LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

ADMINISTRATIVE RECORD

VOLUME 8 of 13

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Prepared for:

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Longhorn Army Ammunition Plant
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N. Title: Final Analytical Data - Interim Remedial Action (RFI) Burning Ground 3 & Unlined Evaporation Pond
Volume 2 of 4 - Chemical Data QA / QC Validation Summary Reports
Group(s): Early Interim Action At Burning Ground No. 3
Site(s): LHAAP-18 & LHAAP-24 Burning Ground / Washout Pond & Evaporation Pond
Location: Longhorn Army Ammunition Plant, Marshall, Texas
Company: AWD Technologies, Inc.
Author(s): AWD Technologies, Inc.
Recipient: U.S. Army Corps Of Engineers, Tulsa District
Date: September 6, 1994
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009725

FINAL

CHEMICAL DATA QA/QC VALIDATION REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

VOLUME 2 OF 4

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

SEPTEMBER 6, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
MODIFICATION 000203
AWD PROJECT 2379

FINAL

CHEMICAL DATA QA\QC
VALIDATION SUMMARY REPORT
Longhorn Army Ammunition Plant
Karnack, Texas

The Longhorn Army Ammunition Plant (LHAAP) Phase I and II analytical data for the Interim Remedial Action of Burning Ground 3 and Unlined Evaporation Pond (LHAAP Units 18 and 24), which were generated by PDP Analytical Services and Inchcape Testing Services, have been validated by AWD Technologies, Inc. (AWD) in accordance with the U.S. EPA's National Functional Guidelines for Organic Data Review (June 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to appropriate method requirements. The resulting reports were produced by AWD in March and August of 1994 and are in accordance with the U.S. Army Corps of Engineers' (USACE) Regulation 1110-1-263 and Minimum Data Reporting Requirements, as well as with the Chemical Data Acquisition Plan (CDAP) for this site. The associated USACE Contract Number is DACA56-93-D-0016 and the Delivery Order Number is 0002.

The validated analytical results are reported in the data summary section of each validation or chemical data QA/QC report and should be accepted as qualified. With the exception of the relatively very few chemical concentrations that were qualified as unusable, "R", all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

Among the criteria used to evaluate the data are accuracy, precision, and representativeness. Each of these criteria were examined for each type of analysis reported in each laboratory data package. The percent recoveries of laboratory control samples, surrogates, and matrix spike/matrix spike duplicates were evaluated under accuracy, which is the determination of how close a concentration is to its true value. Under precision, the relative percent differences (RPDs) between batch spikes and batch spike duplicates, laboratory control samples and laboratory control sample duplicates, matrix spikes and matrix spike duplicates, and site samples and their associated laboratory duplicates were evaluated. These measure the laboratory's ability to reproduce a chemical concentration. The criteria considered under representativeness include: holding times, sample preservation, laboratory and field blank contamination, and field duplicate comparisons. These enable the validator to further assess the chemical data and to decide the extent to which the chemical concentrations are acceptable, reliable, and appropriate.

009727

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1973

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1973

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 12, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1973. Included in this work order are nine (9) soil samples. There were no field duplicates in this set of samples.

Soil Samples

LH18,24-SB-01-2001
LH18,24-SB-01-2003
LH18,24-SB-01-2004
LH18,24-SB-02-2001
LH18,24-SB-02-2002
LH18,24-SB-02-2004
LH18,24-SB-03-2001
LH18,24-SB-03-2003
LH18,24-SB-03-2004

All samples were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, pH, and sulfate. All VOC, SVOC, metals, and pH analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 9045, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Since the laboratory did not supply any of the analytical raw data in the deliverable package, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the semivolatile results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the

following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times. All blanks were free of target compound contamination.

3.0 Semivolatiles.

3.1 Accuracy. The percent recoveries in the MS/MSD sample for 2,4-dinitrotoluene were greater than quality control limits, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved. Both method blanks were free of target compound contamination.

4.0 pH.

4.1 Accuracy. The laboratory control sample spike recoveries were within acceptable quality control limits.

4.2 Precision. The LCS and sample duplicate RPDs were both within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All samples were analyzed within acceptable holding times.

5.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

5.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

5.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

5.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

6.0 TAL Metals.

6.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of antimony (23 percent), arsenic (67 percent), and selenium (0 percent). All sample results associated with arsenic were qualified "UJ", estimated. Due to the very low recovery of antimony and selenium, all associated results less than the IDL were qualified "R", unusable.

6.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges, except for barium and vanadium. All associated results were qualified "J", estimated.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. All method and laboratory blanks were free of contamination.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

The volatile fraction of sample LH18,24-SB-02-2001 was diluted (1:5) and reanalyzed due to the sample concentration of trichloroethene out of instrument calibration range. The trichloroethene result of the reanalyzed sample has been substituted for the result of the original sample. The reanalyzed result is more accurate.

The laboratory reanalyzed the semivolatile fraction of sample LH18,24-SB-03-2004 because an internal standard had low recovery. The original sample results are reported. No internal standard quality control was included in this data package for review.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and

data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:SB01-2001
PDP Sample ID: 1973.01
Report No.: B6600

Date Sampled: 11/12/93
Date Received: 11/16/93
Date Reported: 11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: SOIL
Multiplying Factor: 1.22
Sample Weight: 5.0 g
Dilution: 1.0
Percent Moisture: 18.5 %

Method Ref.: SW846-8240
GC/MS File ID: B6600
Date Analyzed: 11/19/93
Analyst: HZ

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
',2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	5J
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	18	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	9
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	83
Toluene-d8	50	(81-117)	99
Bromofluorobenzene	50	(74-121)	99

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB01-2003	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.02	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6601	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.23	GC/MS File ID:	B6601
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	19.1 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
',2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	10
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	50
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	82
Toluene-d8	50	(81-117)	100
Bromofluorobenzene	50	(74-121)	102

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB01-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.03	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6602	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.25	GC/MS File ID:	B6602
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	20.3 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	13	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	13	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	13	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	13	ND	Methylene chloride	6	4 J
2-Hexanone	13	ND	Styrene	6	ND
4-Methyl-2-pentanone	13	ND	Tetrachloroethene	6	ND
Acetone	13	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	13	ND	Trichloroethene	6	17
Carbon disulfide	6	ND	Vinyl acetate	13	ND
			Vinylchloride	13	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	85
Toluene-d8	50	(81-117)	101
Bromofluorobenzene	50	(74-121)	101

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.04	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6605	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.22	GC/MS File ID:	B6605
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	18 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	20
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	~~30~~ 60	~~12~~ 320
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	86
Toluene-d8	50	(81-117)	104
Bromofluorobenzene	50	(74-121)	100

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2002	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.05	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6609	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.18	GC/MS File ID:	B6609
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	15.8 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	34
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	5J
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	90
Toluene-d8	50	(81-117)	99
Bromofluorobenzene	50	(74-121)	103

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.06	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6603	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.19	GC/MS File ID:	B6603
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	16.4 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
1,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	20
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	10	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	17
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	83
Toluene-d8	50	(81-117)	100
Bromofluorobenzene	50	(74-121)	101

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB03-2001	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.07	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6604	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.24	GC/MS File ID:	B6604
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	19.4 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
1,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	22
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	41	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	ND
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	87
Toluene-d8	50	(81-117)	106
Bromofluorobenzene	50	(74-121)	105

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB03-2003	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.08	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6607	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL		
Multiplying Factor:	1.19	Method Ref.:	SW846-8240
Sample Weight:	5.0 g	GC/MS File ID:	B6607
Dilution:	1.0	Date Analyzed:	11/19/93
Percent Moisture:	16.0 %	Analyst:	HZ

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
',2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	27
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	39	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	ND
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	87
Toluene-d8	50	(81-117)	104
Bromofluorobenzene	50	(74-121)	104

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB03-2004	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.09	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6611	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.24	GC/MS File ID:	B6611
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	19.4 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	30
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	14	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	26
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	85
Toluene-d8	50	(81-117)	107
Bromofluorobenzene	50	(74-121)	106

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009744

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB01-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.01	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1709	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	18.5 %	GC/MS File ID:	D1709
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	107	Phenol-d5	3075	(24-113)	66
2-Fluorobiphenyl	2050	(30-115)	80	2-Fluorophenol	3075	(25-121)	72
Terphenyl-d14	2050	(18-137)	72	2,4,6-Tribromophenol	3075	(19-122)	112

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin ve, Suite 300; Spring, Texas 77386; Phone (7 63-2233

009745

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:SB01-2003
Project Name: LONGHORN AAP PDP Sample ID: 1973.02
Project No.: NA Report No.: D1710
Date Sampled: 11/12/93
Date Received: 11/16/93
Date Reported: 11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: SOIL Dilution: 1.0
Multiplying Factor: 41.00 Percent Moisture: 19.1 %
Sample Weight: 30 g Date Extracted: 11/17/93
Extract Volume: 1.0 ml Date Analyzed: 11/18/93
Method Ref.: SW846-8270
GC/MS File ID: D1710
Analyst: SYA

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
',6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	71	Phenol-d5	3075	(24-113)	72
2-Fluorobiphenyl	2050	(30-115)	88	2-Fluorophenol	3075	(25-121)	78
Terphenyl-d14	2050	(18-137)	82	2,4,6-Tribromophenol	3075	(19-122)	90

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin e, Suite 300; Spring, Texas 77386; Phone (63-2233

009746

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: SB01-2004
PDP Sample ID: 1973.03
Report No.: D1737
Date Sampled: 11/12/93
Date Received: 11/16/93
Date Reported: 11/20/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: SOIL
Multiplying Factor: 42.00
Sample Weight: 30 g
Extract Volume: 1.0 ml
Dilution: 1.0
Percent Moisture: 20.3 %
Date Extracted: 11/17/93
Date Analyzed: 11/19/93
Method Ref.: SW846-8270
GC/MS File ID: D1737
Analyst: SYA

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	420	ND	Benzo(a)pyrene	420	ND
1,2-Dichlorobenzene	420	ND	Benzo(b)fluroanthene	420	ND
1,3-Dichlorobenzene	420	ND	Benzo(g,h,i)perylene	420	ND
1,4-Dichlorobenzene	420	ND	Benzo(k)fluroanthene	420	ND
2,4,5-Tricholorophenol	420	ND	Benzyl Alcohol	420	ND
2,4,6-Trichlorophenol	420	ND	Bis(2-chloroethoxy)methane	420	ND
2,4-Dichlorophenol	420	ND	Bis(2-chloroethyl) ether	420	ND
2,4-Dimethylphenol	420	ND	Bis(2-chloroisopropyl)ether	420	ND
2,4-Dinitrophenol	1050	ND	Bis(2-ethylhexyl)phthalate	420	ND
2,4-Dinitrotoluene	420	ND	Butylbenzylphthalate	420	ND
',6-Dinitrotoluene	420	ND	Chrysene	420	ND
-Chloronaphthalene	420	ND	Dibenzofuran	420	ND
2-Chlorophenol	420	ND	Dibenzo(a,h)anthracene	420	ND
2-Methylnaphthalene	420	ND	Diethylphthalate	420	ND
2-Methylphenol	420	ND	Dimethyl phthalate	420	ND
2-Nitroaniline	1050	ND	Di-n-Butylphthalate	420	ND
2-Nitrophenol	420	ND	Di-n-octylphthalate	420	ND
3,3-Dichlorobenzidine	420	ND	Fluoranthene	420	ND
3-Nitroaniline	1050	ND	Fluorene	420	ND
4,6-Dinitro 2-methylphenol	1050	ND	Hexachlorobenzene	420	ND
4-Bromophenyl-phenylether	420	ND	Hexachlorobutadiene	420	ND
4-Chloroaniline	420	ND	Hexachlorocyclopentadiene	420	ND
4-Chlorophenyl-phenylether	420	ND	Hexachloroethane	420	ND
4-Chloro-3-methylphenol	420	ND	Indeno(1,2,3-cd)pyrene	420	ND
4-Methylphenol	420	ND	Isophorone	420	ND
4-Nitroaniline	1050	ND	Naphthalene	420	ND
4-Nitrophenol	1050	ND	Nitrobenzene	420	ND
Acenaphthene	420	ND	N-Nitrosodiphenylamine	420	ND
Acenaphthylene	420	ND	N-Nitroso-Di-N-propylamine	420	ND
Anthracene	420	ND	Pentachlorophenol	1050	ND
Benzoic Acid	420	ND	Phenanthrene	420	ND
Benzo(a)anthracene	420	ND	Phenol	420	ND
			Pyrene	420	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2100	(23-120)	55	Phenol-d5	3150	(24-113)	74
2-Fluorobiphenyl	2100	(30-115)	60	2-Fluorophenol	3150	(25-121)	84
Terphenyl-d14	2100	(18-137)	64	2,4,6-Tribromophenol	3150	(19-122)	62

Method Blank ID: 1973 [BLK] LCS ID: 1973 [LCS] MS ID: [0]24-03MS MSD ID: 1024-03MSD PDP ID: NA

PDP ANALYTICAL SERVICES
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009747

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB02-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.04	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1712	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	18.0 %	GC/MS File ID:	D1712
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	67	Phenol-d5	3075	(24-113)	69
2-Fluorobiphenyl	2050	(30-115)	81	2-Fluorophenol	3075	(25-121)	74
Terphenyl-d14	2050	(18-137)	74	2,4,6-Tribromophenol	3075	(19-122)	82

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin ve, Suite 300; Spring, Texas 77386; Phone (7 63-2233

009748

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB02-2002	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.05	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1713	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	40.00	Percent Moisture:	15.8 %	GC/MS File ID:	D1713
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	400	ND	Benzo(a)pyrene	400	ND
1,2-Dichlorobenzene	400	ND	Benzo(b)fluroanthene	400	ND
1,3-Dichlorobenzene	400	ND	Benzo(g,h,i)perylene	400	ND
1,4-Dichlorobenzene	400	ND	Benzo(k)fluroanthene	400	ND
2,4,5-Tricholorophenol	400	ND	Benzyl Alcohol	400	ND
2,4,6-Trichlorophenol	400	ND	Bis(2-chloroethoxy)methane	400	ND
2,4-Dichlorophenol	400	ND	Bis(2-chloroethyl) ether	400	ND
2,4-Dimethylphenol	400	ND	Bis(2-chloroisopropyl)ether	400	ND
2,4-Dinitrophenol	1000	ND	Bis(2-ethylhexyl)phthalate	400	ND
2,4-Dinitrotoluene	400	ND	Butylbenzylphthalate	400	ND
2,6-Dinitrotoluene	400	ND	Chrysene	400	ND
`-Chloronaphthalene	400	ND	Dibenzofuran	400	ND
Chlorophenol	400	ND	Dibenzo(a,h)anthracene	400	ND
2-Methylnaphthalene	400	ND	Diethylphthalate	400	ND
2-Methylphenol	400	ND	Dimethyl phthalate	400	ND
2-Nitroaniline	1000	ND	Di-n-Butylphthalate	400	ND
2-Nitrophenol	400	ND	Di-n-octylphthalate	400	ND
3,3-Dichlorobenzidine	400	ND	Fluoranthene	400	ND
3-Nitroaniline	1000	ND	Fluorene	400	ND
4,6-Dinitro 2-methylphenol	1000	ND	Hexachlorobenzene	400	ND
4-Bromophenyl-phenylether	400	ND	Hexachlorobutadiene	400	ND
4-Chloroaniline	400	ND	Hexachlorocyclopentadiene	400	ND
4-Chlorophenyl-phenylether	400	ND	Hexachloroethane	400	ND
4-Chloro-3-methylphenol	400	ND	Indeno(1,2,3-cd)pyrene	400	ND
4-Methylphenol	400	ND	Isophorone	400	ND
4-Nitroaniline	1000	ND	Naphthalene	400	ND
4-Nitrophenol	1000	ND	Nitrobenzene	400	ND
Acenaphthene	400	ND	N-Nitrosodiphenylamine	400	ND
Acenaphthylene	400	ND	N-Nitroso-Di-N-propylamine	400	ND
Anthracene	400	ND	Pentachlorophenol	1000	ND
Benzoic Acid	400	ND	Phenanthrene	400	ND
Benzo(a)anthracene	400	ND	Phenol	400	ND
			Pyrene	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2000	(23-120)	71	Phenol-d5	3000	(24-113)	71
2-Fluorobiphenyl	2000	(30-115)	83	2-Fluorophenol	3000	(25-121)	75
Terphenyl-d14	2000	(18-137)	82	2,4,6-Tribromophenol	3000	(19-122)	88

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]ve, Suite 300; Spring, Texas 77386; Phone ([illegible]63-2233

009749

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB02-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.06	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1714	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	40.00	Percent Moisture:	16.4 %	GC/MS File ID:	D1714
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	400	ND	Benzo(a)pyrene	400	ND
1,2-Dichlorobenzene	400	ND	Benzo(b)fluroanthene	400	ND
1,3-Dichlorobenzene	400	ND	Benzo(g,h,i)perylene	400	ND
1,4-Dichlorobenzene	400	ND	Benzo(k)fluroanthene	400	ND
2,4,5-Tricholorophenol	400	ND	Benzyl Alcohol	400	ND
2,4,6-Trichlorophenol	400	ND	Bis(2-chloroethoxy)methane	400	ND
2,4-Dichlorophenol	400	ND	Bis(2-chloroethyl) ether	400	ND
2,4-Dimethylphenol	400	ND	Bis(2-chloroisopropyl)ether	400	ND
2,4-Dinitrophenol	1000	ND	Bis(2-ethylhexyl)phthalate	400	ND
2,4-Dinitrotoluene	400	ND	Butylbenzylphthalate	400	ND
2,6-Dinitrotoluene	400	ND	Chrysene	400	ND
Chloronaphthalene	400	ND	Dibenzofuran	400	ND
2-Chlorophenol	400	ND	Dibenzo(a,h)anthracene	400	ND
2-Methylnaphthalene	400	ND	Diethylphthalate	400	ND
2-Methylphenol	400	ND	Dimethyl phthalate	400	ND
2-Nitroaniline	1000	ND	Di-n-Butylphthalate	400	ND
2-Nitrophenol	400	ND	Di-n-octylphthalate	400	ND
3,3-Dichlorobenzidine	400	ND	Fluoranthene	400	ND
3-Nitroaniline	1000	ND	Fluorene	400	ND
4,6-Dinitro 2-methylphenol	1000	ND	Hexachlorobenzene	400	ND
4-Bromophenyl-phenylether	400	ND	Hexachlorobutadiene	400	ND
4-Chloroaniline	400	ND	Hexachlorocyclopentadiene	400	ND
4-Chlorophenyl-phenylether	400	ND	Hexachloroethane	400	ND
4-Chloro-3-methylphenol	400	ND	Indeno(1,2,3-cd)pyrene	400	ND
4-Methylphenol	400	ND	Isophorone	400	ND
4-Nitroaniline	1000	ND	Naphthalene	400	ND
4-Nitrophenol	1000	ND	Nitrobenzene	400	ND
Acenaphthene	400	ND	N-Nitrosodiphenylamine	400	ND
Acenaphthylene	400	ND	N-Nitroso-Di-N-propylamine	400	ND
Anthracene	400	ND	Pentachlorophenol	1000	ND
Benzoic Acid	400	ND	Phenanthrene	400	ND
Benzo(a)anthracene	400	ND	Phenol	400	ND
			Pyrene	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2000	(23-120)	78	Phenol-d5	3000	(24-113)	67
2-Fluorobiphenyl	2000	(30-115)	91	2-Fluorophenol	3000	(25-121)	84
Terphenyl-d14	2000	(18-137)	86	2,4,6-Tribromophenol	3000	(19-122)	90

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]e, Suite 300; Spring, Texas 77386; Phone (7[illegible]63-2233

009750

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB03-2001	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.07	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1715	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	19.4 %	GC/MS File ID:	D1715
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
2-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	75	Phenol-d5	3075	(24-113)	76
2-Fluorobiphenyl	2050	(30-115)	93	2-Fluorophenol	3075	(25-121)	80
Terphenyl-d14	2050	(18-137)	83	2,4,6-Tribromophenol	3075	(19-122)	84

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

000036

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]ve, Suite 300; Spring, Texas 77386; Phone ([illegible]63-2233

