-DICHLOROETHANE-D4	91	80	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931108A
INST. BATCH: 13794
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931108A
LOCATION:

ANALYZED : 11/08/93 10:30
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114)	97%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
* = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931108A
INST. BATCH: 13794
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/08/93 11:07
ANALYZED : 11/08/93 11:33

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	63	126	67	134	6.42	28	32-161
BROMOMETHANE	50	48	97	56	113	15.7	23	50-191
VINYL CHLORIDE	50	47	94	52	104	9.2	25	65-167
CHLOROETHANE	50	54	108	63	127	16.4	28	32-212
METHYLENE CHLORIDE	50	48	97	57	115	17.4	43	52-168
ACETONE	50	32	65	37	74	13.4	50	53-146
CARBON DISULFIDE	50	47	95	50	100	5.74	31	50-162
1,1-DICHLOROETHENE	50	49	98	51	103	5.2	32	54-161
1,1-DICHLOROETHANE	50	50	101	51	103	1.46	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	110	110	110	112	1.95	35	74-162
CHLOROFORM	50	50	100	52	105	4.53	19	57-152
1,2-DICHLOROETHANE	50	49	99	49	99	< 1	26	59-151
2-BUTANONE	50	42	85	42	85	< 1	29	42-173
1,1,1-TRICHLOROETHANE	50	49	99	58	116	15.8	51	38-179
CARBON TETRACHLORIDE	50	49	98	58	117	17.0	49	37-182
VINYL ACETATE	50	86	174*	63	127*	31.0	60	22-122
BROMODICHLOROMETHANE	50	44	89	50	101	12.5	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	38	76	48	96	23.8	95	14-157
1,2-DICHLOROPROPANE	50	48	96	51	102	5.94	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	46	92	48	96	4.05	42	10-164
TRICHLOROETHENE	50	50	102	54	109	6.75	38	67-149
DIBROMOCHLOROMETHANE	50	44	88	51	103	15.8	21	43-157
1,1,2-TRICHLOROETHANE	50	44	89	50	100	10.9	31	40-179
BENZENE	50	47	95	52	105	9.9	46	70-134
CIS-1,3-DICHLOROPROPENE	50	47	94	47	95	1.57	33	34-199
2-CHLOROETHYL VINYL ETHE	50	40	81	38	77	4.77	61	73-156
BROMOFORM	50	40	81	53	107	27.6	52	34-151
2-HEXANONE	50	38	76	44	88	14.2	97	27-176
4-METHYL-2-PENTANONE	50	39	78	51	102	26.6	62	23-208
TETRACHLOROETHENE	50	51	102	51	102	< 1	24	61-141
TOLUENE	50	48	98	48	96	1.83	15	75-140
CHLOROBENZENE	50	50	100	50	101	1.14	14	72-135
ETHYLBENZENE	50	50	100	49	99	1.27	17	55-147
STYRENE	50	51	102	50	100	2.5	27	64-147
XYLENE (TOTAL)	150	150	100	150	103	2.73	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	101	99	88-110
BROMOFLUOROBENZENE	104	101	86-115
1,2-DICHLOROETHANE-D4	101	98	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931105A
INST. BATCH: 13747
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931105A
LOCATION:

ANALYZED : 11/05/93 13:48
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
.,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
~ = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
. = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931105A
INST. BATCH: 13747
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/05/93 14:17
ANALYZED : 11/05/93 14:41

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	51	103	51	103	< 1	16	60-141
1,2-DICHLOROETHENE(TOTAL	100	95	96	93	94	1.98	21	72-133
TRICHLOROETHENE	50	54	108	54	108	< 1	21	71-134
BENZENE	50	48	98	48	97	< 1	13	79-128
TOLUENE	50	48	97	50	100	3.57	11	80-122
CHLOROBENZENE	50	50	101	50	100	< 1	10	80-125
XYLENE (TOTAL)	150	150	102	150	101	1.23	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	96	100	81-117
BROMOFLUOROBENZENE	104	108	74-121
1,2-DICHLOROETHANE-D4	96	91	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931108A
INST. BATCH: 13795
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931108A
LOCATION:

ANALYZED : 11/08/93 10:08
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	3.6	J	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	26		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	86%
1,2-DICHLOROETHANE-D4	(70-121)	96%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
• UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
= NOT APPLICABLE

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931108A
INST. BATCH: 13795
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/08/93 11:23
ANALYZED : 11/08/93 11:46

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	58	117	42	85	31.3*	18	21-170
BROMOMETHANE	50	64	128	42	85	40.6*	36	46-161
VINYL CHLORIDE	50	45	91	35	70	25.8	26	31-168
CHLOROETHANE	50	71	143	38	77	60.5*	54	44-154
METHYLENE CHLORIDE	50	64	129	68	136	5.21	21	77-141
ACETONE	50	67	135	66	132	2.07	59	30-160
CARBON DISULFIDE	50	52	105	46	92	12.9	29	52-129
1,1-DICHLOROETHENE	50	55	110	51	103	6.93	16	60-141
1,1-DICHLOROETHANE	50	54	108	46	93	14.6	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	100	104	96	96	7.53	21	72-133
CHLOROFORM	50	53	107	49	98	8.33	17	79-129
1,2-DICHLOROETHANE	50	55	110	50	100	9.81	19	81-132
2-BUTANONE	50	39	78	51	103	27.6	91	16-130
1,1,1-TRICHLOROETHANE	50	50	102	50	101	< 1	45	66-140
CARBON TETRACHLORIDE	50	51	103	51	103	< 1	21	65-140
VINYL ACETATE	50	28	57	27	54	4.94	72	17-153
BROMODICHLOROMETHANE	50	59	119	56	114	4.6	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	44	89	55	111	22.3	78	49-127
1,2-DICHLOROPROPANE	50	53	106	49	98	7.71	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	57	115	58	117	1.76	41	48-141
TRICHLOROETHENE	50	49	99	48	97	2.5	21	71-134
DIBROMOCHLOROMETHANE	50	64	128*	65	131*	2.31	25	68-120
1,1,2-TRICHLOROETHANE	50	62	125*	67	135*	7.46	28	68-120
BENZENE	50	49	98	47	95	3.1	13	79-128
CIS-1,3-DICHLOROPROPENE	50	56	112	54	108	3.96	29	63-123
2-CHLOROETHYL VINYL ETHE	50	76	152	150	299	65.7*	45	0-146
BROMOFORM	50	59	119	70	140*	16.2	37	58-119
2-HEXANONE	50	36	73	61	122	50.2	60	20-181
4-METHYL-2-PENTANONE	50	36	73	52	106	36.7	54	33-163
TETRACHLOROETHENE	50	51	102	50	100	2.3	21	80-125
TOLUENE	50	49	98	47	94	3.9	11	80-122
CHLOROBENZENE	50	51	102	49	98	3.81	10	80-125
ETHYLBENZENE	50	50	102	48	96	5.34	19	82-123
STYRENE	50	51	102	50	101	1.01	13	71-129
XYLENE (TOTAL)	150	160	106	150	98	6.9	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	97	92	81-117
BROMOFLUOROBENZENE	91	86	74-121
1,2-DICHLOROETHANE-D4	111	101	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
SDG: 16176

MATRIX : SOIL

SAMPLE	: 16205.09	QAQC: K931105A	ANALYZED : 11/05/93 20:47
SPIKE SAMPLE	: 16205.10	QAQC: K931105A	ANALYZED : 11/05/93 21:10
SPIKE DUP SAMPLE	: 16205.11	QAQC: K931105A	ANALYZED : 11/05/93 21:33

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	57		53	93	48	84	10.4	22	59-172
TRICHLOROETHENE	57		55	97	53	93	3.82	24	62-137
BENZENE	57		51	89	50	88	1.82	21	66-142
TOLUENE	57		54	94	53	93	< 1	21	59-139
CHLOROBENZENE	57		55	96	53	92	3.65	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	95	97	99	81-117
BROMOFLUOROBENZENE	94	97	93	74-121
1,2-DICHLOROETHANE-D4	81	83	83	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931102-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL110203S LB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931102-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL110203S LB1
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/02/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	71%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	65%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16176Ba
QA/QC SEQ: 931102-001
DATE: 12-2-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-02-93
DATE ANALYZED : 11-10-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6700	4000	60	26 - 90
2-CHLOROPHENOL	6700	4100	62	25 - 102
1,4-DICHLOROBENZENE	3300	2200	66	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2600	80	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2300	69	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	5570	84	26 - 103
ACENAPHTHENE	3300	2700	81	31 - 137
4-NITROPHENOL	6700	6700	100	11 - 114
2,4-DINITROTOLUENE	3300	2600	76	28 - 89
PENTACHLOROPHENOL	6700	4700	71	17 - 109
PYRENE	3300	2400	72	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERY	PERCENT RPD	QC LIMITS RECOVERY
PHENOL	6700	4100	61	2	26 - 90
2-CHLOROPHENOL	6700	4400	66	7	25 - 102
1,4-DICHLOROBENZENE	3300	2300	69	3	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2800	83	4	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2600	78	11	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	5700	86	3	26 - 103
ACENAPHTHENE	3300	2800	84	4	31 - 137
4-NITROPHENOL	6700	7000	106	6	11 - 114
2,4-DINITROTOLUENE	3300	2500	74	3	28 - 89
PENTACHLOROPHENOL	6700	4600	70	2	17 - 109
PYRENE	3300	2500	75	3	35 - 142

QA/QC SURROGATE RECOVERIES

LCS

NITROBENZENE-d5	(23-120) 76%	2-FLUOROBIPHENYL	(30-115) 68%	TERPHENYL-d14	(18-137) 81%
PHENOL-d5	(24-113) 57%	2-FLUOROPHENOL	(25-121) 58%	2,4,6-TRIBROMOPHENOL	(19-122) 90%

LCSD

NITROBENZENE-d5	(23-120) 73%	2-FLUOROBIPHENYL	(30-115) 71%	TERPHENYL-d14	(18-137) 81%
PHENOL-d5	(24-113) 59%	2-FLUOROPHENOL	(25-121) 55%	2,4,6-TRIBROMOPHENOL	(19-122) 9'

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931104-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL110417S LB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	48	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931104-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL110417S LB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/04/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	89%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	61%
2-FLUOROPHENOL	(25-121)	56%	2,4,6-TRIBROMOPHENOL	(19-122)	83%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16176Bd
QA/QC SEQ: 931104-001
DATE: 12-2-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-04-93
DATE ANALYZED : 11-12-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6700	4000	59	26 - 90
2-CHLOROPHENOL	6700	4100	62	25 - 102
1,4-DICHLOROBENZENE	3300	2300	70	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2900	86	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2200	66	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4270	62	26 - 103
ACENAPHTHENE	3300	2600	78	31 - 137
4-NITROPHENOL	6700	4200	63	11 - 114
2,4-DINITROTOLUENE	3300	2400	73	28 - 89
PENTACHLOROPHENOL	6700	3500	52	17 - 109
PYRENE	3300	3100	92	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERY	RPD	QC LIMITS RECOVERY
PHENOL	6700	4400	66	11	26 - 90
2-CHLOROPHENOL	6700	4500	67	8	25 - 102
1,4-DICHLOROBENZENE	3300	2400	72	2	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2800	84	3	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2300	68	2	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4400	67	6	26 - 103
ACENAPHTHENE	3300	2700	81	4	31 - 137
4-NITROPHENOL	6700	6200	93	38	11 - 114
2,4-DINITROTOLUENE	3300	2800	85	15	28 - 89
PENTACHLOROPHENOL	6700	4200	63	19	17 - 109
PYRENE	3300	3120	92	0	35 - 142

QA/QC SURROGATE RECOVERIES

			LCS				
NITROBENZENE-d5	(23-120)	76%	2-FLUOROBIPHENYL	(30-115)	75%	TERPHENYL-d14 (18-137)	92%
PHENOL-d5	(24-113)	66%	2-FLUOROPHENOL	(25-121)	64%	2,4,6-TRIBROMOPHENOL (19-122)	57%
			LCSD				
NITROBENZENE-d5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	75%	TERPHENYL-d14 (18-137)	94%
PHENOL-d5	(24-113)	64%	2-FLUOROPHENOL	(25-121)	63%	2,4,6-TRIBROMOPHENOL (19-122)	61%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931110-002
PROJECT : TINKER AFB RFI
SAMPLE #: BL110103W LB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/01/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931110-002
PROJECT : TINKER AFB RFI
SAMPLE #: BL110103W LB2
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/01/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	66%	2-FLUOROBIPHENYL	(43-116)	52%
TERPHENYL-D14	(33-141)	82%	PHENOL-D5	(10- 94)	55%
2-FLUOROPHENOL	(21-100)	54%	2,4,6-TRIBROMOPHENOL	(10-123)	75%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16176Bb
QA/QC SEQ: 931110-002
DATE: 12-2-93

SAMPLE MATRIX: WATER
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-01-93
DATE ANALYZED: 11-10-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	0	117	59	28 - 104
2-CHLOROPHENOL	200	0	117	58	21 - 106
1,4-DICHLOROBENZENE	100	0	54	54	14 - 110
N-NITROSO-di-n-PROPYLAMINE	100	0	52	52	19 - 128
1,2,4-TRICHLOROBENZENE	100	0	47	47	17 - 109
4-CHLORO-3-METHYLPHENOL	200	0	134	67	23 - 115
ACENAPHTHENE	100	0	62	62	26 - 137
4-NITROPHENOL	200	0	175	88	20 - 135
2,4-DINITROTOLUENE	100	0	64	64	28 - 129
PENTACHLOROPHENOL	200	0	138	69	25 - 134
PYRENE	100	0	67	67	28 - 139

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	132	66	12	35	28 - 104
2-CHLOROPHENOL	200	132	66	12	50	21 - 106
1,4-DICHLOROBENZENE	100	60	60	10	27	14 - 110
N-NITROSO-di-n-PROPYLAMINE	100	58	58	11	38	19 - 128
1,2,4-TRICHLOROBENZENE	100	57	57	19	23	17 - 109
4-CHLORO-3-METHYLPHENOL	200	149	74	10	33	23 - 115
ACENAPHTHENE	100	70	70	13	19	26 - 137
4-NITROPHENOL	200	175	87*	0	50	20 - 135
2,4-DINITROTOLUENE	100	65	65	1	47	28 - 129
PENTACHLOROPHENOL	200	147	74	6	47	25 - 134
PYRENE	100	71	71	6	36	28 - 139

QA/QC SURROGATE RECOVERIES

			LCS				
NITROBENZENE-d5	(35-114) 62%	2-FLUOROBIPHENYL	(43-116) 54%	TERPHENYL-d14	(33-141)	81
PHENOL-d5	(10-94) 54%	2-FLUOROPHENOL	(21-100) 53%	2,4,6-TRIBROMOPHENOL	(10-123)	7
			LCSD				
NITROBENZENE-d5	(35-114) 74%	2-FLUOROBIPHENYL	(43-116) 58%	TERPHENYL-d14	(33-141)	83%
PHENOL-d5	(10-94) 59%	2-FLUOROPHENOL	(21-100) 56%	2,4,6-TRIBROMOPHENOL	(10-123)	82%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931111-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL110305S LB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931111-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL110305S LB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/03/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	72%	2-FLUOROBIPHENYL	(30-115)	89%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	59%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	86%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16176Bc
QA/QC SEQ: 931111-001
DATE: 12-2-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-03-93
DATE ANALYZED : 11-11-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6700	4600	69	26 - 90
2-CHLOROPHENOL	6700	4200	63	25 - 102
1,4-DICHLOROBENZENE	3300	2300	70	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2600	77	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2300	70	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4770	71	26 - 103
ACENAPHTHENE	3300	2900	86	31 - 137
4-NITROPHENOL	6700	5600	84	11 - 114
2,4-DINITROTOLUENE	3300	2400	72	28 - 89
PENTACHLOROPHENOL	6700	5000	74	17 - 109
PYRENE	3300	2400	71	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERY	RPD	QC LIMITS RECOVERY
PHENOL	6700	4500	67	2	26 - 90
2-CHLOROPHENOL	6700	4300	64	1	25 - 102
1,4-DICHLOROBENZENE	3300	2500	75	7	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3300	2500	76	1	41 - 126
1,2,4-TRICHLOROBENZENE	3300	2400	73	4	38 - 107
4-CHLORO-3-METHYLPHENOL	6700	4700	71	0	26 - 103
ACENAPHTHENE	3300	2900	87	1	31 - 137
4-NITROPHENOL	6700	6300	95	12	11 - 114
2,4-DINITROTOLUENE	3300	2400	72	0	28 - 89
PENTACHLOROPHENOL	6700	5200	78	5	17 - 109
PYRENE	3300	2220	67	5	35 - 142

QA/QC SURROGATE RECOVERIES

LCS

NITROBENZENE-d5	(23-120) 68%	2-FLUOROBIPHENYL	(30-115) 81%	TERPHENYL-d14	(18-137) 80%		
PHENOL-d5	(24-113) 59%	2-FLUOROPHENOL	(25-121) 55%	2,4,6-TRIBROMOPHENOL	(19-122) 93%		

LCSD

NITROBENZENE-d5	(23-120) 68%	2-FLUOROBIPHENYL	(30-115) 84%	TERPHENYL-d14	(18-137) 75%		
PHENOL-d5	(24-113) 56%	2-FLUOROPHENOL	(25-121) 52%	2,4,6-TRIBROMOPHENOL	(19-122) 93%		

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931116-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL111501S LB1
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	305	J	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	301	J	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	140	J
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	250	J	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16176

DATE: 12/03/93

SWLO QAQC#: 931116-001
PROJECT : TINKER AFB RFI
SAMPLE #: BL111501S LB1
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/15/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	83%
TERPHENYL-D14	(18-137)	82%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	65%	2,4,6-TRIBROMOPHENOL	(19-122)	61%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16176Bd
QA/QC SEQ: 931116-001
DATE: 12-2-93

SAMPLE MATRIX: SOIL
SWLO # 16205.10 - 16250.11
METHOD REFERENCE: SW846-8270
DILUTION FACTOR: 1.1
PROJECT: TINKER AFB RFI

DATE SAMPLED: 11-02-93
DATE SUBMITTED: 11-03-93
DATE EXTRACTED: 11-15-93
DATE ANALYZED: 11-16-93
SAMPLE ID: S32.8SB13 16-18 (MS/MSD)

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	7700	0	5000	65	26 - 90
2-CHLOROPHENOL	7700	0	5100	67	25 - 102
1,4-DICHLOROBENZENE	3800	0	2600	68	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3800	0	3300	86	41 - 126
1,2,4-TRICHLOROBENZENE	3800	0	2800	73	38 - 107
4-CHLORO-3-METHYLPHENOL	7700	0	6200	80	26 - 103
ACENAPHTHENE	3800	0	3300	87	31 - 137
4-NITROPHENOL	7700	0	6000	78	11 - 114
2,4-DINITROTOLUENE	3800	0	2500	66	28 - 89
PENTACHLOROPHENOL	7700	0	5100	67	17 - 109
PYRENE	3800	0	2600	67	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	7700	4800	62	5	35	26 - 90
2-CHLOROPHENOL	7700	5600	74	10	50	25 - 102
1,4-DICHLOROBENZENE	3800	2800	72	5	27	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3800	3600	95	10	38	41 - 126
1,2,4-TRICHLOROBENZENE	3800	2900	77	5	23	38 - 107
4-CHLORO-3-METHYLPHENOL	7700	6000	79	2	33	26 - 103
ACENAPHTHENE	3800	3400	88	2	19	31 - 137
4-NITROPHENOL	7700	5500	72	8	50	11 - 114
2,4-DINITROTOLUENE	3800	2600	68	3	47	28 - 89
PENTACHLOROPHENOL	7700	5400	70	5	47	17 - 109
PYRENE	3800	2600	68	0	36	35 - 142

QA/QC SURROGATE RECOVERIES

MS

NITROBENZENE-d5 (23-120)	82%	2-FLUOROBIPHENYL (30-115)	80%	TERPHENYL-d14 (18-137)	73%
PHENOL-d5 (24-113)	55%	2-FLUOROPHENOL (25-121)	60%	2,4,6-TRIBROMOPHENOL (19-122)	6°·

MSD

NITROBENZENE-d5 (23-120)	83%	2-FLUOROBIPHENYL (30-115)	81%	TERPHENYL-d14 (18-137)	7.
PHENOL-d5 (24-113)	57%	2-FLUOROPHENOL (25-121)	67%	2,4,6-TRIBROMOPHENOL (19-122)	69%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16176ad
REPORT DATE: 12-01-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/08/93	110593I3	1.0	mg/Kg	< 1.0
LEAD	11/08/93	110593I3	0.30	mg/Kg	< 0.30
SELENIUM	11/08/93	110593I3	0.50	mg/Kg	< 0.50
BARIUM	11/06/93	110593I3	0.50	mg/Kg	< 0.50
CADMIUM	11/06/93	110593I3	0.30	mg/Kg	< 0.30
CHROMIUM	11/06/93	110593I3	0.50	mg/Kg	< 0.50
NICKEL	11/06/93	110593I5	1.0	mg/Kg	< 1.0
ZINC	11/08/93	110593I5	1.5	mg/Kg	< 1.5
MERCURY	11/05/93	110593HG02	0.10	mg/Kg	< 0.10
SILVER	11/12/93	110593F3	0.10	mg/Kg	< 0.10
TOTAL CN	11/04/93	110393CN	0.50	mg/Kg	< 0.50
TOTAL CN	11/08/93	110593CN	0.50	mg/Kg	< 0.50

MATRIX: **WATER**

ARSENIC	11/04/93	110493I4	10.0	ug/L	< 10.0
LEAD	11/04/93	110493I4	3.0	ug/L	< 3.0
SELENIUM	11/04/93	110493I4	5.0	ug/L	< 5.0
BARIUM	11/05/93	110493I4	5.0	ug/L	< 5.0
CADMIUM	11/05/93	110493I4	3.0	ug/L	< 3.0
CHROMIUM	11/05/93	110493I4	5.0	ug/L	< 5.0
NICKEL	11/05/93	110493I4	10.0	ug/L	< 10.0
ZINC	11/05/93	110493I4	15.0	ug/L	< 15.0
MERCURY	11/04/93	110493HG04	0.20	ug/L	< 0.20
SILVER	11/12/93	110493F4	1.0	ug/L	< 1.0
TOTAL CN	11/02/93	110193CN	10.0	ug/L	< 10.0

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16176bd
REPORT DATE: 12-01-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/08/93	200	198.2	99	80-120
LEAD	11/08/93	50	44.7	89	80-120
SELENIUM	11/08/93	200	198.8	99	80-120
BARIUM	11/06/93	200	196	98	80-120
CADMIUM	11/06/93	5.0	4.8	98	80-120
CHROMIUM	11/06/93	20.0	19.3	97	80-120
NICKEL	11/06/93	50.0	47.5	95	80-120
ZINC	11/06/93	50.0	46.7	93	80-120
MERCURY	11/05/93	2.45	2.45	100	80-120
SILVER	11/12/93	5.00	4.48	90	80-120
TOTAL CN	11/04/93	5.0	4.715	94	80-120
TOTAL CN	11/08/93	5.0	4.996	100	80-120
MATRIX: **WATER**					
		(ug/L)	(ug/L)		
ARSENIC	11/04/93	2000	2205	110	80-120
LEAD	11/04/93	500	510	102	80-120
SELENIUM	11/04/93	2000	2399	120	80-120
BARIUM	11/05/93	2000	2010	101	80-120
CADMIUM	11/05/93	50.0	52.3	105	80-120
CHROMIUM	11/05/93	200	199	100	80-120
NICKEL	11/05/93	500	514	103	80-120
ZINC	11/05/93	500	507	101	80-120
MERCURY	11/05/93	4.90	4.90	100	80-120
SILVER	11/12/93	50.0	45.4	91	80-120
TOTAL CN	11/02/93	100	98.8	99	80-120

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16176cd
REPORT DATE: 12-01-93

MATRIX: **SOIL**
SAMPLE ID: **S32.8SB13 MS116-18**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	11/08/93	3.14	232	204	87	75-125
LEAD	11/08/93	2.67	58.1	49.7	81	75-125
SELENIUM	11/08/93	< 0.581	232	200	86	75-125
BARIUM	11/06/93	34.8	232	251	93	75-125
CADMIUM	11/06/93	< 0.348	5.81	4.93	85	75-125
CHROMIUM	11/06/93	12.0	23.2	26.7	63*	75-125
NICKEL	11/06/93	4.42	58.1	54.0	85	75-125
ZINC	11/06/93	5.93	58.1	54.2	83	75-125
MERCURY	11/05/93	< 0.116	0.581	0.585	101	75-125
SILVER	11/12/93	< 0.116	5.81	4.70	81	75-125
TOTAL CN	11/08/93	< 0.581	5.81	5.62	97	75-125

* OUTSIDE CONTROL LIMITS

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16176dd
REPORT DATE: 12-01-93

MATRIX: **SOIL**
SAMPLE ID: **S32.8SB13 SD116-18**

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	204	199	2.5	20
LEAD	49.7	48.5	2.4	20
SELENIUM	200	195	2.5	20
BARIUM	251	236	6.2	20
CADMIUM	4.93	4.95	0.4	20
CHROMIUM	26.7	25.0	6.6	20
NICKEL	54.0	52.1	3.6	20
ZINC	54.2	51.6	4.9	20
MERCURY	0.585	0.599	2.4	20
SILVER	4.70	4.84	2.9	20
TOTAL CN	5.62	5.41	3.8	20

QC/dn

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

ES

1 OF 2

PROJECT NAME/LOCATION: TINKER AFB RFI

CARRIER: [x] Federal Express [ ] UPS

Other _____

PROJECT NUMBER: AV401, 11

AIRBILL OR CARRIER ID #: 8503062761

SAMPLER(S): ERIC DAWSON, Andrew Gwynne

(Signature) Eric J Dawson, Andrew Gwynne

PRESERVATIVE: HCl, HNO3, HCl2

ANALYSIS REQUIRED: 8240, 8270, 6010, 8015 CAL MOD.