009751

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB03-2003	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.08	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1716	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	40.00	Percent Moisture:	16.0 %	GC/MS File ID:	D1716
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	400	ND	Benzo(a)pyrene	400	ND
1,2-Dichlorobenzene	400	ND	Benzo(b)fluoranthene	400	ND
1,3-Dichlorobenzene	400	ND	Benzo(g,h,i)perylene	400	ND
1,4-Dichlorobenzene	400	ND	Benzo(k)fluoranthene	400	ND
2,4,5-Tricholorophenol	400	ND	Benzyl Alcohol	400	ND
2,4,6-Trichlorophenol	400	ND	Bis(2-chloroethoxy)methane	400	ND
2,4-Dichlorophenol	400	ND	Bis(2-chloroethyl) ether	400	ND
2,4-Dimethylphenol	400	ND	Bis(2-chloroisopropyl)ether	400	ND
2,4-Dinitrophenol	1000	ND	Bis(2-ethylhexyl)phthalate	400	ND
2,4-Dinitrotoluene	400	ND	Butylbenzylphthalate	400	ND
6-Dinitrotoluene	400	ND	Chrysene	400	ND
Chloronaphthalene	400	ND	Dibenzofuran	400	ND
2-Chlorophenol	400	ND	Dibenzo(a,h)anthracene	400	ND
2-Methylnaphthalene	400	ND	Diethylphthalate	400	ND
2-Methylphenol	400	ND	Dimethyl phthalate	400	ND
2-Nitroaniline	1000	ND	Di-n-Butylphthalate	400	ND
2-Nitrophenol	400	ND	Di-n-octylphthalate	400	230 J
3,3-Dichlorobenzidine	400	ND	Fluoranthene	400	ND
3-Nitroaniline	1000	ND	Fluorene	400	ND
4,6-Dinitro 2-methylphenol	1000	ND	Hexachlorobenzene	400	ND
4-Bromophenyl-phenylether	400	ND	Hexachlorobutadiene	400	ND
4-Chloroaniline	400	ND	Hexachlorocyclopentadiene	400	ND
4-Chlorophenyl-phenylether	400	ND	Hexachloroethane	400	ND
4-Chloro-3-methylphenol	400	ND	Indeno(1,2,3-cd)pyrene	400	ND
4-Methylphenol	400	ND	Isophorone	400	ND
4-Nitroaniline	1000	ND	Naphthalene	400	ND
4-Nitrophenol	1000	ND	Nitrobenzene	400	ND
Acenaphthene	400	ND	N-Nitrosodiphenylamine	400	ND
Acenaphthylene	400	ND	N-Nitroso-Di-N-propylamine	400	ND
Anthracene	400	ND	Pentachlorophenol	1000	ND
Benzoic Acid	400	ND	Phenanthrene	400	ND
Benzo(a)anthracene	400	ND	Phenol	400	ND
			Pyrene	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2000	(23-120)	75	Phenol-d5	3000	(24-113)	81
2-Fluorobiphenyl	2000	(30-115)	97	2-Fluorophenol	3000	(25-121)	83
Terphenyl-d14	2000	(18-137)	86	2,4,6-Tribromophenol	3000	(19-122)	95

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

009752

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]e, Suite 300; Spring, Texas 77386; Phone (7[illegible]63-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB03-2004	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.09	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1717	Date Reported:	11/20/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	19.4 %	GC/MS File ID:	D1717
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	75	Phenol-d5	3075	(24-113)	70
2-Fluorobiphenyl	2050	(30-115)	94	2-Fluorophenol	3075	(25-121)	80
Terphenyl-d14	2050	(18-137)	99	2,4,6-Tribromophenol	3075	(19-122)	104

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: N[illegible]

[illegible]38

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB01-2001
PDP Sample ID: 1973.01
Report Number: 197301

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 81.5 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.3	10387	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.61	1.2 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	97 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.61	ND	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.61	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.5	658	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	9.2	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	4.7	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	6.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.3	8488	BDH
ad	SW-846 7421	11-17-93	11-19-93	0.61	8.2	MBB
agnesium	SW-846 6010	11-17-93	11-19-93	24.5	1244	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	22	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.9	9.2	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	613	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	2.45	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	61.3	280	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.61	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	14.3 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	36.3	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB01-2003
PDP Sample ID: 1973.02
Report Number: 197302

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 80.9 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.4	12386	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.62	3.8 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	127 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.62	0.70	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.62	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.7	1101	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	14.3	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	3.8	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	7.0	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.4	11213	BDH
Lead	SW-846 7421	11-17-93	11-19-93	1.24	16.3	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.7	2025	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	90	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.9	16.0	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	618	841	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	2.47	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	61.8	518	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.62	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	17.4 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	43.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB01-2004
PDP Sample ID: 1973.03
Report Number: 197303

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL
Percent Solids: 79.7
Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.5	7846	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.5	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.63	2.3 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.3	96 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.63	0.69	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.63	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	25.1	708	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.3	9.1	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.3	5.8	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	6.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.5	14141	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.63	6.1	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	25.1	1324	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.3	158	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.13	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	5.0	14.2	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	627	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.25	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.3	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	62.7	341	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	1.25	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.3	17.9 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	35.7	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1
LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2
MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2001
PDP Sample ID: 1973.04
Report Number: 197304

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 82.0 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.2	12085	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.3	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.61	2.0 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	59 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.61	0.61	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.61	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.4	792	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	12.5	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	6.7	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	8.4	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.2	12915	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.61	8.9	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.4	1579	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	32	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.9	13.1	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	610	611	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.22	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	61.0	193	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.61	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	21.2 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	41.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1 | MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2 | DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2002
PDP Sample ID: 1973.05
Report Number: 197305

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 84.2 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	11.9	7139	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.1	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.59	3.2 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	110 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.59	1.09	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.59	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	23.8	952	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	9.9	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	7.1	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	7.3	BDH
[illegible]n	SW-846 6010	11-17-93	11-19-93	11.9	14798	BDH
[illegible]d	SW-846 7421	11-17-93	11-19-93	0.59	8.1	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	23.8	1583	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	169	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.8	19.7	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	594	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.19	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	59.4	333	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.59	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	16.6 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	45.3	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1 | MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2 | DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2004
PDP Sample ID: 1973.06
Report Number: 197306

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 83.6 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.0	3043	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.2	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.60	0.8 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	199 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.60	ND	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.60	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	23.9	347	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	6.0	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	17.2	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	3.2	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.0	6378	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.60	6.7	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	23.9	505	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	931	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.8	9.6	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	598	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.20	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	59.8	110	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.60	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	7.9 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	19.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1 | MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2 | DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB03-2001
PDP Sample ID: 1973.07
Report Number: 197307

Date Sampled: 11-13-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 80.6 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.4	15062	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.62	2.1 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	133 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.62	0.94	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.62	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.8	790	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	19.6	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	7.6	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	7.8	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.4	17556	BDH
ead	SW-846 7421	11-17-93	11-19-93	0.62	7.4	MBB
agnesium	SW-846 6010	11-17-93	11-19-93	24.8	1867	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	47	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	5.0	14.3	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	620	767	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.24	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	62.0	303	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.62	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	28.5 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	48.9	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB03-2003
PDP Sample ID: 1973.08
Report Number: 197308

Date Sampled: 11-13-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL — Percent Solids: 84.0 — Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	11.9	9980	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.1	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.60	1.3 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	132 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.60	1.00	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.60	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	23.8	949	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	13.6	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	11.9	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	8.4	BDH
Iron	SW-846 6010	11-17-93	11-19-93	11.9	14548	BDH
Lead	SW-846 7421	11-17-93	11-19-93	2.98	5.4	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	23.8	1601	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	232	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.8	18.1	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	595	688	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.19	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	59.5	355	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.60	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	23.7 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	45.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1 — MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2 — DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB03-2004
PDP Sample ID: 1973.09
Report Number: 197309

Date Sampled: 11-13-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL
Percent Solids: 80.6
Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.4	7821	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND R	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.62	3.7 J	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	91 J	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.62	0.67	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.62	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.8	687	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	10.0	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	6.3	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	8.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.4	19640	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.62	7.4	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.8	1246	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	127	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	5.0	18.5	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	620	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.24	ND R	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	62.0	101	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.62	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	23.1 J	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	41.9	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1
MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:11-16-93
Date Reported:11-23-93
Report Number:1973CL

WET CHEMISTRY PARAMETER: Water Extractable Chloride

Method Reference: EPA 325.3 Mod — Units: mg/kg Wet Weight — Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE EXTRACTED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-18-93	11-19-93	4	14			
1973.02	SB01-2003	SOIL	11-18-93	11-19-93	4	95			
1973.03	SB01-2004	SOIL	11-18-93	11-19-93	4	21			
1973.04	SB02-2001	SOIL	11-18-93	11-19-93	4	71			
1973.05	SB02-2002	SOIL	11-18-93	11-19-93	4	18			
1973.06	SB02-2004	SOIL	11-18-93	11-19-93	4	60			
1973.07	SB03-2001	SOIL	11-18-93	11-19-93	4	123			
1973.08	SB03-2003	SOIL	11-18-93	11-19-93	4	35			
1973.09	SB03-2004	SOIL	11-18-93	11-19-93	4	127			
			QUALITY ASSURANCE/QUALITY CONTROL						
1973.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	1	ND			
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	2	145	152		95
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	2	149	152	2.7	98
1973.01 (DUP)	SB01-2001 (DUP)	SOIL	11-18-93	11-19-93	4	17		19.4	
1973.01 (MS)	SB01-2001 (MS)	SOIL	11-18-93	11-19-93	4	85	71		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: 1973NIT

WET CHEMISTRY PARAMETER: Water Extractable Nitrate as N

Method Reference: EPA 352.1 Mod — Units: mg/kg Wet Weight — Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE EXTRACTED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-18-93	11-19-93	0.4	1.3			
1973.02	SB01-2003	SOIL	11-18-93	11-19-93	0.4	2.1			
1973.03	SB01-2004	SOIL	11-18-93	11-19-93	0.4	5.1			
1973.04	SB02-2001	SOIL	11-18-93	11-19-93	0.4	4.5			
1973.05	SB02-2002	SOIL	11-18-93	11-19-93	0.4	3.7			
1973.06	SB02-2004	SOIL	11-18-93	11-19-93	0.4	2.9			
1973.07	SB03-2001	SOIL	11-18-93	11-19-93	0.4	2.9			
1973.08	SB03-2003	SOIL	11-18-93	11-19-93	2.0	19.1			
73.09	SB03-2004	SOIL	11-18-93	11-19-93	0.4	2.6			
				QUALITY ASSURANCE/QUALITY CONTROL					
1973.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	0.1	ND			
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.36	0.40		90
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.35	0.40	2.8	88
1973.01 (DUP)	SB01-2001 (DUP)	SOIL	11-18-93	11-19-93	0.4	1.3		0.0	
1973.01 (MS)	SB01-2001 (MS)	SOIL	11-18-93	11-19-93	0.4	2.6	1.60		81

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: 1973COR

WET CHEMISTRY PARAMETER: pH

Method Reference: SW-846 9045

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-17-93	NA	5.33			
1973.02	SB01-2003	SOIL	11-17-93	NA	5.58			
1973.03	SB01-2004	SOIL	11-17-93	NA	6.02			
1973.04	SB02-2001	SOIL	11-17-93	NA	4.65			
1973.05	SB02-2002	SOIL	11-17-93	NA	5.89			
1973.06	SB02-2004	SOIL	11-17-93	NA	6.64			
1973.07	SB03-2001	SOIL	11-17-93	NA	5.54			
1973.08	SB03-2003	SOIL	11-17-93	NA	5.50			
1973.09	SB03-2004	SOIL	11-17-93	NA	5.90			
				QUALITY ASSURANCE/QUALITY CONTROL				
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	11-17-93	NA	8.98	9.10		99
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	11-17-93	NA	8.99	9.10	0.1	99
1973.05 (DUP)	SB02-2002 (DUP)	SOIL	11-17-93	NA	5.96		1.2	

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: 1973SULF

WET CHEMISTRY PARAMETER: Water Extractable Sulfate

Method Reference: EPA 375.4 Mod — Units: mg/kg Wet Weight — Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE EXTRACTED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-18-93	11-19-93	20	20			
1973.02	SB01-2003	SOIL	11-18-93	11-19-93	20	ND			
1973.03	SB01-2004	SOIL	11-18-93	11-19-93	100	ND			
1973.04	SB02-2001	SOIL	11-18-93	11-19-93	100	103			
1973.05	SB02-2002	SOIL	11-18-93	11-19-93	100	ND			
1973.06	SB02-2004	SOIL	11-18-93	11-19-93	100	ND			
1973.07	SB03-2001	SOIL	11-18-93	11-19-93	20	36			
1973.08	SB03-2003	SOIL	11-18-93	11-19-93	400	ND			
1973.09	SB03-2004	SOIL	11-18-93	11-19-93	20	49			
				QUALITY ASSURANCE/QUALITY CONTROL					
1973.PBW1	(PREPARATION BLK)	AQUEOUS	11-18-93	11-19-93	5	ND			
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	11-18-93	11-19-93	5	185	197		94
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	11-18-93	11-19-93	5	174	197	6.1	88
1973.01 (DUP)	SB01-2001 (DUP)	SOIL	11-18-93	11-19-93	20	21		4.9	
1973.01 (MS)	SB01-2001 (MS)	SOIL	11-18-93	11-19-93	100	52	32		100

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB01-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.01	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6600	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.22	GC/MS File ID:	B6600
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	18.5 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
',2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	5J
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	18	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	9
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	83
Toluene-d8	50	(81-117)	99
Bromofluorobenzene	50	(74-121)	99

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB01-2003	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.02	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6601	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.23	GC/MS File ID:	B6601
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	19.1 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	10
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	50
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	82
Toluene-d8	50	(81-117)	100
Bromofluorobenzene	50	(74-121)	102

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB01-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.03	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6602	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.25	GC/MS File ID:	B6602
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	20.3 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	13	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	13	ND
2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
.,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	13	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	13	ND	Methylene chloride	6	4 J
2-Hexanone	13	ND	Styrene	6	ND
4-Methyl-2-pentanone	13	ND	Tetrachloroethene	6	ND
Acetone	13	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	13	ND	Trichloroethene	6	17
Carbon disulfide	6	ND	Vinyl acetate	13	ND
			Vinylchloride	13	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	85
Toluene-d8	50	(81-117)	101
Bromofluorobenzene	50	(74-121)	101

ethod Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.04	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6605	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.22	GC/MS File ID:	B6605
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	18 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
1,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	20
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	1210 E
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	86
Toluene-d8	50	(81-117)	104
Bromofluorobenzene	50	(74-121)	100

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.04DL	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6612	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	6.00	GC/MS File ID:	B6612
Sample Weight:	1.0 g	Date Analyzed:	11/19/93
Dilution:	5.0	Analyst:	HZ
Percent Moisture:	18.0 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	30	ND	Carbon tetrachloride	30	ND
1,1,2,2-Tetrachloroethane	30	ND	Chlorobenzene	30	ND
1,1,2-Trichloroethane	30	ND	Chloroethane	60	ND
1,1-Dichloroethane	30	ND	Chloroform	30	ND
1,1-Dichloroethene	30	ND	Chloromethane	60	ND
1,2-Dichloroethane	30	ND	Cis-1,3-Dichloropropene	30	ND
1,2-Dichloropropane	30	ND	Dibromochloromethane	30	ND
2-Butanone	60	ND	Ethylbenzene	30	ND
2-Chloroethyl vinyl ether	60	ND	Methylene chloride	30	130
2-Hexanone	60	ND	Styrene	30	ND
4-Methyl-2-pentanone	60	ND	Tetrachloroethene	30	ND
Acetone	60	ND	Toluene	30	ND
Benzene	30	ND	Total xylenes	30	ND
Bromodichloromethane	30	ND	Total-1,2-Dichloroethene	30	ND
Bromoform	30	ND	Trans-1,3-Dichloropropene	30	ND
Bromomethane	60	ND	Trichloroethene	30	320
Carbon disulfide	30	ND	Vinyl acetate	60	ND
			Vinylchloride	60	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	250	(70-121)	90
Toluene-d8	250	(81-117)	108
Bromofluorobenzene	250	(74-121)	107

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2002	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.05	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6609	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.18	GC/MS File ID:	B6609
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	15.8 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	34
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	ND	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	5J
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	90
Toluene-d8	50	(81-117)	99
Bromofluorobenzene	50	(74-121)	103

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB02-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.06	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6603	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.19	GC/MS File ID:	B6603
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	16.4 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	20
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	10	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	17
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	83
Toluene-d8	50	(81-117)	100
Bromofluorobenzene	50	(74-121)	101

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB03-2001	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.07	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6604	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.24	GC/MS File ID:	B6604
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	19.4 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
',2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
.-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	22
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	41	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	ND
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	87
Toluene-d8	50	(81-117)	106
Bromofluorobenzene	50	(74-121)	105

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:SB03-2003
PDP Sample ID: 1973.08
Report No.: B6607

Date Sampled: 11/13/93
Date Received: 11/16/93
Date Reported: 11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: SOIL
Multiplying Factor: 1.19
Sample Weight: 5.0 g
Dilution: 1.0
Percent Moisture: 16.0 %

Method Ref.: SW846-8240
GC/MS File ID: B6607
Date Analyzed: 11/19/93
Analyst: HZ

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
.,2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
2-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	27
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	39	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	ND
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	87
Toluene-d8	50	(81-117)	104
Bromofluorobenzene	50	(74-121)	104

`thod Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC	Client Sample ID:	SB03-2004	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.09	Date Received:	11/16/93
Project No.:	NA	Report No.:	B6611	Date Reported:	11/19/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	SOIL	Method Ref.:	SW846-8240
Multiplying Factor:	1.24	GC/MS File ID:	B6611
Sample Weight:	5.0 g	Date Analyzed:	11/19/93
Dilution:	1.0	Analyst:	HZ
Percent Moisture:	19.4 %		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,1,1-Trichloroethane	6	ND	Carbon tetrachloride	6	ND
1,1,2,2-Tetrachloroethane	6	ND	Chlorobenzene	6	ND
1,1,2-Trichloroethane	6	ND	Chloroethane	12	ND
1,1-Dichloroethane	6	ND	Chloroform	6	ND
1,1-Dichloroethene	6	ND	Chloromethane	12	ND
1,2-Dichloroethane	6	ND	Cis-1,3-Dichloropropene	6	ND
2-Dichloropropane	6	ND	Dibromochloromethane	6	ND
-Butanone	12	ND	Ethylbenzene	6	ND
2-Chloroethyl vinyl ether	12	ND	Methylene chloride	6	30
2-Hexanone	12	ND	Styrene	6	ND
4-Methyl-2-pentanone	12	ND	Tetrachloroethene	6	ND
Acetone	12	14	Toluene	6	ND
Benzene	6	ND	Total xylenes	6	ND
Bromodichloromethane	6	ND	Total-1,2-Dichloroethene	6	ND
Bromoform	6	ND	Trans-1,3-Dichloropropene	6	ND
Bromomethane	12	ND	Trichloroethene	6	26
Carbon disulfide	6	ND	Vinyl acetate	12	ND
			Vinylchloride	12	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(70-121)	85
Toluene-d8	50	(81-117)	107
Bromofluorobenzene	50	(74-121)	106

Method Blank ID: 1973V.SBLK1 LCS ID: 1973V.SLCS1 MS ID: 1966.04MS MSD ID: 1966.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009777

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:SB01-2001
Project Name: LONGHORN AAP PDP Sample ID: 1973.01
Project No.: NA Report No.: D1709

Date Sampled: 11/12/93
Date Received: 11/16/93
Date Reported: 11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: SOIL Dilution: 1.0
Multiplying Factor: 41.00 Percent Moisture: 18.5 %
Sample Weight: 30 g Date Extracted: 11/17/93
Extract Volume: 1.0 ml Date Analyzed: 11/18/93

Method Ref.: SW846-8270
GC/MS File ID: D1709
Analyst: SYA

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluoranthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluoranthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
2-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	107	Phenol-d5	3075	(24-113)	66
2-Fluorobiphenyl	2050	(30-115)	80	2-Fluorophenol	3075	(25-121)	72
Terphenyl-d14	2050	(18-137)	72	2,4,6-Tribromophenol	3075	(19-122)	112

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin ve, Suite 300; Spring, Texas 77386; Phone (7 163-2233

009778

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:SB01-2003
Project Name: LONGHORN AAP PDP Sample ID: 1973.02
Project No.: NA Report No.: D1710

Date Sampled: 11/12/93
Date Received: 11/16/93
Date Reported: 11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: SOIL Dilution: 1.0
Multiplying Factor: 41.00 Percent Moisture: 19.1 %
Sample Weight: 30 g Date Extracted: 11/17/93
Extract Volume: 1.0 ml Date Analyzed: 11/18/93

Method Ref.: SW846-8270
GC/MS File ID: D1710
Analyst: SYA

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	71	Phenol-d5	3075	(24-113)	72
2-Fluorobiphenyl	2050	(30-115)	88	2-Fluorophenol	3075	(25-121)	78
Terphenyl-d14	2050	(18-137)	82	2,4,6-Tribromophenol	3075	(19-122)	90