FIELD LOT CONTROL NUMBER

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	8240	8270	6010	8015 CAL MOD.	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/3/93	1345	~~EB1~~ FIELDQC		EB1 ~~WQ~~ ~~N1~~	~~WW~~ WQ	~~G~~B			7	X	X	X	X	0	~~X~~ 1	1	E	VOAs IN E
	1415	IWTLS2		N1 ~~WW~~	WW	~~G~~B			8	X	X	X	X	0	1	1	C	
		~~FD1~~ IWTLS2		FR1	WW	~~G~~B			8	X	X	X	X	0	1	1	D	
		~~BS1~~ IWTLS2		MS1	WW	~~G~~B			8	X	X	X	X	0	1	1	D	
		~~BSD1~~ IWTLS2		BD1	WW	~~G~~B			8	X	X	X	X	0	1	1	E	
		IWTBG3221		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	B	
	—	~~TB1~~ FIELDQC		TB1	WQ				2	X				0	1	~~X~~ 1	E	
11/4/93	0815	IWTLS3		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	C	
	1035	IWTLS10		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	D	
	1140	IWTBG3001		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	B	
	1330	IWTBG2280		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	A	
	1415	IWTBG2211		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	C	
	1510	IWTBG2127		N1	WW	~~G~~B			8	X	X	X	X	0	1	1	B	

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
(Signature) Eric J Dawson	11/5/93	1445	(Signature)			(Signature)		
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	**Received by:**	**Date**	**Time**
(Signature)			(Signature)			(Signature) K Collis	11/6/93	0830

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

2 OF 2

PROJECT NAME/LOCATION: TINKER AFB RFI

CARRIER: ☑ Federal Express ☐ UPS

Other

PROJECT NUMBER: AV401.11

AIRBILL OR CARRIER ID #: 850306276 1

SAMPLER(S): ERIC DAWSON (Signature) Eric J Dawson; Andrew Gwynne (Signature) Andrew Gwynne

PRESERVATIVE: HCl — 1; HNO3 — 3; HCl — 1

ANALYSIS REQUIRED: 8010; 8270; 8010; 8015 GAL MOD

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	8010	8270	8010	8015 GAL MOD	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
11/4/93	1710	IWTLSBNEW		WW	NI	B			8	X	X	X	X	0	1	1	A		VOAs IN E
11/4/93	1720	IWTLSBOLD		WW	NI	B			8	X	X	X	X	0	1	1	A		VOAs IN E

Relinquished by:	Date	Time	Relinquished by:	Date	Time	Relinquished by:	Date	Time
Eric J Dawson (Signature)	11/5/95	1445	(Signature)			(Signature)		
Received by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	**Received by:**	**Date**	**Time**
(Signature)			(Signature)			(Signature) K Hollis	11/6/93	0830

White: laboratory returns with data; yellow: laboratory copy; pink: sampler copy.

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38 33736 35

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.01

DATE: 12/10/93

SWLO #: 16250.01 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	29		TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	2.5	J
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	1.6	J
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	91%	BROMOFLUOROBENZENE	(86-115)	90%
1,2-DICHLOROETHANE-D4	(76-114)	92%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.01

DATE: 12/10/93

SWLO #: 16250.01 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.01

DATE: 12/10/93

SWLO #: 16250.01 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	74%	2-FLUOROBIPHENYL	(43-116)	68%
TERPHENYL-D14	(33-141)	97%	PHENOL-D5	(10- 94)	67%
2-FLUOROPHENOL	(21-100)	57%	2,4,6-TRIBROMOPHENOL	(10-123)	105%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.01

DATE: 12/10/93

SWLO #: 16250.01 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 102%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.01

DATE: 12/10/93

SWLO #: 16250.01 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C10-C16	28.7	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16250.01

DATE: 12/10/93

SWLO #: 16250.01 EB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	3	U	ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	5	U	ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	3	U	ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	5	U	ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	15	U	ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.02

DATE: 12/10/93

SWLO #: 16250.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100	U	TRICHLOROETHENE	37	J
BROMOMETHANE	100	U	DIBROMOCHLOROMETHANE	50	U
VINYL CHLORIDE	100	U	1,1,2-TRICHLOROETHANE	50	U
CHLOROETHANE	100	U	BENZENE	50	U
METHYLENE CHLORIDE	980	B	CIS-1,3-DICHLOROPROPENE	50	U
ACETONE	100	U	2-CHLOROETHYL VINYL ETHER	100	U
CARBON DISULFIDE	50	U	BROMOFORM	50	U
1,1-DICHLOROETHENE	50	U	2-HEXANONE	100	U
1,1-DICHLOROETHANE	50	U	4-METHYL-2-PENTANONE	100	U
CHLOROFORM	82		TETRACHLOROETHENE	1700	
1,2-DICHLOROETHANE	50	U	TOLUENE	12	J
1,1,1-TRICHLOROETHANE	14	J	CHLOROBENZENE	50	U
CARBON TETRACHLORIDE	50	U	ETHYLBENZENE	50	U
VINYL ACETATE	100	U	STYRENE	50	U
BROMODICHLOROMETHANE	50	U	1,2-DICHLOROETHENE(TOTAL)	65	
1,1,2,2-TETRACHLOROETHANE	50	U	XYLENE (TOTAL)	50	U
1,2-DICHLOROPROPANE	50	U	2-BUTANONE	930	
TRANS-1,3-DICHLOROPROPENE	50	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 99%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114) 107%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.02

DATE: 12/10/93

SWLO #: 16250.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 40.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	3800		ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	2000	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	2000	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	50	J	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	280	J	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	300	J	4-NITROANILINE	2000	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	2000	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	2000	U
2,4-DIMETHYLPHENOL	56	J	PHENANTHRENE	400	U
BENZOIC ACID	2000	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	800	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.02

DATE: 12/10/93

SWLO #: 16250.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 40.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2000	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	2000	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	2000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114) 78%	2-FLUOROBIPHENYL	(43-116) 113%
TERPHENYL-D14	(33-141) 136%	PHENOL-D5	(10- 94) 68%
2-FLUOROPHENOL	(21-100) 64%	2,4,6-TRIBROMOPHENOL	(10-123) 116%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.02

DATE: 12/10/93

SWLO #: 16250.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	143		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 102%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.02

DATE: 12/10/93

SWLO #: 16250.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 5.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	25	U	NAPHTHA C6-C12	25	U
KEROSENE C9-C18	25	U	#6 FUEL OIL C12-C24	25	U
JP-4 C6-C14	25	U	MISCELLANEOUS C7-C24	5950	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	88%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.02

DATE: 12/10/93

SWLO #: 16250.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	12/03/93	12/08/93	SW846-6010
LEAD	19.6		ug/l	12/03/93	12/08/93	SW846-6010
SELENIUM	5	U	ug/l	12/03/93	12/08/93	SW846-6010
BARIUM	468		ug/l	12/03/93	12/06/93	SW846-6010
CADMIUM	35.2		ug/l	12/03/93	12/06/93	SW846-6010
CHROMIUM	650		ug/l	12/03/93	12/06/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	114		ug/l	12/03/93	12/06/93	SW846-6010
SILVER	5.4		ug/l	12/03/93	12/07/93	SW846-7761
ZINC	49.8		ug/l	12/03/93	12/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/10/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100	U	TRICHLOROETHENE	43	J
BROMOMETHANE	100	U	DIBROMOCHLOROMETHANE	50	U
VINYL CHLORIDE	100	U	1,1,2-TRICHLOROETHANE	50	U
CHLOROETHANE	100	U	BENZENE	50	U
METHYLENE CHLORIDE	760	B	CIS-1,3-DICHLOROPROPENE	50	U
ACETONE	100	U	2-CHLOROETHYL VINYL ETHER	100	U
CARBON DISULFIDE	50	U	BROMOFORM	50	U
1,1-DICHLOROETHENE	50	U	2-HEXANONE	100	U
1,1-DICHLOROETHANE	50	U	4-METHYL-2-PENTANONE	100	U
CHLOROFORM	240		TETRACHLOROETHENE	1100	
1,2-DICHLOROETHANE	50	U	TOLUENE	15	J
1,1,1-TRICHLOROETHANE	31	J	CHLOROBENZENE	50	U
CARBON TETRACHLORIDE	50	U	ETHYLBENZENE	50	U
VINYL ACETATE	100	U	STYRENE	50	U
BROMODICHLOROMETHANE	50	U	1,2-DICHLOROETHENE(TOTAL)	72	
1,1,2,2-TETRACHLOROETHANE	50	U	XYLENE (TOTAL)	50	U
1,2-DICHLOROPROPANE	50	U	2-BUTANONE	1900	
TRANS-1,3-DICHLOROPROPENE	50	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 103%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114) 105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/29/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4800		ACENAPHTHENE	50	U
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	50	U	4-NITROPHENOL	10	J
1,3-DICHLOROBENZENE	50	U	DIBENZOFURAN	50	U
1,4-DICHLOROBENZENE	50	U	2,4-DINITROTOLUENE	50	U
BENZYL ALCOHOL	50	U	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	35	J	DIETHYLPHTHALATE	50	U
2-METHYLPHENOL(O-CRESOL)	230		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	50	U
4-METHYLPHENOL(P-CRESOL)	240		4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	50	U	4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	10	J	PENTACHLOROPHENOL	250	U
2,4-DIMETHYLPHENOL	38	J	PHENANTHRENE	50	U
BENZOIC ACID	250	U	ANTHRACENE	50	U
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	50	U
1,2,4-TRICHLOROBENZENE	50	U	PYRENE	50	U
NAPHTHALENE	50	U	BUTYL BENZYL PHTHALATE	50	U
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	50	U
4-CHLORO-3-METHYLPHENOL	50	U	BIS(2-ETHYLHEXYL)PHTHALATE	6	J
2-METHYLNAPHTHALENE	12	J	CHRYSENE	50	U
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	50	U
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	50	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/10/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	250	U	BENZO(K)FLUORANTHENE	50	U
2-CHLORONAPHTHALENE	50	U	BENZO(A)PYRENE	50	U
2-NITROANILINE	250	U	INDENO(1,2,3-CD)PYRENE	50	U
DIMETHYL PHTHALATE	50	U	DIBENZ(A,H)ANTHRACENE	50	U
ACENAPHTHYLENE	50	U	BENZO(G,H,I)PERYLENE	50	U
3-NITROANILINE	250	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	73%	2-FLUOROBIPHENYL	(43-116)	88%
TERPHENYL-D14	(33-141)	91%	PHENOL-D5	(10- 94)	29%
2-FLUOROPHENOL	(21-100)	62%	2,4,6-TRIBROMOPHENOL	(10-123)	115%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/10/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 40.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4800	D1	ACENAPHTHENE	50	U
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	50	U	4-NITROPHENOL	10	J
1,3-DICHLOROBENZENE	50	U	DIBENZOFURAN	50	U
1,4-DICHLOROBENZENE	50	U	2,4-DINITROTOLUENE	50	U
BENZYL ALCOHOL	50	U	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	35	J	DIETHYLPHTHALATE	50	U
2-METHYLPHENOL(O-CRESOL)	230		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	50	U
4-METHYLPHENOL(P-CRESOL)	240		4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	50	U	4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	10	J	PENTACHLOROPHENOL	250	U
2,4-DIMETHYLPHENOL	38	J	PHENANTHRENE	50	U
BENZOIC ACID	250	U	ANTHRACENE	50	U
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	50	U
1,2,4-TRICHLOROBENZENE	50	U	PYRENE	50	U
NAPHTHALENE	50	U	BUTYL BENZYL PHTHALATE	50	U
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	50	U
4-CHLORO-3-METHYLPHENOL	50	U	BIS(2-ETHYLHEXYL)PHTHALATE	6	J
2-METHYLNAPHTHALENE	12	J	CHRYSENE	50	U
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	50	U
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	50	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/10/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	125		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 108%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/10/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C7-C24	7030	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.03

DATE: 12/10/93

SWLO #: 16250.03 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	16.3		ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	449		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	31.1		ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	800		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	87.1		ug/l	11/08/93	11/11/93	SW846-6010
SILVER	3.7		ug/l	11/08/93	11/27/93	SW846-7761
ZINC	44.8		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.04

DATE: 12/10/93

SWLO #: 16250.04 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	81	
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	45	
METHYLENE CHLORIDE	720	E	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	47		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	45		2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	43		TETRACHLOROETHENE	910	E
1,2-DICHLOROETHANE	5	U	TOLUENE	55	
1,1,1-TRICHLOROETHANE	29		CHLOROBENZENE	47	
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	56	
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	3.7	J
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	440	E
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	90%	BROMOFLUOROBENZENE	(86-115)	91%
1,2-DICHLOROETHANE-D4	(76-114)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.04

DATE: 12/17/93

SWLO #: 16250.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	2800		ACENAPHTHENE	89	
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	107		4-NITROPHENOL	180	J
1,3-DICHLOROBENZENE	50	U	DIBENZOFURAN	50	U
1,4-DICHLOROBENZENE	80		2,4-DINITROTOLUENE	65	
BENZYL ALCOHOL	22	J	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	47	J	DIETHYLPHTHALATE	50	U
2-METHYLPHENOL(O-CRESOL)	270		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	50	U
4-METHYLPHENOL(P-CRESOL)	280		4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	81		4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	50	U	PENTACHLOROPHENOL	167	J
2,4-DIMETHYLPHENOL	36	J	PHENANTHRENE	50	U
BENZOIC ACID	250	U	ANTHRACENE	50	U
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	50	U
1,2,4-TRICHLOROBENZENE	91		PYRENE	80	
NAPHTHALENE	50	U	BUTYL BENZYL PHTHALATE	50	U
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	50	U
4-CHLORO-3-METHYLPHENOL	173		BIS(2-ETHYLHEXYL)PHTHALATE	8	J
2-METHYLNAPHTHALENE	50	U	CHRYSENE	50	U
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	50	U
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	50	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.04

DATE: 12/17/93

SWLO #: 16250.04 MS1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	250	U	BENZO(K)FLUORANTHENE	50	U
2-CHLORONAPHTHALENE	50	U	BENZO(A)PYRENE	50	U
2-NITROANILINE	250	U	INDENO(1,2,3-CD)PYRENE	50	U
DIMETHYL PHTHALATE	50	U	DIBENZ(A,H)ANTHRACENE	50	U
ACENAPHTHYLENE	50	U	BENZO(G,H,I)PERYLENE	50	U
3-NITROANILINE	250	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	71%	2-FLUOROBIPHENYL	(43-116)	87%
TERPHENYL-D14	(33-141)	93%	PHENOL-D5	(10- 94)	41%
2-FLUOROPHENOL	(21-100)	79%	2,4,6-TRIBROMOPHENOL	(10-123)	110%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.04

DATE: 12/10/93

SWLO #: 16250.04 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	704		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 111%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16250.04

DATE: 12/10/93

SWLO #: 16250.04 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 5.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	8120		NAPHTHA C6-C12	25	U
KEROSENE C9-C18	25	U	#6 FUEL OIL C12-C24	25	U
JP-4 C6-C14	25	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121) 110%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.04

DATE: 12/10/93

SWLO #: 16250.04 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2110	ug/l	12/03/93	12/08/93	SW846-6010
LEAD	497	ug/l	12/03/93	12/08/93	SW846-6010
SELENIUM	2160	ug/l	12/03/93	12/08/93	SW846-6010
BARIUM	2430	ug/l	12/03/93	12/06/93	SW846-6010
CADMIUM	83.8	ug/l	12/03/93	12/06/93	SW846-6010
CHROMIUM	711	ug/l	12/03/93	12/06/93	SW846-6010
MERCURY	0.857	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	572	ug/l	12/03/93	12/06/93	SW846-6010
SILVER	50	ug/l	12/03/93	12/07/93	SW846-7761
ZINC	536	ug/l	12/03/93	12/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.05

DATE: 12/10/93

SWLO #: 16250.05 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	73	
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	45	
METHYLENE CHLORIDE	520	E	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	31		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	43		2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	190		TETRACHLOROETHENE	800	E
1,2-DICHLOROETHANE	5	U	TOLUENE	51	
1,1,1-TRICHLOROETHANE	25		CHLOROBENZENE	46	
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	49	
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	1.9	J
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	2300	E
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	90%	BROMOFLUOROBENZENE	(86-115)	91%
1,2-DICHLOROETHANE-D4	(76-114)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16250.05

DATE: 12/17/93

SWLO #: 16250.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	1100	E	ACENAPHTHENE	40	J
BIS(2-CHLOROETHYL)ETHER	50	U	2,4-DINITROPHENOL	250	U
2-CHLOROPHENOL	44	J	4-NITROPHENOL	140	J
1,3-DICHLOROBENZENE	50	U	DIBENZOFURAN	50	U
1,4-DICHLOROBENZENE	32	J	2,4-DINITROTOLUENE	45	J
BENZYL ALCOHOL	50	U	2,6-DINITROTOLUENE	50	U
1,2-DICHLOROBENZENE	15	J	DIETHYLPHTHALATE	50	U
2-METHYLPHENOL(O-CRESOL)	120		4-CHLOROPHENYL-PHENYLETHER	50	U
BIS(2-CHLOROISOPROPYL)ETHER	50	U	FLUORENE	50	U
4-METHYLPHENOL(P-CRESOL)	125		4-NITROANILINE	250	U
N-NITROSO-DI-N-PROPYLAMINE	25	J	4,6-DINITRO-2-METHYLPHENOL	250	U
HEXACHLOROETHANE	50	U	N-NITROSODIPHENYLAMINE(1)	50	U
NITROBENZENE	50	U	4-BROMOPHENYL-PHENYLETHER	50	U
ISOPHORONE	50	U	HEXACHLOROBENZENE	50	U
2-NITROPHENOL	12	J	PENTACHLOROPHENOL	110	J
2,4-DIMETHYLPHENOL	20	J	PHENANTHRENE	50	U
BENZOIC ACID	250	U	ANTHRACENE	50	U
BIS(2-CHLOROETHOXY)METHANE	50	U	DI-N-BUTYL PHTHALATE	50	U
2,4-DICHLOROPHENOL	50	U	FLUORANTHENE	50	U
1,2,4-TRICHLOROBENZENE	42	J	PYRENE	53	
NAPHTHALENE	50	U	BUTYL BENZYL PHTHALATE	50	U
4-CHLOROANILINE	50	U	3,3'-DICHLOROBENZIDINE	100	U
HEXACHLOROBUTADIENE	50	U	BENZO(A)ANTHRACENE	50	U
4-CHLORO-3-METHYLPHENOL	91		BIS(2-ETHYLHEXYL)PHTHALATE	50	U
2-METHYLNAPHTHALENE	11	J	CHRYSENE	50	U
HEXACHLOROCYCLOPENTADIENE	50	U	DI-N-OCTYL PHTHALATE	50	U
2,4,6-TRICHLOROPHENOL	50	U	BENZO(B)FLUORANTHENE	50	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16250.05

DATE: 12/17/93

SWLO #: 16250.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 5.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	250	U	BENZO(K)FLUORANTHENE	50	U
2-CHLORONAPHTHALENE	50	U	BENZO(A)PYRENE	50	U
2-NITROANILINE	250	U	INDENO(1,2,3-CD)PYRENE	50	U
DIMETHYL PHTHALATE	50	U	DIBENZ(A,H)ANTHRACENE	50	U
ACENAPHTHYLENE	50	U	BENZO(G,H,I)PERYLENE	50	U
3-NITROANILINE	250	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	36%	2-FLUOROBIPHENYL	(43-116)	40% *
TERPHENYL-D14	(33-141)	63%	PHENOL-D5	(10- 94)	20%
2-FLUOROPHENOL	(21-100)	28%	2,4,6-TRIBROMOPHENOL	(10-123)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.05

DATE: 12/10/93

SWLO #: 16250.05 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	694		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 117%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.05

DATE: 12/17/93

SWLO #: 16250.05 SD1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS2
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 20.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	18100		NAPHTHA C6-C12	100	U
KEROSENE C9-C18	100	U	#6 FUEL OIL C12-C24	100	U
JP-4 C6-C14	100	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121) 125%	*

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.05

DATE: 12/10/93

SWLO #: 16250.05 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS2
LOCATION:

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	2090	ug/l	12/03/93	12/08/93	SW846-6010
LEAD	488	ug/l	12/03/93	12/08/93	SW846-6010
SELENIUM	2150	ug/l	12/03/93	12/08/93	SW846-6010
BARIUM	2390	ug/l	12/03/93	12/06/93	SW846-6010
CADMIUM	80.2	ug/l	12/03/93	12/06/93	SW846-6010
CHROMIUM	1170	ug/l	12/03/93	12/06/93	SW846-6010
MERCURY	0.846	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	583	ug/l	12/03/93	12/06/93	SW846-6010
SILVER	52.5	ug/l	12/03/93	12/07/93	SW846-7761
ZINC	545	ug/l	12/03/93	12/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.06

DATE: 12/10/93

SWLO #: 16250.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	9.6	B	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	101%	BROMOFLUOROBENZENE	(86-115) 101%
1,2-DICHLOROETHANE-D4	(76-114)	104%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16250.06

DATE: 12/10/93

SWLO #: 16250.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	22		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	1	J	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	2	J	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.06

DATE: 12/10/93

SWLO #: 16250.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	40%	2-FLUOROBIPHENYL	(43-116)	39% *
TERPHENYL-D14	(33-141)	47%	PHENOL-D5	(10- 94)	33%
2-FLUOROPHENOL	(21-100)	5% *	2,4,6-TRIBROMOPHENOL	(10-123)	57%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16250.06

DATE: 12/10/93

SWLO #: 16250.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 103%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.06

DATE: 12/10/93

SWLO #: 16250.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C8-C24	170	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16250.06

DATE: 12/10/93

SWLO #: 16250.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3221
LOCATION:

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	34.6		ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	468		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	3	U	ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	24.3		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	11.2		ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	63.1		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.07

DATE: 12/10/93

SWLO #: 16250.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 50.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	500	U	TRICHLOROETHENE	250	U
BROMOMETHANE	500	U	DIBROMOCHLOROMETHANE	250	U
VINYL CHLORIDE	500	U	1,1,2-TRICHLOROETHANE	250	U
CHLOROETHANE	500	U	BENZENE	250	U
METHYLENE CHLORIDE	9500	B	CIS-1,3-DICHLOROPROPENE	250	U
ACETONE	500	U	2-CHLOROETHYL VINYL ETHER	500	U
CARBON DISULFIDE	250	U	BROMOFORM	250	U
1,1-DICHLOROETHENE	250	U	2-HEXANONE	500	U
1,1-DICHLOROETHANE	250	U	4-METHYL-2-PENTANONE	500	U
CHLOROFORM	250	U	TETRACHLOROETHENE	110	J
1,2-DICHLOROETHANE	250	U	TOLUENE	3100	
1,1,1-TRICHLOROETHANE	290		CHLOROBENZENE	250	U
CARBON TETRACHLORIDE	250	U	ETHYLBENZENE	250	U
VINYL ACETATE	500	U	STYRENE	250	U
BROMODICHLOROMETHANE	250	U	1,2-DICHLOROETHENE(TOTAL)	250	U
1,1,2,2-TETRACHLOROETHANE	250	U	XYLENE (TOTAL)	150	J
1,2-DICHLOROPROPANE	250	U	2-BUTANONE	500	U
TRANS-1,3-DICHLOROPROPENE	250	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 103%	BROMOFLUOROBENZENE	(86-115) 107%
1,2-DICHLOROETHANE-D4	(76-114) 111%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.07

DATE: 12/17/93

SWLO #: 16250.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4	J	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	1	J	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	2	J	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	1	J
4-METHYLPHENOL(P-CRESOL)	2	J	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	4	J	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	4	J	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	13	
2-METHYLNAPHTHALENE	5	J	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	2	J
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

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Attn: KEVIN TYNES

REPORT: 16250.07

DATE: 12/17/93

SWLO #: 16250.07 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	39%	2-FLUOROBIPHENYL	(43-116)	47%
TERPHENYL-D14	(33-141)	54%	PHENOL-D5	(10- 94)	37%
2-FLUOROPHENOL	(21-100)	30%	2,4,6-TRIBROMOPHENOL	(10-123)	55%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.13

DATE: 12/10/93

SWLO #: 16250.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/10/93	SW846-6010
LEAD	56		ug/l	11/08/93	11/10/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/10/93	SW846-6010
BARIUM	561		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	166		ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	85800		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	30	U	ug/l	11/08/93	11/11/93	SW846-6010
SILVER	3.9		ug/l	11/08/93	11/27/93	SW846-7761
ZINC	531		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.14

DATE: 12/10/93

SWLO #: 16250.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100	U	TRICHLOROETHENE	50	U
BROMOMETHANE	100	U	DIBROMOCHLOROMETHANE	50	U
VINYL CHLORIDE	100	U	1,1,2-TRICHLOROETHANE	50	U
CHLOROETHANE	100	U	BENZENE	50	U
METHYLENE CHLORIDE	1700	B	CIS-1,3-DICHLOROPROPENE	50	U
ACETONE	790		2-CHLOROETHYL VINYL ETHER	100	U
CARBON DISULFIDE	50	U	BROMOFORM	50	U
1,1-DICHLOROETHENE	50	U	2-HEXANONE	100	U
1,1-DICHLOROETHANE	50	U	4-METHYL-2-PENTANONE	100	U
CHLOROFORM	50	U	TETRACHLOROETHENE	50	U
1,2-DICHLOROETHANE	50	U	TOLUENE	34	J
1,1,1-TRICHLOROETHANE	50	U	CHLOROBENZENE	50	U
CARBON TETRACHLORIDE	50	U	ETHYLBENZENE	50	U
VINYL ACETATE	100	U	STYRENE	50	U
BROMODICHLOROMETHANE	50	U	1,2-DICHLOROETHENE(TOTAL)	50	U
1,1,2,2-TETRACHLOROETHANE	50	U	XYLENE (TOTAL)	14	J
1,2-DICHLOROPROPANE	50	U	2-BUTANONE	1700	
TRANS-1,3-DICHLOROPROPENE	50	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 103%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 103%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16250.14

DATE: 12/10/93

SWLO #: 16250.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	120000		ACENAPHTHENE	1000	U
BIS(2-CHLOROETHYL)ETHER	1000	U	2,4-DINITROPHENOL	5000	U
2-CHLOROPHENOL	1000	U	4-NITROPHENOL	5000	U
1,3-DICHLOROBENZENE	1000	U	DIBENZOFURAN	1000	U
1,4-DICHLOROBENZENE	1000	U	2,4-DINITROTOLUENE	1000	U
BENZYL ALCOHOL	1500	J	2,6-DINITROTOLUENE	1000	U
1,2-DICHLOROBENZENE	1000	U	DIETHYLPHTHALATE	1000	U
2-METHYLPHENOL(O-CRESOL)	1000	U	4-CHLOROPHENYL-PHENYLETHER	1000	U
BIS(2-CHLOROISOPROPYL)ETHER	1000	U	FLUORENE	1000	U
4-METHYLPHENOL(P-CRESOL)	1000	U	4-NITROANILINE	5000	U
N-NITROSO-DI-N-PROPYLAMINE	1000	U	4,6-DINITRO-2-METHYLPHENOL	5000	U
HEXACHLOROETHANE	1000	U	N-NITROSODIPHENYLAMINE(1)	1000	U
NITROBENZENE	1000	U	4-BROMOPHENYL-PHENYLETHER	1000	U
ISOPHORONE	1000	U	HEXACHLOROBENZENE	1000	U
2-NITROPHENOL	1000	U	PENTACHLOROPHENOL	5000	U
2,4-DIMETHYLPHENOL	1000	U	PHENANTHRENE	1000	U
BENZOIC ACID	4500	J	ANTHRACENE	1000	U
BIS(2-CHLOROETHOXY)METHANE	1000	U	DI-N-BUTYL PHTHALATE	1000	U
2,4-DICHLOROPHENOL	1000	U	FLUORANTHENE	1000	U
1,2,4-TRICHLOROBENZENE	1000	U	PYRENE	1000	U
NAPHTHALENE	1000	U	BUTYL BENZYL PHTHALATE	1000	U
4-CHLOROANILINE	1000	U	3,3'-DICHLOROBENZIDINE	2000	U
HEXACHLOROBUTADIENE	1000	U	BENZO(A)ANTHRACENE	1000	U
4-CHLORO-3-METHYLPHENOL	1000	U	BIS(2-ETHYLHEXYL)PHTHALATE	1000	U
2-METHYLNAPHTHALENE	1000	U	CHRYSENE	1000	U
HEXACHLOROCYCLOPENTADIENE	1000	U	DI-N-OCTYL PHTHALATE	1000	U
2,4,6-TRICHLOROPHENOL	1000	U	BENZO(B)FLUORANTHENE	1000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16250.14

DATE: 12/10/93

SWLO #: 16250.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/24/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	5000	U	BENZO(K)FLUORANTHENE	1000	U
2-CHLORONAPHTHALENE	1000	U	BENZO(A)PYRENE	1000	U
2-NITROANILINE	5000	U	INDENO(1,2,3-CD)PYRENE	1000	U
DIMETHYL PHTHALATE	1000	U	DIBENZ(A,H)ANTHRACENE	1000	U
ACENAPHTHYLENE	1000	U	BENZO(G,H,I)PERYLENE	1000	U
3-NITROANILINE	5000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114) D	2-FLUOROBIPHENYL	(43-116) D
TERPHENYL-D14	(33-141) D	PHENOL-D5	(10- 94) D
2-FLUOROPHENOL	(21-100) D	2,4,6-TRIBROMOPHENOL	(10-123) D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.14

DATE: 12/10/93

SWLO #: 16250.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	699		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 91%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.14

DATE: 12/10/93

SWLO #: 16250.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 20.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	100	U	NAPHTHA C6-C12	100	U
KEROSENE C9-C18	100	U	#6 FUEL OIL C12-C24	100	U
JP-4 C6-C14	100	U	MISCELLANEOUS C7-C24	28400	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	115%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.14

DATE: 12/10/93

SWLO #: 16250.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6OLD
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	553		ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	763		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	43.8		ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	1830		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	433		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.15

DATE: 12/10/93

SWLO #: 16250.15 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/03/93
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	89%	BROMOFLUOROBENZENE	(86-115)	90%
1,2-DICHLOROETHANE-D4	(76-114)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.07

DATE: 12/10/93

SWLO #: 16250.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 50.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	12000		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 97%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.07

DATE: 12/10/93

SWLO #: 16250.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	6590		NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121) 103%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.07

DATE: 12/10/93

SWLO #: 16250.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS3
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	4.8		ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	505		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	13.5		ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	25		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	41.3		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.08

DATE: 12/10/93

SWLO #: 16250.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	50	U	TRICHLOROETHENE	25	U
BROMOMETHANE	50	U	DIBROMOCHLOROMETHANE	25	U
VINYL CHLORIDE	50	U	1,1,2-TRICHLOROETHANE	25	U
CHLOROETHANE	50	U	BENZENE	62	
METHYLENE CHLORIDE	38	B	CIS-1,3-DICHLOROPROPENE	25	U
ACETONE	50	U	2-CHLOROETHYL VINYL ETHER	50	U
CARBON DISULFIDE	25	U	BROMOFORM	25	U
1,1-DICHLOROETHENE	25	U	2-HEXANONE	50	U
1,1-DICHLOROETHANE	23	J	4-METHYL-2-PENTANONE	50	U
CHLOROFORM	25	U	TETRACHLOROETHENE	24	J
1,2-DICHLOROETHANE	25	U	TOLUENE	89	
1,1,1-TRICHLOROETHANE	33		CHLOROBENZENE	25	U
CARBON TETRACHLORIDE	25	U	ETHYLBENZENE	69	
VINYL ACETATE	50	U	STYRENE	25	U
BROMODICHLOROMETHANE	25	U	1,2-DICHLOROETHENE(TOTAL)	25	U
1,1,2,2-TETRACHLOROETHANE	25	U	XYLENE (TOTAL)	500	
1,2-DICHLOROPROPANE	25	U	2-BUTANONE	94	
TRANS-1,3-DICHLOROPROPENE	25	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 101%	BROMOFLUOROBENZENE	(86-115) 105%
1,2-DICHLOROETHANE-D4	(76-114) 106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.08

DATE: 12/10/93

SWLO #: 16250.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 300.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	3000	U	ACENAPHTHENE	3000	U
BIS(2-CHLOROETHYL)ETHER	3000	U	2,4-DINITROPHENOL	15000	U
2-CHLOROPHENOL	3000	U	4-NITROPHENOL	15000	U
1,3-DICHLOROBENZENE	3000	U	DIBENZOFURAN	450	J
1,4-DICHLOROBENZENE	3000	U	2,4-DINITROTOLUENE	3000	U
BENZYL ALCOHOL	3000	U	2,6-DINITROTOLUENE	3000	U
1,2-DICHLOROBENZENE	3000	U	DIETHYLPHTHALATE	3000	U
2-METHYLPHENOL(O-CRESOL)	3000	U	4-CHLOROPHENYL-PHENYLETHER	3000	U
BIS(2-CHLOROISOPROPYL)ETHER	3000	U	FLUORENE	3000	U
4-METHYLPHENOL(P-CRESOL)	3000	U	4-NITROANILINE	15000	U
N-NITROSO-DI-N-PROPYLAMINE	3000	U	4,6-DINITRO-2-METHYLPHENOL	15000	U
HEXACHLOROETHANE	3000	U	N-NITROSODIPHENYLAMINE(1)	3000	U
NITROBENZENE	3000	U	4-BROMOPHENYL-PHENYLETHER	3000	U
ISOPHORONE	3000	U	HEXACHLOROBENZENE	3000	U
2-NITROPHENOL	3000	U	PENTACHLOROPHENOL	15000	U
2,4-DIMETHYLPHENOL	3000	U	PHENANTHRENE	3000	U
BENZOIC ACID	15000	U	ANTHRACENE	3000	U
BIS(2-CHLOROETHOXY)METHANE	3000	U	DI-N-BUTYL PHTHALATE	3000	U
2,4-DICHLOROPHENOL	3000	U	FLUORANTHENE	3000	U
1,2,4-TRICHLOROBENZENE	3000	U	PYRENE	3000	U
NAPHTHALENE	8200		BUTYL BENZYL PHTHALATE	3000	U
4-CHLOROANILINE	3000	U	3,3'-DICHLOROBENZIDINE	6000	U
HEXACHLOROBUTADIENE	3000	U	BENZO(A)ANTHRACENE	3000	U
4-CHLORO-3-METHYLPHENOL	3000	U	BIS(2-ETHYLHEXYL)PHTHALATE	3000	U
2-METHYLNAPHTHALENE	17000		CHRYSENE	3000	U
HEXACHLOROCYCLOPENTADIENE	3000	U	DI-N-OCTYL PHTHALATE	3000	U
2,4,6-TRICHLOROPHENOL	3000	U	BENZO(B)FLUORANTHENE	3000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.08

DATE: 12/10/93

SWLO #: 16250.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/19/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 300.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	15000	U	BENZO(K)FLUORANTHENE	3000	U
2-CHLORONAPHTHALENE	3000	U	BENZO(A)PYRENE	3000	U
2-NITROANILINE	15000	U	INDENO(1,2,3-CD)PYRENE	3000	U
DIMETHYL PHTHALATE	3000	U	DIBENZ(A,H)ANTHRACENE	3000	U
ACENAPHTHYLENE	3000	U	BENZO(G,H,I)PERYLENE	3000	U
3-NITROANILINE	15000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114) D	2-FLUOROBIPHENYL	(43-116) D
TERPHENYL-D14	(33-141) D	PHENOL-D5	(10- 94) D
2-FLUOROPHENOL	(21-100) D	2,4,6-TRIBROMOPHENOL	(10-123) D

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.08

DATE: 12/10/93

SWLO #: 16250.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 25.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	5070		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 103%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.08

DATE: 12/10/93

SWLO #: 16250.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 400.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	2000	U	NAPHTHA C6-C12	2000	U
KEROSENE C9-C18	4590000	E	#6 FUEL OIL C12-C24	2000	U
JP-4 C6-C14	2000	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.08

DATE: 12/10/93

SWLO #: 16250.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS10
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	3	U	ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	541		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	3.3		ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	7.3		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	68.9		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.09

DATE: 12/10/93

SWLO #: 16250.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	11	
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	25	B	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	180		2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	31		4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	29	
1,2-DICHLOROETHANE	5	U	TOLUENE	12	
1,1,1-TRICHLOROETHANE	28		CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	1.6	J
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	140	
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	24	
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 101%	BROMOFLUOROBENZENE	(86-115) 103%
1,2-DICHLOROETHANE-D4	(76-114) 103%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.09

DATE: 12/10/93

SWLO #: 16250.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	120		ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	7	J	DIBENZOFURAN	1	J
1,4-DICHLOROBENZENE	16		2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	75		DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	55		4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	6	J	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	9	J	BUTYL BENZYL PHTHALATE	2	J
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	64	
2-METHYLNAPHTHALENE	20		CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.09

DATE: 12/10/93

SWLO #: 16250.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	71%	2-FLUOROBIPHENYL	(43-116)	68%
TERPHENYL-D14	(33-141)	52%	PHENOL-D5	(10- 94)	59%
2-FLUOROPHENOL	(21-100)	36%	2,4,6-TRIBROMOPHENOL	(10-123)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.09

DATE: 12/17/93

SWLO #: 16250.09 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	1500		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 141% *

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16250.09

DATE: 12/10/93

SWLO #: 16250.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C7-C24	7160	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	92%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16250.09

DATE: 12/10/93

SWLO #: 16250.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG3001
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	3	U	ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	583		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	3	U	ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	16		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	36.4		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.10

DATE: 12/10/93

SWLO #: 16250.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 20.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	200	U	TRICHLOROETHENE	100	U
BROMOMETHANE	200	U	DIBROMOCHLOROMETHANE	100	U
VINYL CHLORIDE	200	U	1,1,2-TRICHLOROETHANE	100	U
CHLOROETHANE	200	U	BENZENE	100	U
METHYLENE CHLORIDE	2500	B	CIS-1,3-DICHLOROPROPENE	100	U
ACETONE	770		2-CHLOROETHYL VINYL ETHER	200	U
CARBON DISULFIDE	100	U	BROMOFORM	100	U
1,1-DICHLOROETHENE	100	U	2-HEXANONE	200	U
1,1-DICHLOROETHANE	100	U	4-METHYL-2-PENTANONE	200	U
CHLOROFORM	100	U	TETRACHLOROETHENE	100	U
1,2-DICHLOROETHANE	100	U	TOLUENE	51	J
1,1,1-TRICHLOROETHANE	100	U	CHLOROBENZENE	100	U
CARBON TETRACHLORIDE	100	U	ETHYLBENZENE	100	U
VINYL ACETATE	200	U	STYRENE	100	U
BROMODICHLOROMETHANE	100	U	1,2-DICHLOROETHENE(TOTAL)	100	U
1,1,2,2-TETRACHLOROETHANE	100	U	XYLENE (TOTAL)	39	J
1,2-DICHLOROPROPANE	100	U	2-BUTANONE	2200	
TRANS-1,3-DICHLOROPROPENE	100	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 101%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114) 108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16250.10

DATE: 12/10/93

SWLO #: 16250.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	16000		ACENAPHTHENE	1000	U
BIS(2-CHLOROETHYL)ETHER	1000	U	2,4-DINITROPHENOL	5000	U
2-CHLOROPHENOL	1000	U	4-NITROPHENOL	5000	U
1,3-DICHLOROBENZENE	1000	U	DIBENZOFURAN	1000	U
1,4-DICHLOROBENZENE	1000	U	2,4-DINITROTOLUENE	1000	U
BENZYL ALCOHOL	1000	U	2,6-DINITROTOLUENE	1000	U
1,2-DICHLOROBENZENE	1000	U	DIETHYLPHTHALATE	1000	U
2-METHYLPHENOL(O-CRESOL)	1000	U	4-CHLOROPHENYL-PHENYLETHER	1000	U
BIS(2-CHLOROISOPROPYL)ETHER	1000	U	FLUORENE	1000	U
4-METHYLPHENOL(P-CRESOL)	1000	U	4-NITROANILINE	5000	U
N-NITROSO-DI-N-PROPYLAMINE	1000	U	4,6-DINITRO-2-METHYLPHENOL	5000	U
HEXACHLOROETHANE	1000	U	N-NITROSODIPHENYLAMINE(1)	1000	U
NITROBENZENE	1000	U	4-BROMOPHENYL-PHENYLETHER	1000	U
ISOPHORONE	1000	U	HEXACHLOROBENZENE	1000	U
2-NITROPHENOL	1000	U	PENTACHLOROPHENOL	5000	U
2,4-DIMETHYLPHENOL	1000	U	PHENANTHRENE	1000	U
BENZOIC ACID	280	J	ANTHRACENE	1000	U
BIS(2-CHLOROETHOXY)METHANE	1000	U	DI-N-BUTYL PHTHALATE	1000	U
2,4-DICHLOROPHENOL	1000	U	FLUORANTHENE	1000	U
1,2,4-TRICHLOROBENZENE	1000	U	PYRENE	1000	U
NAPHTHALENE	1000	U	BUTYL BENZYL PHTHALATE	1000	U
4-CHLOROANILINE	1000	U	3,3'-DICHLOROBENZIDINE	2000	U
HEXACHLOROBUTADIENE	1000	U	BENZO(A)ANTHRACENE	1000	U
4-CHLORO-3-METHYLPHENOL	1000	U	BIS(2-ETHYLHEXYL)PHTHALATE	1000	U
2-METHYLNAPHTHALENE	1000	U	CHRYSENE	1000	U
HEXACHLOROCYCLOPENTADIENE	1000	U	DI-N-OCTYL PHTHALATE	1000	U
2,4,6-TRICHLOROPHENOL	1000	U	BENZO(B)FLUORANTHENE	1000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.10

DATE: 12/10/93

SWLO #: 16250.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/23/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	5000	U	BENZO(K)FLUORANTHENE	1000	U
2-CHLORONAPHTHALENE	1000	U	BENZO(A)PYRENE	1000	U
2-NITROANILINE	5000	U	INDENO(1,2,3-CD)PYRENE	1000	U
DIMETHYL PHTHALATE	1000	U	DIBENZ(A,H)ANTHRACENE	1000	U
ACENAPHTHYLENE	1000	U	BENZO(G,H,I)PERYLENE	1000	U
3-NITROANILINE	5000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	81%	2-FLUOROBIPHENYL	(43-116)	96%
TERPHENYL-D14	(33-141)	96%	PHENOL-D5	(10- 94)	68%
2-FLUOROPHENOL	(21-100)	64%	2,4,6-TRIBROMOPHENOL	(10-123)	66%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.10

DATE: 12/10/93

SWLO #: 16250.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	1030		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 82%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.10

DATE: 12/10/93

SWLO #: 16250.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 20.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	100	U	NAPHTHA C6-C12	100	U
KEROSENE C9-C18	100	U	#6 FUEL OIL C12-C24	100	U
JP-4 C6-C14	100	U	MISCELLANEOUS C7-C24	17900	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	81%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16250.10

DATE: 12/10/93

SWLO #: 16250.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2280
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	12/03/93	12/08/93	SW846-6010
LEAD	35.1		ug/l	12/03/93	12/08/93	SW846-6010
SELENIUM	5	U	ug/l	12/03/93	12/08/93	SW846-6010
BARIUM	1040		ug/l	12/03/93	12/06/93	SW846-6010
CADMIUM	78.3		ug/l	12/03/93	12/06/93	SW846-6010
CHROMIUM	3770		ug/l	12/03/93	12/06/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	12/03/93	12/06/93	SW846-6010
SILVER	1	U	ug/l	12/03/93	12/07/93	SW846-7761
ZINC	1300		ug/l	12/03/93	12/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.11

DATE: 12/10/93

SWLO #: 16250.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	7.7		CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	83	
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	90%	BROMOFLUOROBENZENE	(86-115)	90%
1,2-DICHLOROETHANE-D4	(76-114)	93%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.11

DATE: 12/10/93

SWLO #: 16250.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	9	J	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	2	J
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.11

DATE: 12/10/93

SWLO #: 16250.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	71%	2-FLUOROBIPHENYL	(43-116)	71%
TERPHENYL-D14	(33-141)	68%	PHENOL-D5	(10- 94)	67%
2-FLUOROPHENOL	(21-100)	61%	2,4,6-TRIBROMOPHENOL	(10-123)	87%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.11

DATE: 12/10/93

SWLO #: 16250.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**
GASOLINE	10	U		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 94%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.11

DATE: 12/10/93

SWLO #: 16250.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	#6 FUEL OIL C12-C24	5	U
KEROSENE C9-C18	5	U	MISCELLANEOUS C7	106	
JP-4 C6-C14	5	U	MISCELLANEOUS C12-C24	876	
NAPHTHA C6-C12	5	U			

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	90%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.11

DATE: 12/10/93

SWLO #: 16250.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2211
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	12/03/93	12/08/93	SW846-6010
LEAD	4.1		ug/l	12/03/93	12/08/93	SW846-6010
SELENIUM	5	U	ug/l	12/03/93	12/08/93	SW846-6010
BARIUM	553		ug/l	12/03/93	12/06/93	SW846-6010
CADMIUM	11.7		ug/l	12/03/93	12/06/93	SW846-6010
CHROMIUM	10.4		ug/l	12/03/93	12/06/93	SW846-6010
MERCURY	0.2	U	ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	10	U	ug/l	12/03/93	12/06/93	SW846-6010
SILVER	1	U	ug/l	12/03/93	12/07/93	SW846-7761
ZINC	57.5		ug/l	12/03/93	12/06/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.12

DATE: 12/10/93

SWLO #: 16250.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100	U	TRICHLOROETHENE	50	U
BROMOMETHANE	100	U	DIBROMOCHLOROMETHANE	50	U
VINYL CHLORIDE	100	U	1,1,2-TRICHLOROETHANE	50	U
CHLOROETHANE	100	U	BENZENE	50	U
METHYLENE CHLORIDE	960	B	CIS-1,3-DICHLOROPROPENE	50	U
ACETONE	570		2-CHLOROETHYL VINYL ETHER	100	U
CARBON DISULFIDE	50	U	BROMOFORM	50	U
1,1-DICHLOROETHENE	50	U	2-HEXANONE	100	U
1,1-DICHLOROETHANE	50	U	4-METHYL-2-PENTANONE	100	U
CHLOROFORM	50	U	TETRACHLOROETHENE	50	U
1,2-DICHLOROETHANE	50	U	TOLUENE	39	J
1,1,1-TRICHLOROETHANE	50	U	CHLOROBENZENE	50	U
CARBON TETRACHLORIDE	50	U	ETHYLBENZENE	50	U
VINYL ACETATE	100	U	STYRENE	50	U
BROMODICHLOROMETHANE	50	U	1,2-DICHLOROETHENE(TOTAL)	50	U
1,1,2,2-TETRACHLOROETHANE	50	U	XYLENE (TOTAL)	19	J
1,2-DICHLOROPROPANE	50	U	2-BUTANONE	1300	
TRANS-1,3-DICHLOROPROPENE	50	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 99%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.12

DATE: 12/17/93

SWLO #: 16250.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 100.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	11000		ACENAPHTHENE	100	U
BIS(2-CHLOROETHYL)ETHER	100	U	2,4-DINITROPHENOL	500	U
2-CHLOROPHENOL	100	U	4-NITROPHENOL	500	U
1 DICHLOROBENZENE	100	U	DIBENZOFURAN	100	U
1 DICHLOROBENZENE	100	U	2,4-DINITROTOLUENE	100	U
BENZYL ALCOHOL	120		2,6-DINITROTOLUENE	100	U
1,2-DICHLOROBENZENE	100	U	DIETHYLPHTHALATE	100	U
2-METHYLPHENOL(O-CRESOL)	70	J	4-CHLOROPHENYL-PHENYLETHER	100	U
BIS(2-CHLOROISOPROPYL)ETHER	100	U	FLUORENE	100	U
4-METHYLPHENOL(P-CRESOL)	100	U	4-NITROANILINE	500	U
N-NITROSO-DI-N-PROPYLAMINE	100	U	4,6-DINITRO-2-METHYLPHENOL	500	U
HEXACHLOROETHANE	100	U	N-NITROSODIPHENYLAMINE(1)	100	U
NITROBENZENE	100	U	4-BROMOPHENYL-PHENYLETHER	100	U
ISOPHORONE	100	U	HEXACHLOROBENZENE	100	U
2-NITROPHENOL	100	U	PENTACHLOROPHENOL	500	U
2,4-DIMETHYLPHENOL	100	U	PHENANTHRENE	100	U
BENZOIC ACID	500	U	ANTHRACENE	100	U
BIS(2-CHLOROETHOXY)METHANE	100	U	DI-N-BUTYL PHTHALATE	100	U
2,4-DICHLOROPHENOL	100	U	FLUORANTHENE	13	J
1,2,4-TRICHLOROBENZENE	100	U	PYRENE	13	J
NAPHTHALENE	100	U	BUTYL BENZYL PHTHALATE	100	U
4-CHLOROANILINE	100	U	3,3'-DICHLOROBENZIDINE	200	U
HEXACHLOROBUTADIENE	100	U	BENZO(A)ANTHRACENE	100	U
4-CHLORO-3-METHYLPHENOL	100	U	BIS(2-ETHYLHEXYL)PHTHALATE	280	
2-METHYLNAPHTHALENE	11	J	CHRYSENE	100	U
HEXACHLOROCYCLOPENTADIENE	100	U	DI-N-OCTYL PHTHALATE	16	J
2,4,6-TRICHLOROPHENOL	100	U	BENZO(B)FLUORANTHENE	8	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16250.12