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

009779

PDP ANALYTICAL SERVICES
24900 Pitkin e, Suite 300; Spring, Texas 77386; Phone (63-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB01-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.03	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1737	Date Reported:	11/20/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	42.00	Percent Moisture:	20.3 %	GC/MS File ID:	D1737
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/19/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	420	ND	Benzo(a)pyrene	420	ND
1,2-Dichlorobenzene	420	ND	Benzo(b)fluroanthene	420	ND
1,3-Dichlorobenzene	420	ND	Benzo(g,h,i)perylene	420	ND
1,4-Dichlorobenzene	420	ND	Benzo(k)fluroanthene	420	ND
2,4,5-Tricholorophenol	420	ND	Benzyl Alcohol	420	ND
2,4,6-Trichlorophenol	420	ND	Bis(2-chloroethoxy)methane	420	ND
2,4-Dichlorophenol	420	ND	Bis(2-chloroethyl) ether	420	ND
2,4-Dimethylphenol	420	ND	Bis(2-chloroisopropyl)ether	420	ND
2,4-Dinitrophenol	1050	ND	Bis(2-ethylheryl)phthalate	420	ND
2,4-Dinitrotoluene	420	ND	Butylbenzylphthalate	420	ND
',6-Dinitrotoluene	420	ND	Chrysene	420	ND
-Chloronaphthalene	420	ND	Dibenzofuran	420	ND
2-Chlorophenol	420	ND	Dibenzo(a,h)anthracene	420	ND
2-Methylnaphthalene	420	ND	Diethylphthalate	420	ND
2-Methylphenol	420	ND	Dimethyl phthalate	420	ND
2-Nitroaniline	1050	ND	Di-n-Butylphthalate	420	ND
2-Nitrophenol	420	ND	Di-n-octylphthalate	420	ND
3,3-Dichlorobenzidine	420	ND	Fluoranthene	420	ND
3-Nitroaniline	1050	ND	Fluorene	420	ND
4,6-Dinitro 2-methylphenol	1050	ND	Hexachlorobenzene	420	ND
4-Bromophenyl-phenylether	420	ND	Hexachlorobutadiene	420	ND
4-Chloroaniline	420	ND	Hexachlorocyclopentadiene	420	ND
4-Chlorophenyl-phenylether	420	ND	Hexachloroethane	420	ND
4-Chloro-3-methylphenol	420	ND	Indeno(1,2,3-cd)pyrene	420	ND
4-Methylphenol	420	ND	Isophorone	420	ND
4-Nitroaniline	1050	ND	Naphthalene	420	ND
4-Nitrophenol	1050	ND	Nitrobenzene	420	ND
Acenaphthene	420	ND	N-Nitrosodiphenylamine	420	ND
Acenaphthylene	420	ND	N-Nitroso-Di-N-propylamine	420	ND
Anthracene	420	ND	Pentachlorophenol	1050	ND
Benzoic Acid	420	ND	Phenanthrene	420	ND
Benzo(a)anthracene	420	ND	Phenol	420	ND
			Pyrene	420	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2100	(23-120)	55	Phenol-d5	3150	(24-113)	74
2-Fluorobiphenyl	2100	(30-115)	60	2-Fluorophenol	3150	(25-121)	84
Terphenyl-d14	2100	(18-137)	64	2,4,6-Tribromophenol	3150	(19-122)	62

Method Blank ID: 1973 [BLK] LCS ID: 1973 [LCS] MS ID: 1974-02MS MSD ID: 1974-02MSD PDP ID: MI

009780

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]e, Suite 300; Spring, Texas 77386; Phone ([illegible]63-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB02-2001	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.04	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1712	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	18.0 %	GC/MS File ID:	D1712
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluoranthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluoranthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	67	Phenol-d5	3075	(24-113)	69
2-Fluorobiphenyl	2050	(30-115)	81	2-Fluorophenol	3075	(25-121)	74
Terphenyl-d14	2050	(18-137)	74	2,4,6-Tribromophenol	3075	(19-122)	82

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin ve, Suite 300; Spring, Texas 77386; Phone (7 63-2233

009781

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB02-2002	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.05	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1713	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	40.00	Percent Moisture:	15.8 %	GC/MS File ID:	D1713
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	400	ND	Benzo(a)pyrene	400	ND
1,2-Dichlorobenzene	400	ND	Benzo(b)fluoranthene	400	ND
1,3-Dichlorobenzene	400	ND	Benzo(g,h,i)perylene	400	ND
1,4-Dichlorobenzene	400	ND	Benzo(k)fluoranthene	400	ND
2,4,5-Tricholorophenol	400	ND	Benzyl Alcohol	400	ND
2,4,6-Trichlorophenol	400	ND	Bis(2-chloroethoxy)methane	400	ND
2,4-Dichlorophenol	400	ND	Bis(2-chloroethyl) ether	400	ND
2,4-Dimethylphenol	400	ND	Bis(2-chloroisopropyl)ether	400	ND
2,4-Dinitrophenol	1000	ND	Bis(2-ethylhexyl)phthalate	400	ND
2,4-Dinitrotoluene	400	ND	Butylbenzylphthalate	400	ND
2,6-Dinitrotoluene	400	ND	Chrysene	400	ND
-Chloronaphthalene	400	ND	Dibenzofuran	400	ND
-Chlorophenol	400	ND	Dibenzo(a,h)anthracene	400	ND
2-Methylnaphthalene	400	ND	Diethylphthalate	400	ND
2-Methylphenol	400	ND	Dimethyl phthalate	400	ND
2-Nitroaniline	1000	ND	Di-n-Butylphthalate	400	ND
2-Nitrophenol	400	ND	Di-n-octylphthalate	400	ND
3,3-Dichlorobenzidine	400	ND	Fluoranthene	400	ND
3-Nitroaniline	1000	ND	Fluorene	400	ND
4,6-Dinitro 2-methylphenol	1000	ND	Hexachlorobenzene	400	ND
4-Bromophenyl-phenylether	400	ND	Hexachlorobutadiene	400	ND
4-Chloroaniline	400	ND	Hexachlorocyclopentadiene	400	ND
4-Chlorophenyl-phenylether	400	ND	Hexachloroethane	400	ND
4-Chloro-3-methylphenol	400	ND	Indeno(1,2,3-cd)pyrene	400	ND
4-Methylphenol	400	ND	Isophorone	400	ND
4-Nitroaniline	1000	ND	Naphthalene	400	ND
4-Nitrophenol	1000	ND	Nitrobenzene	400	ND
Acenaphthene	400	ND	N-Nitrosodiphenylamine	400	ND
Acenaphthylene	400	ND	N-Nitroso-Di-N-propylamine	400	ND
Anthracene	400	ND	Pentachlorophenol	1000	ND
Benzoic Acid	400	ND	Phenanthrene	400	ND
Benzo(a)anthracene	400	ND	Phenol	400	ND
			Pyrene	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2000	(23-120)	71	Phenol-d5	3000	(24-113)	71
2-Fluorobiphenyl	2000	(30-115)	83	2-Fluorophenol	3000	(25-121)	75
Terphenyl-d14	2000	(18-137)	82	2,4,6-Tribromophenol	3000	(19-122)	88

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]ve, Suite 300; Spring, Texas 77386; Phone (7[illegible]63-2233

009782

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB02-2004	Date Sampled:	11/12/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.06	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1714	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	40.00	Percent Moisture:	16.4 %	GC/MS File ID:	D1714
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	400	ND	Benzo(a)pyrene	400	ND
1,2-Dichlorobenzene	400	ND	Benzo(b)fluroanthene	400	ND
1,3-Dichlorobenzene	400	ND	Benzo(g,h,i)perylene	400	ND
1,4-Dichlorobenzene	400	ND	Benzo(k)fluroanthene	400	ND
2,4,5-Tricholorophenol	400	ND	Benzyl Alcohol	400	ND
2,4,6-Trichlorophenol	400	ND	Bis(2-chloroethoxy)methane	400	ND
2,4-Dichlorophenol	400	ND	Bis(2-chloroethyl) ether	400	ND
2,4-Dimethylphenol	400	ND	Bis(2-chloroisopropyl)ether	400	ND
2,4-Dinitrophenol	1000	ND	Bis(2-ethylheryl)phthalate	400	ND
2,4-Dinitrotoluene	400	ND	Butylbenzylphthalate	400	ND
2,6-Dinitrotoluene	400	ND	Chrysene	400	ND
-Chloronaphthalene	400	ND	Dibenzofuran	400	ND
2-Chlorophenol	400	ND	Dibenzo(a,h)anthracene	400	ND
2-Methylnaphthalene	400	ND	Diethylphthalate	400	ND
2-Methylphenol	400	ND	Dimethyl phthalate	400	ND
2-Nitroaniline	1000	ND	Di-n-Butylphthalate	400	ND
2-Nitrophenol	400	ND	Di-n-octylphthalate	400	ND
3,3-Dichlorobenzidine	400	ND	Fluoranthene	400	ND
3-Nitroaniline	1000	ND	Fluorene	400	ND
4,6-Dinitro 2-methylphenol	1000	ND	Hexachlorobenzene	400	ND
4-Bromophenyl-phenylether	400	ND	Hexachlorobutadiene	400	ND
4-Chloroaniline	400	ND	Hexachlorocyclopentadiene	400	ND
4-Chlorophenyl-phenylether	400	ND	Hexachloroethane	400	ND
4-Chloro-3-methylphenol	400	ND	Indeno(1,2,3-cd)pyrene	400	ND
4-Methylphenol	400	ND	Isophorone	400	ND
4-Nitroaniline	1000	ND	Naphthalene	400	ND
4-Nitrophenol	1000	ND	Nitrobenzene	400	ND
Acenaphthene	400	ND	N-Nitrosodiphenylamine	400	ND
Acenaphthylene	400	ND	N-Nitroso-Di-N-propylamine	400	ND
Anthracene	400	ND	Pentachlorophenol	1000	ND
Benzoic Acid	400	ND	Phenanthrene	400	ND
Benzo(a)anthracene	400	ND	Phenol	400	ND
			Pyrene	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2000	(23-120)	78	Phenol-d5	3000	(24-113)	67
2-Fluorobiphenyl	2000	(30-115)	91	2-Fluorophenol	3000	(25-121)	84
Terphenyl-d14	2000	(18-137)	86	2,4,6-Tribromophenol	3000	(19-122)	90

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin e, Suite 300; Spring, Texas 77386; Phone (7 63-2233

009783

LABORATORY REPORT

lient:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB03-2001	Date Sampled:	11/13/93
roject Name:	LONGHORN AAP	PDP Sample ID:	1973.07	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1715	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	19.4 %	GC/MS File ID:	D1715
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	75	Phenol-d5	3075	(24-113)	76
2-Fluorobiphenyl	2050	(30-115)	93	2-Fluorophenol	3075	(25-121)	80
Terphenyl-d14	2050	(18-137)	83	2,4,6-Tribromophenol	3075	(19-122)	84

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

100036

PDP ANALYTICAL SERVICES
24900 Pitkin[illegible]ve, Suite 300; Spring, Texas 77386; Phone ([illegible]63-2233

009784

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB03-2003	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.08	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1716	Date Reported:	11/19/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	40.00	Percent Moisture:	16.0 %	GC/MS File ID:	D1716
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/18/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	400	ND	Benzo(a)pyrene	400	ND
1,2-Dichlorobenzene	400	ND	Benzo(b)fluroanthene	400	ND
1,3-Dichlorobenzene	400	ND	Benzo(g,h,i)perylene	400	ND
1,4-Dichlorobenzene	400	ND	Benzo(k)fluroanthene	400	ND
2,4,5-Tricholorophenol	400	ND	Benzyl Alcohol	400	ND
2,4,6-Trichlorophenol	400	ND	Bis(2-chloroethoxy)methane	400	ND
2,4-Dichlorophenol	400	ND	Bis(2-chloroethyl) ether	400	ND
2,4-Dimethylphenol	400	ND	Bis(2-chloroisopropyl)ether	400	ND
2,4-Dinitrophenol	1000	ND	Bis(2-ethylhexyl)phthalate	400	ND
2,4-Dinitrotoluene	400	ND	Butylbenzylphthalate	400	ND
6-Dinitrotoluene	400	ND	Chrysene	400	ND
Chloronaphthalene	400	ND	Dibenzofuran	400	ND
2-Chlorophenol	400	ND	Dibenzo(a,h)anthracene	400	ND
2-Methylnaphthalene	400	ND	Diethylphthalate	400	ND
2-Methylphenol	400	ND	Dimethyl phthalate	400	ND
2-Nitroaniline	1000	ND	Di-n-Butylphthalate	400	ND
2-Nitrophenol	400	ND	Di-n-octylphthalate	400	230 J
3,3-Dichlorobenzidine	400	ND	Fluoranthene	400	ND
3-Nitroaniline	1000	ND	Fluorene	400	ND
4,6-Dinitro 2-methylphenol	1000	ND	Hexachlorobenzene	400	ND
4-Bromophenyl-phenylether	400	ND	Hexachlorobutadiene	400	ND
4-Chloroaniline	400	ND	Hexachlorocyclopentadiene	400	ND
4-Chlorophenyl-phenylether	400	ND	Hexachloroethane	400	ND
4-Chloro-3-methylphenol	400	ND	Indeno(1,2,3-cd)pyrene	400	ND
4-Methylphenol	400	ND	Isophorone	400	ND
4-Nitroaniline	1000	ND	Naphthalene	400	ND
4-Nitrophenol	1000	ND	Nitrobenzene	400	ND
Acenaphthene	400	ND	N-Nitrosodiphenylamine	400	ND
Acenaphthylene	400	ND	N-Nitroso-Di-N-propylamine	400	ND
Anthracene	400	ND	Pentachlorophenol	1000	ND
Benzoic Acid	400	ND	Phenanthrene	400	ND
Benzo(a)anthracene	400	ND	Phenol	400	ND
			Pyrene	400	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2000	(23-120)	75	Phenol-d5	3000	(24-113)	81
2-Fluorobiphenyl	2000	(30-115)	97	2-Fluorophenol	3000	(25-121)	83
Terphenyl-d14	2000	(18-137)	86	2,4,6-Tribromophenol	3000	(19-122)	95

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

009785

PDP ANALYTICAL SERVICES
24900 Pitkin, e, Suite 300; Spring, Texas 77386; Phone (7 63-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:SB03-2004
Project Name: LONGHORN AAP PDP Sample ID: 1973.09
Project No.: NA Report No.: D1717

Date Sampled: 11/13/93
Date Received: 11/16/93
Date Reported: 11/20/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: SOIL Dilution: 1.0
Multiplying Factor: 41.00 Percent Moisture: 19.4 %
Sample Weight: 30 g Date Extracted: 11/17/93
Extract Volume: 1.0 ml Date Analyzed: 11/18/93

Method Ref.: SW846-8270
GC/MS File ID: D1717
Analyst: SYA

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Tricholorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
2,4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
2,6-Dinitrotoluene	410	ND	Chrysene	410	ND
-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	75	Phenol-d5	3075	(24-113)	70
2-Fluorobiphenyl	2050	(30-115)	94	2-Fluorophenol	3075	(25-121)	80
Terphenyl-d14	2050	(18-137)	99	2,4,6-Tribromophenol	3075	(19-122)	104

Method Blank ID: 1973.LBLK1 LCS ID: 1973.LLCS1 MS ID: 1974.02MS MSD ID: 1974.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	SB03-2004RE	Date Sampled:	11/13/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1973.09RE	Date Received:	11/16/93
Project No.:	NA	Report No.:	D1738	Date Reported:	11/20/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	SOIL	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	41.00	Percent Moisture:	19.4 %	GC/MS File ID:	D1738
Sample Weight:	30 g	Date Extracted:	11/17/93	Analyst:	SYA
Extract Volume:	1.0 ml	Date Analyzed:	11/19/93		

COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)	COMPOUND	QUANTITATION LIMIT (ug/kg)	RESULTS (ug/kg)
1,2,4-Trichlorobenzene	410	ND	Benzo(a)pyrene	410	ND
1,2-Dichlorobenzene	410	ND	Benzo(b)fluroanthene	410	ND
1,3-Dichlorobenzene	410	ND	Benzo(g,h,i)perylene	410	ND
1,4-Dichlorobenzene	410	ND	Benzo(k)fluroanthene	410	ND
2,4,5-Trichlorophenol	410	ND	Benzyl Alcohol	410	ND
2,4,6-Trichlorophenol	410	ND	Bis(2-chloroethoxy)methane	410	ND
2,4-Dichlorophenol	410	ND	Bis(2-chloroethyl) ether	410	ND
2,4-Dimethylphenol	410	ND	Bis(2-chloroisopropyl)ether	410	ND
2,4-Dinitrophenol	1030	ND	Bis(2-ethylhexyl)phthalate	410	ND
4-Dinitrotoluene	410	ND	Butylbenzylphthalate	410	ND
,6-Dinitrotoluene	410	ND	Chrysene	410	ND
2-Chloronaphthalene	410	ND	Dibenzofuran	410	ND
2-Chlorophenol	410	ND	Dibenzo(a,h)anthracene	410	ND
2-Methylnaphthalene	410	ND	Diethylphthalate	410	ND
2-Methylphenol	410	ND	Dimethyl phthalate	410	ND
2-Nitroaniline	1030	ND	Di-n-Butylphthalate	410	ND
2-Nitrophenol	410	ND	Di-n-octylphthalate	410	ND
3,3-Dichlorobenzidine	410	ND	Fluoranthene	410	ND
3-Nitroaniline	1030	ND	Fluorene	410	ND
4,6-Dinitro 2-methylphenol	1030	ND	Hexachlorobenzene	410	ND
4-Bromophenyl-phenylether	410	ND	Hexachlorobutadiene	410	ND
4-Chloroaniline	410	ND	Hexachlorocyclopentadiene	410	ND
4-Chlorophenyl-phenylether	410	ND	Hexachloroethane	410	ND
4-Chloro-3-methylphenol	410	ND	Indeno(1,2,3-cd)pyrene	410	ND
4-Methylphenol	410	ND	Isophorone	410	ND
4-Nitroaniline	1030	ND	Naphthalene	410	ND
4-Nitrophenol	1030	ND	Nitrobenzene	410	ND
Acenaphthene	410	ND	N-Nitrosodiphenylamine	410	ND
Acenaphthylene	410	ND	N-Nitroso-Di-N-propylamine	410	ND
Anthracene	410	ND	Pentachlorophenol	1030	ND
Benzoic Acid	410	ND	Phenanthrene	410	ND
Benzo(a)anthracene	410	ND	Phenol	410	ND
			Pyrene	410	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/kg)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	2050	(23-120)	51	Phenol-d5	3075	(24-113)	41
2-Fluorobiphenyl	2050	(30-115)	73	2-Fluorophenol	3075	(25-121)	54
Terphenyl-d14	2050	(18-137)	86	2,4,6-Tribromophenol	3075	(19-122)	64

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB01-2001
PDP Sample ID: 1973.01
Report Number: 197301

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL
Percent Solids: 81.5
Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.3	10387	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.61	1.2	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	97	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.61	ND	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.61	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.5	658	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	9.2	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	4.7	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	6.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.3	8488	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.61	8.2	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.5	1244	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	22	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.9	9.2	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	613	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	2.45	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	61.3	280	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.61	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	14.3	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	36.3	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1
LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2
MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB01-2003
PDP Sample ID: 1973.02
Report Number: 197302

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 80.9 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.4	12386	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.62	3.8	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	127	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.62	0.70	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.62	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.7	1101	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	14.3	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	3.8	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	7.0	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.4	11213	BDH
Lead	SW-846 7421	11-17-93	11-19-93	1.24	16.3	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.7	2025	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	90	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.9	16.0	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	618	841	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	2.47	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	61.8	518	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.62	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	17.4	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	43.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB01-2004
PDP Sample ID: 1973.03
Report Number: 197303

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL — Percent Solids: 79.7 — Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.5	7846	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.5	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.63	2.3	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.3	96	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.63	0.69	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.63	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	25.1	708	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.3	9.1	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.3	5.8	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	6.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.5	14141	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.63	6.1	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	25.1	1324	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.3	158	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.13	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	5.0	14.2	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	627	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.25	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.3	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	62.7	341	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	1.25	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.3	17.9	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	35.7	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1 — MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2 — DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2001
PDP Sample ID: 1973.04
Report Number: 197304

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 82.0 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.2	12085	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.3	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.61	2.0	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	59	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.61	0.61	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.61	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.4	792	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	12.5	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	6.7	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	8.4	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.2	12915	BDH
ead	SW-846 7421	11-17-93	11-19-93	0.61	8.9	MBB
agnesium	SW-846 6010	11-17-93	11-19-93	24.4	1579	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	32	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.9	13.1	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	610	611	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.22	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	61.0	193	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.61	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	21.2	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	41.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2002
PDP Sample ID: 1973.05
Report Number: 197305

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL
Percent Solids: 84.2
Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	11.9	7139	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.1	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.59	3.2	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	110	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.59	1.09	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.59	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	23.8	952	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	9.9	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	7.1	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	7.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	11.9	14798	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.59	8.1	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	23.8	1583	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	169	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.8	19.7	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	594	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.19	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	59.4	333	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.59	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	16.6	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	45.3	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2004
PDP Sample ID: 1973.06
Report Number: 197306

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL — Percent Solids: 83.6 — Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.0	3043	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.2	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.60	0.8	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	199	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.60	ND	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.60	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	23.9	347	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	6.0	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	17.2	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	3.2	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.0	6378	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.60	6.7	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	23.9	505	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	931	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.8	9.6	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	598	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.20	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	59.8	110	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.60	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	7.9	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	19.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA
Client Sample ID: SB03-2001
PDP Sample ID: 1973.07
Report Number: 197307
Date Sampled: 11-13-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL
Percent Solids: 80.6
Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.4	15062	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.62	2.1	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	133	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.62	0.94	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.62	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.8	790	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	19.6	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	7.6	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	7.8	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.4	17556	BDH
ad	SW-846 7421	11-17-93	11-19-93	0.62	7.4	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.8	1867	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	47	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	5.0	14.3	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	620	767	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.24	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	62.0	303	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.62	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	28.5	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	48.9	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1
MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB03-2003
PDP Sample ID: 1973.08
Report Number: 197308

Date Sampled: 11-13-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 84.0 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	11.9	9980	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.1	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.60	1.3	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	132	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.60	1.00	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.60	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	23.8	949	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	13.6	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	11.9	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.4	8.4	BDH
Iron	SW-846 6010	11-17-93	11-19-93	11.9	14548	BDH
Lead	SW-846 7421	11-17-93	11-19-93	2.98	5.4	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	23.8	1601	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	232	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	4.8	18.1	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	595	688	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.19	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	59.5	355	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.60	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	23.7	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.4	45.5	BDH

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1973.PBS1

LCS ID: 1973.LCSS1
LCSD ID: 1973.LCSS2

MS ID: 1973.04MS
DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
-24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB03-2004
PDP Sample ID: 1973.09
Report Number: 197309

Date Sampled: 11-13-93
Date Received: 11-16-93
Date Reported: 11-22-93

TOTAL METALS (DATA SHEET)

Sample Matrix: SOIL | Percent Solids: 80.6 | Units: mg/Kg Dry Weight

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-17-93	11-19-93	12.4	7821	BDH
Antimony	SW-846 6010	11-17-93	11-19-93	7.4	ND	BDH
Arsenic	SW-846 7060	11-17-93	11-19-93	0.62	3.7	MBB
Barium	SW-846 6010	11-17-93	11-19-93	1.2	91	BDH
Beryllium	SW-846 6010	11-17-93	11-19-93	0.62	0.67	BDH
Cadmium	SW-846 6010	11-17-93	11-19-93	0.62	ND	BDH
Calcium	SW-846 6010	11-17-93	11-19-93	24.8	687	BDH
Chromium	SW-846 6010	11-17-93	11-19-93	1.2	10.0	BDH
Cobalt	SW-846 6010	11-17-93	11-19-93	1.2	6.3	BDH
Copper	SW-846 6010	11-17-93	11-19-93	2.5	8.3	BDH
Iron	SW-846 6010	11-17-93	11-19-93	12.4	19640	BDH
Lead	SW-846 7421	11-17-93	11-19-93	0.62	7.4	MBB
Magnesium	SW-846 6010	11-17-93	11-19-93	24.8	1246	BDH
Manganese	SW-846 6010	11-17-93	11-19-93	1.2	127	BDH
Mercury	SW-846 7471	11-18-93	11-19-93	0.12	ND	DAO
Nickel	SW-846 6010	11-17-93	11-19-93	5.0	18.5	BDH
Potassium	SW-846 6010	11-17-93	11-19-93	620	ND	BDH
Selenium	SW-846 7740	11-17-93	11-20-93	1.24	ND	MBB
Silver	SW-846 6010	11-17-93	11-19-93	1.2	ND	BDH
Sodium	SW-846 6010	11-17-93	11-19-93	62.0	101	BDH
Thallium	SW-846 7841	11-17-93	11-19-93	0.62	ND	MBB
Vanadium	SW-846 6010	11-17-93	11-19-93	1.2	23.1	BDH
Zinc	SW-846 6010	11-17-93	11-19-93	2.5	41.9	BDH

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1 | MS ID: 1973.04MS
Method Blank ID:1973.PBS1
LCSD ID: 1973.LCSS2 | DUP ID: 1973.04D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: I973CL

WET CHEMISTRY PARAMETER: Water Extractable Chloride

Method Reference: EPA 325.3 Mod Units: mg/kg Wet Weight Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE EXTRACTED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-18-93	11-19-93	4	14			
1973.02	SB01-2003	SOIL	11-18-93	11-19-93	4	95			
1973.03	SB01-2004	SOIL	11-18-93	11-19-93	4	21			
1973.04	SB02-2001	SOIL	11-18-93	11-19-93	4	71			
1973.05	SB02-2002	SOIL	11-18-93	11-19-93	4	18			
1973.06	SB02-2004	SOIL	11-18-93	11-19-93	4	60			
1973.07	SB03-2001	SOIL	11-18-93	11-19-93	4	123			
1973.08	SB03-2003	SOIL	11-18-93	11-19-93	4	35			
1973.09	SB03-2004	SOIL	11-18-93	11-19-93	4	127			
			QUALITY ASSURANCE/QUALITY CONTROL						
1973.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	1	ND			
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	2	145	152		95
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	2	149	152	2.7	98
1973.01 (DUP)	SB01-2001 (DUP)	SOIL	11-18-93	11-19-93	4	17		19.4	
1973.01 (MS)	SB01-2001 (MS)	SOIL	11-18-93	11-19-93	4	85	71		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: 1973NIT

WET CHEMISTRY PARAMETER: Water Extractable Nitrate as N

Method Reference: EPA 352.1 Mod | Units: mg/kg Wet Weight | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE EXTRACTED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-18-93	11-19-93	0.4	1.3			
1973.02	SB01-2003	SOIL	11-18-93	11-19-93	0.4	2.1			
1973.03	SB01-2004	SOIL	11-18-93	11-19-93	0.4	5.1			
1973.04	SB02-2001	SOIL	11-18-93	11-19-93	0.4	4.5			
1973.05	SB02-2002	SOIL	11-18-93	11-19-93	0.4	3.7			
1973.06	SB02-2004	SOIL	11-18-93	11-19-93	0.4	2.9			
1973.07	SB03-2001	SOIL	11-18-93	11-19-93	0.4	2.9			
1973.08	SB03-2003	SOIL	11-18-93	11-19-93	2.0	19.1			
973.09	SB03-2004	SOIL	11-18-93	11-19-93	0.4	2.6			
				QUALITY ASSURANCE/QUALITY CONTROL					
1973.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	0.1	ND			
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.36	0.40		90
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.35	0.40	2.8	88
1973.01 (DUP)	SB01-2001 (DUP)	SOIL	11-18-93	11-19-93	0.4	1.3		0.0	
1973.01 (MS)	SB01-2001 (MS)	SOIL	11-18-93	11-19-93	0.4	2.6	1.60		81

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: 1973COR

WET CHEMISTRY PARAMETER: pH

Method Reference: SW-846 9045

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-17-93	NA	5.33			
1973.02	SB01-2003	SOIL	11-17-93	NA	5.58			
1973.03	SB01-2004	SOIL	11-17-93	NA	6.02			
1973.04	SB02-2001	SOIL	11-17-93	NA	4.65			
1973.05	SB02-2002	SOIL	11-17-93	NA	5.89			
1973.06	SB02-2004	SOIL	11-17-93	NA	6.64			
1973.07	SB03-2001	SOIL	11-17-93	NA	5.54			
1973.08	SB03-2003	SOIL	11-17-93	NA	5.50			
1973.09	SB03-2004	SOIL	11-17-93	NA	5.90			
				QUALITY ASSURANCE/QUALITY CONTROL				
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	11-17-93	NA	8.98	9.10		99
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	11-17-93	NA	8.99	9.10	0.1	99
1973.05 (DUP)	SB02-2002 (DUP)	SOIL	11-17-93	NA	5.96		1.2	

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-16-93
Date Reported: 11-23-93
Report Number: 1973SOLF

WET CHEMISTRY PARAMETER: Water Extractable Sulfate

Method Reference: EPA 375.4 Mod — Units: mg/kg Wet Weight — Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE EXTRACTED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1973.01	SB01-2001	SOIL	11-18-93	11-19-93	20	20			
1973.02	SB01-2003	SOIL	11-18-93	11-19-93	20	ND			
1973.03	SB01-2004	SOIL	11-18-93	11-19-93	100	ND			
1973.04	SB02-2001	SOIL	11-18-93	11-19-93	100	103			
1973.05	SB02-2002	SOIL	11-18-93	11-19-93	100	ND			
1973.06	SB02-2004	SOIL	11-18-93	11-19-93	100	ND			
1973.07	SB03-2001	SOIL	11-18-93	11-19-93	20	36			
1973.08	SB03-2003	SOIL	11-18-93	11-19-93	400	ND			
1973.09	SB03-2004	SOIL	11-18-93	11-19-93	20	49			
				QUALITY ASSURANCE/QUALITY CONTROL					
1973.PBW1	(PREPARATION BLK)	AQUEOUS	11-18-93	11-19-93	5	ND			
1973.LCSW1	(LAB CONTROL STD)	AQUEOUS	11-18-93	11-19-93	5	185	197		94
1973.LCSW2	(LAB CONTROL STD)	AQUEOUS	11-18-93	11-19-93	5	174	197	6.1	88
1973.01 (DUP)	SB01-2001 (DUP)	SOIL	11-18-93	11-19-93	20	21		4.9	
1973.01 (MS)	SB01-2001 (MS)	SOIL	11-18-93	11-19-93	100	52	32		100

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: SB02-2001 (MS/DUP)
PDP Sample ID: 1973.04 (MATRIX SPIKE/DUP)
Report Number: 1973MSD

Date Sampled: 11-12-93
Date Received: 11-16-93
Date Reported: 11-22-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: SOIL Percent Solids: 82.0 Units: mg/Kg Dry Weight

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (30)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	11-17-93	11-19-93	12085	10396	15.0	244	13451	NC*
Antimony	SW-846 6010	11-17-93	11-19-93	ND	ND	NC	61.0	13.8	23
Arsenic	SW-846 7060	11-17-93	11-19-93	2.6	2.0	28.5	4.9	5.9	67
Barium	SW-846 6010	11-17-93	11-19-93	59	130	75.5	244	325	109
Beryllium	SW-846 6010	11-17-93	11-19-93	0.61	ND	NC	6.1	6.5	97
Cadmium	SW-846 6010	11-17-93	11-19-93	ND	ND	NC	6.1	5.3	87
Calcium	SW-846 6010	11-17-93	11-19-93	792	848	6.8	NA	NA	NA
Chromium	SW-846 6010	11-17-93	11-19-93	12.5	11.2	11.2	24.4	37.4	102
Cobalt	SW-846 6010	11-17-93	11-19-93	6.7	6.8	1.8	61.0	67.7	100
Copper	SW-846 6010	11-17-93	11-19-93	8.4	6.7	21.8	30.5	38.1	97
Iron	SW-846 6010	11-17-93	11-19-93	12915	10061	24.8	122	13598	NC*
Lead	SW-846 7421	11-17-93	11-19-93	8.9	8.9	0.0	2.4	11.1	90
Magnesium	SW-846 6010	11-17-93	11-19-93	1579	1626	2.9	NA	NA	NA
Manganese	SW-846 6010	11-17-93	11-19-93	32	25	22.1	61.0	89.6	95
Mercury	SW-846 7471	11-18-93	11-19-93	ND	ND	NC	0.61	0.64	105
Nickel	SW-846 6010	11-17-93	11-19-93	13.1	12.5	4.5	61.0	75.5	102
Potassium	SW-846 6010	11-17-93	11-19-93	611	ND	NC	NA	NA	NA
Selenium	SW-846 7740	11-17-93	11-20-93	ND	ND	NC	1.2	ND	0
Silver	SW-846 6010	11-17-93	11-19-93	ND	ND	NC	6.1	5.0	82
Sodium	SW-846 6010	11-17-93	11-19-93	193	195	1.0	NA	NA	NA
Thallium	SW-846 7841	11-17-93	11-19-93	ND	ND	NC	6.1	5.9	97
Vanadium	SW-846 6010	11-17-93	11-19-93	21.2	14.0	40.5	61.0	76.7	91
Zinc	SW-846 6010	11-17-93	11-19-93	41.5	37.3	10.6	61.0	104	102

QUALITY ASSURANCE/QUALITY CONTROL

LCS ID: 1973.LCSS1

Method Blank ID:1973.PBS1

LCSD ID: 1973.LCSS2

PDP ANALYTICAL SERVICES
24900 Pitkin Driv nite 300; Spring, Texas 77386; Phone (713)3(233

009802

LABORATORY REPORT

Client: NA
Project Name: NA
Project No.: NA

Date Received: NA
Date Reported: NA
Report No.: D175152

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: SOIL Analyst: SYA

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1974.02	MS Sample ID: 1974.02MS	MSD Sample ID: 1974.02MSD
Date Analyzed: 11/18/93	Date Analyzed: 11/20/93	Date Analyzed: 11/20/93
GC/MS File ID: D1721	GC/MS File ID: D1751	GC/MS File ID: D1752

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	1667	ND	1292	78	38-107
1,4-Dichlorobenzene	1667	ND	881	53	28-104
2,4-Dinitrotoluene	1667	ND	1572	94	28-89
2-Chlorophenol	2500	ND	2097	84	25-102
4-Chloro-3-methylphenol	2500	ND	2255	90	26-103
4-Nitrophenol	2500	ND	1983	79	11-114
Acenapthene	1667	ND	1511	91	31-137
N-Nitroso-Di-N-propylamine	1667	ND	1265	76	41-126
Pentachlorophenol	2500	ND	2626	105	17-109
Phenol	2500	ND	2004	80	26-190
Pyrene	1667	ND	1377	83	35-142

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MSD CONCENTRATION (ug/kg)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	1667	ND	1475	88	12.0	35	38-107
1,4-Dichlorobenzene	1667	ND	1062	64	18.8	50	28-104
2,4-Dinitrotoluene	1667	ND	1664	100	6.2	27	28-89
2-Chlorophenol	2500	ND	2406	96	13.3	38	25-102
4-Chloro-3-methylphenol	2500	ND	2465	99	9.5	23	26-103
4-Nitrophenol	2500	ND	1905	76	3.9	33	11-114
Acenapthene	1667	ND	1678	101	10.4	19	31-137
N-Nitroso-Di-N-propylamine	1667	ND	1528	92	19.0	50	41-126
Pentachlorophenol	2500	ND	2645	106	0.9	47	17-109
Phenol	2500	ND	2234	89	10.7	47	26-190
Pyrene	1667	ND	1409	84	1.2	36	35-142

= Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

PDP ANALYTICAL SERVICES

24900 Pitkin Drive, Suite 300 • Spring, Texas 77386 • Phone (713)363-2233

Client: AWD Technologies, Inc. Episode No.: 1973	Project Name: Longhorn AAP Project No.: NA

CASE NARRATIVE

Nine soil samples were received for analysis on 11/16/93.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

All results, with the exception of wet chemistry parameters, are reported on dry weight basis. Total solids percentages are provided.

VOLATILES:

Sample SB02-2001 needed a dilution of 5X in order to obtain the concentration of one compound with the instrument calibration range. Inconsistancies in concentrations of trichloromethane between the original and diluted determination are due to the non-homogenous nature of the sample.

SEMIVOLATILES:

A low recovery of an internal standard for sample SB03-2004 was determined upon the original analysis and reanalysis. This is due possibly to matrix effects.

TOTAL METALS:

Due to the high concentrations of aluminum and iron present in the sample, the matrix spike added to the sample was saturated, preventing accurate determination of the recovery. The recovery of antimony in the matrix spike was low due to the instability of this metal in the presence of hydrochloric acid used in the metals digestion process.

Matrix interferences are suspected for some graphite furnace atomic absorption analyses based on the matrix spike recovery. A post digest spike is added to each determination to compensate for potential matrix interferences.

Poor duplicate precision was noted for total barium and vanadium.

009804

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

INCHCAPE TESTING SERVICES -- Job Numbers H93-7584, 7585, 7586 7644, 7653, 7678, 7679, and 7680

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
Inchcape Testing Services -- Job Numbers H93-7584, 7585, 7586, 7644, 7653, 7678, 7679, and 7680

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 9-13, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to PDP Analytical Services in Spring, Texas where the explosive analyses were subcontracted to Inchcape Testing Services in Houston, Texas. The samples were subsequently placed under the above job numbers. Included in this set of data are the results of fifty-one (51) soil samples, including four (4) duplicate samples, and one (1) equipment rinsate blank.

Soil Samples

SB06-2002	SB08-2002	SB05-2004	SB10-2002
SB06-2003	SB08-2003	AWD1-2001	SB10-2001
SB06-2004	SB08-2004	AWD3-2001	AWD4-2002
SB06-2005	SB08-2005	AWD3-2002	SB02-2001
SB06-2006	SB08-2006	AWD3-2003	SB01-2004
SB06-2007	SB08-2006-QC	AWD3-2004	SB03-2004
SB07-2001	SB08-2007	SB10-2003	SB01-2001
SB07-2002	SB04-2001	SB10-2003-QC	SB03-2001
SB07-2003	SB04-2003	SB09-2001	SB02-2002
SB07-2005	SB04-2003-QC	SB09-2001-QC	SB02-2004
SB07-2006	SB04-2005	SB10-2004	SB01-2003
SB07-2007	SB05-2001	AWD4-2001	SB03-2003
SB08-2001	SB05-2003	AWD4-2003	

Field Duplicates

SB08-2006-QC is a field duplicate of SB08-2006.
SB04-2003-QC is a field duplicate of SB04-2003.
SB09-2001-QC is a field duplicate of SB09-2001.
SB10-2003-QC is a field duplicate of SB10-2003.

Equipment Rinsate Blank

SB02-2004-EB

All samples were analyzed for explosives by U.S. EPA SW-846 Method 8330. Since the laboratory did not supply any of the analytical raw data in the deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Explosives.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and MS/MSD percent recoveries were within acceptable quality control limits.

2.2 Precision. All MS/MSD relative percent differences (RPDs) were within acceptable quality control limits.

2.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. Note that the samples in Inchcape Testing Services Job Number H93-7653, (AWD1-2001, AWD3-2001, AWD3-2002, AWD3-2003, and AWD3-2004) were all received at the laboratory at a temperature of 10°C. Since this temperature was only

slightly elevated and explosive compounds are semivolatile in nature, the data was not deemed to be impacted.

All samples were prepared and analyzed within appropriate holding times, except for sample SB02-2004-EB which was extracted one day after the holding time had expired. In this sample, all compounds have been qualified as estimated, "UJ", as they are all non-detect.

All blanks were free of target compound contamination; however, not all target compounds were reported with the method blank data. Also, all compounds in all four field duplicate pairs are non-detect and are therefore comparable with no significant differences.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The semivolatile holding time criteria was also used to validate the explosive data.

3.0 Notes.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

4.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991) and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. All results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

5.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:

a) All positive results with qualifier codes, if applicable;
b) All unusable detection limits qualified with "R"; and
c) All estimated detection limits qualified with "UJ".