DATE: 12/17/93

SWLO #: 16250.12 N1
PROJECT : TINKER AFB RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/17/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 10.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	500	U	BENZO(K)FLUORANTHENE	7	J
2-CHLORONAPHTHALENE	100	U	BENZO(A)PYRENE	100	U
2-NITROANILINE	500	U	INDENO(1,2,3-CD)PYRENE	100	U
DIMETHYL PHTHALATE	100	U	DIBENZ(A,H)ANTHRACENE	100	U
ACENAPHTHYLENE	100	U	BENZO(G,H,I)PERYLENE	100	U
3-NITROANILINE	500	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	110%	2-FLUOROBIPHENYL	(43-116)	79%
TERPHENYL-D14	(33-141)	63%	PHENOL-D5	(10- 94)	51%
2-FLUOROPHENOL	(21-100)	77%	2,4,6-TRIBROMOPHENOL	(10-123)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.12

DATE: 12/10/93

SWLO #: 16250.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	384		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 96%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16250.12

DATE: 12/10/93

SWLO #: 16250.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5	U	NAPHTHA C6-C12	5	U
KEROSENE C9-C18	5	U	#6 FUEL OIL C12-C24	5	U
JP-4 C6-C14	5	U	MISCELLANEOUS C7-C24	9410	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16250.12

DATE: 12/10/93

SWLO #: 16250.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTBG2127
LOCATION:

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ARSENIC	10	U	ug/l	11/08/93	11/09/93	SW846-6010
LEAD	436		ug/l	11/08/93	11/09/93	SW846-6010
SELENIUM	5	U	ug/l	11/08/93	11/09/93	SW846-6010
BARIUM	904		ug/l	11/08/93	11/11/93	SW846-6010
CADMIUM	53.9		ug/l	11/08/93	11/11/93	SW846-6010
CHROMIUM	1800		ug/l	11/08/93	11/11/93	SW846-6010
MERCURY	0.93		ug/l	11/08/93	11/08/93	SW846-7470
NICKEL	31.9		ug/l	11/08/93	11/11/93	SW846-6010
SILVER	1	U	ug/l	11/08/93	11/27/93	SW846-7761
ZINC	1470		ug/l	11/08/93	11/11/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.13

DATE: 12/10/93

SWLO #: 16250.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 10000.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	100000	U	TRICHLOROETHENE	50000	U
BROMOMETHANE	100000	U	DIBROMOCHLOROMETHANE	50000	U
VINYL CHLORIDE	100000	U	1,1,2-TRICHLOROETHANE	50000	U
CHLOROETHANE	100000	U	BENZENE	50000	U
METHYLENE CHLORIDE	1300000	B	CIS-1,3-DICHLOROPROPENE	50000	U
ACETONE	100000	U	2-CHLOROETHYL VINYL ETHER	100000	U
CARBON DISULFIDE	50000	U	BROMOFORM	50000	U
1,1-DICHLOROETHENE	50000	U	2-HEXANONE	100000	U
1,1-DICHLOROETHANE	50000	U	4-METHYL-2-PENTANONE	100000	U
CHLOROFORM	50000	U	TETRACHLOROETHENE	50000	U
1,2-DICHLOROETHANE	50000	U	TOLUENE	50000	U
1,1,1-TRICHLOROETHANE	26000	J	CHLOROBENZENE	50000	U
CARBON TETRACHLORIDE	50000	U	ETHYLBENZENE	50000	U
VINYL ACETATE	100000	U	STYRENE	50000	U
BROMODICHLOROMETHANE	50000	U	1,2-DICHLOROETHENE(TOTAL)	50000	U
1,1,2,2-TETRACHLOROETHANE	50000	U	XYLENE (TOTAL)	50000	U
1,2-DICHLOROPROPANE	50000	U	2-BUTANONE	100000	U
TRANS-1,3-DICHLOROPROPENE	50000	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 102%	BROMOFLUOROBENZENE	(86-115) 104%
1,2-DICHLOROETHANE-D4	(76-114) 108%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16250.13

DATE: 12/10/93

SWLO #: 16250.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 20000.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	3000000		ACENAPHTHENE	200000	U
BIS(2-CHLOROETHYL)ETHER	200000	U	2,4-DINITROPHENOL	1000000	U
2-CHLOROPHENOL	200000	U	4-NITROPHENOL	1000000	U
1,3-DICHLOROBENZENE	200000	U	DIBENZOFURAN	200000	U
1,4-DICHLOROBENZENE	200000	U	2,4-DINITROTOLUENE	200000	U
BENZYL ALCOHOL	750000		2,6-DINITROTOLUENE	200000	U
1,2-DICHLOROBENZENE	200000	U	DIETHYLPHTHALATE	200000	U
2-METHYLPHENOL(O-CRESOL)	200000	U	4-CHLOROPHENYL-PHENYLETHER	200000	U
BIS(2-CHLOROISOPROPYL)ETHER	200000	U	FLUORENE	200000	U
4-METHYLPHENOL(P-CRESOL)	200000	U	4-NITROANILINE	1000000	U
N-NITROSO-DI-N-PROPYLAMINE	200000	U	4,6-DINITRO-2-METHYLPHENOL	1000000	U
HEXACHLOROETHANE	200000	U	N-NITROSODIPHENYLAMINE(1)	200000	U
NITROBENZENE	200000	U	4-BROMOPHENYL-PHENYLETHER	200000	U
ISOPHORONE	200000	U	HEXACHLOROBENZENE	200000	U
2-NITROPHENOL	200000	U	PENTACHLOROPHENOL	1000000	U
2,4-DIMETHYLPHENOL	200000	U	PHENANTHRENE	200000	U
BENZOIC ACID	1000000	U	ANTHRACENE	200000	U
BIS(2-CHLOROETHOXY)METHANE	200000	U	DI-N-BUTYL PHTHALATE	200000	U
2,4-DICHLOROPHENOL	200000	U	FLUORANTHENE	200000	U
1,2,4-TRICHLOROBENZENE	200000	U	PYRENE	200000	U
NAPHTHALENE	200000	U	BUTYL BENZYL PHTHALATE	200000	U
4-CHLOROANILINE	200000	U	3,3'-DICHLOROBENZIDINE	400000	U
HEXACHLOROBUTADIENE	200000	U	BENZO(A)ANTHRACENE	200000	U
4-CHLORO-3-METHYLPHENOL	200000	U	BIS(2-ETHYLHEXYL)PHTHALATE	200000	U
2-METHYLNAPHTHALENE	200000	U	CHRYSENE	200000	U
HEXACHLOROCYCLOPENTADIENE	200000	U	DI-N-OCTYL PHTHALATE	200000	U
2,4,6-TRICHLOROPHENOL	200000	U	BENZO(B)FLUORANTHENE	200000	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.13

DATE: 12/10/93

SWLO #: 16250.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 12/01/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 20000.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1000000	U	BENZO(K)FLUORANTHENE	200000	U
2-CHLORONAPHTHALENE	200000	U	BENZO(A)PYRENE	200000	U
2-NITROANILINE	1000000	U	INDENO(1,2,3-CD)PYRENE	200000	U
DIMETHYL PHTHALATE	200000	U	DIBENZ(A,H)ANTHRACENE	200000	U
ACENAPHTHYLENE	200000	U	BENZO(G,H,I)PERYLENE	200000	U
3-NITROANILINE	1000000	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114) D	2-FLUOROBIPHENYL	(43-116) D
TERPHENYL-D14	(33-141) D	PHENOL-D5	(10- 94) D
2-FLUOROPHENOL	(21-100) D	2,4,6-TRIBROMOPHENOL	(10-123) D

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.13

DATE: 12/10/93

SWLO #: 16250.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 11/10/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 5.00

TOTAL PURGEABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**	PARAMETER	RESULTS**
GASOLINE	1230		

QA/QC SURROGATE RECOVERIES
4-BROMOFLUOROBENZENE (65-135) 84%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250.13

DATE: 12/10/93

SWLO #: 16250.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: IWTLS6NEW
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: MODIFIED 8015

DATE SAMPLED: 11/04/93
SAMPLE MATRIX : WG
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/08/93
DILUTION FACTOR: 1000.00

TOTAL EXTRACTABLE HYDROCARBONS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
DIESEL C10-C22	5000	U	NAPHTHA C6-C12	5000	U
KEROSENE C9-C18	5000	U	#6 FUEL OIL C12-C24	5000	U
JP-4 C6-C14	5000	U	MISCELLANEOUS C7-C24	897000	

QA/QC SURROGATE RECOVERIES

NAPHTHALENE	(46-121)	I

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250

DATE: 12/10/93

SWLO QAQC#: C931111A
PROJECT : TINKER AFB-RFI
SAMPLE #: C931111A LB1
LOCATION: LABQC
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	90%	BROMOFLUOROBENZENE	(86-115)	90%
1,2-DICHLOROETHANE-D4	(76-114)	92%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931111A
INST. BATCH: 13983
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/11/93 12:19
ANALYZED : 11/11/93 12:45

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	44	88	48	95	7.58	32	54-161
TRICHLOROETHENE	50	45	90	45	90	< 1	38	67-149
BENZENE	50	41	82	45	90	8.91	46	70-134
TOLUENE	50	41	81	42	84	2.81	15	75-140
CHLOROBENZENE	50	43	85	44	88	3.44	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	93	93	88-110
BROMOFLUOROBENZENE	90	90	86-115
1,2-DICHLOROETHANE-D4	94	93	76-114

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250

DATE: 12/10/93

SWLO QAQC#: C931112A
PROJECT : TINKER AFB-RFI
SAMPLE #: C931112A LB1
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	6.5		CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	100%
1,2-DICHLOROETHANE-D4	(76-114)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931112A
INST. BATCH: 14053
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/12/93 14:29
ANALYZED : 11/12/93 14:55

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	57	114	55	110	4.23	32	54-161
TRICHLOROETHENE	50	55	110	52	105	5.39	38	67-149
BENZENE	50	51	103	51	103	< 1	46	70-134
TOLUENE	50	51	102	50	101	1.48	15	75-140
CHLOROBENZENE	50	52	104	51	102	1.86	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	102	103	88-110
BROMOFLUOROBENZENE	104	103	86-115
1,2-DICHLOROETHANE-D4	100	108	76-114

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250

DATE: 12/10/93

SWLO QAQC#: C931115A
PROJECT : TINKER AFB-RFI
SAMPLE #: C931115A LB1
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	3.8	J	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	XYLENE (TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 98%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931115A
INST. BATCH: 14108
REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/15/93 11:14
ANALYZED : 11/15/93 11:40

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50	47	95	52	104	9.66	32	54-161
TRICHLOROETHENE	50	45	90	49	99	9.31	38	67-149
BENZENE	50	45	90	52	104	15.0	46	70-134
TOLUENE	50	44	88	49	98	10.2	15	75-140
CHLOROBENZENE	50	45	90	50	100	10.1	14	72-135

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	101	102	88-110
BROMOFLUOROBENZENE	103	103	86-115
1,2-DICHLOROETHANE-D4	106	106	76-114

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/17/93

PROJECT : TINKER AFB RFI
SDG: 16250
MATRIX : WATER

SAMPLE	: 16250.02	QAQC: C931115A	ANALYZED : 11/15/93 17:53
SPIKE SAMPLE	: 16250.04	QAQC: C931111A	ANALYZED : 11/11/93 17:59
SPIKE DUP SAMPLE	: 16250.05	QAQC: C931111A	ANALYZED : 11/11/93 18:25

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	50		45	90	43	87	3.02	14	61-145
TRICHLOROETHENE	50	37	81	87	73	72	9.92	14	71-120
BENZENE	50		45	90	45	90	< 1	11	76-127
TOLUENE	50	12	55	84	51	78	6.29	13	76-125
CHLOROBENZENE	50		47	94	46	92	2.38	13	75-130

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	99	90	90	88-110
BROMOFLUOROBENZENE	104	91	90	86-115
1,2-DICHLOROETHANE-D4	107	88	90	76-114

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250

DATE: 12/10/93

SWLO QAQC#: BL110604W
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	10	U	ACENAPHTHENE	10	U
BIS(2-CHLOROETHYL)ETHER	10	U	2,4-DINITROPHENOL	50	U
2-CHLOROPHENOL	10	U	4-NITROPHENOL	50	U
1,3-DICHLOROBENZENE	10	U	DIBENZOFURAN	10	U
1,4-DICHLOROBENZENE	10	U	2,4-DINITROTOLUENE	10	U
BENZYL ALCOHOL	10	U	2,6-DINITROTOLUENE	10	U
1,2-DICHLOROBENZENE	10	U	DIETHYLPHTHALATE	10	U
2-METHYLPHENOL(O-CRESOL)	10	U	4-CHLOROPHENYL-PHENYLETHER	10	U
BIS(2-CHLOROISOPROPYL)ETHER	10	U	FLUORENE	10	U
4-METHYLPHENOL(P-CRESOL)	10	U	4-NITROANILINE	50	U
N-NITROSO-DI-N-PROPYLAMINE	10	U	4,6-DINITRO-2-METHYLPHENOL	50	U
HEXACHLOROETHANE	10	U	N-NITROSODIPHENYLAMINE(1)	10	U
NITROBENZENE	10	U	4-BROMOPHENYL-PHENYLETHER	10	U
ISOPHORONE	10	U	HEXACHLOROBENZENE	10	U
2-NITROPHENOL	10	U	PENTACHLOROPHENOL	50	U
2,4-DIMETHYLPHENOL	10	U	PHENANTHRENE	10	U
BENZOIC ACID	50	U	ANTHRACENE	10	U
BIS(2-CHLOROETHOXY)METHANE	10	U	DI-N-BUTYL PHTHALATE	10	U
2,4-DICHLOROPHENOL	10	U	FLUORANTHENE	10	U
1,2,4-TRICHLOROBENZENE	10	U	PYRENE	10	U
NAPHTHALENE	10	U	BUTYL BENZYL PHTHALATE	10	U
4-CHLOROANILINE	10	U	3,3'-DICHLOROBENZIDINE	20	U
HEXACHLOROBUTADIENE	10	U	BENZO(A)ANTHRACENE	10	U
4-CHLORO-3-METHYLPHENOL	10	U	BIS(2-ETHYLHEXYL)PHTHALATE	10	U
2-METHYLNAPHTHALENE	10	U	CHRYSENE	10	U
HEXACHLOROCYCLOPENTADIENE	10	U	DI-N-OCTYL PHTHALATE	10	U
2,4,6-TRICHLOROPHENOL	10	U	BENZO(B)FLUORANTHENE	10	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16250

DATE: 12/10/93

SWLO QAQC#: BL110604W
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION:
DATE ANALYZED : 11/29/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/06/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	50	U	BENZO(K)FLUORANTHENE	10	U
2-CHLORONAPHTHALENE	10	U	BENZO(A)PYRENE	10	U
2-NITROANILINE	50	U	INDENO(1,2,3-CD)PYRENE	10	U
DIMETHYL PHTHALATE	10	U	DIBENZ(A,H)ANTHRACENE	10	U
ACENAPHTHYLENE	10	U	BENZO(G,H,I)PERYLENE	10	U
3-NITROANILINE	50	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(35-114)	68%	2-FLUOROBIPHENYL	(43-116)	62%
TERPHENYL-D14	(33-141)	84%	PHENOL-D5	(10- 94)	63%
2-FLUOROPHENOL	(21-100)	57%	2,4,6-TRIBROMOPHENOL	(10-123)	96%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Bb

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-06-93
DATE ANALYZED: 11-16-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	0	107	53	12 - 89
2-CHLOROPHENOL	200	0	143	71	27 - 123
1,4-DICHLOROBENZENE	100	0	61	60	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	0	68	68	41 - 116
1,2,4-TRICHLOROBENZENE	100	0	59	59	39 - 98
4-CHLORO-3-METHYLPHENOL	200	0	108	54	23 - 97
ACENAPHTHENE	100	0	84	85	46 - 118
4-NITROPHENOL	200	0	180	90*	10 - 80
2,4-DINITROTOLUENE	100	0	78	78	24 - 96
PENTACHLOROPHENOL	200	0	126	63	9 - 103
PYRENE	100	0	69	69	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	112	56	6	35	12 - 89
2-CHLOROPHENOL	200	145	72	1	50	27 - 123
1,4-DICHLOROBENZEE	100	62	62	2	27	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	72	72	6	38	41 - 116
1,2,4-TRICHLOROBEZENE	100	61	61	3	23	39 - 98
4-CHLORO-3-METHYLPHENOL	200	113	56	4	33	23 - 97
ACENAPHTHENE	100	90	90	6	19	46 - 118
4-NITROPHENOL	200	139	700	25	50	10 - 80
2,4-DINITROTOLUENE	100	81	81	4	47	24 - 96
PENTACHLOROPHENOL	200	131	66	5	47	9 - 103
PYRENE	100	71	71	3	36	26 - 127

QA/QC SURROGATE RECOVERIES

			LCS				
NITROBENZENE-d5	(35-114) 74%	2-FLUOROBIPHENYL	(43-116)	67%	TERPHENYL-d14	(33-141)	67%
PHENOL-d5	(10-94) 52%	2-FLUOROPHENOL	(21-100)	65%	2,4,6-TRIBROMOPHENOL	(10-123)	102
			LCSD				
NITROBENZENE-d5	(35-114) 75%	2-FLUOROBIPHENYL	(43-116)	66%	TERPHENYL-d14	(33-141)	6
PHENOL-d5	(10-94) 51%	2-FLUOROPHENOL	(21-100)	63%	2,4,6-TRIBROMOPHENOL	(10-123)	80

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Bd

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO # 16250.04(MS) / 16250.05(MSD)
METHOD REFERENCE: SW846-8270
SAMPLE ID: IWTLS2 MS/MSD

DATE EXTRACTED: 11-06-93
DATE ANALYZED: 11-23-93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	3850	2800	0 *	12 - 89
2-CHLOROPHENOL	200	0	107	54	27 - 123
1,4-DICHLOROBENZENE	100	0	80	80	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	0	81	81	41 - 116
1,2,4-TRICHLOROBENZENE	100	0	91	91	39 - 98
4-CHLORO-3-METHYLPHENOL	200	0	173	87	23 - 97
ACENAPHTHENE	100	0	89	89	46 - 118
4-NITROPHENOL	200	0	180	90 *	10 - 80
2,4-DINITROTOLUENE	100	0	65	65	24 - 96
PENTACHLOROPHENOL	200	0	167	84	9 - 103
PYRENE	100	0	80	80	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	1100	0 *	87 *	35	12 - 89
2-CHLOROPHENOL	200	44	22*	84 *	50	27 - 123
1,4-DICHLOROBENZEE	100	32	32*	86 *	27	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	25	25*	106*	38	41 - 116
1,2,4-TRICHLOROBEZENE	100	42	42	74 *	23	39 - 98
4-CHLORO-3-METHYLPHENOL	200	91	45	117*	33	23 - 97
ACENAPHTHENE	100	40	40*	76 *	19	46 - 118
4-NITROPHENOL	200	140	66	25 *	50	10 - 80
2,4-DINITROTOLUENE	100	45	45	36	47	24 - 96
PENTACHLOROPHENOL	200	110	54	41	47	9 - 103
PYRENE	100	53	53	41 *	36	26 - 127

QA/QC SURROGATE RECOVERIES

		MS					
NITROBENZENE-d5	(35-114) 71%	2-FLUOROBIPHENYL	(43-116)	87%	TERPHENYL-d14	(33-141)	93%
PHENOL-d5	(10-94) 41%	2-FLUOROPHENOL	(21-100)	79%	2,4,6-TRIBROMOPHENOL	(10-123)	110%
		MSD					
NITROBENZENE-d5	(35-114) 36%	2-FLUOROBIPHENYL	(43-116)	40%*	TERPHENYL-d14	(33-141)	63%
PHENOL-d5	(10-94) 20%	2-FLUOROPHENOL	(21-100)	28%	2,4,6-TRIBROMOPHENOL	(10-123)	85%

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCE, INC
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Bd

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO # 16250.04(MS) / 16250.05(MSD)
METHOD REFERENCE: SW846-8270
SAMPLE ID: IWTLS2 MS/MSD

DATE EXTRACTED: 11-06-93
DATE ANALYZED: 11-23-93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS PERCENT RECOVERY	QC LIMITS RECOVERY
PHENOL	200	2100	2800	363	12 - 89
2-CHLOROPHENOL	200	0	110	54	27 - 123
1,4-DICHLOROBENZENE	100	0	80	80	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	0	81	81	41 - 116
1,2,4-TRICHLOROBENZENE	100	0	91	91	39 - 98
4-CHLORO-3-METHYLPHENOL	200	0	170	87	23 - 97
ACENAPHTHENE	100	0	89	89	46 - 118
4-NITROPHENOL	200	9.6	180	86	10 - 80
2,4-DINITROTOLUENE	100	0	65	65	24 - 96
PENTACHLOROPHENOL	200	0	170	84	9 - 103
PYRENE	100	0	80	80	26 - 127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD PERCENT RECOVERY	RPD	QC LIMITS RPD	QC LIMITS RECOVERY
PHENOL	200	1100	0 *	200*	35	12 - 89
2-CHLOROPHENOL	200	44	22*	84 *	50	27 - 123
1,4-DICHLOROBENZEE	100	32	32*	86 *	27	36 - 97
N-NITROSO-di-n-PROPYLAMINE	100	25	25*	106*	38	41 - 116
1,2,4-TRICHLOROBEZENE	100	42	42	74 *	23	39 - 98
4-CHLORO-3-METHYLPHENOL	200	91	45	64 *	33	23 - 97
ACENAPHTHENE	100	40	40*	76 *	19	46 - 118
4-NITROPHENOL	200	140	66	265*	50	10 - 80
2,4-DINITROTOLUENE	100	45	45	36	47	24 - 96
PENTACHLOROPHENOL	200	110	54	43	47	9 - 103
PYRENE	100	53	53	41 *	36	26 - 127

QA/QC SURROGATE RECOVERIES

MS

NITROBENZENE-d5	(35-114) 71%	2-FLUOROBIPHENYL	(43-116) 87%	TERPHENYL-d14	(33-141) 93%
PHENOL-d5	(10-94) 41%	2-FLUOROPHENOL	(21-100) 79%	2,4,6-TRIBROMOPHENOL	(10-123) 110%

MSD

NITROBENZENE-d5	(35-114) 36%	2-FLUOROBIPHENYL	(43-116) 40%*	TERPHENYL-d14	(33-141) 6
PHENOL-d5	(10-94) 20%	2-FLUOROPHENOL	(21-100) 28%	2,4,6-TRIBROMOPHENOL	(10-123) 8

*VALUES OUTSIDE OF QC LIMITS

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Tc

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
DATE ANALYZED: 11-09-93
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DILUTION FACTOR: 1
PROJECT: TINKER AFB-RFI
SAMPLE ID: BLANK

PARAMETER	QUANT. LIMIT	UNIT	RESULTS
TOTAL PURGEABLE PETROLEUM HYDROCARBONS			
GASOLINE	10.0	ug/L	ND

QA/QC SURROGATE RECOVERY

4-BROMOFLUOROBENZENE(65-135) 102%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER, 1986

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ATTN: KEVIN TYNES

REPORT: 16250Tg

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO #: 16250.04(MS)/16250.05(MSD)
DATE ANALYZED: 11-09-93
METHOD REFERENCE: MOD. 8015 (CALIF.) PURGEABLE
SAMPLE ID: IWTLS2 MS/MSD

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)*	MS CONC. (ug/L)*	MS % RECOVERY
GASOLINE	500.0	143	704	112

	MSD CONC. (ug/L)*	MSD % RECOVERY	RELATIVE PERCENT DIFFERENCE
GASOLINE	694	110	1.4%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS

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AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Ta

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
DATE ANALYZED: 11-10-93
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DILUTION FACTOR: 1
PROJECT: TINKER AFB-RFI
SAMPLE ID: BLANK