3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

Inchcape Testing Services
NDRC Laboratories

009811

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7584
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB06-2002	Soil	9-NOV-1993
2	SB06-2003	Soil	9-NOV-1993
3	SB06-2004	Soil	9-NOV-1993
4	SB06-2005	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
2,4-DNT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
2,6-DNT	mg/Kg	< 0.29	< 0.32	< 0.31	< 0.31
HMX	mg/Kg	< 2.5	< 2.7	< 2.7	< 2.6
NB	mg/Kg	< 0.29	< 0.32	< 0.31	< 0.31
2-NT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
3-NT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
4-NT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
RDX	mg/Kg	< 1.1	< 1.2	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.73	< 0.79	< 0.79	< 0.77
1,3,5-TNB	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
2,4,6-TNT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	11.0	18.0	17.6	15.3

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7584
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB06-2006	Soil	9-NOV-1993
6	SB06-2007	Soil	9-NOV-1993
7	LCS	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	
1,3-DNB	mg/Kg	< 0.30	< 0.31	3.47	
2,4-DNT	mg/Kg	< 0.30	< 0.31	3.49	
2,6-DNT	mg/Kg	< 0.31	< 0.32	3.42	
HMX	mg/Kg	< 2.6	< 2.7	3.4	
NB	mg/Kg	< 0.31	< 0.32	3.50	
2-NT	mg/Kg	< 0.30	< 0.31	3.52	
3-NT	mg/Kg	< 0.30	< 0.31	3.55	
4-NT	mg/Kg	< 0.30	< 0.31	3.50	
RDX	mg/Kg	< 1.2	< 1.2	3.4	
Tetryl	mg/Kg	< 0.78	< 0.80	1.41	
1,3,5-TNB	mg/Kg	< 0.30	< 0.31	2.83	
2,4,6-TNT	mg/Kg	< 0.30	< 0.31	3.42	

MISCELLANEOUS ANALYSES		5	6	7	
Moisture (Oven)	%	16.7	18.6	-	

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7585
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB07-2001	Soil	9-NOV-1993
2	SB07-2002	Soil	9-NOV-1993
3	SB07-2003	Soil	9-NOV-1993
4	SB07-2005	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
2,4-DNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
2,6-DNT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.30
HMX	mg/Kg	< 2.6	< 2.5	< 2.5	< 2.5
NB	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.30
2-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
3-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
4-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
RDX	mg/Kg	< 1.2	< 1.1	< 1.1	< 1.1
Tetryl	mg/Kg	< 0.77	< 0.74	< 0.74	< 0.74
1,3,5-TNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
2,4,6-TNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	15.3	12.7	12.5	12.2

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7585
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB07-2006	Soil	9-NOV-1993
6	SB07-2007	Soil	9-NOV-1993
7	LCS	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	
1,3-DNB	mg/Kg	< 0.28	< 0.28	3.47	
2,4-DNT	mg/Kg	< 0.28	< 0.28	3.49	
2,6-DNT	mg/Kg	< 0.29	< 0.30	3.42	
HMX	mg/Kg	< 2.4	< 2.5	3.4	
NB	mg/Kg	< 0.29	< 0.30	3.50	
2-NT	mg/Kg	< 0.28	< 0.28	3.52	
3-NT	mg/Kg	< 0.28	< 0.28	3.55	
4-NT	mg/Kg	< 0.28	< 0.28	3.50	
RDX	mg/Kg	< 1.1	< 1.1	3.4	
Tetryl	mg/Kg	< 0.72	< 0.74	1.41	
1,3,5-TNB	mg/Kg	< 0.28	< 0.28	2.83	
2,4,6-TNT	mg/Kg	< 0.28	< 0.28	3.42	

MISCELLANEOUS ANALYSES		5	6	7	
Moisture (Oven)	%	9.5	11.9	-	

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7586
REPORT DATE : 24-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB08-2001	Soil	10-NOV-1993
2	SB08-2002	Soil	10-NOV-1993
3	SB08-2003	Soil	10-NOV-1993
4	SB08-2004	Soil	10-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
2,4-DNT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
2,6-DNT	mg/Kg	< 0.37	< 0.31	< 0.33	< 0.30
HMX	mg/Kg	< 3.1	< 2.6	< 2.8	< 2.5
NB	mg/Kg	< 0.37	< 0.31	< 0.33	< 0.30
2-NT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
3-NT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
4-NT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
RDX	mg/Kg	< 1.4	< 1.2	< 1.3	< 1.1
Tetryl	mg/Kg	< 0.92	< 0.78	< 0.82	< 0.75
1,3,5-TNB	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
2,4,6-TNT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	29.8	16.6	20.9	13.1

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7586
REPORT DATE : 24-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB08-2005	Soil	10-NOV-1993
6	SB08-2006	Soil	10-NOV-1993
7	SB08-2006 QC	Soil	10-NOV-1993
8	SB08-2007	Soil	10-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	8
1,3-DNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
2,4-DNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
2,6-DNT	mg/Kg	< 0.30	< 0.29	< 0.29	< 0.32
HMX	mg/Kg	< 2.6	< 2.5	< 2.5	< 2.7
NB	mg/Kg	< 0.30	< 0.29	< 0.29	< 0.32
2-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
3-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
4-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
RDX	mg/Kg	< 1.2	< 1.1	< 1.1	< 1.2
Tetryl	mg/Kg	< 0.75	< 0.73	< 0.73	< 0.79
1,3,5-TNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
2,4,6-TNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31

MISCELLANEOUS ANALYSES		5	6	7	8
Moisture (Oven)	%	14.2	11.4	11.7	17.8

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7586
REPORT DATE : 24-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
9	LCS	Soil	10-NOV-1993

EXPLOSIVES, EPA 8330		9			
1,3-DNB	mg/Kg	3.47			
2,4-DNT	mg/Kg	3.49			
2,6-DNT	mg/Kg	3.42			
HMX	mg/Kg	3.4			
NB	mg/Kg	3.50			
2-NT	mg/Kg	3.52			
3-NT	mg/Kg	3.55			
4-NT	mg/Kg	3.50			
RDX	mg/Kg	3.4			
Tetryl	mg/Kg	1.41			
1,3,5-TNB	mg/Kg	2.83			
2,4,6-TNT	mg/Kg	3.42			

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn

JOB NUMBER : H93-7644
REPORT DATE : 22-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
2	SB04-2001	Soil	12-NOV-1993
3	SB04-2003	Soil	12-NOV-1993
4	SB04-2003 QC	Soil	12-NOV-1993
5	SB04-2005	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		2	3	4	5
1,3-DNB	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
2,4-DNT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
2,6-DNT	mg/Kg	< 0.31	< 0.32	< 0.32	< 0.32
HMX	mg/Kg	< 2.7	< 2.8	< 2.7	< 2.7
NB	mg/Kg	< 0.31	< 0.32	< 0.32	< 0.32
2-NT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
3-NT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
4-NT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
RDX	mg/Kg	< 1.2	< 1.3	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.79	< 0.81	< 0.80	< 0.81
1,3,5-TNB	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
2,4,6-TNT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31

MISCELLANEOUS ANALYSES		2	3	4	5
Moisture (Oven)	%	17.6	19.8	18.7	19.1

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn

JOB NUMBER : H93-7644
REPORT DATE : 22-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
6	SB05-2001	Soil	12-NOV-1993
7	SB05-2003	Soil	12-NOV-1993
8	SB05-2004	Soil	12-NOV-1993
9	LCS-Soil	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		6	7	8	9
1,3-DNB	mg/Kg	< 0.29	< 0.31	< 0.31	3.47
2,4-DNT	mg/Kg	< 0.29	< 0.31	< 0.31	3.49
2,6-DNT	mg/Kg	< 0.31	< 0.32	< 0.32	3.42
HMX	mg/Kg	< 2.6	< 2.7	< 2.7	3.4
NB	mg/Kg	< 0.31	< 0.32	< 0.32	3.50
2-NT	mg/Kg	< 0.29	< 0.31	< 0.31	3.52
3-NT	mg/Kg	< 0.29	< 0.31	< 0.31	3.55
4-NT	mg/Kg	< 0.29	< 0.31	< 0.31	3.50
RDX	mg/Kg	< 1.2	< 1.2	< 1.2	3.4
Tetryl	mg/Kg	< 0.77	< 0.79	< 0.80	1.41
1,3,5-TNB	mg/Kg	< 0.29	< 0.31	< 0.31	2.83
2,4,6-TNT	mg/Kg	< 0.29	< 0.31	< 0.31	3.42

MISCELLANEOUS ANALYSES		6	7	8	9
Moisture (Oven)	%	15.3	17.8	18.9	-

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn

JOB NUMBER : H93-7644
REPORT DATE : 22-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB02-2004-EB	Water	12-NOV-1993
10	LCS-Water	Water	12-NOV-1993

EXPLOSIVES, EPA 8330		1	10		
1,3-DNB	µg/L	< 0.10 UJ	5.30		
2,4-DNT	µg/L	< 0.10	5.55		
2,6-DNT	µg/L	< 0.10	6.92		
HMX	µg/L	< 0.10	6.32		
NB	µg/L	< 0.10	6.96		
2-NT	µg/L	< 0.10	6.98		
3-NT	µg/L	< 0.10	6.94		
4-NT	µg/L	< 0.10	6.94		
RDX	µg/L	< 0.10	7.57		
Tetryl	µg/L	< 0.10	3.12		
1,3,5-TNB	µg/L	< 0.10	4.78		
2,4,6-TNT	µg/L	< 0.10	3.71		

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7653
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	AWD1-2001	Soil	11-NOV-1993
2	AWD3-2001	Soil	11-NOV-1993
3	AWD3-2002	Soil	11-NOV-1993
4	AWD3-2003	Soil	11-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
2,4-DNT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
2,6-DNT	mg/Kg	< 0.30	< 0.30	< 0.31	< 0.32
HMX	mg/Kg	< 2.5	< 2.6	< 2.6	< 2.7
NB	mg/Kg	< 0.30	< 0.30	< 0.31	< 0.32
2-NT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
3-NT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
4-NT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
RDX	mg/Kg	< 1.1	< 1.2	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.75	< 0.76	< 0.77	< 0.79
1,3,5-TNB	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
2,4,6-TNT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	12.8	14.7	16.0	18.2

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7653
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	AWD3-2004	Soil	11-NOV-1993
6	LCS	Soil	11-NOV-1993

EXPLOSIVES, EPA 8330		5	6		
1,3-DNB	mg/Kg	< 0.32	3.48		
2,4-DNT	mg/Kg	< 0.32	3.52		
2,6-DNT	mg/Kg	< 0.34	3.43		
HMX	mg/Kg	< 2.8	3.5		
NB	mg/Kg	< 0.34	3.51		
2-NT	mg/Kg	< 0.32	3.53		
3-NT	mg/Kg	< 0.32	3.58		
4-NT	mg/Kg	< 0.32	3.53		
RDX	mg/Kg	< 1.3	3.4		
Tetryl	mg/Kg	< 0.84	1.38		
1,3,5-TNB	mg/Kg	< 0.32	2.79		
2,4,6-TNT	mg/Kg	< 0.32	3.42		

MISCELLANEOUS ANALYSES		5	6		
Moisture (Oven)	%	22.2	-		

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7678
REPORT DATE : 23-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB02-2001	Soil	12-NOV-1993
2	SB01-2004	Soil	12-NOV-1993
3	SB03-2004	Soil	13-NOV-1993
4	SB01-2001	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
2,4-DNT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
2,6-DNT	mg/Kg	< 0.32	< 0.34	< 0.32	< 0.31
HMX	mg/Kg	< 2.7	< 2.9	< 2.8	< 2.6
NB	mg/Kg	< 0.32	< 0.34	< 0.32	< 0.31
2-NT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
3-NT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
4-NT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
RDX	mg/Kg	< 1.2	< 1.3	< 1.3	< 1.2
Tetryl	mg/Kg	< 0.79	< 0.84	< 0.81	< 0.78
1,3,5-TNB	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
2,4,6-TNT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	18.0	22.8	19.7	16.6

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7678
REPORT DATE : 23-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB03-2001	Soil	13-NOV-1993
6	SB02-2002	Soil	12-NOV-1993
7	SB02-2004	Soil	12-NOV-1993
8	SB01-2003	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	8
1,3-DNB	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
2,4-DNT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
2,6-DNT	mg/Kg	< 0.31	< 0.31	< 0.33	< 0.31
HMX	mg/Kg	< 2.6	< 2.6	< 2.8	< 2.6
NB	mg/Kg	< 0.31	< 0.31	< 0.33	< 0.31
2-NT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
3-NT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
4-NT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
RDX	mg/Kg	< 1.2	< 1.2	< 1.3	< 1.2
Tetryl	mg/Kg	< 0.77	< 0.77	< 0.83	< 0.77
1,3,5-TNB	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
2,4,6-TNT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30

MISCELLANEOUS ANALYSES		5	6	7	8
Moisture (Oven)	%	15.5	16.0	21.5	15.9

Inchcape Testing Services

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Vice President, General Manager

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Inchcape Testing Services
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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7678
REPORT DATE : 23-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
9	LCS	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		9			
1,3-DNB	mg/Kg	3.48			
2,4-DNT	mg/Kg	3.52			
2,6-DNT	mg/Kg	3.43			
HMX	mg/Kg	3.5			
NB	mg/Kg	3.51			
2-NT	mg/Kg	3.53			
3-NT	mg/Kg	3.58			
4-NT	mg/Kg	3.53			
RDX	mg/Kg	3.4			
Tetryl	mg/Kg	1.38			
1,3,5-TNB	mg/Kg	2.79			
2,4,6-TNT	mg/Kg	3.42			

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7679
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB03-2003	Soil	13-NOV-1993
2	LCS	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		1	2		
1,3-DNB	mg/Kg	< 0.29	3.48		
2,4-DNT	mg/Kg	< 0.29	3.52		
2,6-DNT	mg/Kg	< 0.31	3.43		
HMX	mg/Kg	< 2.6	3.5		
NB	mg/Kg	< 0.31	3.51		
2-NT	mg/Kg	< 0.29	3.53		
3-NT	mg/Kg	< 0.29	3.58		
4-NT	mg/Kg	< 0.29	3.53		
RDX	mg/Kg	< 1.2	3.4		
Tetryl	mg/Kg	< 0.77	1.38		
1,3,5-TNB	mg/Kg	< 0.29	2.79		
2,4,6-TNT	mg/Kg	< 0.29	3.42		

MISCELLANEOUS ANALYSES		1	2		
Moisture (Oven)	%	15.0	-		

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7680
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB10-2003-QC	Soil	13-NOV-1993
2	SB09-2001-QC	Soil	13-NOV-1993
3	SB09-2001	Soil	13-NOV-1993
4	SB10-2004	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
2,4-DNT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
2,6-DNT	mg/Kg	< 0.33	< 0.31	< 0.31	< 0.33
HMX	mg/Kg	< 2.8	< 2.6	< 2.6	< 2.8
NB	mg/Kg	< 0.33	< 0.31	< 0.31	< 0.33
2-NT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
3-NT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
4-NT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
RDX	mg/Kg	< 1.3	< 1.2	< 1.2	< 1.3
Tetryl	mg/Kg	< 0.81	< 0.77	< 0.77	< 0.83
1,3,5-TNB	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
2,4,6-TNT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	20.0	16.0	16.0	21.0

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-768[illegible]
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	AWD4-2001	Soil	13-NOV-1993
6	AWD4-2003	Soil	13-NOV-1993
7	SB10-2002	Soil	13-NOV-1993
8	SB10-2001	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	8
1,3-DNB	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
2,4-DNT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
2,6-DNT	mg/Kg	< 0.29	< 0.31	< 0.31	< 0.32
HMX	mg/Kg	< 2.4	< 2.6	< 2.6	< 2.7
NB	mg/Kg	< 0.29	< 0.31	< 0.31	< 0.32
2-NT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
3-NT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
4-NT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
RDX	mg/Kg	< 1.1	< 1.2	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.72	< 0.78	< 0.78	< 0.79
1,3,5-TNB	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
2,4,6-TNT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31

MISCELLANEOUS ANALYSES		5	6	7	8
Moisture (Oven)	%	9.5	17.0	17.0	18.[illegible]

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7680
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
9	AWD4-2002	Soil	13-NOV-1993
10	SB10-2003	Soil	13-NOV-1993
11	LCS	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		9	10	11	
1,3-DNB	mg/Kg	< 0.29	< 0.32	3.46	
2,4-DNT	mg/Kg	< 0.29	< 0.32	3.52	
2,6-DNT	mg/Kg	< 0.30	< 0.33	3.43	
HMX	mg/Kg	< 2.5	< 2.8	3.5	
NB	mg/Kg	< 0.30	< 0.33	3.51	
2-NT	mg/Kg	< 0.29	< 0.32	3.53	
3-NT	mg/Kg	< 0.29	< 0.32	3.58	
4-NT	mg/Kg	< 0.29	< 0.32	3.53	
RDX	mg/Kg	< 1.1	< 1.3	3.4	
Tetryl	mg/Kg	< 0.75	< 0.82	1.38	
1,3,5-TNB	mg/Kg	< 0.29	< 0.32	2.79	
2,4,6-TNT	mg/Kg	< 0.29	< 0.32	3.42	

MISCELLANEOUS ANALYSES		9	10	11	
Moisture (Oven)	%	13.0	20.5	-	

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APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

009831

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7584
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB06-2002	Soil	9-NOV-1993
2	SB06-2003	Soil	9-NOV-1993
3	SB06-2004	Soil	9-NOV-1993
4	SB06-2005	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
2,4-DNT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
2,6-DNT	mg/Kg	< 0.29	< 0.32	< 0.31	< 0.31
HMX	mg/Kg	< 2.5	< 2.7	< 2.7	< 2.6
NB	mg/Kg	< 0.29	< 0.32	< 0.31	< 0.31
2-NT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
3-NT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
4-NT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
RDX	mg/Kg	< 1.1	< 1.2	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.73	< 0.79	< 0.79	< 0.77
1,3,5-TNB	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29
2,4,6-TNT	mg/Kg	< 0.28	< 0.31	< 0.30	< 0.29

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	11.0	18.0	17.6	15.3

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7584
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB06-2006	Soil	9-NOV-1993
6	SB06-2007	Soil	9-NOV-1993
7	LCS	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	
1,3-DNB	mg/Kg	< 0.30	< 0.31	3.47	
2,4-DNT	mg/Kg	< 0.30	< 0.31	3.49	
2,6-DNT	mg/Kg	< 0.31	< 0.32	3.42	
HMX	mg/Kg	< 2.6	< 2.7	3.4	
NB	mg/Kg	< 0.31	< 0.32	3.50	
2-NT	mg/Kg	< 0.30	< 0.31	3.52	
3-NT	mg/Kg	< 0.30	< 0.31	3.55	
4-NT	mg/Kg	< 0.30	< 0.31	3.50	
RDX	mg/Kg	< 1.2	< 1.2	3.4	
Tetryl	mg/Kg	< 0.78	< 0.80	1.41	
1,3,5-TNB	mg/Kg	< 0.30	< 0.31	2.83	
2,4,6-TNT	mg/Kg	< 0.30	< 0.31	3.42	

MISCELLANEOUS ANALYSES		5	6	7	
Moisture (Oven)	%	16.7	18.6	-	

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7585
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB07-2001	Soil	9-NOV-1993
2	SB07-2002	Soil	9-NOV-1993
3	SB07-2003	Soil	9-NOV-1993
4	SB07-2005	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
2,4-DNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
2,6-DNT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.30
HMX	mg/Kg	< 2.6	< 2.5	< 2.5	< 2.5
NB	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.30
2-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
3-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
4-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
RDX	mg/Kg	< 1.2	< 1.1	< 1.1	< 1.1
Tetryl	mg/Kg	< 0.77	< 0.74	< 0.74	< 0.74
1,3,5-TNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28
2,4,6-TNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.28

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	15.3	12.7	12.5	12.2

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Ms. Deborah O'Connor
PROJECT :

JOB NUMBER : H93-7585
REPORT DATE : 27-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB07-2006	Soil	9-NOV-1993
6	SB07-2007	Soil	9-NOV-1993
7	LCS	Soil	9-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	
1,3-DNB	mg/Kg	< 0.28	< 0.28	3.47	
2,4-DNT	mg/Kg	< 0.28	< 0.28	3.49	
2,6-DNT	mg/Kg	< 0.29	< 0.30	3.42	
HMX	mg/Kg	< 2.4	< 2.5	3.4	
NB	mg/Kg	< 0.29	< 0.30	3.50	
2-NT	mg/Kg	< 0.28	< 0.28	3.52	
3-NT	mg/Kg	< 0.28	< 0.28	3.55	
4-NT	mg/Kg	< 0.28	< 0.28	3.50	
RDX	mg/Kg	< 1.1	< 1.1	3.4	
Tetryl	mg/Kg	< 0.72	< 0.74	1.41	
1,3,5-TNB	mg/Kg	< 0.28	< 0.28	2.83	
2,4,6-TNT	mg/Kg	< 0.28	< 0.28	3.42	

MISCELLANEOUS ANALYSES		5	6	7	
Moisture (Oven)	%	9.5	11.9	-	

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7586
REPORT DATE : 24-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB08-2001	Soil	10-NOV-1993
2	SB08-2002	Soil	10-NOV-1993
3	SB08-2003	Soil	10-NOV-1993
4	SB08-2004	Soil	10-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
2,4-DNT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
2,6-DNT	mg/Kg	< 0.37	< 0.31	< 0.33	< 0.30
HMX	mg/Kg	< 3.1	< 2.6	< 2.8	< 2.5
NB	mg/Kg	< 0.37	< 0.31	< 0.33	< 0.30
2-NT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
3-NT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
4-NT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
RDX	mg/Kg	< 1.4	< 1.2	< 1.3	< 1.1
Tetryl	mg/Kg	< 0.92	< 0.78	< 0.82	< 0.75
1,3,5-TNB	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29
2,4,6-TNT	mg/Kg	< 0.36	< 0.30	< 0.32	< 0.29

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	29.8	16.6	20.9	13.1

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7586
REPORT DATE : 24-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB08-2005	Soil	10-NOV-1993
6	SB08-2006	Soil	10-NOV-1993
7	SB08-2006 QC	Soil	10-NOV-1993
8	SB08-2007	Soil	10-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	8
1,3-DNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
2,4-DNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
2,6-DNT	mg/Kg	< 0.30	< 0.29	< 0.29	< 0.32
HMX	mg/Kg	< 2.6	< 2.5	< 2.5	< 2.7
NB	mg/Kg	< 0.30	< 0.29	< 0.29	< 0.32
2-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
3-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
4-NT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
RDX	mg/Kg	< 1.2	< 1.1	< 1.1	< 1.2
Tetryl	mg/Kg	< 0.75	< 0.73	< 0.73	< 0.79
1,3,5-TNB	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31
2,4,6-TNT	mg/Kg	< 0.29	< 0.28	< 0.28	< 0.31

MISCELLANEOUS ANALYSES		5	6	7	8
Moisture (Oven)	%	14.2	11.4	11.7	17.8

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7586
REPORT DATE : 24-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
9	LCS	Soil	10-NOV-1993

EXPLOSIVES, EPA 8330		9			
1,3-DNB	mg/Kg	3.47			
2,4-DNT	mg/Kg	3.49			
2,6-DNT	mg/Kg	3.42			
HMX	mg/Kg	3.4			
NB	mg/Kg	3.50			
2-NT	mg/Kg	3.52			
3-NT	mg/Kg	3.55			
4-NT	mg/Kg	3.50			
RDX	mg/Kg	3.4			
Tetryl	mg/Kg	1.41			
1,3,5-TNB	mg/Kg	2.83			
2,4,6-TNT	mg/Kg	3.42			

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn

JOB NUMBER : H93-7644
REPORT DATE : 22-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
2	SB04-2001	Soil	12-NOV-1993
3	SB04-2003	Soil	12-NOV-1993
4	SB04-2003 QC	Soil	12-NOV-1993
5	SB04-2005	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		2	3	4	5
1,3-DNB	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
2,4-DNT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
2,6-DNT	mg/Kg	< 0.31	< 0.32	< 0.32	< 0.32
HMX	mg/Kg	< 2.7	< 2.8	< 2.7	< 2.7
NB	mg/Kg	< 0.31	< 0.32	< 0.32	< 0.32
2-NT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
3-NT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
4-NT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
RDX	mg/Kg	< 1.2	< 1.3	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.79	< 0.81	< 0.80	< 0.81
1,3,5-TNB	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31
2,4,6-TNT	mg/Kg	< 0.30	< 0.31	< 0.31	< 0.31

MISCELLANEOUS ANALYSES		2	3	4	5
Moisture (Oven)	%	17.6	19.8	18.7	19.1

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn

JOB NUMBER : H93-7644
REPORT DATE : 22-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
6	SB05-2001	Soil	12-NOV-1993
7	SB05-2003	Soil	12-NOV-1993
8	SB05-2004	Soil	12-NOV-1993
9	LCS-Soil	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		6	7	8	9
1,3-DNB	mg/Kg	< 0.29	< 0.31	< 0.31	3.47
2,4-DNT	mg/Kg	< 0.29	< 0.31	< 0.31	3.49
2,6-DNT	mg/Kg	< 0.31	< 0.32	< 0.32	3.42
HMX	mg/Kg	< 2.6	< 2.7	< 2.7	3.4
NB	mg/Kg	< 0.31	< 0.32	< 0.32	3.50
2-NT	mg/Kg	< 0.29	< 0.31	< 0.31	3.52
3-NT	mg/Kg	< 0.29	< 0.31	< 0.31	3.55
4-NT	mg/Kg	< 0.29	< 0.31	< 0.31	3.50
RDX	mg/Kg	< 1.2	< 1.2	< 1.2	3.4
Tetryl	mg/Kg	< 0.77	< 0.79	< 0.80	1.41
1,3,5-TNB	mg/Kg	< 0.29	< 0.31	< 0.31	2.83
2,4,6-TNT	mg/Kg	< 0.29	< 0.31	< 0.31	3.42

MISCELLANEOUS ANALYSES		6	7	8	9
Moisture (Oven)	%	15.3	17.8	18.9	-

Inchcape Testing Services

Raj Naran
Vice President, General Manager

009840

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn

JOB NUMBER : H93-7644
REPORT DATE : 22-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB02-2004-EB	Water	12-NOV-1993
10	LCS-Water	Water	12-NOV-1993

EXPLOSIVES, EPA 8330		1	10		
1,3-DNB	µg/L	< 0.10	5.30		
2,4-DNT	µg/L	< 0.10	5.55		
2,6-DNT	µg/L	< 0.10	6.92		
HMX	µg/L	< 0.10	6.32		
NB	µg/L	< 0.10	6.96		
2-NT	µg/L	< 0.10	6.98		
3-NT	µg/L	< 0.10	6.94		
4-NT	µg/L	< 0.10	6.94		
RDX	µg/L	< 0.10	7.57		
Tetryl	µg/L	< 0.10	3.12		
1,3,5-TNB	µg/L	< 0.10	4.78		
2,4,6-TNT	µg/L	< 0.10	3.71		

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7653
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	AWD1-2001	Soil	11-NOV-1993
2	AWD3-2001	Soil	11-NOV-1993
3	AWD3-2002	Soil	11-NOV-1993
4	AWD3-2003	Soil	11-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
2,4-DNT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
2,6-DNT	mg/Kg	< 0.30	< 0.30	< 0.31	< 0.32
HMX	mg/Kg	< 2.5	< 2.6	< 2.6	< 2.7
NB	mg/Kg	< 0.30	< 0.30	< 0.31	< 0.32
2-NT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
3-NT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
4-NT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
RDX	mg/Kg	< 1.1	< 1.2	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.75	< 0.76	< 0.77	< 0.79
1,3,5-TNB	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31
2,4,6-TNT	mg/Kg	< 0.29	< 0.29	< 0.30	< 0.31

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	12.8	14.7	16.0	18.2

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : Longhorn AAP

JOB NUMBER : H93-7653
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	AWD3-2004	Soil	11-NOV-1993
6	LCS	Soil	11-NOV-1993

EXPLOSIVES, EPA 8330		5	6		
1,3-DNB	mg/Kg	< 0.32	3.48		
2,4-DNT	mg/Kg	< 0.32	3.52		
2,6-DNT	mg/Kg	< 0.34	3.43		
HMX	mg/Kg	< 2.8	3.5		
NB	mg/Kg	< 0.34	3.51		
2-NT	mg/Kg	< 0.32	3.53		
3-NT	mg/Kg	< 0.32	3.58		
4-NT	mg/Kg	< 0.32	3.53		
RDX	mg/Kg	< 1.3	3.4		
Tetryl	mg/Kg	< 0.84	1.38		
1,3,5-TNB	mg/Kg	< 0.32	2.79		
2,4,6-TNT	mg/Kg	< 0.32	3.42		

MISCELLANEOUS ANALYSES		5	6		
Moisture (Oven)	%	22.2	-		

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009843

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7680
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB10-2003-QC	Soil	13-NOV-1993
2	SB09-2001-QC	Soil	13-NOV-1993
3	SB09-2001	Soil	13-NOV-1993
4	SB10-2004	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
2,4-DNT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
2,6-DNT	mg/Kg	< 0.33	< 0.31	< 0.31	< 0.33
HMX	mg/Kg	< 2.8	< 2.6	< 2.6	< 2.8
NB	mg/Kg	< 0.33	< 0.31	< 0.31	< 0.33
2-NT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
3-NT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
4-NT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
RDX	mg/Kg	< 1.3	< 1.2	< 1.2	< 1.3
Tetryl	mg/Kg	< 0.81	< 0.77	< 0.77	< 0.83
1,3,5-TNB	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32
2,4,6-TNT	mg/Kg	< 0.31	< 0.30	< 0.30	< 0.32

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	20.0	16.0	16.0	21.0

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-768[illegible]
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	AWD4-2001	Soil	13-NOV-1993
6	AWD4-2003	Soil	13-NOV-1993
7	SB10-2002	Soil	13-NOV-1993
8	SB10-2001	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	8
1,3-DNB	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
2,4-DNT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
2,6-DNT	mg/Kg	< 0.29	< 0.31	< 0.31	< 0.32
HMX	mg/Kg	< 2.4	< 2.6	< 2.6	< 2.7
NB	mg/Kg	< 0.29	< 0.31	< 0.31	< 0.32
2-NT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
3-NT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
4-NT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
RDX	mg/Kg	< 1.1	< 1.2	< 1.2	< 1.2
Tetryl	mg/Kg	< 0.72	< 0.78	< 0.78	< 0.79
1,3,5-TNB	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31
2,4,6-TNT	mg/Kg	< 0.28	< 0.30	< 0.30	< 0.31

MISCELLANEOUS ANALYSES		5	6	7	8
Moisture (Oven)	%	9.5	17.0	17.0	18.[illegible]

Inchcape Testing Services

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009845

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7680
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
9	AWD4-2002	Soil	13-NOV-1993
10	SB10-2003	Soil	13-NOV-1993
11	LCS	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		9	10	11	
1,3-DNB	mg/Kg	< 0.29	< 0.32	3.46	
2,4-DNT	mg/Kg	< 0.29	< 0.32	3.52	
2,6-DNT	mg/Kg	< 0.30	< 0.33	3.43	
HMX	mg/Kg	< 2.5	< 2.8	3.5	
NB	mg/Kg	< 0.30	< 0.33	3.51	
2-NT	mg/Kg	< 0.29	< 0.32	3.53	
3-NT	mg/Kg	< 0.29	< 0.32	3.58	
4-NT	mg/Kg	< 0.29	< 0.32	3.53	
RDX	mg/Kg	< 1.1	< 1.3	3.4	
Tetryl	mg/Kg	< 0.75	< 0.82	1.38	
1,3,5-TNB	mg/Kg	< 0.29	< 0.32	2.79	
2,4,6-TNT	mg/Kg	< 0.29	< 0.32	3.42	

MISCELLANEOUS ANALYSES		9	10	11	
Moisture (Oven)	%	13.0	20.5	-	

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009846

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7678
REPORT DATE : 23-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB02-2001	Soil	12-NOV-1993
2	SB01-2004	Soil	12-NOV-1993
3	SB03-2004	Soil	13-NOV-1993
4	SB01-2001	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		1	2	3	4
1,3-DNB	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
2,4-DNT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
2,6-DNT	mg/Kg	< 0.32	< 0.34	< 0.32	< 0.31
HMX	mg/Kg	< 2.7	< 2.9	< 2.8	< 2.6
NB	mg/Kg	< 0.32	< 0.34	< 0.32	< 0.31
2-NT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
3-NT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
4-NT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
RDX	mg/Kg	< 1.2	< 1.3	< 1.3	< 1.2
Tetryl	mg/Kg	< 0.79	< 0.84	< 0.81	< 0.78
1,3,5-TNB	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30
2,4,6-TNT	mg/Kg	< 0.31	< 0.32	< 0.31	< 0.30

MISCELLANEOUS ANALYSES		1	2	3	4
Moisture (Oven)	%	18.0	22.8	19.7	16.6

Inchcape Testing Services

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009847

Inchcape Testing Services
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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7678
REPORT DATE : 23-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	SB03-2001	Soil	13-NOV-1993
6	SB02-2002	Soil	12-NOV-1993
7	SB02-2004	Soil	12-NOV-1993
8	SB01-2003	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		5	6	7	8
1,3-DNB	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
2,4-DNT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
2,6-DNT	mg/Kg	< 0.31	< 0.31	< 0.33	< 0.31
HMX	mg/Kg	< 2.6	< 2.6	< 2.8	< 2.6
NB	mg/Kg	< 0.31	< 0.31	< 0.33	< 0.31
2-NT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
3-NT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
4-NT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
RDX	mg/Kg	< 1.2	< 1.2	< 1.3	< 1.2
Tetryl	mg/Kg	< 0.77	< 0.77	< 0.83	< 0.77
1,3,5-TNB	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30
2,4,6-TNT	mg/Kg	< 0.29	< 0.30	< 0.32	< 0.30

MISCELLANEOUS ANALYSES		5	6	7	8
Moisture (Oven)	%	15.5	16.0	21.5	15.9

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009848

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7678
REPORT DATE : 23-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
9	LCS	Soil	12-NOV-1993

EXPLOSIVES, EPA 8330		9			
1,3-DNB	mg/Kg	3.48			
2,4-DNT	mg/Kg	3.52			
2,6-DNT	mg/Kg	3.43			
HMX	mg/Kg	3.5			
NB	mg/Kg	3.51			
2-NT	mg/Kg	3.53			
3-NT	mg/Kg	3.58			
4-NT	mg/Kg	3.53			
RDX	mg/Kg	3.4			
Tetryl	mg/Kg	1.38			
1,3,5-TNB	mg/Kg	2.79			
2,4,6-TNT	mg/Kg	3.42			

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009849

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SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT :

JOB NUMBER : H93-7679
REPORT DATE : 29-NOV-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	SB03-2003	Soil	13-NOV-1993
2	LCS	Soil	13-NOV-1993

EXPLOSIVES, EPA 8330		1	2		
1,3-DNB	mg/Kg	< 0.29	3.48		
2,4-DNT	mg/Kg	< 0.29	3.52		
2,6-DNT	mg/Kg	< 0.31	3.43		
HMX	mg/Kg	< 2.6	3.5		
NB	mg/Kg	< 0.31	3.51		
2-NT	mg/Kg	< 0.29	3.53		
3-NT	mg/Kg	< 0.29	3.58		
4-NT	mg/Kg	< 0.29	3.53		
RDX	mg/Kg	< 1.2	3.4		
Tetryl	mg/Kg	< 0.77	1.38		
1,3,5-TNB	mg/Kg	< 0.29	2.79		
2,4,6-TNT	mg/Kg	< 0.29	3.42		

MISCELLANEOUS ANALYSES		1	2		
Moisture (Oven)	%	15.0	-		

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

009851

Inchcape Testing Services
NDRC Laboratories

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DATE RECEIVED: 13-NOV-1993

REPORT NUMBER: H93-7644:1-10
REPORT DATE: 23-NOV-1993

SAMPLE SUBMITTED BY: PDP Analytical Services

ATTENTION: Mr. Bruce Howbert

LABORATORY ANALYSIS
QUALITY CONTROL REPORT

ANALYSIS:	HMX	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	20-NOV-1993	MS/MSD RPD:	3.4%
QC Extracted:	20-NOV-1993	Average Spike Recovery:	90%
Sample Analyzed:	21-NOV-1993	Duplicate RPD:	---
QC Analyzed:	21-NOV-1993	Method Blank:	< 0.1 µg/L
QC Sample Number:	7644-1	LCS Recovery:	90%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---
ANALYSIS:	RDX	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	20-NOV-1993	MS/MSD RPD:	0.9%
QC Extracted:	20-NOV-1993	Average Spike Recovery:	106%
Sample Analyzed:	21-NOV-1993	Duplicate RPD:	---
QC Analyzed:	21-NOV-1993	Method Blank:	< 0.1 µg/L
QC Sample Number:	7644-1	LCS Recovery:	~~108%~~ JJS 8/12/94
TCLP Leachate Date:	---	TCLP Spike Recovery:	~~107%~~
ANALYSIS:	TNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	20-NOV-1993	MS/MSD RPD:	25.9%
QC Extracted:	20-NOV-1993	Average Spike Recovery:	66%
Sample Analyzed:	21-NOV-1993	Duplicate RPD:	---
QC Analyzed:	21-NOV-1993	Method Blank:	< 0.1 µg/L
QC Sample Number:	7644-1	LCS Recovery:	53%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---
ANALYSIS:	2,4-DNT	Analysis Method:	EPA 8330
Technician:	JPS	Extraction Method:	EPA 8330
Sample Extracted:	20-NOV-1993	MS/MSD RPD:	11.8%
QC Extracted:	20-NOV-1993	Average Spike Recovery:	85%
Sample Analyzed:	21-NOV-1993	Duplicate RPD:	---
QC Analyzed:	21-NOV-1993	Method Blank:	< 0.1 µg/L
QC Sample Number:	7644-1	LCS Recovery:	79%
TCLP Leachate Date:	---	TCLP Spike Recovery:	---

- exceeds aqueous holding time for extractions by 1 day
- extracted 8 days after collection
⇒ flag aqueous results as estimated.

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Inchcape Testing Services

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SAMPLE PRESERVATION INFORMATION SHEET

Field Sampling ☐ Incoming Samples ☐

GENERAL

Company: PDP Analytical Job No: 7653

No. of Cooler(s): 1 Temperature of Cooler(s): 10°C.

PRESERVATION INFORMATION

Sample No.	Temperature of Sample	Sample Container	Volume	Preservation used *	Initial pH	Final pH	Bottles generated	Comments
1	10°C	SV.	125mL	1				
2	"	"	"	"				
3	"	"	"	"				
4	"	"	"	"				
5	"	"	"	"				

PRESERVATION USED *

1 - Cool to 4° C
2 - H_2SO_4 to pH < 2
3 - HNO_3 to pH < 2
4 - HCL to pH < 2
5 - NaOH to pH > 12
6 - $Na_2S_2O_2$ 0.008%
7 - 2 mL Zinc Acetate and NaOH to pH > 12
8 - None required

KR
Preserved by

11-15-93'
Date/Time

Sample temp. is only slightly elevated. Since target compounds are semivolatile qualifiers no flags will be applied.

009853

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1981
INCHCAPE TESTING SERVICES -- Job Number H93-7851

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1981
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-7851

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 18, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1981. Included in this work order are four (4) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-C3-1001
LH18,24-C4-1001
LH18,24-C5-1001
LH18,24-C8-1001

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively.

Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-7851. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits. However, the percent recoveries of benzene and toluene in the laboratory control sample (LCS) analyzed on 11/30/93 were high. Since all associated sample results are non-detect, no qualification was necessary.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were received in good condition but were not acid preserved. As a result, samples LH18,24-C4-1001, LH18,24-C5-1001, LH18,24-C8-1001, and the trip blank were analyzed outside the recommended holding time for aromatic hydrocarbons. Therefore, these compounds were qualified as estimated, "UJ", as they were all non-detect.

All blanks were free of target compound contamination.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site-related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

3.0 Semivolatiles.

3.1 Accuracy. All surrogate percent recoveries were within control limits.

The laboratory control sample (LCS) extracted on 11/24/93 had low percent recoveries for 1,2,4-trichlorobenzene and 4-nitrophenol. As a result, all associated sample concentrations have been qualified as estimated, "UJ", as they were all non-detects.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPD between the matrix spike and matrix spike duplicate for 2-chlorophenol was high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and were properly preserved with the exception of sample LH18,24-C5-1001 which was lost when the sample froze in the laboratory refrigerator. The remaining samples were extracted and analyzed within the recommended holding times.

The method blank was free of any target compound contamination.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 **Precision.** The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 **Representativeness.** All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 **Accuracy.** All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 30 percent. Therefore, all sample results for selenium have been qualified as estimated, "UJ", and should be considered biased low.

5.2 **Precision.** The difference between the sample and its laboratory duplicate exceeded the control limit of ±CRDL (contract required detection limit) for cadmium. this control limit was applied when at least one sample result was less than 5XCRDL. Therefore, all results for this compound were qualified as estimated, "J", and "UJ", for positive and non-detect results, respectively. All other LCS and sample duplicate RPDs were within acceptable control ranges.

5.3 **Representativeness.** All samples were properly preserved and were received in good condition by the laboratory. The samples were prepared and analyzed within appropriate holding times.

Contamination was found for calcium in the preparation blank digested on November 23, 1993. Since all associated sample results were greater than 5 times the blank concentration, they were not impacted. All other blanks were free of target analyte contamination.

6.0 Explosives.

6.1 **Accuracy.** All LCS and MS/MSD percent recoveries were within acceptable quality control limits.

The surrogate percent recovery for 3,4-dinitrotoluene was high in sample LH18,24-C8-1001. Since all sample results were non-detect, they were not impacted. All other surrogate percent recoveries were within control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were received in good condition and were properly preserved with the exception of sample C5-1001 which was lost when the sample froze in the laboratory refrigerator while being stored at PDP Analytical Services. The remaining samples were prepared and analyzed within the recommended holding times.