PARAMETER	QUANT. LIMIT	UNIT	RESULTS
TOTAL PURGEABLE PETROLEUM HYDROCARBONS			
GASOLINE	10.0	ug/L	ND

QA/QC SURROGATE RECOVERY

4-BROMOFLUOROBENZENE(65-135)	79%

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER, 1986

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7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Tb

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO #: 16250 LCS/LCSD
DATE ANALYZED: 11-10-93
METHOD REFERENCE: MOD. 8015 (CALIF.) PURGEABLE
SAMPLE ID: LCS/LCSD

LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)*	LCS CONC. (ug/L)*	LCS % RECOVERY
GASOLINE	500.0	0	469	92

	LCSD CONC. (ug/L)*	LCS % RECOVERY	RELATIVE PERCENT DIFFERENCE
GASOLINE	498	99.6	6.0%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS

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AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Te

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO # METHOD BLANK
METHOD REFERENCE: MOD. SW846-8015 (CALIFORNIA METHOD)
DATE ANALYZED: 11-08-93
PROJECT: TINKER AFB-RFI
SAMPLE ID: LABORATORY BLANK

PARAMETER	DET. LIMIT	UNIT	RESULTS
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS			
DIESEL C10-C22	5.0	ug/L	ND
KEROSENE C9-C18	5.0	ug/L	ND
JP-4 C6-C14	5.0	ug/L	ND
NAPTHA C6-C12	5.0	ug/L	ND
#6 FUEL OIL C12-C24	5.0	ug/L	ND
MISCELLANEOUS C8-C14 (1)	5.0	ug/L	ND

QA/QC SURROGATE RECOVERY

NAPHTHALENE(21-166) 83%

(1) = ANALYSIS SHOWS MISCELLANEOUS PEAKS WHICH CANNOT BE IDENTIFIED AS ANY SPECIFIC PATTERN. THE RESPONSE FACTOR FOR THE NEAREST ELUTING HYDROCARBON STANDARD WAS USED TO CALCULATE THE CONCENTRATION OF THE MISCELLANEOUS PEAKS. NUMBERS INDICATE THE APPROXIMATE CARBON CHAIN LENGTH.
(2) = PATTERN IS SIMILAR TO, BUT NOT IDENTICAL TO STANDARD
(3) = MAY BE A WEATHERED GASOLINE
ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = COMPOUND FOUND IN BLANK AS WELL AS SAMPLE
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE

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7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16250Td

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO #: 16250.04(MS) / 16250.05(MSD)
DATE ANALYZED: 11-08-93
METHOD REFERENCE: MOD. 8015 (CALIF.) EXTRACTABLE
SAMPLE ID: IWTLS2 MS/MSD

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY DATA

	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)*	MS CONC. (ug/L)*	MS % RECOVERY
DIESEL	500.0	5950	8120	110%

	MSD CONC. (ug/L)*	MSD % RECOVERY	RELATIVE PERCENT DIFFERENCE
DIESEL	18100	125	76%

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS

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7800 SHOAL CREEK BLVD, STE 222 W
AUSTIN, TX 78757
ATTN: CLIENT CONTACT

REPORT: 16250Tf

DATE: 12-17-93

SAMPLE MATRIX: WATER
SWLO #: 16250 LCS
DATE ANALYZED: 11-08-93
METHOD REFERENCE: MOD. 8015 (CALIF.) EXTRACTABLE
SAMPLE ID: LCS

LAB CONTROL SPIKE

	SPIKE CONC. (ug/L)	SAMPLE CONC. (ug/L)*	LCS CONC. (ug/L)*	LCS % RECOVERY
DIESEL	5000	0	3940	94

* = DILUTION FACTOR NOT APPLIED TO THESE CONCENTRATIONS

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16250a
REPORT DATE: 12-09-93

MATRIX: **WATER**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/09/93	110893I4	10.0	ug/L	< 10.0
LEAD	11/09/93	110893I4	3.0	ug/L	< 3.0
SELENIUM	11/09/93	110893I4	5.0	ug/L	< 5.0
BARIUM	11/11/93	110893I4	5.0	ug/L	< 5.0
CADMIUM	11/11/93	110893I4	3.0	ug/L	< 3.0
CHROMIUM	11/11/93	110893I4	5.0	ug/L	< 5.0
NICKEL	11/11/93	110893I4	10.0	ug/L	< 10.0
ZINC	11/11/93	110893I4	15.0	ug/L	< 15.0
MERCURY	11/08/93	110893HG02	0.2	ug/L	< 0.2
SILVER	11/27/93	110893F4	1.0	ug/L	< 1.0
ARSENIC	12/08/93	120393I5	10.0	ug/L	< 10.0
LEAD	12/08/93	120393I5	3.0	ug/L	< 3.0
SELENIUM	12/08/93	120393I5	5.0	ug/L	< 5.0
BARIUM	12/08/93	120393I5	5.0	ug/L	< 5.0
CADMIUM	12/08/93	120393I5	3.0	ug/L	< 3.0
CHROMIUM	12/08/93	120393I5	5.0	ug/L	< 5.0
NICKEL	12/08/93	120393I5	10.0	ug/L	< 10.0
ZINC	12/08/93	120393I5	15.0	ug/L	< 15.0
SILVER	12/07/93	120393F5	1.0	ug/L	< 1.0

QC/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16250b
REPORT DATE: 12-09-93

MATRIX: **WATER**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (ug/L)	SPIKED RESULTS (ug/L)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/09/93	2000	2211	110	80-120
LEAD	11/09/93	500	484	97	80-120
SELENIUM	11/09/93	2000	2388	119	80-120
BARIUM	11/11/93	2000	2040	102	80-120
CADMIUM	11/11/93	50.0	49.0	98	80-120
CHROMIUM	11/11/93	200	200	100	80-120
NICKEL	11/11/93	500	506	101	80-120
ZINC	11/11/93	500	496	99	80-120
MERCURY	11/08/93	4.90	4.97	101	80-120
SILVER	11/27/93	50.0	42.8	86	80-120
ARSENIC	12/08/93	2000	2062	103	80-120
LEAD	12/08/93	500	496	99	80-120
SELENIUM	12/08/93	2000	2009	100	80-120
BARIUM	12/08/93	2000	2000	100	80-120
CADMIUM	12/08/93	50.0	50.5	101	80-120
CHROMIUM	12/08/93	200	192	96	80-120
NICKEL	12/08/93	500	500	100	80-120
ZINC	12/08/93	500	501	100	80-120
SILVER	12/07/93	50.0	47.5	95	80-120

QC/lb/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16250c
REPORT DATE: 12-09-93

MATRIX: **WATER**
SAMPLE ID: **IWTLS2 N1**

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (ug/L)	SPIKE CONC. (ug/L)	MS CONC. (ug/L)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	12/08/93	< 10.0	2000	2111	106	75-125
LEAD	12/08/93	19.6	500	497	95	75-125
SELENIUM	12/08/93	< 5.0	2000	2163	108	75-125
BARIUM	12/08/93	468	2000	2430	98	75-125
CADMIUM	12/08/93	35.2	50.0	83.8	97	75-125
CHROMIUM	12/08/93	650	200	711	31*	75-125
NICKEL	12/08/93	114	500	573	92	75-125
ZINC	12/08/93	49.8	500	536	97	75-125
MERCURY	11/08/93	< 0.2	1.00	0.857	86	75-125
SILVER	12/07/93	5.4	50.0	50.0	89	75-125

* OUTSIDE CONTROL LIMITS

QC/lb/dn

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: [x] Federal Express [ ] UPS Other: ~~BO~~

PROJECT NUMBER: A0401.08

AIRBILL OR CARRIER ID #: 8010145485

SAMPLER(S): M. HARDER R. NELSON

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	VOA (8240)	SemiVOA (8270)	CN (ACID)	Metals (6010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/3/93	--	FIELDQC		TB1	WQ	NA	0	0	2	x				0	0	1	A	
	1305	I24.12SB6		N1	SO	H	8	8.5	3	x	x	x	x	0	0	1	A	
	1400	↓		N1	SO	H	15	16	3	x	x	x	x	0	0	1	A	
	0840	I24.11SB2		N1	SO	H	6	7	3	x	x	x	x	0	0	1	A	
	1015	↓		N1	SO	H	13	14	3	x	x	x	x	0	0	1	A	
	0940	S32 BSB11		N1	SO	H	15	16.5	3	x	x	x	x	0	0	1	A	
	1000	↓		N1	SO	H	16.5	17.5	3	x	x	x	x	0	0	1	A	
	1310	S32.BSB10		N1	SO	H	14.5	16	3	x	x	x	x	0	0	1	A	
	1310	↓		FR1	SO	H	14.5	16	3	x	x	x	x	0	0	1	A	
	1215	↓		N1	SO	H	11	12	3	x	x	x	x	0	0	1	A	
	1600	S32.BSB9		N1	SO	H	14.5	15.5	3	x	x	x	x	0	0	1	A	
↓	1615	↓		N1	SO	H	16.5	18	3	x	x	x	x	0	0	1	A	
																		CS

Relinquished by: (Signature) — Date 11/3/93 — Time 1750

Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time

Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time

Received by: (Signature) — Date 11/4/93 — Time 0845

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chainо.dwg

PAGE 2 OF 2

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS
Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 801014545485

SAMPLER(S): M. HARDER R. NELSON

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	NUMBER OF CONTAINERS	PRESERVATIVE	ANALYSIS REQUIRED: VOA (8240)	SemiVOA (8270)	CN (9010)	METALS (6010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	FIELD LOT CONTROL NUMBER	REMARKS
11/3/93	1610	I24.10SB3		N1	SO	H	6	7	3		X	X	X	X						
1	1700	↓		N1	SO	H	15	16	3		X	X	X	X						

Relinquished by: (Signature) Date 11/3/93 Time 1750

Received by: (Signature) Date Time

Relinquished by: (Signature) Date Time

Received by: (Signature) Date Time

Relinquished by: (Signature) Date Time

Received by: (Signature) K. Williamson Date 11/4/93 Time 0845

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34

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS — Other

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 801014547 4

SAMPLER(S): M. HARDER, R. NELSON

(Signature)

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	No. of Containers	VOA (8240)	SVOA (8270)	Metals (6010)	CN (9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	REMARKS
11/4/93	–	FIELDQC		TB1	WQ	NA	0	0	2	X				0	0	1	A	
	0825	I24.9SB1		N1	SO	H	10.5	11.5	3	X	X	X	X	0	0	1	A	
	0925	I24.9SB1		N1	SO	H	16.5	17.5	3	X	X	X	X	0	0	1	A	
	1125	I24.9SB2		N1	SO	H	10	11	3	X	X	X	X	0	0	1	A	
	1145	I24.9SB2		N1	SO	H	17	17.5	3	X	X	X	X	0	0	1	A	
	0830	S32.8SB18		N1	SO	H	9.5	11.5	3	X	X	X	X	0	0	1	A	
	1000	S32.8SB18		N1	SO	H	16	18	3	X	X	X	X	0	0	1	A	
	1130	S32.8SB4		N1	SO	H	8	9	3	X	X	X	X	0	0	1	A	
	1225	S32.8SB4		N1	SO	H	12	13.5	3	X	X	X	X	0	0	1	A	
	1425	S32.8SB5		N1	SO	H	6	7	3	X	X	X	X	0	0	1	A	
	1500	S32.8SB5		N1	SO	H	11.5	13.5	3	X	X	X	X	0	0	1	A	
	1500	S32.8SB5		MS1	SO	H	11.5	13.5	3	X	X	X	X	0	0	1	A	
	1500	S32.8SB5		SD1	SO	H	11.5	13.5	3	X	X	X	X	0	0	1	A	

Relinquished by: (Signature) — Date 11/4/93 Time 1730

Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time

Received by: (Signature) — Date — Time

Relinquished by: (Signature) — Date — Time

Received by: (Signature) — Date 11/5/93 Time 08:15

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38F

CHAIN OF CUSTODY RECORD

ENGINEERING–SCIENCE
AUSTIN, TEXAS
ES

PROJECT NAME/LOCATION: TINKER AFB, OK

CARRIER: ☒ Federal Express ☐ UPS
Other _____

PROJECT NUMBER: AU401.08

AIRBILL OR CARRIER ID #: 8010145474

SAMPLER(S): M. HARDER R. NELSON.

(Signature) M. W. Harder TCL, NL

Date	Time	Loc. ID	Sample ID/Desc.	Sample Type	Matrix	Sampling Method	Begin Depth	End Depth	Number of Containers	VOA (8240)	SemiVOA (8270)	Metals (6010)	CN (9010)	Ambient Condition Blank	Equipment Blank	Trip Blank	Cooler Letter	Field Lot Control Number	REMARKS
11-4-93	1445	I24.2SB3		N1	SO	H	6	7	3	X	X	X	X			0	0	1	A		
	1610	I24.2SB3		N1	SO	H	16.5	17.5	3	X	X	X	X			0	0	1	A		

Preservative

Analysis Required

Relinquished by: (Signature)	Date	Time
M. W. Harder	11/4/93	1730

Received by: (Signature)	Date	Time
K. Collis	11/5/93	0845

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SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.01

DATE: 12/03/93

SWLO #: 16220.01 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	2	J
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	4.8	J
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 109%	BROMOFLUOROBENZENE	(86-115) 101%
1,2-DICHLOROETHANE-D4	(76-114) 105%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.02

DATE: 12/03/93

SWLO #: 16220.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : / /
DILUTION FACTOR: 1.12

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	2.5	J	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	11	U	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 102%	BROMOFLUOROBENZENE	(74-121) 102%
1,2-DICHLOROETHANE-D4	(70-121) 101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.02

DATE: 12/03/93

SWLO #: 16220.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	40	J
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	43	J	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	39	J
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	52	J
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	42	J
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	59	J	BIS(2-ETHYLHEXYL)PHTHALATE	100	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.02

DATE: 12/03/93

SWLO #: 16220.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	66%
TERPHENYL-D14	(18-137)	62%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	52%	2,4,6-TRIBROMOPHENOL	(19-122)	86%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.02

DATE: 12/03/93

SWLO #: 16220.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.112	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.112	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	4.61		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	308		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.439		mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	15.9		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	4.84		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	9.34		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.563	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	14.3		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.02

DATE: 12/03/93

SWLO #: 16220.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 8.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.563	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.03

DATE: 12/03/93

SWLO #: 16220.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	3.8	J	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	12		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	1.3	J
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	97%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.03

DATE: 12/02/93

SWLO #: 16220.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	62	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

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METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	66%
TERPHENYL-D14	(18-137)	63%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16220.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.118	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.42		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	49.6		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.355	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	5.09		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	0.829		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	5.09		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.592	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	5.8		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB-RFI
SAMPLE #: I24.12SB6
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.592	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.04

DATE: 12/02/93

SWLO #: 16220.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	4.5	J	CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	32		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	100%
1,2-DICHLOROETHANE-D4	(70-121)	99%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16220.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	49	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16220.04 N1
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SAMPLE #: I24.11SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	60%	2-FLUOROBIPHENYL	(30-115)	64%
TERPHENYL-D14	(18-137)	59%	PHENOL-D5	(24-113)	51%
2-FLUOROPHENOL	(25-121)	51%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.04

DATE: 12/02/93

SWLO #: 16220.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.114	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	6.96		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	132		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.342	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	14		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	5.82		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	15.1		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.571	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	17.6		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.11SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.571	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.05

DATE: 12/02/93

SWLO #: 16220.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : / /
DILUTION FACTOR: 1.28

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	13	U	TRICHLOROETHENE	6.4	U
BROMOMETHANE	13	U	DIBROMOCHLOROMETHANE	6.4	U
VINYL CHLORIDE	13	U	1,1,2-TRICHLOROETHANE	6.4	U
CHLOROETHANE	13	U	BENZENE	6.4	U
METHYLENE CHLORIDE	4.4	J	CIS-1,3-DICHLOROPROPENE	6.4	U
ACETONE	41		2-CHLOROETHYL VINYL ETHER	13	U
CARBON DISULFIDE	6.4	U	BROMOFORM	6.4	U
1,1-DICHLOROETHENE	6.4	U	2-HEXANONE	13	U
1,1-DICHLOROETHANE	6.4	U	4-METHYL-2-PENTANONE	13	U
CHLOROFORM	6.4	U	TETRACHLOROETHENE	1.6	J
1,2-DICHLOROETHANE	6.4	U	TOLUENE	6.4	U
1,1,1-TRICHLOROETHANE	6.4	U	CHLOROBENZENE	6.4	U
CARBON TETRACHLORIDE	6.4	U	ETHYLBENZENE	6.4	U
VINYL ACETATE	13	U	STYRENE	6.4	U
BROMODICHLOROMETHANE	6.4	U	1,2-DICHLOROETHENE(TOTAL)	6.4	U
1,1,2,2-TETRACHLOROETHANE	6.4	U	XYLENE (TOTAL)	6.4	U
1,2-DICHLOROPROPANE	6.4	U	2-BUTANONE	13	U
TRANS-1,3-DICHLOROPROPENE	6.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 100%	BROMOFLUOROBENZENE	(74-121) 100%
1,2-DICHLOROETHANE-D4	(70-121) 98%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.05

DATE: 12/02/93

SWLO #: 16220.05 N1
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SAMPLE #: I24.11SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	430	U	ACENAPHTHENE	430	U
BIS(2-CHLOROETHYL)ETHER	430	U	2,4-DINITROPHENOL	2100	U
2-CHLOROPHENOL	430	U	4-NITROPHENOL	2100	U
1,3-DICHLOROBENZENE	430	U	DIBENZOFURAN	430	U
1,4-DICHLOROBENZENE	430	U	2,4-DINITROTOLUENE	430	U
BENZYL ALCOHOL	430	U	2,6-DINITROTOLUENE	430	U
1,2-DICHLOROBENZENE	430	U	DIETHYLPHTHALATE	430	U
2-METHYLPHENOL(O-CRESOL)	430	U	4-CHLOROPHENYL-PHENYLETHER	430	U
BIS(2-CHLOROISOPROPYL)ETHER	430	U	FLUORENE	430	U
4-METHYLPHENOL(P-CRESOL)	430	U	4-NITROANILINE	2100	U
N-NITROSO-DI-N-PROPYLAMINE	430	U	4,6-DINITRO-2-METHYLPHENOL	2100	U
HEXACHLOROETHANE	430	U	N-NITROSODIPHENYLAMINE(1)	430	U
NITROBENZENE	430	U	4-BROMOPHENYL-PHENYLETHER	430	U
ISOPHORONE	430	U	HEXACHLOROBENZENE	430	U
2-NITROPHENOL	430	U	PENTACHLOROPHENOL	2100	U
2,4-DIMETHYLPHENOL	430	U	PHENANTHRENE	430	U
BENZOIC ACID	2100	U	ANTHRACENE	430	U
BIS(2-CHLOROETHOXY)METHANE	430	U	DI-N-BUTYL PHTHALATE	430	U
2,4-DICHLOROPHENOL	430	U	FLUORANTHENE	430	U
1,2,4-TRICHLOROBENZENE	430	U	PYRENE	430	U
NAPHTHALENE	430	U	BUTYL BENZYL PHTHALATE	430	U
4-CHLOROANILINE	430	U	3,3'-DICHLOROBENZIDINE	860	U
HEXACHLOROBUTADIENE	430	U	BENZO(A)ANTHRACENE	430	U
4-CHLORO-3-METHYLPHENOL	430	U	BIS(2-ETHYLHEXYL)PHTHALATE	83	JB
2-METHYLNAPHTHALENE	430	U	CHRYSENE	430	U
HEXACHLOROCYCLOPENTADIENE	430	U	DI-N-OCTYL PHTHALATE	430	U
2,4,6-TRICHLOROPHENOL	430	U	BENZO(B)FLUORANTHENE	430	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.05

DATE: 12/02/93

SWLO #: 16220.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.30

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	2100	U	BENZO(K)FLUORANTHENE	430	U
2-CHLORONAPHTHALENE	430	U	BENZO(A)PYRENE	430	U
2-NITROANILINE	2100	U	INDENO(1,2,3-CD)PYRENE	430	U
DIMETHYL PHTHALATE	430	U	DIBENZ(A,H)ANTHRACENE	430	U
ACENAPHTHYLENE	430	U	BENZO(G,H,I)PERYLENE	430	U
3-NITROANILINE	2100	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	60%	2-FLUOROBIPHENYL	(30-115)	68%
TERPHENYL-D14	(18-137)	64%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	55%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

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REPORT: 16220.05

DATE: 12/02/93

SWLO #: 16220.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.128	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.128	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	4.34		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	31.8		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.383	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	3.96		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	2.81		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	2.68		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.639	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	3.45		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16220.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.11SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 13.00
DEPTH TO : 14.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.639	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.06

DATE: 12/02/93

SWLO #: 16220.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.50
DATE PREPARED : / /
DILUTION FACTOR: 1.13

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	3.3	J	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	21		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	102%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121)	100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16220.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	55	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.06

DATE: 12/02/93

SWLO #: 16220.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120) 110%	2-FLUOROBIPHENYL	(30-115) 112%	
TERPHENYL-D14	(18-137) 106%	PHENOL-D5	(24-113) 90%	
2-FLUOROPHENOL	(25-121) 92%	2,4,6-TRIBROMOPHENOL	(19-122) 154%	*

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.06

DATE: 12/02/93

SWLO #: 16220.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.113	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.113	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	3.62		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	51.3		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.34	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	14.5		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	7.24		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	5.21		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.566	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	3.51		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16220.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.566	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.07

DATE: 12/02/93

SWLO #: 16220.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	3.6	J	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	30		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 100%	BROMOFLUOROBENZENE	(74-121) 103%
1,2-DICHLOROETHANE-D4	(70-121) 98%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	46	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	61%	2-FLUOROBIPHENYL	(30-115)	67%
TERPHENYL-D14	(18-137)	61%	PHENOL-D5	(24-113)	53%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

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SAMPLE #: S32.8SB11
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.117	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.17	U	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	45.8		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.35	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	5.48		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	1.52		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	7.46		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.583	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	4.2		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.07

DATE: 12/02/93

SWLO #: 16220.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB11
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.583	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.08

DATE: 12/02/93

SWLO #: 16220.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	3.5	J	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	26		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.08

DATE: 12/02/93

SWLO #: 16220.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	52	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.08

DATE: 12/02/93

SWLO #: 16220.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	61%	2-FLUOROBIPHENYL	(30-115)	66%
TERPHENYL-D14	(18-137)	64%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.08

DATE: 12/02/93

SWLO #: 16220.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.117	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	2.57		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	89.2		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.351	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	5.85		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	1.4		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	3.39		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.585	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	5.03		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.08

DATE: 12/02/93

SWLO #: 16220.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.585	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.09

DATE: 12/02/93

SWLO #: 16220.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	4.6	J	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	28		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	1.5	J
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 101%	BROMOFLUOROBENZENE	(74-121) 99%
1,2-DICHLOROETHANE-D4	(70-121) 100%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.09

DATE: 12/02/93

SWLO #: 16220.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	66	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.09

DATE: 12/02/93

SWLO #: 16220.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	63%
TERPHENYL-D14	(18-137)	59%	PHENOL-D5	(24-113)	53%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16220.09

DATE: 12/02/93

SWLO #: 16220.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.117	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	3.86		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	76.5		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.351	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	7.14		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	2.58		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	4.1		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.586	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	5.62		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16220.09

DATE: 12/02/93

SWLO #: 16220.09 FR1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.586	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.10

DATE: 12/02/93

SWLO #: 16220.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 12.00
DATE PREPARED : / /
DILUTION FACTOR: 1.10

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.5	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.5	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.5	U
CHLOROETHANE	11	U	BENZENE	5.5	U
METHYLENE CHLORIDE	3	J	CIS-1,3-DICHLOROPROPENE	5.5	U
ACETONE	21		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.5	U	BROMOFORM	5.5	U
1,1-DICHLOROETHENE	5.5	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.5	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.5	U	TETRACHLOROETHENE	1.7	J
1,2-DICHLOROETHANE	5.5	U	TOLUENE	4.2	J
1,1,1-TRICHLOROETHANE	5.5	U	CHLOROBENZENE	5.5	U
CARBON TETRACHLORIDE	5.5	U	ETHYLBENZENE	5.5	U
VINYL ACETATE	11	U	STYRENE	5.5	U
BROMODICHLOROMETHANE	5.5	U	1,2-DICHLOROETHENE(TOTAL)	5.5	U
1,1,2,2-TETRACHLOROETHANE	5.5	U	XYLENE (TOTAL)	5.5	U
1,2-DICHLOROPROPANE	5.5	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121) 105%
1,2-DICHLOROETHANE-D4	(70-121)	104%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.10

DATE: 12/02/93

SWLO #: 16220.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 12.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	60	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.10

DATE: 12/02/93

SWLO #: 16220.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 12.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	63%
TERPHENYL-D14	(18-137)	60%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	57%	2,4,6-TRIBROMOPHENOL	(19-122)	77%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.10

DATE: 12/03/93

SWLO #: 16220.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 12.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.11	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.11	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	4.09		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	136		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.332	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	6.41		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	1.99		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	5.2		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.553		mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	7.41		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.10