The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Please note that the LCS provided with the volatile sample analyses on November 22, 1993 was a TCLP LCS while the samples were groundwater. Since all the percent recoveries were within control limits and no further problems were encountered, no action was taken on the data.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. All results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C3-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.01	Date Received:	11/19/93
Project No.:	NA	Report No.:	B6672	Date Reported:	12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6672
Sample Volume:	5.0 ml	Date Analyzed:	11/22/93
Dilution:	1.0	Analyst:	HZX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	7
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	86
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1975V.WBLK1 LCS ID: 1975V.TLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES INC. Client Sample ID:C4-1001
Project Name: LONGHORN AAP PDP Sample ID: 1981.02
Project No.: NA Report No.: B6766

Date Sampled: 11/18/93
Date Received: 11/19/93
Date Reported: 12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6766
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND UJ
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND UJ
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND UJ
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND UJ
Benzene	5	ND UJ	Total xylenes	5	ND UJ
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C5-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.03	Date Received:	11/19/93
Project No.:	NA	Report No.:	B6767	Date Reported:	12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6767
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND u5
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND u5
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND u5
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND u5
Benzene	5	ND u5	Total xylenes	5	ND u5
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C8-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.04	Date Received:	11/19/93
Project No.:	NA	Report No.:	B6768	Date Reported:	12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6768
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	1.0	Analyst:	HZL

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND uJ
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND uJ
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND uJ
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND uJ
Benzene	5	ND uJ	Total xylenes	5	ND uJ
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	98
Toluene-d8	50	(88-110)	106
Bromofluorobenzene	50	(86-115)	104

thod Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	1001-TB1	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.05	Date Received:	11/19/93
Project No.:	NA	Report No.:	B6764	Date Reported:	12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6764
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
.2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD.ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009867

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C3-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.01	Date Received:	11/19/93
Project No.:	NA	Report No.:	D1861	Date Reported:	12/08/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1861
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	47	Phenol-d5	75	(10-94)	37
2-Fluorobiphenyl	50	(43-116)	52	2-Fluorophenol	75	(21-100)	58
Terphenyl-d14	50	(33-141)	72	2,4,6-Tribromphenol	75	(10-123)	71

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009868

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C4-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.02	Date Received:	11/19/93
Project No.:	NA	Report No.:	D1862	Date Reported:	12/08/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1862
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	41	Phenol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	49	2-Fluorophenol	75	(21-100)	30
Terphenyl-d14	50	(33-141)	82	2,4,6-Tribromphenol	75	(10-123)	71

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009869

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C8-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.04	Date Received:	11/19/93
Project No.:	NA	Report No.:	D1863	Date Reported:	12/08/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1863
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND uJ	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	70	Phenol-d5	75	(10-94)	41
2-Fluorobiphenyl	50	(43-116)	80	2-Fluorophenol	75	(21-100)	58
Terphenyl-d14	50	(33-141)	93	2,4,6-Tribromphenol	75	(10-123)	72

009870

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C3-1001
PDP Sample ID: 1981.01
Report Number: I98101

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.63	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.825	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	0.0053 J	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	46.1	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	22.0	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	16.3	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.998	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND UJ	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	105	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.061	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
Extraction Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

009871

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C4-1001
PDP Sample ID: 1981.02
Report Number: I98102

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.14	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.211	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	9.3	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	2.94	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	4.1	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.173	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	21.4	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.042	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1 | LCS ID: 1981.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1981.LCSW2 | DUP ID: 1981.01D

009872

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C5-1001
PDP Sample ID: 1981.03
Report Number: I98103

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.60	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.108	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND ut	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	7.7	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	5.91	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	3.3	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.182	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND ut	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	68.4	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.029	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
Extraction Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

009873

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C8-1001
PDP Sample ID: 1981.04
Report Number: I98104

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.2	6.8	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.12	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.01	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.02	4.23	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.01	ND uJ	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.4	187	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.2	6.55	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.4	137	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.02	0.334	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.08	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	10	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND uJ	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	1	835	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
LCS ID: 1981.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1981.LCSW2
DUP ID: 1981.01D

009874

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-19-93
Date Reported: 12-06-93
Report Number: I981CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1981.01	C3-1001	WATER	11-18-93	11-19-93	1	330			
1981.02	C4-1001	WATER	11-18-93	11-19-93	1	30			
1981.03	C5-1001	WATER	11-18-93	11-19-93	1	55			
1981.04	C8-1001	WATER	11-18-93	11-19-93	3	1820			
			QUALITY ASSURANCE/QUALITY CONTROL						
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	1	ND			
1981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	1	145	152		95
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	1	149	152	2.7	98
1986.01	NA	WATER	NA	11-21-93	1	376			
1986.01 (DUP)	NA (DUP)	WATER	NA	11-21-93	1	374		0.5	
1986.01 (MS)	NA (MS)	WATER	NA	11-21-93	1	447	71		~~100~~ ~~103~~ 100 AM 12/6/93

000028

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-19-93
Date Reported: 12-06-93
Report Number: I981NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1981.01	C3-1001	WATER	11-18-93	11-19-93	0.1	0.47			
1981.02	C4-1001	WATER	11-18-93	11-19-93	0.1	ND			
1981.03	C5-1001	WATER	11-18-93	11-19-93	0.1	0.82			
1981.04	C8-1001	WATER	11-18-93	11-19-93	0.1	0.14			
			QUALITY ASSURANCE/QUALITY CONTROL						
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	0.1	ND			
1981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.36	0.40		90
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.35	0.40	2.8	88
1986.01	NA	WATER	NA	11-21-93	0.5	1.4			
1986.01 (DUP)	NA (DUP)	WATER	NA	11-21-93	0.5	1.3		7.4	
1986.01 (MS)	NA (MS)	WATER	NA	11-21-93	0.5	3.7	2.00		115

009876

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-19-93
Date Reported: 12-06-93
Report Number: I981SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1981.01	C3-1001	WATER	11-18-93	11-19-93	5	13			
1981.02	C4-1001	WATER	11-18-93	11-19-93	5	ND			
1981.03	C5-1001	WATER	11-18-93	11-19-93	5	15			
1981.04	C8-1001	WATER	11-18-93	11-19-93	5	ND			
QUALITY ASSURANCE/QUALITY CONTROL									
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	5	ND			
81.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	5	185	197		94
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	5	174	197	6.1	88
1986.01	NA	WATER	NA	11-23-93	10	69			
1986.01 (DUP)	NA (DUP)	WATER	NA	11-23-93	10	68		1.5	
1986.01 (MS)	NA (MS)	WATER	NA	11-23-93	10	78	8		112

009877

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 22-NOV-1993

REPORT NUMBER : H93-7851-1
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C3-1001
PROJECT : 1981
DATE SAMPLED : 18-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	87.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

009878

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 22-NOV-1993

REPORT NUMBER : H93-7851-2
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C4-1001
PROJECT : 1981
DATE SAMPLED : 18-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	77.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 22-NOV-1993

REPORT NUMBER : H93-7851-3
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C8-1001
PROJECT : 1981
DATE SAMPLED : 18-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	134 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: C3-1001
PDP Sample ID: 1981.01
Report No.: B6672

Date Sampled: 11/18/93
Date Received: 11/19/93
Date Reported: 12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6672
Date Analyzed: 11/22/93
Analyst: HZX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	7
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	86
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1975V.WBLK1 LCS ID: 1975V.TLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

009882

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: C4-1001
PDP Sample ID: 1981.02
Report No.: 86766

Date Sampled: 11/18/93
Date Received: 11/19/93
Date Reported: 12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6766
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1-Dichloroethene	5	ND	Chloromethane	10	ND
-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	105

Aod Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C5-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.03	Date Received:	11/19/93
Project No.:	NA	Report No.:	B6767	Date Reported:	12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6767
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
.2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	6
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	103

ethod Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

009884

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: C8-1001
PDP Sample ID: 1981.04
Report No.: B6768

Date Sampled: 11/18/93
Date Received: 11/19/93
Date Reported: 12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6768
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	98
Toluene-d8	50	(88-110)	106
Bromofluorobenzene	50	(86-115)	104

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:1001-TB1
PDP Sample ID: 1981.05
Report No.: B6764

Date Sampled: 11/18/93
Date Received: 11/19/93
Date Reported: 12/08/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6764
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	103

thod Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009886

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C3-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.01	Date Received:	11/19/93
Project No.:	NA	Report No.:	D1861	Date Reported:	12/08/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1861
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	47	Phenol-d5	75	(10-94)	37
2-Fluorobiphenyl	50	(43-116)	52	2-Fluorophenol	75	(21-100)	58
Terphenyl-d14	50	(33-141)	72	2,4,6-Tribromphenol	75	(10-123)	71

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009887

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: C4-1001
PDP Sample ID: 1981.02
Report No.: D1862

Date Sampled: 11/18/93
Date Received: 11/19/93
Date Reported: 12/08/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/24/93
Date Analyzed: 12/01/93

Method Ref.: SW846-8270
GC/MS File ID: D1862
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	41	Phenol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	49	2-Fluorophenol	75	(21-100)	30
Terphenyl-d14	50	(33-141)	82	2,4,6-Tribromphenol	75	(10-123)	71

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009888

LABORATORY REPORT

Client:	AWD TECHNOLOGIES INC.	Client Sample ID:	C8-1001	Date Sampled:	11/18/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1981.04	Date Received:	11/19/93
Project No.:	NA	Report No.:	D1863	Date Reported:	12/08/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1863
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	70	Phenol-d5	75	(10-94)	41
2-Fluorobiphenyl	50	(43-116)	80	2-Fluorophenol	75	(21-100)	58
Terphenyl-d14	50	(33-141)	93	2,4,6-Tribromphenol	75	(10-123)	72

009889

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C3-1001
PDP Sample ID: 1981.01
Report Number: I98101

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.63	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.825	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	0.0053	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	46.1	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	22.0	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	16.3	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.998	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	105	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.061	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
Extraction Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C4-1001
PDP Sample ID: 1981.02
Report Number: I98102

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.14	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.211	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	9.3	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	2.94	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	4.1	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.173	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	21.4	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.042	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
Extraction Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

009891

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C5-1001
PDP Sample ID: 1981.03
Report Number: I98103

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.60	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.108	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	7.7	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	5.91	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	3.3	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.182	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	68.4	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.029	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
Extraction Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C8-1001
PDP Sample ID: 1981.04
Report Number: I98104

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.2	6.8	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.12	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.01	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.02	4.23	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.4	187	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
[illegible]n	SW-846 6010	11-23-93	12-02-93	0.2	6.55	MBB
[illegible]d	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.4	137	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.02	0.334	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.08	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	10	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	1	835	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
LCS ID: 1981.LCSW1
MS ID: 1981.01MS
Extraction Blank ID: NA
LCSD ID: 1981.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-19-93
Date Reported: 12-06-93
Report Number: I981CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1981.01	C3-1001	WATER	11-18-93	11-19-93	1	330			
1981.02	C4-1001	WATER	11-18-93	11-19-93	1	30			
1981.03	C5-1001	WATER	11-18-93	11-19-93	1	55			
1981.04	C8-1001	WATER	11-18-93	11-19-93	3	1820			
QUALITY ASSURANCE/QUALITY CONTROL									
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	1	ND			
981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	1	145	152		95
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	1	149	152	2.7	98
1986.01	NA	WATER	NA	11-21-93	1	376			
1986.01 (DUP)	NA (DUP)	WATER	NA	11-21-93	1	374		0.5	
1986.01 (MS)	NA (MS)	WATER	NA	11-21-93	1	447	71		100

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-19-93
Date Reported: 12-06-93
Report Number: I981NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1981.01	C3-1001	WATER	11-18-93	11-19-93	0.1	0.47			
1981.02	C4-1001	WATER	11-18-93	11-19-93	0.1	ND			
1981.03	C5-1001	WATER	11-18-93	11-19-93	0.1	0.82			
1981.04	C8-1001	WATER	11-18-93	11-19-93	0.1	0.14			
				QUALITY ASSURANCE/QUALITY CONTROL					
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	0.1	ND			
1981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.36	0.40		90
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	0.1	0.35	0.40	2.8	88
1986.01	NA	WATER	NA	11-21-93	0.5	1.4			
1986.01 (DUP)	NA (DUP)	WATER	NA	11-21-93	0.5	1.3		7.4	
1986.01 (MS)	NA (MS)	WATER	NA	11-21-93	0.5	3.7	2.00		115

009895

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-19-93
Date Reported: 12-06-93
Report Number: I981SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1981.01	C3-1001	WATER	11-18-93	11-19-93	5	13			
1981.02	C4-1001	WATER	11-18-93	11-19-93	5	ND			
1981.03	C5-1001	WATER	11-18-93	11-19-93	5	15			
1981.04	C8-1001	WATER	11-18-93	11-19-93	5	ND			
QUALITY ASSURANCE/QUALITY CONTROL									
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-19-93	5	ND			
1981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	5	185	197		94
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-19-93	5	174	197	6.1	88
1986.01	NA	WATER	NA	11-23-93	10	69			
1986.01 (DUP)	NA (DUP)	WATER	NA	11-23-93	10	68		1.5	
1986.01 (MS)	NA (MS)	WATER	NA	11-23-93	10	78	8		112

009896

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 22-NOV-1993

REPORT NUMBER : H93-7851-1
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C3-1001
PROJECT : 1981
DATE SAMPLED : 18-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	87.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

009897

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 22-NOV-1993

REPORT NUMBER : H93-7851-2
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C4-1001
PROJECT : 1981
DATE SAMPLED : 18-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	77.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

009898

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 22-NOV-1993

REPORT NUMBER : H93-7851-3
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C8-1001
PROJECT : 1981
DATE SAMPLED : 18-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	134 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

009900

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: NA
PDP Sample ID: 1981V.WLCS1 (LAB CONTROL SAMPLE)
Report No.: B6765
Date Sampled: NA
Date Received: NA
Date Reported: 12/08/93

GC/MS-VOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0
Method Ref.: SW846-8240
GC/MS File ID: B6765
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	59	118	(61-145)
Benzene	50	64	128 *	(76-127)
Chlorobenzene	50	62	124	(75-130)
Toluene	50	66	132 *	(76-125)
ichloroethene	50	54	108	(71-120)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	97

ethod Blank: 1981.V.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

009901

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/20/93
Date Reported: 12/08/93
Report No.: D187071

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270
Sample Matrix: WATER
Analyst: MA

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1986.02	MS Sample ID: 1986.02MS	MSD Sample ID: 1986.02MSD
Date Analyzed: 12/01/93	Date Analyzed: 12/01/93	Date Analyzed: 12/01/93
GC/MS File ID: D1869	GC/MS File ID: D1870	GC/MS File ID: D1871

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	40	80	(39-98)
1,4-Dichlorobenzene	50	ND	28	56	(36-97)
2,4-Dinitrotoluene	50	ND	56	112 *	(24-96)
2-Chlorophenol	75	ND	16	21 *	(27-123)
4-Chloro-3-methylphenol	75	ND	29	39	(23-97)
4-Nitrophenol	75	ND	20	27	(10-80)
Acenapthene	50	ND	50	100	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	47	94	(41-116)
Pentachlorophenol	75	ND	55	73	(9-103)
Phenol	75	ND	0	0 *	(12-110)
Pyrene	50	ND	41	82	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	38	76	5.1	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	29	58	3.5	~~40~~ 28	(36-97)
2,4-Dinitrotoluene	50	ND	39	78	35.8 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	10	13 *	47.1 *	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	20	27	36.4 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	24	32	16.9	~~42~~ 50	(10-80)
Acenapthene	50	ND	50	100	0.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	48	96	2.1	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	35	47	43.3 *	~~38~~ 50	(9-103)
Phenol	75	ND	0	0 *	ERR *	~~50~~ 42	(12-110)
Pyrene	50	ND	40	80	2.5	31	(26-127)

* = Values outside of QC limits

RPD: 5 out of 11 outside limits
Spike Recovery: 5 out of 22 outside limits

PDP ANALYTICAL SERVICES

24900 Pitkin Drive, Suite 300 • Spring, Texas 77386 • Phone (713)363-2233

Client: AWD Technologies, Inc. Episode No.: 1981	Project Name: Longhorn AAP Project No.: NA

CASE NARRATIVE

Five water samples were received for analysis on 11/19/93. All EPA holding times were met.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

VOLATILES:

LCS showed high recoveries of two compounds. However, these compounds are within the QC range in the associated MS/MSD.

SEMIVOLATILES:

Sample "C5-1001" broke in the walk-in cooler. "1981.WLCS1" showed low recoveries in two compounds.

Associated MS/MSD is attached. "1986.02MS/MSD" has 5 recoveries outside the QC range and 5 RPDs are also outside the QC range. This is an interference from matrix. Sample and MS/MSD extract formed emulsion.

TOTAL METALS:

Due to the high concentrations of iron present in the sample, the matrix spike added to the sample was saturated, preventing accurate determination of the recovery.

Matrix interferences are suspected for total selenium by graphite furnace atomic absorption analyses based on the matrix spike recovery. A post digest spike is added to each determination to compensate for potential matrix interferences.

Trace levels of calcium were noted in the method blank. Sample "C8-1001" required dilution during ICP analysis due to sodium exceeding the upper linear range of the instrument.

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: NA
PDP Sample ID: 1981.WLCS1 (LAB CONTROL SAMPLE)
Report No.: D1876

Date Sampled: NA
Date Received: NA
Date Reported: 12/08/93

GC/MS-SEMIVOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/24/93
Date Analyzed: 12/02/93

Method Ref.: SW846-8270
GC/MS File ID: D1876
Analyst: MA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	15	30 *	(39-98)
1,4-Dichlorobenzene	50	21	42	(36-97)
2,4-Dinitrotoluene	50	27	54	(24-96)
2-Chlorophenol	75	77	103	(27-123)
-Chloro-3-methylphenol	75	32	43	(23-97)
-Nitrophenol	75	7	9 *	(10-80)
Acenaphthene	50	25	50	(46-118)
N-Nitroso-Di-N-propylamine	50	43	86	(41-116)
Pentachlorophenol	75	28	37	(9-103)
Phenol	75	33	44	(12-110)
Pyrene	50	26	52	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	37
2-Fluorobiphenyl	50	(43-116)	50	2-Fluorophenol	75	(21-100)	57
Terphenyl-d14	50	(33-141)	55	2,4,6-Tribromophenol	75	(10-123)	44

Method Blank: 1981.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: NA
PDP Sample ID: 1981.PBW1 (PREPARATION BLANK)
Report Number: I981PBW

Date Sampled: NA
Date Received: NA
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	ND	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	0.23	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	ND	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	ND	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.005	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	ND	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA
LCS ID: NA
MS ID: NA
Extraction Blank ID: NA
LCSD ID: NA
DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C3-1001 (MS/DUP)
PDP Sample ID: 1981.01 (MS/DUP)
Report Number: I981MSD

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	11-23-93	12-02-93	0.63	0.55	13.6	2.00	2.44	90
Antimony	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.50	100
Arsenic	SW-846 7060	11-23-93	12-01-93	ND	ND	NC	0.040	0.039	98
Barium	SW-846 6010	11-23-93	12-02-93	0.825	0.865	4.7	2.00	2.69	93
Beryllium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.048	96
Cadmium	SW-846 6010	11-23-93	12-02-93	0.0053	ND	NC	0.050	0.049	87
Calcium	SW-846 6010	11-23-93	12-02-93	46.1	49.4	6.9	NA	47.4	NA
Chromium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.20	0.19	95
Cobalt	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Copper	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.25	0.25	100
Iron	SW-846 6010	11-23-93	12-02-93	22.0	23.0	4.4	1.00	23.20	NC* (20
Lead	SW-846 7421	11-23-93	12-01-93	ND	ND	NC	0.020	0.017	85
Magnesium	SW-846 6010	11-23-93	12-02-93	16.3	17.5	7.1	NA	16.8	NA
Manganese	SW-846 6010	11-23-93	12-02-93	0.998	1.06	6.0	0.50	1.49	98
Mercury	SW-846 7470	11-23-93	12-02-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Potassium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	NA	ND	NA
Selenium	SW-846 7740	11-23-93	12-01-93	ND	ND	NC	0.010	0.003	30
Silver	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.043	86
Sodium	SW-846 6010	11-23-93	12-02-93	105	112	6.5	NA	108	NA
Thallium	SW-846 7841	11-23-93	11-30-93	ND	ND	NC	0.050	0.051	102
Vanadium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	11-23-93	12-02-93	0.061	0.064	4.8	0.50	0.54	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
TCLP Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

* non ok sample level > 4x spike level for MS %R

009906

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1986
INCHCAPE TESTING SERVICES -- Job Number H93-7850

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1986
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-7850

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 19, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1986. Included in this work order are five (5) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-129-1001	LH18,24-MW14-1001
LH18,24-AWD1-1001	LH18,24-MW12-1001
LH18,24-120-1001	

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively.

Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-7850. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the semivolatile results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits. However, the percent recoveries of benzene and toluene in the laboratory control sample (LCS) analyzed on 11/30/93 were high. Since all associated sample results are non-detect, no qualification was necessary.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times. All blanks were free of target compound contamination.

3.0 Semivolatiles.

3.1 Accuracy. Many of the surrogate recoveries in each sample were out of control. As a result, the laboratory re-extracted and re-analyzed each sample and had the same problem.

Note that the re-extractions took place after the 7-day holding time had expired. The laboratory had attributed matrix interferences to the poor recoveries. Having the benefit of the results from both sets of analyses, the "best" data for each sample were chosen by the validator and qualified accordingly. Consequently, the concentrations from the original analyses were determined to be the best values to report for each sample except LH18,24-AWD1-1001.

Samples LH18,24-120-1001, LH18,24-MW14-1001, and LH18,24-MW12-1001 have surrogate recoveries for phenol-d5 and 2-fluorophenol that were less than 10 percent. As a result, all acid extractable concentrations in these samples have been rejected, "R", and should be considered unreliable, as they are all non-detects.

Sample LH18,24-129-1001 had two base/neutral surrogates with high percent recoveries, but no action was necessary since all associated data is non-detect.

Finally, the results of the re-analysis of sample LH18,24-AWD1-1001 were used with the exception of three compounds. In this sample, the surrogate, phenol-d5, had a percent recovery of less than 10 percent. Thus, all acid extractable phenolics have been rejected, "R", except for the positive hit reported for pentachlorophenol which was qualified as estimated, "J". All other results for this sample, except for 2-methylnaphthalene, di-n-butylphthalate, and naphthalene which were reported from the original analysis, have been qualified as estimated, "J" and "UJ", because the holding time from sample collection to extraction was exceeded. The three hits reported from the original analysis were qualified as estimated, "J", due to a base/neutral surrogate recovery of less than 10 percent. Note that when validating these two analyses of sample LH-18,24-AWD1-1001, the largest compound concentrations were reported in the data summary.