DATE: 12/02/93

SWLO #: 16220.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB10
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.00
DEPTH TO : 12.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.553	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.11

DATE: 12/02/93

SWLO #: 16220.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : / /
DILUTION FACTOR: 1.23

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6.2	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6.2	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6.2	U
CHLOROETHANE	12	U	BENZENE	6.2	U
METHYLENE CHLORIDE	4.1	J	CIS-1,3-DICHLOROPROPENE	6.2	U
ACETONE	41		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6.2	U	BROMOFORM	6.2	U
1,1-DICHLOROETHENE	6.2	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6.2	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6.2	U	TETRACHLOROETHENE	1.3	J
1,2-DICHLOROETHANE	6.2	U	TOLUENE	6.2	U
1,1,1-TRICHLOROETHANE	6.2	U	CHLOROBENZENE	6.2	U
CARBON TETRACHLORIDE	6.2	U	ETHYLBENZENE	6.2	U
VINYL ACETATE	12	U	STYRENE	6.2	U
BROMODICHLOROMETHANE	6.2	U	1,2-DICHLOROETHENE(TOTAL)	6.2	U
1,1,2,2-TETRACHLOROETHANE	6.2	U	XYLENE (TOTAL)	6.2	U
1,2-DICHLOROPROPANE	6.2	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6.2	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 104%	BROMOFLUOROBENZENE	(74-121) 101%
1,2-DICHLOROETHANE-D4	(70-121) 101%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.11

DATE: 12/02/93

SWLO #: 16220.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	56	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16220.11

DATE: 12/02/93

SWLO #: 16220.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	58%	2-FLUOROBIPHENYL	(30-115)	64%
TERPHENYL-D14	(18-137)	59%	PHENOL-D5	(24-113)	53%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	71%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.11

DATE: 12/02/93

SWLO #: 16220.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.123	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.123	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	7.28		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	108		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.37	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	14.7		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	8.52		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	4.81		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.617	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	6.29		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16220.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 14.50
DEPTH TO : 15.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.617	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.12

DATE: 12/02/93

SWLO #: 16220.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.17

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	3	J	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	52		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117) 109%	BROMOFLUOROBENZENE	(74-121) 107%
1,2-DICHLOROETHANE-D4	(70-121) 106%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16220.12

DATE: 12/02/93

SWLO #: 16220.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	48	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.12

DATE: 12/02/93

SWLO #: 16220.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	57%	2-FLUOROBIPHENYL	(30-115)	64%
TERPHENYL-D14	(18-137)	60%	PHENOL-D5	(24-113)	51%
2-FLUOROPHENOL	(25-121)	51%	2,4,6-TRIBROMOPHENOL	(19-122)	78%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.12

DATE: 12/03/93

SWLO #: 16220.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.117	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.117		mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	3.51		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	132		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.351	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	12.5		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	2.22		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	9.48		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.586	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	10.6		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.12

DATE: 12/02/93

SWLO #: 16220.12 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB9
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.586	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.13

DATE: 12/02/93

SWLO #: 16220.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	3.3	J	CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	20		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	4.9	J
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	98%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.13

DATE: 12/02/93

SWLO #: 16220.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	270	J
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	120	J
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	400	
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	4000	
BENZOIC ACID	1800	U	ANTHRACENE	1200	
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	3600	
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	2400	
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	1300	
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	45	JB
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	1100	

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.13

DATE: 12/02/93

SWLO #: 16220.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	1200	
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	1100	
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	380	
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	180	J
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	350	J
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	52%	2-FLUOROBIPHENYL	(30-115)	59%
TERPHENYL-D14	(18-137)	68%	PHENOL-D5	(24-113)	47%
2-FLUOROPHENOL	(25-121)	47%	2,4,6-TRIBROMOPHENOL	(19-122)	67%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.13

DATE: 12/02/93

SWLO #: 16220.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.223		mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	2.56		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	244		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.546		mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	30		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	4.79		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	12.4		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.557	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	16.6		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.13

DATE: 12/02/93

SWLO #: 16220.13 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.557	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16220.14

DATE: 12/02/93

SWLO #: 16220.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:
DATE ANALYZED : 11/07/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : / /
DILUTION FACTOR: 1.20

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	5.2	J	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	26		2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	4.1	J
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	107%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	102%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16220.14

DATE: 12/02/93

SWLO #: 16220.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:
DATE ANALYZED : 11/16/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	110	J
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	160	J
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	94	J
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	55	JB
2-METHYLNAPHTHALENE	400	U	CHRYSENE	50	J
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	42	J

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16220.14 N1
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METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	35	J
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	58%	2-FLUOROBIPHENYL	(30-115)	64%
TERPHENYL-D14	(18-137)	60%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	55%	2,4,6-TRIBROMOPHENOL	(19-122)	74%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220.14

DATE: 12/02/93

SWLO #: 16220.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.12	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.24		mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	3.36		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	393		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	1.92		mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	29.4		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	9.11		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	13.3		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.599	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	20.5		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16220.14

DATE: 12/02/93

SWLO #: 16220.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.10SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 15.00
DEPTH TO : 16.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.599	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.01

DATE: 12/02/93

SWLO #: 16241.01 TB1
PROJECT : TINKER AFB-RFI
SAMPLE #: FIELDQC
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : WQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : / /
DILUTION FACTOR: 1.00

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/l

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	10	U	TRICHLOROETHENE	5	U
BROMOMETHANE	10	U	DIBROMOCHLOROMETHANE	5	U
VINYL CHLORIDE	10	U	1,1,2-TRICHLOROETHANE	5	U
CHLOROETHANE	10	U	BENZENE	5	U
METHYLENE CHLORIDE	5	U	CIS-1,3-DICHLOROPROPENE	5	U
ACETONE	10	U	2-CHLOROETHYL VINYL ETHER	10	U
CARBON DISULFIDE	5	U	BROMOFORM	5	U
1,1-DICHLOROETHENE	5	U	2-HEXANONE	10	U
1,1-DICHLOROETHANE	5	U	4-METHYL-2-PENTANONE	10	U
CHLOROFORM	5	U	TETRACHLOROETHENE	5	U
1,2-DICHLOROETHANE	5	U	TOLUENE	5	U
1,1,1-TRICHLOROETHANE	5	U	CHLOROBENZENE	5	U
CARBON TETRACHLORIDE	5	U	ETHYLBENZENE	5	U
VINYL ACETATE	10	U	STYRENE	5	U
BROMODICHLOROMETHANE	5	U	1,2-DICHLOROETHENE(TOTAL)	5	U
1,1,2,2-TETRACHLOROETHANE	5	U	XYLENE (TOTAL)	5	U
1,2-DICHLOROPROPANE	5	U	2-BUTANONE	10	U
TRANS-1,3-DICHLOROPROPENE	5	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 98%	BROMOFLUOROBENZENE	(86-115) 108%
1,2-DICHLOROETHANE-D4	(76-114) 102%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.02

DATE: 12/02/93

SWLO #: 16241.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.50
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 5.29

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	53	U	TRICHLOROETHENE	26	U
BROMOMETHANE	53	U	DIBROMOCHLOROMETHANE	26	U
VINYL CHLORIDE	53	U	1,1,2-TRICHLOROETHANE	26	U
CHLOROETHANE	53	U	BENZENE	26	U
METHYLENE CHLORIDE	26	U	CIS-1,3-DICHLOROPROPENE	26	U
ACETONE	63		2-CHLOROETHYL VINYL ETHER	53	U
CARBON DISULFIDE	26	U	BROMOFORM	26	U
1,1-DICHLOROETHENE	26	U	2-HEXANONE	53	U
1,1-DICHLOROETHANE	26	U	4-METHYL-2-PENTANONE	53	U
CHLOROFORM	26	U	TETRACHLOROETHENE	26	U
1,2-DICHLOROETHANE	26	U	TOLUENE	26	U
1,1,1-TRICHLOROETHANE	26	U	CHLOROBENZENE	26	U
CARBON TETRACHLORIDE	26	U	ETHYLBENZENE	26	U
VINYL ACETATE	53	U	STYRENE	26	U
BROMODICHLOROMETHANE	26	U	1,2-DICHLOROETHENE(TOTAL)	26	U
1,1,2,2-TETRACHLOROETHANE	26	U	XYLENE (TOTAL)	26	U
1,2-DICHLOROPROPANE	26	U	2-BUTANONE	53	U
TRANS-1,3-DICHLOROPROPENE	26	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	96%	BROMOFLUOROBENZENE	(74-121)	91%
1,2-DICHLOROETHANE-D4	(70-121)	84%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.02

DATE: 12/02/93

SWLO #: 16241.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.50
DEPTH TO : 11.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.02

DATE: 12/02/93

SWLO #: 16241.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.50
DEPTH TO : 11.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	65%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	84%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	57%	2,4,6-TRIBROMOPHENOL	(19-122)	65%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.02

DATE: 12/02/93

SWLO #: 16241.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.50
DEPTH TO : 11.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.106	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.106	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	3.92		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	101		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.318	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	9.74		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	5.82		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	3.49		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.529	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	5.61		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.02

DATE: 12/02/93

SWLO #: 16241.02 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.50
DEPTH TO : 11.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.529	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.03

DATE: 12/02/93

SWLO #: 16241.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.21

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	13	B	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	51	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121) 91%
1,2-DICHLOROETHANE-D4	(70-121)	96%		

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.03

DATE: 12/02/93

SWLO #: 16241.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16241.03

DATE: 12/02/93

SWLO #: 16241.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	67%
TERPHENYL-D14	(18-137)	78%	PHENOL-D5	(24-113)	55%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	64%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.03

DATE: 12/02/93

SWLO #: 16241.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.121	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.121	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.21	U	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	132		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.362	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	7.36		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	1.09		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	5.43		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.604	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	6.16		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.03

DATE: 12/02/93

SWLO #: 16241.03 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.9SB1
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.604	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.04

DATE: 12/02/93

SWLO #: 16241.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00
DATE PREPARED : / /
DILUTION FACTOR: 1.19

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	13	B	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	32	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	93%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16241.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	64	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16241.04

DATE: 12/02/93

SWLO #: 16241.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	75%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	87%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	72%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16241.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.119	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.119	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	2.99		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	678		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.358	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	14.3		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	6.57		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	10.5		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.597	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	15.6		mg/kg	11/06/93	11/08/93	SW846-6010

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DATE: 12/02/93

SWLO #: 16241.04 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 10.00
DEPTH TO : 11.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.597	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.05

DATE: 12/02/93

SWLO #: 16241.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	12	B	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	36	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	103%	BROMOFLUOROBENZENE	(74-121)	90%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.05

DATE: 12/03/93

SWLO #: 16241.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	44	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

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REPORT: 16241.05

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SWLO #: 16241.05 N1
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LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	74%	2-FLUOROBIPHENYL	(30-115)	78%
TERPHENYL-D14	(18-137)	88%	PHENOL-D5	(24-113)	62%
2-FLUOROPHENOL	(25-121)	68%	2,4,6-TRIBROMOPHENOL	(19-122)	73%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: I24.8SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.116	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	2.9		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	240		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.348	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	7.3		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	3.01		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	9.15		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.579	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	9.73		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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DATE: 12/02/93

SWLO #: 16241.05 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB2
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 17.00
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.579	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.06

DATE: 12/02/93

SWLO #: 16241.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB18
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 9.58
DEPTH TO : 11.50
DATE PREPARED : / /
DILUTION FACTOR: 1.07

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.4	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.4	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.4	U
CHLOROETHANE	11	U	BENZENE	5.4	U
METHYLENE CHLORIDE	11	B	CIS-1,3-DICHLOROPROPENE	5.4	U
ACETONE	18	B	2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.4	U	BROMOFORM	5.4	U
1,1-DICHLOROETHENE	5.4	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.4	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.4	U	TETRACHLOROETHENE	5.4	U
1,2-DICHLOROETHANE	5.4	U	TOLUENE	5.4	U
1,1,1-TRICHLOROETHANE	5.4	U	CHLOROBENZENE	5.4	U
CARBON TETRACHLORIDE	5.4	U	ETHYLBENZENE	5.4	U
VINYL ACETATE	11	U	STYRENE	5.4	U
BROMODICHLOROMETHANE	5.4	U	1,2-DICHLOROETHENE(TOTAL)	5.4	U
1,1,2,2-TETRACHLOROETHANE	5.4	U	XYLENE (TOTAL)	5.4	U
1,2-DICHLOROPROPANE	5.4	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.4	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	99%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	94%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.06

DATE: 12/02/93

SWLO #: 16241.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB18
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 9.58
DEPTH TO : 11.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	360	U
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.06

DATE: 12/02/93

SWLO #: 16241.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB18
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 9.58
DEPTH TO : 11.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	75%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	58%
2-FLUOROPHENOL	(25-121)	61%	2,4,6-TRIBROMOPHENOL	(19-122)	69%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.06

DATE: 12/02/93

SWLO #: 16241.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB18
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 9.58
DEPTH TO : 11.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.107	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.107	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	2.25		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	58.2		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.321	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	6.75		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	2.68		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	4.82		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.536	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	5.46		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.06

DATE: 12/02/93

SWLO #: 16241.06 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.8SB18
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 9.58
DEPTH TO : 11.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.536	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.07

DATE: 12/02/93

SWLO #: 16241.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB18
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : / /
DILUTION FACTOR: 1.16

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	11	B	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	44	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.07

DATE: 12/03/93

SWLO #: 16241.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB18
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	51	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.07

DATE: 12/03/93

SWLO #: 16241.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB18
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	73%	2-FLUOROBIPHENYL	(30-115)	74%
TERPHENYL-D14	(18-137)	90%	PHENOL-D5	(24-113)	63%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	60%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.07

DATE: 12/02/93

SWLO #: 16241.07 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB18
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.116	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.116	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.16	U	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	33.2		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.349	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	2.21		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	0.465		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	2.91		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.582	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	3.14		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.8SB18
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.00
DEPTH TO : 18.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.582	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.08

DATE: 12/02/93

SWLO #: 16241.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : / /
DILUTION FACTOR: 1.15

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.8	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.8	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.8	U
CHLOROETHANE	12	U	BENZENE	5.8	U
METHYLENE CHLORIDE	9.3	B	CIS-1,3-DICHLOROPROPENE	5.8	U
ACETONE	69	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.8	U	BROMOFORM	5.8	U
1,1-DICHLOROETHENE	5.8	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.8	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.8	U	TETRACHLOROETHENE	5.8	U
1,2-DICHLOROETHANE	5.8	U	TOLUENE	5.8	U
1,1,1-TRICHLOROETHANE	5.8	U	CHLOROBENZENE	5.8	U
CARBON TETRACHLORIDE	5.8	U	ETHYLBENZENE	5.8	U
VINYL ACETATE	12	U	STYRENE	5.8	U
BROMODICHLOROMETHANE	5.8	U	1,2-DICHLOROETHENE(TOTAL)	5.8	U
1,1,2,2-TETRACHLOROETHANE	5.8	U	XYLENE (TOTAL)	5.8	U
1,2-DICHLOROPROPANE	5.8	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.8	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	107%	BROMOFLUOROBENZENE	(74-121)	92%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
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Attn: KEVIN TYNES

REPORT: 16241.08

DATE: 12/02/93

SWLO #: 16241.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.08

DATE: 12/02/93

SWLO #: 16241.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	77%	2-FLUOROBIPHENYL	(30-115)	77%
TERPHENYL-D14	(18-137)	86%	PHENOL-D5	(24-113)	67%
2-FLUOROPHENOL	(25-121)	70%	2,4,6-TRIBROMOPHENOL	(19-122)	70%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16241.08

DATE: 12/02/93

SWLO #: 16241.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.115	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.115	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.15	U	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	2240		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	50.5		mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	3000		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	7.39		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	168		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.808		mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	52.3		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.08

DATE: 12/02/93

SWLO #: 16241.08 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 8.00
DEPTH TO : 9.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.577	U	mg/kg	/ /	11/08/93	SW846-9010

****RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES**

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.09

DATE: 12/02/93

SWLO #: 16241.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 13.50
DATE PREPARED : / /
DILUTION FACTOR: 1.19

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	6	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	6	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	6	U
CHLOROETHANE	12	U	BENZENE	6	U
METHYLENE CHLORIDE	11	B	CIS-1,3-DICHLOROPROPENE	6	U
ACETONE	50	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	6	U	BROMOFORM	6	U
1,1-DICHLOROETHENE	6	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	6	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	6	U	TETRACHLOROETHENE	6	U
1,2-DICHLOROETHANE	6	U	TOLUENE	6	U
1,1,1-TRICHLOROETHANE	6	U	CHLOROBENZENE	6	U
CARBON TETRACHLORIDE	6	U	ETHYLBENZENE	6	U
VINYL ACETATE	12	U	STYRENE	6	U
BROMODICHLOROMETHANE	6	U	1,2-DICHLOROETHENE(TOTAL)	6	U
1,1,2,2-TETRACHLOROETHANE	6	U	XYLENE (TOTAL)	6	U
1,2-DICHLOROPROPANE	6	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	109%	BROMOFLUOROBENZENE	(74-121)	94%
1,2-DICHLOROETHANE-D4	(70-121)	91%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.10

DATE: 12/02/93

SWLO #: 16241.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	10	B	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	60	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	84%
1,2-DICHLOROETHANE-D4	(70-121)	93%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.09

DATE: 12/02/93

SWLO #: 16241.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 13.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.595	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16241.09

DATE: 12/02/93

SWLO #: 16241.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 13.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.119	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.119	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	3.81		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	27.3		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.357	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	3.45		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	1.19		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	3.45		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.595	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	3.93		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16241.09

DATE: 12/02/93

SWLO #: 16241.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	64%
TERPHENYL-D14	(18-137)	74%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	55%	2,4,6-TRIBROMOPHENOL	(19-122)	95%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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REPORT: 16241.09

DATE: 12/02/93

SWLO #: 16241.09 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB4
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 12.00
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	400	U
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.15

DATE: 12/02/93

SWLO #: 16241.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.111	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.111	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	5.57		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	81.2		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.334	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	21.9		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	8.8		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	20.4		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.557	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	27.7		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.15

DATE: 12/02/93

SWLO #: 16241.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.557	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.10

DATE: 12/02/93

SWLO #: 16241.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	160	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.10

DATE: 12/02/93

SWLO #: 16241.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	59%	2-FLUOROBIPHENYL	(30-115)	59%
TERPHENYL-D14	(18-137)	69%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	51%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.10

DATE: 12/02/93

SWLO #: 16241.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.118	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.77		mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	179		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.354	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	18.4		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	3.78		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	31.3		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.826		mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	23.2		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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REPORT: 16241.10

DATE: 12/02/93

SWLO #: 16241.10 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.59	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.11

DATE: 12/02/93

SWLO #: 16241.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	5.9	U
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	5.9	U
METHYLENE CHLORIDE	11	B	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	62	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	5.9	U	2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	5.9	U
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	5.9	U
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	95%	BROMOFLUOROBENZENE	(74-121)	88%
1,2-DICHLOROETHANE-D4	(70-121)	97%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.11

DATE: 12/02/93

SWLO #: 16241.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	400	U	ACENAPHTHENE	400	U
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	400	U	4-NITROPHENOL	1900	U
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	400	U	2,4-DINITROTOLUENE	400	U
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	400	U	4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	1900	U
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	400	U	PYRENE	400	U
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	400	U	BIS(2-ETHYLHEXYL)PHTHALATE	120	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.11

DATE: 12/02/93

SWLO #: 16241.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	55%	2-FLUOROBIPHENYL	(30-115)	57%
TERPHENYL-D14	(18-137)	67%	PHENOL-D5	(24-113)	48%
2-FLUOROPHENOL	(25-121)	47%	2,4,6-TRIBROMOPHENOL	(19-122)	105%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.11

DATE: 12/03/93

SWLO #: 16241.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.118	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.118	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.18	U	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	25.8		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	0.355	U	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	2.37		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	0.355		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	3.9		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.592	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	3.19		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.11

DATE: 12/02/93

SWLO #: 16241.11 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.592	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.12

DATE: 12/02/93

SWLO #: 16241.12 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	56	
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	56	
METHYLENE CHLORIDE	10	B	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	44	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	56		2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	58	
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	59	
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	86%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Attn: KEVIN TYNES

REPORT: 16241.12

DATE: 12/02/93

SWLO #: 16241.12 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4300		ACENAPHTHENE	2500	
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	5000		4-NITROPHENOL	4200	
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	2000		2,4-DINITROTOLUENE	2200	
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	3200		4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	5900	
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	400	U
1,2,4-TRICHLOROBENZENE	2400		PYRENE	2300	
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	4600		BIS(2-ETHYLHEXYL)PHTHALATE	130	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16241.12

DATE: 12/02/93

SWLO #: 16241.12 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	65%
TERPHENYL-D14	(18-137)	73%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	96%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.12

DATE: 12/02/93

SWLO #: 16241.12 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.549	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	4.61	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	228	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	259	mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	5.56	mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	25.2	mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	54.4	mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	61.3	mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	230	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	58.6	mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16241.12 MS1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.4	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.13

DATE: 12/02/93

SWLO #: 16241.13 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/08/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : / /
DILUTION FACTOR: 1.18

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	12	U	TRICHLOROETHENE	59	
BROMOMETHANE	12	U	DIBROMOCHLOROMETHANE	5.9	U
VINYL CHLORIDE	12	U	1,1,2-TRICHLOROETHANE	5.9	U
CHLOROETHANE	12	U	BENZENE	56	
METHYLENE CHLORIDE	11	B	CIS-1,3-DICHLOROPROPENE	5.9	U
ACETONE	65	B	2-CHLOROETHYL VINYL ETHER	12	U
CARBON DISULFIDE	5.9	U	BROMOFORM	5.9	U
1,1-DICHLOROETHENE	52		2-HEXANONE	12	U
1,1-DICHLOROETHANE	5.9	U	4-METHYL-2-PENTANONE	12	U
CHLOROFORM	5.9	U	TETRACHLOROETHENE	5.9	U
1,2-DICHLOROETHANE	5.9	U	TOLUENE	57	
1,1,1-TRICHLOROETHANE	5.9	U	CHLOROBENZENE	62	
CARBON TETRACHLORIDE	5.9	U	ETHYLBENZENE	5.9	U
VINYL ACETATE	12	U	STYRENE	5.9	U
BROMODICHLOROMETHANE	5.9	U	1,2-DICHLOROETHENE(TOTAL)	5.9	U
1,1,2,2-TETRACHLOROETHANE	5.9	U	XYLENE (TOTAL)	5.9	U
1,2-DICHLOROPROPANE	5.9	U	2-BUTANONE	12	U
TRANS-1,3-DICHLOROPROPENE	5.9	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	92%	BROMOFLUOROBENZENE	(74-121)	78%
1,2-DICHLOROETHANE-D4	(70-121)	86%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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DATE: 12/02/93

SWLO #: 16241.13 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	4400		ACENAPHTHENE	2500	
BIS(2-CHLOROETHYL)ETHER	400	U	2,4-DINITROPHENOL	1900	U
2-CHLOROPHENOL	5000		4-NITROPHENOL	5000	
1,3-DICHLOROBENZENE	400	U	DIBENZOFURAN	400	U
1,4-DICHLOROBENZENE	2100		2,4-DINITROTOLUENE	2300	
BENZYL ALCOHOL	400	U	2,6-DINITROTOLUENE	400	U
1,2-DICHLOROBENZENE	400	U	DIETHYLPHTHALATE	400	U
2-METHYLPHENOL(O-CRESOL)	400	U	4-CHLOROPHENYL-PHENYLETHER	400	U
BIS(2-CHLOROISOPROPYL)ETHER	400	U	FLUORENE	400	U
4-METHYLPHENOL(P-CRESOL)	400	U	4-NITROANILINE	1900	U
N-NITROSO-DI-N-PROPYLAMINE	3300		4,6-DINITRO-2-METHYLPHENOL	1900	U
HEXACHLOROETHANE	400	U	N-NITROSODIPHENYLAMINE(1)	400	U
NITROBENZENE	400	U	4-BROMOPHENYL-PHENYLETHER	400	U
ISOPHORONE	400	U	HEXACHLOROBENZENE	400	U
2-NITROPHENOL	400	U	PENTACHLOROPHENOL	4700	
2,4-DIMETHYLPHENOL	400	U	PHENANTHRENE	400	U
BENZOIC ACID	1900	U	ANTHRACENE	400	U
BIS(2-CHLOROETHOXY)METHANE	400	U	DI-N-BUTYL PHTHALATE	400	U
2,4-DICHLOROPHENOL	400	U	FLUORANTHENE	48	J
1,2,4-TRICHLOROBENZENE	2400		PYRENE	2200	
NAPHTHALENE	400	U	BUTYL BENZYL PHTHALATE	400	U
4-CHLOROANILINE	400	U	3,3'-DICHLOROBENZIDINE	790	U
HEXACHLOROBUTADIENE	400	U	BENZO(A)ANTHRACENE	400	U
4-CHLORO-3-METHYLPHENOL	4600		BIS(2-ETHYLHEXYL)PHTHALATE	110	J
2-METHYLNAPHTHALENE	400	U	CHRYSENE	400	U
HEXACHLOROCYCLOPENTADIENE	400	U	DI-N-OCTYL PHTHALATE	400	U
2,4,6-TRICHLOROPHENOL	400	U	BENZO(B)FLUORANTHENE	400	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.13

DATE: 12/02/93

SWLO #: 16241.13 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.20

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1900	U	BENZO(K)FLUORANTHENE	400	U
2-CHLORONAPHTHALENE	400	U	BENZO(A)PYRENE	400	U
2-NITROANILINE	1900	U	INDENO(1,2,3-CD)PYRENE	400	U
DIMETHYL PHTHALATE	400	U	DIBENZ(A,H)ANTHRACENE	400	U
ACENAPHTHYLENE	400	U	BENZO(G,H,I)PERYLENE	400	U
3-NITROANILINE	1900	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	66%
TERPHENYL-D14	(18-137)	71%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	96%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50

METAL PARAMETER

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.551	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	4.97	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	222	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	254	mg/kg	11/06/93	11/18/93	SW846-6010
CADMIUM	5.32	mg/kg	11/06/93	11/18/93	SW846-6010
CHROMIUM	23.1	mg/kg	11/06/93	11/18/93	SW846-6010
LEAD	52.8	mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	58.3	mg/kg	11/06/93	11/18/93	SW846-6010
SELENIUM	220	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	55.5	mg/kg	11/06/93	11/18/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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SWLO #: 16241.13 SD1
PROJECT : TINKER AFB-RFI
SAMPLE #: S32.8SB5
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 11.50
DEPTH TO : 13.50

MISCELLANEOUS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	5.57	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.14

DATE: 12/02/93

SWLO #: 16241.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : / /
DILUTION FACTOR: 1.14

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.7	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.7	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.7	U
CHLOROETHANE	11	U	BENZENE	5.7	U
METHYLENE CHLORIDE	7.4		CIS-1,3-DICHLOROPROPENE	5.7	U
ACETONE	140		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.7	U	BROMOFORM	5.7	U
1,1-DICHLOROETHENE	5.7	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.7	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.7	U	TETRACHLOROETHENE	5.7	U
1,2-DICHLOROETHANE	5.7	U	TOLUENE	5.7	U
1,1,1-TRICHLOROETHANE	5.7	U	CHLOROBENZENE	5.7	U
CARBON TETRACHLORIDE	5.7	U	ETHYLBENZENE	5.7	U
VINYL ACETATE	11	U	STYRENE	5.7	U
BROMODICHLOROMETHANE	5.7	U	1,2-DICHLOROETHENE(TOTAL)	5.7	U
1,1,2,2-TETRACHLOROETHANE	5.7	U	XYLENE (TOTAL)	5.7	U
1,2-DICHLOROPROPANE	5.7	U	2-BUTANONE	18	
TRANS-1,3-DICHLOROPROPENE	5.7	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	88%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16241.14

DATE: 12/02/93

SWLO #: 16241.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	1400		ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	94	J	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	440		4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	540		4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	210	J	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	79	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	61%	2-FLUOROBIPHENYL	(30-115)	60%
TERPHENYL-D14	(18-137)	66%	PHENOL-D5	(24-113)	49%
2-FLUOROPHENOL	(25-121)	51%	2,4,6-TRIBROMOPHENOL	(19-122)	88%

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PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

METAL PARAMETER

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MERCURY	0.114	U	mg/kg	11/09/93	11/09/93	SW846-7471
SILVER	0.114	U	mg/kg	11/06/93	11/12/93	SW846-7761
ARSENIC	1.14	U	mg/kg	11/06/93	11/09/93	SW846-6010
BARIUM	228		mg/kg	11/06/93	11/08/93	SW846-6010
CADMIUM	1.71		mg/kg	11/06/93	11/08/93	SW846-6010
CHROMIUM	106		mg/kg	11/06/93	11/08/93	SW846-6010
LEAD	1.59		mg/kg	11/06/93	11/09/93	SW846-6010
NICKEL	11.7		mg/kg	11/06/93	11/08/93	SW846-6010
SELENIUM	0.569	U	mg/kg	11/06/93	11/09/93	SW846-6010
ZINC	13.1		mg/kg	11/06/93	11/08/93	SW846-6010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

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Attn: KEVIN TYNES

REPORT: 16241.14

DATE: 12/02/93

SWLO #: 16241.14 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 6.00
DEPTH TO : 7.00

MISCELLANEOUS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
TOTAL CYANIDE	0.569	U	mg/kg	/ /	11/08/93	SW846-9010

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.15

DATE: 12/02/93

SWLO #: 16241.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1800	U	BENZO(K)FLUORANTHENE	360	U
2-CHLORONAPHTHALENE	360	U	BENZO(A)PYRENE	360	U
2-NITROANILINE	1800	U	INDENO(1,2,3-CD)PYRENE	360	U
DIMETHYL PHTHALATE	360	U	DIBENZ(A,H)ANTHRACENE	360	U
ACENAPHTHYLENE	360	U	BENZO(G,H,I)PERYLENE	360	U
3-NITROANILINE	1800	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	64%	2-FLUOROBIPHENYL	(30-115)	62%
TERPHENYL-D14	(18-137)	67%	PHENOL-D5	(24-113)	54%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	85%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
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SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.15

DATE: 12/02/93

SWLO #: 16241.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:
DATE ANALYZED : 11/12/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.10

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	360	U	ACENAPHTHENE	360	U
BIS(2-CHLOROETHYL)ETHER	360	U	2,4-DINITROPHENOL	1800	U
2-CHLOROPHENOL	360	U	4-NITROPHENOL	1800	U
1,3-DICHLOROBENZENE	360	U	DIBENZOFURAN	360	U
1,4-DICHLOROBENZENE	360	U	2,4-DINITROTOLUENE	360	U
BENZYL ALCOHOL	360	U	2,6-DINITROTOLUENE	360	U
1,2-DICHLOROBENZENE	360	U	DIETHYLPHTHALATE	360	U
2-METHYLPHENOL(O-CRESOL)	360	U	4-CHLOROPHENYL-PHENYLETHER	360	U
BIS(2-CHLOROISOPROPYL)ETHER	360	U	FLUORENE	360	U
4-METHYLPHENOL(P-CRESOL)	360	U	4-NITROANILINE	1800	U
N-NITROSO-DI-N-PROPYLAMINE	360	U	4,6-DINITRO-2-METHYLPHENOL	1800	U
HEXACHLOROETHANE	360	U	N-NITROSODIPHENYLAMINE(1)	360	U
NITROBENZENE	360	U	4-BROMOPHENYL-PHENYLETHER	360	U
ISOPHORONE	360	U	HEXACHLOROBENZENE	360	U
2-NITROPHENOL	360	U	PENTACHLOROPHENOL	1800	U
2,4-DIMETHYLPHENOL	360	U	PHENANTHRENE	360	U
BENZOIC ACID	1800	U	ANTHRACENE	360	U
BIS(2-CHLOROETHOXY)METHANE	360	U	DI-N-BUTYL PHTHALATE	360	U
2,4-DICHLOROPHENOL	360	U	FLUORANTHENE	360	U
1,2,4-TRICHLOROBENZENE	360	U	PYRENE	360	U
NAPHTHALENE	360	U	BUTYL BENZYL PHTHALATE	360	U
4-CHLOROANILINE	360	U	3,3'-DICHLOROBENZIDINE	730	U
HEXACHLOROBUTADIENE	360	U	BENZO(A)ANTHRACENE	360	U
4-CHLORO-3-METHYLPHENOL	360	U	BIS(2-ETHYLHEXYL)PHTHALATE	61	J
2-METHYLNAPHTHALENE	360	U	CHRYSENE	360	U
HEXACHLOROCYCLOPENTADIENE	360	U	DI-N-OCTYL PHTHALATE	360	U
2,4,6-TRICHLOROPHENOL	360	U	BENZO(B)FLUORANTHENE	360	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16241.15

DATE: 12/03/93

SWLO #: 16241.15 N1
PROJECT : TINKER AFB-RFI
SAMPLE #: I24.2SB3
LOCATION:
DATE ANALYZED : 11/09/93
METHOD REFERENCE: SW846-8240

DATE SAMPLED: / /
SAMPLE MATRIX : SO
DEPTH FROM : 16.50
DEPTH TO : 17.50
DATE PREPARED : / /
DILUTION FACTOR: 1.11

VOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
CHLOROMETHANE	11	U	TRICHLOROETHENE	5.6	U
BROMOMETHANE	11	U	DIBROMOCHLOROMETHANE	5.6	U
VINYL CHLORIDE	11	U	1,1,2-TRICHLOROETHANE	5.6	U
CHLOROETHANE	11	U	BENZENE	5.6	U
METHYLENE CHLORIDE	5.6		CIS-1,3-DICHLOROPROPENE	5.6	U
ACETONE	24		2-CHLOROETHYL VINYL ETHER	11	U
CARBON DISULFIDE	5.6	U	BROMOFORM	5.6	U
1,1-DICHLOROETHENE	5.6	U	2-HEXANONE	11	U
1,1-DICHLOROETHANE	5.6	U	4-METHYL-2-PENTANONE	11	U
CHLOROFORM	5.6	U	TETRACHLOROETHENE	5.6	U
1,2-DICHLOROETHANE	5.6	U	TOLUENE	5.6	U
1,1,1-TRICHLOROETHANE	5.6	U	CHLOROBENZENE	5.6	U
CARBON TETRACHLORIDE	5.6	U	ETHYLBENZENE	5.6	U
VINYL ACETATE	11	U	STYRENE	5.6	U
BROMODICHLOROMETHANE	5.6	U	1,2-DICHLOROETHENE(TOTAL)	5.6	U
1,1,2,2-TETRACHLOROETHANE	5.6	U	XYLENE (TOTAL)	5.6	U
1,2-DICHLOROPROPANE	5.6	U	2-BUTANONE	11	U
TRANS-1,3-DICHLOROPROPENE	5.6	U			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	90%
1,2-DICHLOROETHANE-D4	(70-121)	84%			

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

QA/QC REPORT

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931107A
INST. BATCH: 2636
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : U931107A
LOCATION:

ANALYZED : 11/07/93 11:44
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS	
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND	
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND	
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND	
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND	
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND	
ACETONE	10	ND	BENZENE	5	ND	
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND	
,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND	
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND	
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	8.5	J
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND	
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND	
2-BUTANONE	10	ND	TOLUENE	5	ND	
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND	
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND	
VINYL ACETATE	10	ND	STYRENE	5	ND	
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND	
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	101%	BROMOFLUOROBENZENE	(74-121)	99%
1,2-DICHLOROETHANE-D4	(70-121)	95%			

= NOT DETECTED ABOVE QUANTITATION LIMIT
= ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : U931107A
INST. BATCH: 2636
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/07/93 12:42
ANALYZED : 11/07/93 13:05

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	51	102	52	104	1.71	18	21-170
BROMOMETHANE	50	43	86	53	106	20.1	36	46-161
VINYL CHLORIDE	50	49	98	50	101	2.81	26	31-168
CHLOROETHANE	50	51	103	52	105	1.89	54	44-154
METHYLENE CHLORIDE	50	51	102	50	101	1.31	21	77-141
ACETONE	50	45	91	43	86	5.38	59	30-160
CARBON DISULFIDE	50	50	102	51	102	< 1	29	52-129
1,1-DICHLOROETHENE	50	50	101	50	102	< 1	16	60-141
1,1-DICHLOROETHANE	50	50	102	50	102	< 1	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	100	105	100	104	1.02	21	72-133
CHLOROFORM	50	50	101	51	102	< 1	17	79-129
1,2-DICHLOROETHANE	50	49	98	49	98	< 1	19	81-132
2-BUTANONE	50	44	89	42	85	4.95	91	16-130
1,1,1-TRICHLOROETHANE	50	50	100	50	101	< 1	45	66-140
CARBON TETRACHLORIDE	50	50	100	51	102	1.91	21	65-140
VINYL ACETATE	50	43	87	35	71	19.5	72	17-153
BROMODICHLOROMETHANE	50	48	97	49	99	2.52	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	44	88	43	86	1.64	78	49-127
1,2-DICHLOROPROPANE	50	49	98	50	100	2.33	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	46	92	46	93	< 1	41	48-141
TRICHLOROETHENE	50	49	98	50	100	1.79	21	71-134
DIBROMOCHLOROMETHANE	50	46	92	47	94	2.09	25	68-120
1,1,2-TRICHLOROETHANE	50	46	92	46	93	1.26	28	68-120
BENZENE	50	49	98	50	100	1.91	13	79-128
CIS-1,3-DICHLOROPROPENE	50	47	95	48	96	< 1	29	63-123
2-CHLOROETHYL VINYL ETHE	50	48	97	44	89	8.97	45	0-146
BROMOFORM	50	44	89	45	90	2.04	37	58-119
2-HEXANONE	50	40	81	38	77	4.6	60	20-181
4-METHYL-2-PENTANONE	50	47	95	40	80	18.0	54	33-163
TETRACHLOROETHENE	50	50	100	50	101	1.08	21	80-125
TOLUENE	50	49	99	50	101	2.24	11	80-122
CHLOROBENZENE	50	49	99	50	101	1.85	10	80-125
ETHYLBENZENE	50	50	100	50	102	1.84	19	82-123
STYRENE	50	48	97	50	100	2.72	13	71-129
XYLENE (TOTAL)	150	150	103	160	104	1.31	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	97	98	81-117
BROMOFLUOROBENZENE	94	97	74-121
1,2-DICHLOROETHANE-D4	97	97	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931108A
INST. BATCH: 13794
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931108A
LOCATION:

ANALYZED : 11/08/93 10:30
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110)	98%	BROMOFLUOROBENZENE	(86-115)	102%
1,2-DICHLOROETHANE-D4	(76-114)	97%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
" = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
... = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931108A
INST. BATCH: 13794
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/08/93 11:07
ANALYZED : 11/08/93 11:33

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	63	126	67	134	6.42	28	32-161
BROMOMETHANE	50	48	97	56	113	15.7	23	50-191
VINYL CHLORIDE	50	47	94	52	104	9.2	25	65-167
CHLOROETHANE	50	54	108	63	127	16.4	28	32-212
METHYLENE CHLORIDE	50	48	97	57	115	17.4	43	52-168
ACETONE	50	32	65	37	74	13.4	50	53-146
CARBON DISULFIDE	50	47	95	50	100	5.74	31	50-162
1,1-DICHLOROETHENE	50	49	98	51	103	5.2	32	54-161
1,1-DICHLOROETHANE	50	50	101	51	103	1.46	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	110	110	110	112	1.95	35	74-162
CHLOROFORM	50	50	100	52	105	4.53	19	57-152
1,2-DICHLOROETHANE	50	49	99	49	99	< 1	26	59-151
2-BUTANONE	50	42	85	42	85	< 1	29	42-173
1,1,1-TRICHLOROETHANE	50	49	99	58	116	15.8	51	38-179
CARBON TETRACHLORIDE	50	49	98	58	117	17.0	49	37-182
VINYL ACETATE	50	86	174*	63	127*	31.0	60	22-122
BROMODICHLOROMETHANE	50	44	89	50	101	12.5	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	38	76	48	96	23.8	95	14-157
1,2-DICHLOROPROPANE	50	48	96	51	102	5.94	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	46	92	48	96	4.05	42	10-164
TRICHLOROETHENE	50	50	102	54	109	6.75	38	67-149
DIBROMOCHLOROMETHANE	50	44	88	51	103	15.8	21	43-157
1,1,2-TRICHLOROETHANE	50	44	89	50	100	10.9	31	40-179
BENZENE	50	47	95	52	105	9.9	46	70-134
CIS-1,3-DICHLOROPROPENE	50	47	94	47	95	1.57	33	34-199
2-CHLOROETHYL VINYL ETHE	50	40	81	38	77	4.77	61	73-156
BROMOFORM	50	40	81	53	107	27.6	52	34-151
2-HEXANONE	50	38	76	44	88	14.2	97	27-176
4-METHYL-2-PENTANONE	50	39	78	51	102	26.6	62	23-208
TETRACHLOROETHENE	50	51	102	51	102	< 1	24	61-141
TOLUENE	50	48	98	48	96	1.83	15	75-140
CHLOROBENZENE	50	50	100	50	101	1.14	14	72-135
ETHYLBENZENE	50	50	100	49	99	1.27	17	55-147
STYRENE	50	51	102	50	100	2.5	27	64-147
XYLENE (TOTAL)	150	150	100	150	103	2.73	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	101	99	88-110
BROMOFLUOROBENZENE	104	101	86-115
1,2-DICHLOROETHANE-D4	101	98	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931108A
INST. BATCH: 13795
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931108A
LOCATION:

ANALYZED : 11/08/93 10:08
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	QUANT. LIMIT	RESULTS		PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND		1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND		TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND		TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND		DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	3.6	J	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	26		BENZENE	5	ND
CARBON DISULFIDE	5	ND		CIS-1,3-DICHLOROPROPENE	5	ND
,1-DICHLOROETHENE	5	ND		2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND		BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND		2-HEXANONE	10	ND
CHLOROFORM	5	ND		4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND		TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND		TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND		CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND		ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND		STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND		XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND				

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	100%	BROMOFLUOROBENZENE	(74-121) 86%
1,2-DICHLOROETHANE-D4	(70-121)	96%		

- NOT DETECTED ABOVE QUANTITATION LIMIT
- = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931108A
INST. BATCH: 13795
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/08/93 11:23
ANALYZED : 11/08/93 11:46

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	58	117	42	85	31.3*	18	21-170
BROMOMETHANE	50	64	128	42	85	40.6*	36	46-161
VINYL CHLORIDE	50	45	91	35	70	25.8	26	31-168
CHLOROETHANE	50	71	143	38	77	60.5*	54	44-154
METHYLENE CHLORIDE	50	64	129	68	136	5.21	21	77-141
ACETONE	50	67	135	66	132	2.07	59	30-160
CARBON DISULFIDE	50	52	105	46	92	12.9	29	52-129
1,1-DICHLOROETHENE	50	55	110	51	103	6.93	16	60-141
1,1-DICHLOROETHANE	50	54	108	46	93	14.6	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	100	104	96	96	7.53	21	72-133
CHLOROFORM	50	53	107	49	98	8.33	17	79-129
1,2-DICHLOROETHANE	50	55	110	50	100	9.81	19	81-132
2-BUTANONE	50	39	78	51	103	27.6	91	16-130
1,1,1-TRICHLOROETHANE	50	50	102	50	101	< 1	45	66-140
CARBON TETRACHLORIDE	50	51	103	51	103	< 1	21	65-140
VINYL ACETATE	50	28	57	27	54	4.94	72	17-153
BROMODICHLOROMETHANE	50	59	119	56	114	4.6	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	44	89	55	111	22.3	78	49-127
1,2-DICHLOROPROPANE	50	53	106	49	98	7.71	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	57	115	58	117	1.76	41	48-141
TRICHLOROETHENE	50	49	99	48	97	2.5	21	71-134
DIBROMOCHLOROMETHANE	50	64	128*	65	131*	2.31	25	68-120
1,1,2-TRICHLOROETHANE	50	62	125*	67	135*	7.46	28	68-120
BENZENE	50	49	98	47	95	3.1	13	79-128
CIS-1,3-DICHLOROPROPENE	50	56	112	54	108	3.96	29	63-123
2-CHLOROETHYL VINYL ETHE	50	76	152	150	299	65.7*	45	0-146
BROMOFORM	50	59	119	70	140*	16.2	37	58-119
2-HEXANONE	50	36	73	61	122	50.2	60	20-181
4-METHYL-2-PENTANONE	50	36	73	52	106	36.7	54	33-163
TETRACHLOROETHENE	50	51	102	50	100	2.3	21	80-125
TOLUENE	50	49	98	47	94	3.9	11	80-122
CHLOROBENZENE	50	51	102	49	98	3.81	10	80-125
ETHYLBENZENE	50	50	102	48	96	5.34	19	82-123
STYRENE	50	51	102	50	101	1.01	13	71-129
XYLENE (TOTAL)	150	160	106	150	98	6.9	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	97	92	81-117
BROMOFLUOROBENZENE	91	86	74-121
1,2-DICHLOROETHANE-D4	111	101	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931109A
INST. BATCH: 13879
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : C931109A
LOCATION:

ANALYZED : 11/09/93 10:50
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : WATER
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/L

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
1,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
1,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(88-110) 99%	BROMOFLUOROBENZENE	(86-115) 102%
1,2-DICHLOROETHANE-D4	(76-114) 101%		

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
~ = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
= UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
.4 = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : C931109A
INST. BATCH: 13879
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : WATER
ANALYZED : 11/09/93 11:27
ANALYZED : 11/09/93 11:53

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/L	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	62	126	71	143	12.8	28	32-161
BROMOMETHANE	50	48	97	56	113	14.8	23	50-191
VINYL CHLORIDE	50	45	90	52	105	15.9	25	65-167
CHLOROETHANE	50	53	106	58	117	10.1	28	32-212
METHYLENE CHLORIDE	50	46	93	52	104	10.9	43	52-168
ACETONE	50	37	74	45	90	20.2	50	53-146
CARBON DISULFIDE	50	46	93	51	102	10.2	31	50-162
1,1-DICHLOROETHENE	50	47	95	52	104	9.57	32	54-161
1,1-DICHLOROETHANE	50	48	96	52	106	9.6	22	55-159
1,2-DICHLOROETHENE(TOTAL	100	97	97	100	104	7.32	35	74-162
CHLOROFORM	50	46	92	49	99	7.59	19	57-152
1,2-DICHLOROETHANE	50	48	98	51	103	5.37	26	59-151
2-BUTANONE	50	42	84	44	89	5.84	29	42-173
1,1,1-TRICHLOROETHANE	50	44	88	48	97	9.78	51	38-179
CARBON TETRACHLORIDE	50	42	84	48	96	13.3	49	37-182
VINYL ACETATE	50	89	178*	89	178*	< 1	60	22-122
BROMODICHLOROMETHANE	50	45	91	51	102	11.2	20	48-164
1,1,2,2-TETRACHLOROETHAN	50	40	80	51	102	23.7	95	14-157
1,2-DICHLOROPROPANE	50	47	94	51	102	8.22	32	40-182
TRANS-1,3-DICHLOROPROPEN	50	47	94	50	100	5.89	42	10-164
TRICHLOROETHENE	50	45	90	48	96	6.81	38	67-149
DIBROMOCHLOROMETHANE	50	44	88	50	100	12.7	21	43-157
1,1,2-TRICHLOROETHANE	50	44	90	48	97	7.94	31	40-179
BENZENE	50	43	87	47	94	8.27	46	70-134
CIS-1,3-DICHLOROPROPENE	50	47	94	52	104	9.85	33	34-199
2-CHLOROETHYL VINYL ETHE	50	48	96	53	107	11.1	61	73-156
BROMOFORM	50	43	86	51	102	17.3	52	34-151
2-HEXANONE	50	42	84	47	94	11.6	97	27-176
4-METHYL-2-PENTANONE	50	41	83	49	99	16.8	62	23-208
TETRACHLOROETHENE	50	46	93	50	100	7.25	24	61-141
TOLUENE	50	44	88	48	96	8.39	15	75-140
CHLOROBENZENE	50	46	92	49	98	6.79	14	72-135
ETHYLBENZENE	50	46	92	49	98	6.67	17	55-147
STYRENE	50	48	96	50	101	5.08	27	64-147
XYLENE (TOTAL)	150	140	91	140	97	6.42	16	55-151

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	100	104	88-110
BROMOFLUOROBENZENE	106	105	86-115
1,2-DICHLOROETHANE-D4	106	106	76-114

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931109A
INST. BATCH: 13873
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
LAB# : METHOD BLANK

SAMPLE : K931109A
LOCATION:

ANALYZED : 11/09/93 09:11
DILUTION : 1
%MOISTURE: 0.00
LEVEL : LOW

MATRIX : SOIL
METHOD : SW 8240

VOLATILE ORGANICS PRIORITY POLLUTANTS
RESULTS REPORTED IN ug/Kg ON A DRY WEIGHT BASIS

PARAMETER	QUANT. LIMIT	RESULTS	PARAMETER	QUANT. LIMIT	RESULTS
CHLOROMETHANE	10	ND	1,2-DICHLOROPROPANE	5	ND
BROMOMETHANE	10	ND	TRANS-1,3-DICHLOROPROPENE	5	ND
VINYL CHLORIDE	10	ND	TRICHLOROETHENE	5	ND
CHLOROETHANE	10	ND	DIBROMOCHLOROMETHANE	5	ND
METHYLENE CHLORIDE	5	ND	1,1,2-TRICHLOROETHANE	5	ND
ACETONE	10	ND	BENZENE	5	ND
CARBON DISULFIDE	5	ND	CIS-1,3-DICHLOROPROPENE	5	ND
,1-DICHLOROETHENE	5	ND	2-CHLOROETHYL VINYL ETHER	10	ND
ı,1-DICHLOROETHANE	5	ND	BROMOFORM	5	ND
1,2-DICHLOROETHENE(TOTAL)	5	ND	2-HEXANONE	10	ND
CHLOROFORM	5	ND	4-METHYL-2-PENTANONE	10	ND
1,2-DICHLOROETHANE	5	ND	TETRACHLOROETHENE	5	ND
2-BUTANONE	10	ND	TOLUENE	5	ND
1,1,1-TRICHLOROETHANE	5	ND	CHLOROBENZENE	5	ND
CARBON TETRACHLORIDE	5	ND	ETHYLBENZENE	5	ND
VINYL ACETATE	10	ND	STYRENE	5	ND
BROMODICHLOROMETHANE	5	ND	XYLENE (TOTAL)	5	ND
1,1,2,2-TETRACHLOROETHANE	5	ND			

QA/QC SURROGATE RECOVERIES

TOLUENE-D8	(81-117)	98%	BROMOFLUOROBENZENE	(74-121)	96%
1,2-DICHLOROETHANE-D4	(70-121)	90%			

ND = NOT DETECTED ABOVE QUANTITATION LIMIT
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE
I = UNABLE TO QUANTITATE DUE TO MATRIX INTERFERENCE
NA = NOT APPLICABLE
Methodology: SM = STANDARD METHODS, 16th EDITION, 1985
EPA = #EPA600/4-79-020, MARCH 1985

* = SURROGATE RECOVERY OUTSIDE OF QC LIMITS
D = SURROGATES DILUTED OUT
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

SW = EPA METHODOLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

QAQC# : K931109A
INST. BATCH: 13873
REPORTED : 11/30/93

PROJECT : TINKER AFB RFI
SPIKE SAMPLE : LCS
SPIKE DUP SAMPLE: LCSD

MATRIX : SOIL
ANALYZED : 11/09/93 09:39
ANALYZED : 11/09/93 10:01

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
CHLOROMETHANE	50	47	94	39	79	16.8	18	21-170
BROMOMETHANE	50	54	108	35	71	42.2*	36	46-161
VINYL CHLORIDE	50	36	73	34	69	5.42	26	31-168
CHLOROETHANE	50	44	89	28	57	44.2	54	44-154
METHYLENE CHLORIDE	50	47	95	44	90	5.87	21	77-141
ACETONE	50	28	56	27	54	2.61	59	30-160
CARBON DISULFIDE	50	44	88	41	82	7.01	29	52-129
1,1-DICHLOROETHENE	50	49	99	48	98	1.74	16	60-141
1,1-DICHLOROETHANE	50	44	88	40	81	8.4	19	75-129
1,2-DICHLOROETHENE(TOTAL	100	89	90	90	91	1.43	21	72-133
CHLOROFORM	50	47	95	47	94	1.59	17	79-129
1,2-DICHLOROETHANE	50	44	88	45	90	3.05	19	81-132
2-BUTANONE	50	35	70	50	100	35.4	91	16-130
1,1,1-TRICHLOROETHANE	50	47	94	45	91	3.15	45	66-140
CARBON TETRACHLORIDE	50	51	102	53	106	3.54	21	65-140
VINYL ACETATE	50	28	57	28	57	< 1	72	17-153
BROMODICHLOROMETHANE	50	49	98	51	102	3.86	14	71-124
1,1,2,2-TETRACHLOROETHAN	50	48	96	54	108	11.4	78	49-127
1,2-DICHLOROPROPANE	50	43	87	42	85	2.43	17	81-122
TRANS-1,3-DICHLOROPROPEN	50	39	79	38	77	2.01	41	48-141
TRICHLOROETHENE	50	49	99	52	104	5.47	21	71-134
DIBROMOCHLOROMETHANE	50	47	95	54	109	13.7	25	68-120
1,1,2-TRICHLOROETHANE	50	47	94	52	105	11.1	28	68-120
BENZENE	50	44	89	44	90	< 1	13	79-128
CIS-1,3-DICHLOROPROPENE	50	44	89	44	89	< 1	29	63-123
2-CHLOROETHYL VINYL ETHE	50	88	176	90	181	2.95	45	0-146
BROMOFORM	50	50	100	54	109	9.06	37	58-119
2-HEXANONE	50	33	66	45	90	31.3	60	20-181
4-METHYL-2-PENTANONE	50	40	80	48	97	18.9	54	33-163
TETRACHLOROETHENE	50	50	100	52	104	3.61	21	80-125
TOLUENE	50	46	94	48	96	2.29	11	80-122
CHLOROBENZENE	50	48	97	50	100	3.33	10	80-125
ETHYLBENZENE	50	48	96	49	99	3.61	19	82-123
STYRENE	50	50	102	48	97	4.35	13	71-129
XYLENE (TOTAL)	150	160	104	150	103	1.17	21	81-125

QA/QC SURROGATE RECOVERIES

Parameter	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	98	100	81-117
BROMOFLUOROBENZENE	100	92	74-121
1,2-DICHLOROETHANE-D4	93	88	70-121

* Outside of QC Limits

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. ALBANY SUITE C BROKEN ARROW, OK 74012-1421 (918) 251-2858

ENGINEERING SCIENCES, INC.
7800 SHOAL CREEK BLVD.
SUITE 222 W
AUSTIN, TX 78757

REPORTED : 12/03/93

PROJECT : TINKER AFB RFI
SDG: 16220

MATRIX : SOIL

SAMPLE	: 16241.11	QAQC: K931108A	ANALYZED : 11/08/93 18:03
SPIKE SAMPLE	: 16241.12	QAQC: K931108A	ANALYZED : 11/08/93 18:26
SPIKE DUP SAMPLE	: 16241.13	QAQC: K931108A	ANALYZED : 11/08/93 18:49

VOLATILE ORGANICS PRIORITY POLLUTANTS
SPIKE/SPIKE DUPLICATE RECOVERY

Parameter ug/Kg	SPIKE AMOUNT	SAMP CONC.	SPIKE CONC.	SPIKE %Rec	DUP CONC.	DUP %Rec	RPD	MAX RPD	LIMITS %Rec.
1,1-DICHLOROETHENE	59		56	95	52	89	6.18	22	59-172
TRICHLOROETHENE	59		56	96	59	100	4.56	24	62-137
BENZENE	59		56	95	56	96	1.31	21	66-142
TOLUENE	59		58	98	57	98	1.02	21	59-139
CHLOROBENZENE	59		59	100	62	105	5.02	21	60-133

QA/QC SURROGATE RECOVERIES

Parameter	SAMPLE %Rec	SPIKE %Rec	DUP %Rec	Limits
TOLUENE-D8	95	98	92	81-117
BROMOFLUOROBENZENE	88	86	78	74-121
1,2-DICHLOROETHANE-D4	97	90	85	70-121

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220

DATE: 12/01/93

SWLO QAQC#: BL110516S
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION: LABQC
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	74	J
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220

DATE: 12/01/93

SWLO QAQC#: BL110516S
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION: LABQC
DATE ANALYZED : 11/15/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/05/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	60%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	65%	PHENOL-D5	(24-113)	52%
2-FLUOROPHENOL	(25-121)	53%	2,4,6-TRIBROMOPHENOL	(19-122)	73%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16220Ba

DATE: 12-03-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-05-93
DATE ANALYZED : 11-17-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	6666.66	3468.13	52.02	26 - 90
2-CHLOROPHENOL	6666.66	4109.99	61.65	25 - 102
1,4-DICHLOROBENZENE	3333.33	1930.49	57.91	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2556.96	76.71	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	2012.04	60.36	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	3620.64	54.31	26 - 103
ACENAPHTHENE	3333.33	2481.00	74.43	31 - 137
4-NITROPHENOL	6666.66	3976.07	59.64	11 - 114
2,4-DINITROTOLUENE	3333.33	2131.94	63.96	28 - 89
PENTACHLOROPHENOL	6666.66	3702.20	55.53	17 - 109
PYRENE	3333.33	1877.25	56.32	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	6666.66	3857.39	11	57.86	26 - 90
2-CHLOROPHENOL	6666.66	4505.25	9	67.68	25 - 102
1,4-DICHLOROBENZENE	3333.33	2022.53	5	60.68	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3333.33	2739.18	6	82,18	41 - 126
1,2,4-TRICHLOROBENZENE	3333.33	2082.36	3	62.47	38 - 107
4-CHLORO-3-METHYLPHENOL	6666.66	4068.82	12	61.03	26 - 103
ACENAPHTHENE	3333.33	2606.06	5	78.18	31 - 137
4-NITROPHENOL	6666.66	3402.36	16	51.04	11 - 114
2,4-DINITROTOLUENE	3333.33	2088.06	2	62.64	28 - 89
PENTACHLOROPHENOL	6666.66	3958.38	5	59.38	17 - 109
PYRENE	3333.33	1993.29	7	59.80	35 - 142

QA/QC SURROGATE RECOVERIES

		LCS			
NITROBENZENE-d5	(23-120) 66%	2-FLUOROBIPHENYL	(30-115) 73%	TERPHENYL-d14	(18-137) 65%
PHENOL-d5	(24-113) 48%	2-FLUOROPHENOL	(25-121) 66%	2,4,6-TRIBROMOPHENOL	(19-122) 68%
		LCSD			
NITROBENZENE-d5	(23-120) 69%	2-FLUOROBIPHENYL	(30-115) 76%	TERPHENYL-d14	(18-137) 68%
PHENOL-d5	(24-113) 55%	2-FLUOROPHENOL	(25-121) 72%	2,4,6-TRIBROMOPHENOL	(19-122) 68%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220

DATE: 12/01/93

SWLO QAQC#: BL110705S
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION: LABQC
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
PHENOL	330	U	ACENAPHTHENE	330	U
BIS(2-CHLOROETHYL)ETHER	330	U	2,4-DINITROPHENOL	1600	U
2-CHLOROPHENOL	330	U	4-NITROPHENOL	1600	U
1,3-DICHLOROBENZENE	330	U	DIBENZOFURAN	330	U
1,4-DICHLOROBENZENE	330	U	2,4-DINITROTOLUENE	330	U
BENZYL ALCOHOL	330	U	2,6-DINITROTOLUENE	330	U
1,2-DICHLOROBENZENE	330	U	DIETHYLPHTHALATE	330	U
2-METHYLPHENOL(O-CRESOL)	330	U	4-CHLOROPHENYL-PHENYLETHER	330	U
BIS(2-CHLOROISOPROPYL)ETHER	330	U	FLUORENE	330	U
4-METHYLPHENOL(P-CRESOL)	330	U	4-NITROANILINE	1600	U
N-NITROSO-DI-N-PROPYLAMINE	330	U	4,6-DINITRO-2-METHYLPHENOL	1600	U
HEXACHLOROETHANE	330	U	N-NITROSODIPHENYLAMINE(1)	330	U
NITROBENZENE	330	U	4-BROMOPHENYL-PHENYLETHER	330	U
ISOPHORONE	330	U	HEXACHLOROBENZENE	330	U
2-NITROPHENOL	330	U	PENTACHLOROPHENOL	1600	U
2,4-DIMETHYLPHENOL	330	U	PHENANTHRENE	330	U
BENZOIC ACID	1600	U	ANTHRACENE	330	U
BIS(2-CHLOROETHOXY)METHANE	330	U	DI-N-BUTYL PHTHALATE	330	U
2,4-DICHLOROPHENOL	330	U	FLUORANTHENE	330	U
1,2,4-TRICHLOROBENZENE	330	U	PYRENE	330	U
NAPHTHALENE	330	U	BUTYL BENZYL PHTHALATE	330	U
4-CHLOROANILINE	330	U	3,3'-DICHLOROBENZIDINE	660	U
HEXACHLOROBUTADIENE	330	U	BENZO(A)ANTHRACENE	330	U
4-CHLORO-3-METHYLPHENOL	330	U	BIS(2-ETHYLHEXYL)PHTHALATE	330	U
2-METHYLNAPHTHALENE	330	U	CHRYSENE	330	U
HEXACHLOROCYCLOPENTADIENE	330	U	DI-N-OCTYL PHTHALATE	330	U
2,4,6-TRICHLOROPHENOL	330	U	BENZO(B)FLUORANTHENE	330	U

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ENGINEERING SCIENCE, INC.
7800 SHOAL CREEK BLVD.
SUITE 222W
AUSTIN, TX 78757
Attn: KEVIN TYNES

REPORT: 16220

DATE: 12/01/93

SWLO QAQC#: BL110705S
PROJECT : TINKER AFB-RFI
SAMPLE #: SBLK LB1
LOCATION: LABQC
DATE ANALYZED : 11/11/93
METHOD REFERENCE: SW846-8270

DATE SAMPLED: / /
SAMPLE MATRIX : SQ
DEPTH FROM : 0.00
DEPTH TO : 0.00
DATE PREPARED : 11/07/93
DILUTION FACTOR: 1.00

SEMIVOLATILE ORGANIC COMPOUNDS
RESULTS REPORT IN ug/kg

PARAMETER	RESULTS**		PARAMETER	RESULTS**	
2,4,5-TRICHLOROPHENOL	1600	U	BENZO(K)FLUORANTHENE	330	U
2-CHLORONAPHTHALENE	330	U	BENZO(A)PYRENE	330	U
2-NITROANILINE	1600	U	INDENO(1,2,3-CD)PYRENE	330	U
DIMETHYL PHTHALATE	330	U	DIBENZ(A,H)ANTHRACENE	330	U
ACENAPHTHYLENE	330	U	BENZO(G,H,I)PERYLENE	330	U
3-NITROANILINE	1600	U			

QA/QC SURROGATE RECOVERIES

NITROBENZENE-D5	(23-120)	67%	2-FLUOROBIPHENYL	(30-115)	70%
TERPHENYL-D14	(18-137)	81%	PHENOL-D5	(24-113)	56%
2-FLUOROPHENOL	(25-121)	59%	2,4,6-TRIBROMOPHENOL	(19-122)	68%

**RESULTS REPORTED TO A MAXIMUM OF 3 SIGNIFICANT FIGURES

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16241Ba

DATE: 12-03-93

SAMPLE MATRIX: SOIL
SWLO # 16241.12(MS) 16241.13(MSD)
METHOD REFERENCE: SW846-8270
SAMPLE ID: S32.8SB5 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

DATE EXTRACTED: 11-07-93
DATE ANALYZED : 11-15-93

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	7843.13	4348.99	55.45	26 - 90
2-CHLOROPHENOL	7843.13	4972.74	63.40	25 - 102
1,4-DICHLOROBENZENE	3921.56	2056.49	52.44	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3921.56	3214.33	81.97	41 - 126
1,2,4-TRICHLOROBENZENE	3921.56	2456.22	62.63	38 - 107
4-CHLORO-3-METHYLPHENOL	7843.13	4646.33	59.24	26 - 103
ACENAPHTHENE	3921.56	2485.47	63.38	31 - 137
4-NITROPHENOL	7843.13	4224.86	53.87	11 - 114
2,4-DINITROTOLUENE	3921.56	2249.89	57.37	28 - 89
PENTACHLOROPHENOL	7843.13	5919.49	75.47	17 - 109
PYRENE	3921.56	2329.37	59.40	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	7843.13	4350.37	0	55.47	26 - 90
2-CHLOROPHENOL	7843.13	5004.19	2	63.80	25 - 102
1,4-DICHLOROBENZENE	3921.56	2107.09	4	53.73	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3921.56	3293.94	2	84.00	41 - 126
1,2,4-TRICHLOROBENZENE	3921.56	2444.57	2	62.34	38 - 107
4-CHLORO-3-METHYLPHENOL	7843.13	4562.01	2	58.17	26 - 103
ACENAPHTHENE	3921.56	2526.18	2	64.42	31 - 137
4-NITROPHENOL	7843.13	4985.11	17	63.56	11 - 114
2,4-DINITROTOLUENE	3921.56	2294.60	2	58.51	28 - 89
PENTACHLOROPHENOL	7843.13	4722.89	22	60.22	17 - 109
PYRENE	3921.56	2224.13	3	56.72	35 - 142

QA/QC SURROGATE RECOVERIES

				LCS				
NITROBENZENE-d5	(23-120)	66%	2-FLUOROBIPHENYL	(30-115)	66%	TERPHENYL-d14	(18-137)	73%
PHENOL-d5	(24-113)	52%	2-FLUOROPHENOL	(25-121)	62%	2,4,6-TRIBROMOPHENOL	(19-122)	96%
				LCSD				
NITROBENZENE-d5	(23-120)	69%	2-FLUOROBIPHENYL	(30-115)	66%	TERPHENYL-d14	(18-137)	71%
PHENOL-d5	(24-113)	52%	2-FLUOROPHENOL	(25-121)	66%	2,4,6-TRIBROMOPHENOL	(19-122)	96%

= VALUES OUTSIDE OF QC LIMITS
= EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING-SCIENCE, INC.
7800 SHOAL CREEK BOULEVARD, SUITE 222W
AUSTIN, TX 78757
ATTN: KEVIN TYNES

REPORT: 16241Ba

DATE: 12-03-93

SAMPLE MATRIX: SOIL
SWLO # LCS/LCSD
METHOD REFERENCE: SW846-8270
SAMPLE ID: LAB CONTROL SPIKE/CONTROL SPIKE DUPLICATE

DATE EXTRACTED: 11-07-93
DATE ANALYZED : 11-15-93

LABORATORY CONTROL SPIKE/SPIKE DUPLICATE RECOVERY

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RECOVERED (ug/Kg)	QC LIMITS RECOVERY
PHENOL	7843.13	4348.99	55.45	26 - 90
2-CHLOROPHENOL	7843.13	4972.74	63.40	25 - 102
1,4-DICHLOROBENZENE	3921.56	2056.49	52.44	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3921.56	3214.33	81.97	41 - 126
1,2,4-TRICHLOROBENZENE	3921.56	2456.22	62.63	38 - 107
4-CHLORO-3-METHYLPHENOL	7843.13	4646.33	59.24	26 - 103
ACENAPHTHENE	3921.56	2485.47	63.38	31 - 137
4-NITROPHENOL	7843.13	4224.86	53.87	11 - 114
2,4-DINITROTOLUENE	3921.56	2249.89	57.37	28 - 89
PENTACHLOROPHENOL	7843.13	5919.49	75.47	17 - 109
PYRENE	3921.56	2329.37	59.40	35 - 142

COMPOUND	SPIKE ADDED (ug/Kg)	AMOUNT RECOVERED (ug/Kg)	PERCENT RPD	PERCENT RECOVERY	LIMITS RECOVERY
PHENOL	7843.13	4350.37	0	55.47	26 - 90
2-CHLOROPHENOL	7843.13	5004.19	2	63.80	25 - 102
1,4-DICHLOROBENZENE	3921.56	2107.09	4	53.73	28 - 104
N-NITROSO-di-n-PROPYLAMINE	3921.56	3293.94	2	84.00	41 - 126
1,2,4-TRICHLOROBENZENE	3921.56	2444.57	2	62.34	38 - 107
4-CHLORO-3-METHYLPHENOL	7843.13	4562.01	2	58.17	26 - 103
ACENAPHTHENE	3921.56	2526.18	2	64.42	31 - 137
4-NITROPHENOL	7843.13	4985.11	17	63.56	11 - 114
2,4-DINITROTOLUENE	3921.56	2294.60	2	58.51	28 - 89
PENTACHLOROPHENOL	7843.13	4722.89	22	60.22	17 - 109
PYRENE	3921.56	2224.13	3	56.72	35 - 142

QA/QC SURROGATE RECOVERIES

LCS

NITROBENZENE-d5	(23-120) 66%	2-FLUOROBIPHENYL	(30-115) 66%	TERPHENYL-d14	(18-137)	73%
PHENOL-d5	(24-113) 52%	2-FLUOROPHENOL	(25-121) 62%	2,4,6-TRIBROMOPHENOL	(19-122)	96%

LCSD

NITROBENZENE-d5	(23-120) 69%	2-FLUOROBIPHENYL	(30-115) 66%	TERPHENYL-d14	(18-137)	71%
PHENOL-d5	(24-113) 52%	2-FLUOROPHENOL	(25-121) 66%	2,4,6-TRIBROMOPHENOL	(19-122)	96%

* = VALUES OUTSIDE OF QC LIMITS
SW = EPA METHODLOGY, "#SW846", THIRD EDITION, NOVEMBER 1986

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16220ad
REPORT DATE: 12-01-93

MATRIX: **SOIL**
QA/QC : **METHOD BLANK**

PARAMETER	DATE ANALYZED	BATCH ID	DET LIMIT	UNIT	RESULTS
ARSENIC	11/09/93	110693I3	1.0	mg/Kg	< 1.0
LEAD	11/09/93	110693I3	0.30	mg/Kg	< 0.30
SELENIUM	11/09/93	110693I3	0.50	mg/Kg	< 0.50
BARIUM	11/08/93	110693I3	0.50	mg/Kg	< 0.50
CADMIUM	11/08/93	110693I3	0.30	mg/Kg	< 0.30
CHROMIUM	11/08/93	110693I3	0.50	mg/Kg	< 0.50
NICKEL	11/08/93	110693I3	1.0	mg/Kg	< 1.0
ZINC	11/08/93	110693I3	1.5	mg/Kg	< 1.5
MERCURY	11/09/93	110993HG03	0.10	mg/Kg	< 0.10
SILVER	11/12/93	110693F3	0.10	mg/Kg	< 0.10
TOTAL CN	11/08/93	110793CN	0.50	mg/Kg	< 0.50

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16220bd
REPORT DATE: 12-01-93

MATRIX: **SOIL**
QA/QC : **LABORATORY CONTROL SPIKE**

LABORATORY CONTROL SPIKE RECOVERY

PARAMETER	DATE ANALYZED	AMOUNT SPIKED (mg/Kg)	SPIKED RESULTS (mg/Kg)	SPIKE PERCENT RECOVERY	SPIKE RECOVERY LIMITS
ARSENIC	11/09/93	200	212.3	106	80-120
LEAD	11/09/93	50.0	48.3	97	80-120
SELENIUM	11/09/93	200	215.4	108	80-120
BARIUM	11/08/93	200	205	103	80-120
CADMIUM	11/08/93	5.0	4.8	96	80-120
CHROMIUM	11/08/93	20.0	19.7	99	80-120
NICKEL	11/08/93	50.0	50.1	100	80-120
ZINC	11/08/93	50.0	48.3	97	80-120
MERCURY	11/09/93	2.45	2.40	102	80-120
SILVER	11/12/93	5.0	4.59	92	80-120
TOTAL CN	11/08/93	5.0	4.8	96	80-120

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16220cd
REPORT DATE: 12-01-93

MATRIX: **SOIL**
SAMPLE ID: **S32.8SB5MS111.5-13.5**
REPORTED ON DRY WT BASIS

MATRIX SPIKE

PARAMETER	DATE ANALYZED	SAMPLE CONC. (mg/Kg)	SPIKE CONC. (mg/Kg)	MS CONC. (mg/Kg)	MS % RECOVERY	CONTROL LIMITS
ARSENIC	11/09/93	< 1.18	237	228	96	75-125
LEAD	11/09/93	0.355	59.2	54.4	91	75-125
SELENIUM	11/09/93	< 0.592	237	230	97	75-125
BARIUM	11/08/93	25.8	237	259	98	75-125
CADMIUM	11/08/93	< 0.355	5.92	5.56	94	75-125
CHROMIUM	11/08/93	2.37	23.7	25.2	96	75-125
NICKEL	11/08/93	3.90	59.2	61.3	97	75-125
ZINC	11/08/93	3.19	59.2	58.6	94	75-125
MERCURY	11/09/93	< 0.118	0.592	0.549	93	75-125
SILVER	11/12/93	< 0.118	5.92	4.61	77	75-125
TOTAL CN	11/08/93	< 0.592	5.92	5.42	92	75-125

QC/dn

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

CLIENT: ENGINEERING SCIENCES, INC.

SDG: 16220dd
REPORT DATE: 12-01-93

MATRIX: **SOIL**
SAMPLE ID: **S32.8SB5SD111.5-13.5**
REPORTED ON DRY WT BASIS

MATRIX SPIKE DUPLICATE PRECISION DATA

PARAMETER	MS CONC. (mg/Kg)	MSD CONC. (mg/Kg)	RELATIVE PERCENT DIFFERENCE	CONTROL LIMIT MAX RPD
ARSENIC	228	222	2.7	20
LEAD	54.4	52.8	3.0	20
SELENIUM	230	220	4.4	20
BARIUM	259	254	2.0	20
CADMIUM	5.56	5.32	4.4	20
CHROMIUM	25.2	23.1	8.7	20
NICKEL	61.3	58.3	5.0	20
ZINC	58.6	55.5	5.4	20
MERCURY	0.549	0.551	0.4	20
SILVER	4.61	4.97	7.5	20
TOTAL CN	5.42	5.57	2.7	20

QC/dn