The laboratory control sample (LCS) extracted on 11/24/93 had low percent recoveries for 1,2,4-trichlorobenzene and 4-nitrophenol. As a result, all associated sample concentrations have been qualified as estimated, "UJ", except for the 4-nitrophenol values that have already been rejected.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 **Precision.** The RPDs between the matrix spike and matrix spike duplicate for 2-chlorophenol and pentachlorophenol were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 **Representativeness.** All samples were received in good condition and they were all properly preserved. Both method blanks were free of target compound contamination.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 **Accuracy.** The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 **Precision.** The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 **Representativeness.** All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 **Accuracy.** All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 30 percent. Therefore, all sample results for selenium have been qualified as estimated, "UJ", and should be considered biased low.

5.2 **Precision.** All LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 **Representativeness.** All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. There was low level calcium contamination (0.23 mg/L) found in the preparation

blank. However, the data was not impacted since all associated calcium sample results are greater than five (5) times the amount of contamination.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	129-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.01	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6769	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B6769
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	50.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	380
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	2400
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1981V.MBLK1 LCS ID: 1981V.MLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6773	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	500.00	GC/MS File ID:	B6773
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	500.0	Analyst:	HXX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	2500	ND	Carbon tetrachloride	2500	ND
1,1,2,2-Tetrachloroethane	2500	ND	Chlorobenzene	2500	ND
1,1,2-Trichloroethane	2500	ND	Chloroethane	5000	ND
1,1-Dichloroethane	2500	ND	Chloroform	2500	ND
1,1-Dichloroethene	2500	ND	Chloromethane	5000	ND
1,2-Dichloroethane	2500	ND	Cis-1,3-Dichloropropene	2500	ND
1,2-Dichloropropane	2500	ND	Dibromochloromethane	2500	ND
2-Butanone	5000	ND	Ethylbenzene	2500	ND
2-Chloroethyl vinyl ether	5000	ND	Methylene chloride	2500	8800
2-Hexanone	5000	ND	Styrene	2500	ND
4-Methyl-2-pentanone	5000	ND	Tetrachloroethene	2500	ND
Acetone	5000	ND	Toluene	2500	ND
Benzene	2500	ND	Total xylenes	2500	ND
Bromodichloromethane	2500	ND	Total-1,2-Dichloroethene	2500	ND
Bromoform	2500	ND	Trans-1,3-Dichloropropene	2500	ND
Bromomethane	5000	ND	Trichloroethene	2500	81200
Carbon disulfide	2500	ND	Vinyl acetate	5000	ND
			Vinylchloride	5000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	92
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6786	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	2500.00	GC/MS File ID:	B6786
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	2500.0	Analyst:	HXX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	12500	ND	Carbon tetrachloride	12500	ND
1,1,2,2-Tetrachloroethane	12500	ND	Chlorobenzene	12500	ND
1,1,2-Trichloroethane	12500	ND	Chloroethane	25000	ND
1,1-Dichloroethane	12500	ND	Chloroform	12500	ND
1,1-Dichloroethene	12500	ND	Chloromethane	25000	ND
1,2-Dichloroethane	12500	ND	Cis-1,3-Dichloropropene	12500	ND
1,2-Dichloropropane	12500	ND	Dibromochloromethane	12500	ND
2-Butanone	25000	ND	Ethylbenzene	12500	ND
2-Chloroethyl vinyl ether	25000	ND	Methylene chloride	12500	294000
2-Hexanone	25000	ND	Styrene	12500	ND
4-Methyl-2-pentanone	25000	ND	Tetrachloroethene	12500	ND
Acetone	25000	ND	Toluene	12500	ND
Benzene	12500	ND	Total xylenes	12500	ND
Bromodichloromethane	12500	ND	Total-1,2-Dichloroethene	12500	ND
Bromoform	12500	ND	Trans-1,3-Dichloropropene	12500	ND
Bromomethane	25000	ND	Trichloroethene	12500	58600
Carbon disulfide	12500	ND	Vinyl acetate	25000	ND
			Vinylchloride	25000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: LH18.24
Client Sample ID:MW14-1001
PDP Sample ID: 1986.04
Report No.: B6770
Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 50.00
Sample Volume: 5.0 ml
Dilution: 50.0
Method Ref.: SW846-8240
GC/MS File ID: B6770
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
',2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	168 J
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	2800
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: LH18.24

Client Sample ID: MW12-1001
PDP Sample ID: 1986.05
Report No.: B6772

Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 50.00
Sample Volume: 5.0 ml
Dilution: 50.0

Method Ref.: SW846-8240
GC/MS File ID: B6772
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	630
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	3650
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	91

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.06	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6771	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6771
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009921

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: LH18.24

Client Sample ID:129-1001
PDP Sample ID: 1986.01
Report No.: D1864

Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/24/93
Date Analyzed: 12/01/93

Method Ref.: SW846-8270
GC/MS File ID: D1864
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND UJ	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	58	Phenol-d5	75	(10-94)	14
2-Fluorobiphenyl	50	(43-116)	150 *	2-Fluorophenol	75	(21-100)	37
Terphenyl-d14	50	(33-141)	154 *	2,4,6-Tribromphenol	75	(10-123)	41

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009922

LABORATORY REPORT

lient: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:AWD1-1001
PDP Sample ID: 1986.02RA
Report No.: A5149

Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/15/93

Method Ref.: SW846-8270
GC/MS File ID: A5149
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	11 J
2,4-Dinitrotoluene	10	ND UJ	Butylbenzylphthalate	10	ND UJ
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	53 ~~39~~ J	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND UJ	Di-n-Butylphthalate	10	7 ~~8~~ J
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND UJ
3,3-Dichlorobenzidine	10	ND UJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND UJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND UJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND UJ	Naphthalene	10	37 ~~ND~~ J
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND UJ
Acenaphthene	10	ND UJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	18 J
Benzoic Acid	10	ND	Phenanthrene	10	ND UJ
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	5 *
2-Fluorobiphenyl	50	(43-116)	40 *	2-Fluorophenol	75	(21-100)	27
Terphenyl-d14	50	(33-141)	48	2,4,6-Tribromphenol	75	(10-123)	43

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009923

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1873	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1873
Sample Volume:	1000 ml	Date Analyzed:	12/02/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	9 J
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	99	Phenol-d5	75	(10-94)	1 *
2-Fluorobiphenyl	50	(43-116)	94	2-Fluorophenol	75	(21-100)	7 *
Terphenyl-d14	50	(33-141)	104	2,4,6-Tribromphenol	75	(10-123)	80

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009924

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: LH18.24

Client Sample ID:MW14-1001
PDP Sample ID: 1986.04
Report No.: D1865

Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/24/93
Date Analyzed: 12/01/93

Method Ref.: SW846-8270
GC/MS File ID: D1865
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	0 J
2-Fluorobiphenyl	50	(43-116)	65	2-Fluorophenol	75	(21-100)	1 J
Terphenyl-d14	50	(33-141)	81	2,4,6-Tribromphenol	75	(10-123)	15

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009925

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW12-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.05	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1866	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1866
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	70	Phenol-d5	75	(10-94)	4 *
2-Fluorobiphenyl	50	(43-116)	88	2-Fluorophenol	75	(21-100)	7 *
Terphenyl-d14	50	(33-141)	97	2,4,6-Tribromphenol	75	(10-123)	12

Method Blank: 1981S.MBLK1 LCS ID: 1981S.MLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 129-1001
PDP Sample ID: 1986.01
Report Number: I98601

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	34.6	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.448	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	5.8	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.038	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	0.029	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	0.031	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	30.0	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	0.014	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	6.3	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.316	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-03-93	0.02	ND UJ	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	0.018	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	63.9	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	0.063	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.096	MBB

QUALITY ASSURANCE/QUALITY CONTROL

'ethod Blank ID:1981.PBW1

LCS ID: 1981.LCSW1

MS ID: 1981.01MS

Extraction Blank ID: NA

LCSD ID: 1981.LCSW2

DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD1-1001
PDP Sample ID: 1986.02
Report Number: I98602

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	17.0	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.01	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.631	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	4.3	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.043	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	0.013	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	13.4	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	4.5	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.01	0.328	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	9.9	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND W	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	0.012	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	101	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	0.029	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.060	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
LCS ID: 1981.LCSW1
MS ID: 1981.01MS
Extraction Blank ID: NA
LCSD ID: 1981.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 120-1001
PDP Sample ID: 1986.03
Report Number: I98603

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.5	3.78	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.3	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.01	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.05	0.474	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.025	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.025	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	1	66.8	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.05	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.05	0.189	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.1	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.5	7.10	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	1	75.8	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.05	1.97	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.2	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	25	ND	MBB
Selenium	SW-846 7740	11-22-93	11-23-93	0.0002	ND UJ	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.05	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	2.5	1260	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.05	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.1	0.13	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
LCS ID: 1981.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1981.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW14-1001
PDP Sample ID: 1986.04
Report Number: 198604

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.18	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.80	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	45.4	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.155	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	56.7	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	22.4	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.01	1.77	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	0.380	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	5.6	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND UJ	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	166	MBB
Thallium	SW-846 7841	11-23-93	12-03-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.054	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
Extraction Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW12-1001
PDP Sample ID: 1986.05
Report Number: I98605

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.21	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.26	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	39.3	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.031	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	0.028	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	88.3	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	25.0	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.01	2.08	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	0.048	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-02-93	0.02	ND UJ	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	200	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.172	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
LCS ID: 1981.LCSW1
MS ID: 1981.01MS
Extraction Blank ID: NA
LCSD ID: 1981.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-20-93
Date Reported: 12-08-93
Report Number: I986CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1986.01	129-1001	WATER	11-19-93	11-22-93	1	376			
1986.02	AWD1-1001	WATER	11-19-93	11-22-93	1	461			
1986.03	120-1001	WATER	11-19-93	11-22-93	1	2950			
1986.04	MW14-1001	WATER	11-19-93	11-22-93	1	2440			
1986.05	MW12-1001	WATER	11-19-93	11-22-93	1	638			
			QUALITY ASSURANCE/QUALITY CONTROL						
1986.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-22-93	1	ND			
1986.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-22-93	1	147	152		97
1986.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-22-93	1	152	152	3.3	100
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-22-93	1	374		0.5	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-22-93	1	447	71		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-20-93
Date Reported: 12-08-93
Report Number: 1986NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1986.01	129-1001	WATER	11-19-93	11-21-93	0.5	1.4			
1986.02	AWD1-1001	WATER	11-19-93	11-21-93	0.1	0.8			
1986.03	120-1001	WATER	11-19-93	11-21-93	100	376			
1986.04	MW14-1001	WATER	11-19-93	11-21-93	5	5.6			
1986.05	MW12-1001	WATER	11-19-93	11-21-93	0.1	ND			
			QUALITY ASSURANCE/QUALITY CONTROL						
1986.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-21-93	0.1	ND			
1986.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-21-93	0.1	0.39	0.40		98
1986.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-21-93	0.1	0.39	0.40	0.0	98
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-21-93	0.5	1.3		7.4	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-21-93	0.5	3.7	2.00		115

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-20-93
Date Reported: 12-08-93
Report Number: I986SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1986.01	129-1001	WATER	11-19-93	11-23-93	10	69			
1986.02	AWD1-1001	WATER	11-19-93	11-23-93	10	49			
1986.03	120-1001	WATER	11-19-93	11-23-93	5	34			
1986.04	MW14-1001	WATER	11-19-93	11-23-93	5	20			
1986.05	MW12-1001	WATER	11-19-93	11-23-93	25	58			
				QUALITY ASSURANCE/QUALITY CONTROL					
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-23-93	5	ND			
1981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	185	197		94
1981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	174	197	6.1	88
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-23-93	10	68		1.5	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-23-93	10	78	8		112

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : 1986

JOB NUMBER : H93-7850
REPORT DATE : 6-DEC-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	129-1001	Water	19-NOV-1993

EXPLOSIVES, EPA 8330		1			
1,3-DNB	µg/L	< 0.10			
2,4-DNT	µg/L	< 0.10			
2,6-DNT	µg/L	< 0.10			
HMX	µg/L	< 0.10			
NB	µg/L	< 0.10			
2-NT	µg/L	< 0.10			
3-NT	µg/L	< 0.10			
4-NT	µg/L	< 0.10			
RDX	µg/L	< 0.10			
Tetryl	µg/L	< 0.10			
1,3,5-TNB	µg/L	< 0.10			
2,4,6-TNT	µg/L	< 0.10			

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : 1986

JOB NUMBER : H93-7850
REPORT DATE : 6-DEC-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
2	AWD1-1001	Groundwater	19-NOV-1993
3	120-1001	Groundwater	19-NOV-1993
4	MW14-1001	Groundwater	19-NOV-1993
5	MW12-1001	Groundwater	19-NOV-1993

EXPLOSIVES, EPA 8330		2	3	4	5
1,3-DNB	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2,4-DNT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2,6-DNT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
HMX	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
NB	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2-NT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
3-NT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
4-NT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
RDX	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
Tetryl	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
1,3,5-TNB	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2,4,6-TNT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	129-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.01	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6769	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B6769
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	50.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	380
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	2400
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDr . SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6773	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	500.00	GC/MS File ID:	B6773
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	500.0	Analyst:	HSK

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	2500	ND	Carbon tetrachloride	2500	ND
1,1,2,2-Tetrachloroethane	2500	ND	Chlorobenzene	2500	ND
1,1,2-Trichloroethane	2500	ND	Chloroethane	5000	ND
1,1-Dichloroethane	2500	ND	Chloroform	2500	ND
1,1-Dichloroethene	2500	ND	Chloromethane	5000	ND
1,2-Dichloroethane	2500	ND	Cis-1,3-Dichloropropene	2500	ND
1,2-Dichloropropane	2500	ND	Dibromochloromethane	2500	ND
2-Butanone	5000	ND	Ethylbenzene	2500	ND
2-Chloroethyl vinyl ether	5000	ND	Methylene chloride	2500	8800
2-Hexanone	5000	ND	Styrene	2500	ND
4-Methyl-2-pentanone	5000	ND	Tetrachloroethene	2500	ND
Acetone	5000	ND	Toluene	2500	ND
Benzene	2500	ND	Total xylenes	2500	ND
Bromodichloromethane	2500	ND	Total-1,2-Dichloroethene	2500	ND
Bromoform	2500	ND	Trans-1,3-Dichloropropene	2500	ND
Bromomethane	5000	ND	Trichloroethene	2500	81200
Carbon disulfide	2500	ND	Vinyl acetate	5000	ND
			Vinylchloride	5000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	92
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	93

Method Blank ID: 1981V.MBLK1 LCS ID: 1981V.MLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6786	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	2500.00	GC/MS File ID:	B6786
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	2500.0	Analyst:	HXX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	12500	ND	Carbon tetrachloride	12500	ND
1,1,2,2-Tetrachloroethane	12500	ND	Chlorobenzene	12500	ND
1,1,2-Trichloroethane	12500	ND	Chloroethane	25000	ND
1,1-Dichloroethane	12500	ND	Chloroform	12500	ND
1,1-Dichloroethene	12500	ND	Chloromethane	25000	ND
1,2-Dichloroethane	12500	ND	Cis-1,3-Dichloropropene	12500	ND
1,2-Dichloropropane	12500	ND	Dibromochloromethane	12500	ND
2-Butanone	25000	ND	Ethylbenzene	12500	ND
2-Chloroethyl vinyl ether	25000	ND	Methylene chloride	12500	294000
2-Hexanone	25000	ND	Styrene	12500	ND
4-Methyl-2-pentanone	25000	ND	Tetrachloroethene	12500	ND
Acetone	25000	ND	Toluene	12500	ND
Benzene	12500	ND	Total xylenes	12500	ND
Bromodichloromethane	12500	ND	Total-1,2-Dichloroethene	12500	ND
Bromoform	12500	ND	Trans-1,3-Dichloropropene	12500	ND
Bromomethane	25000	ND	Trichloroethene	12500	58600
Carbon disulfide	12500	ND	Vinyl acetate	25000	ND
			Vinylchloride	25000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW14-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.04	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	86770	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B6770
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	50.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
',2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	168 J
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	2800
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW12-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.05	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	86772	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B6772
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	50.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	630
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	3650
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	94
Bromofluorobenzene	50	(86-115)	91

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.06	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	B6771	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6771
Sample Volume:	5.0 ml	Date Analyzed:	11/30/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
',2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 1981V.WBLK1 LCS ID: 1981V.WLCS1 MS ID: 1969.08MS MSD ID: 1969.08MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009943

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	129-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.01	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1864	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1864
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	58	Phenol-d5	75	(10-94)	14
2-Fluorobiphenyl	50	(43-116)	150 *	2-Fluorophenol	75	(21-100)	37
Terphenyl-d14	50	(33-141)	154 *	2,4,6-Tribromphenol	75	(10-123)	41

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009944

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	129-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.01RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5147	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5147
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
-4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	6 *	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	23 *	2-Fluorophenol	75	(21-100)	18 *
Terphenyl-d14	50	(33-141)	24 *	2,4,6-Tribromphenol	75	(10-123)	11

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009945

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1869	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1869
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	53	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	7 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	37
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	14 J
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	87	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	4 *	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	101	2,4,6-Tribromphenol	75	(10-123)	46

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: MA

PDP ANALYTICAL SERVICES
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009946

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5149	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5149
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	11
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
4-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	39	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	3 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	18 J
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	5 *
2-Fluorobiphenyl	50	(43-116)	40	2-Fluorophenol	75	(21-100)	27
Terphenyl-d14	50	(33-141)	48	2,4,6-Tribromphenol	75	(10-123)	43

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009947

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1873	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1873
Sample Volume:	1000 ml	Date Analyzed:	12/02/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
.-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	9 J
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	99	Phenol-d5	75	(10-94)	1 *
2-Fluorobiphenyl	50	(43-116)	94	2-Fluorophenol	75	(21-100)	7 *
Terphenyl-d14	50	(33-141)	104	2,4,6-Tribromphenol	75	(10-123)	80

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

009948

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5148	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5148
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	5 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	62	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	58	2,4,6-Tribromphenol	75	(10-123)	10

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009949

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW14-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.04	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1865	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1865
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	65	2-Fluorophenol	75	(21-100)	1 *
Terphenyl-d14	50	(33-141)	81	2,4,6-Tribromphenol	75	(10-123)	15

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009950

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW14-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.04RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5150	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5150
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	23	Phenol-d5	75	(10-94)	2 *
2-Fluorobiphenyl	50	(43-116)	42	2-Fluorophenol	75	(21-100)	10 *
Terphenyl-d14	50	(33-141)	40	2,4,6-Tribromphenol	75	(10-123)	25

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009951

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW12-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.05	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1866	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1866
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	70	Phenol-d5	75	(10-94)	4 *
2-Fluorobiphenyl	50	(43-116)	88	2-Fluorophenol	75	(21-100)	7 *
Terphenyl-d14	50	(33-141)	97	2,4,6-Tribromphenol	75	(10-123)	12

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

009952

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW12-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.05RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5151	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5151
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	0 *	Phenol-d5	75	(10-94)	9 *
2-Fluorobiphenyl	50	(43-116)	24 *	2-Fluorophenol	75	(21-100)	10 *
Terphenyl-d14	50	(33-141)	23 *	2,4,6-Tribromphenol	75	(10-123)	5 *

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 129-1001
PDP Sample ID: 1986.01
Report Number: I98601

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	34.6	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.448	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	5.8	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.038	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	0.029	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	0.031	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	30.0	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	0.014	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	6.3	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	0.316	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-03-93	0.02	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	0.018	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	63.9	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	0.063	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.096	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1 | LCS ID: 1981.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1981.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: AWD1-1001
PDP Sample ID: 1986.02
Report Number: I98602

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: ug/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	17.0	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.01	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.631	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	4.3	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.043	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	0.013	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	13.4	MBB
ead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
agnesium	SW-846 6010	11-23-93	12-02-93	0.2	4.5	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.01	0.328	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	9.9	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	0.012	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	101	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	0.029	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.060	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1 | LCS ID: 1981.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1981.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 120-1001
PDP Sample ID: 1986.03
Report Number: I98603

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.5	3.78	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.3	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.01	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.05	0.474	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.025	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.025	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	1	66.8	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.05	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.05	0.189	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.1	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.5	7.10	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	1	75.8	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.05	1.97	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.2	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	25	ND	MBB
Selenium	SW-846 7740	11-22-93	11-23-93	0.0002	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.05	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	2.5	1260	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.05	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.1	0.13	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1 | LCS ID: 1981.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1981.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW14-1001
PDP Sample ID: 1986.04
Report Number: I98604

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.18	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.80	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	45.4	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.155	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	56.7	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	22.4	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.01	1.77	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	0.380	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	5.6	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.01	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	166	MBB
Thallium	SW-846 7841	11-23-93	12-03-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.054	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1 | LCS ID: 1981.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1981.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW12-1001
PDP Sample ID: 1986.05
Report Number: 198605

Date Sampled: 11-19-93
Date Received: 11-20-93
Date Reported: 12-08-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	0.21	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	0.26	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	39.3	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	0.031	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	0.028	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	88.3	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	25.0	MBB
Manganese	SW-846 6010	11-22-93	11-23-93	0.01	2.08	MBB
Mercury	SW-846 7470	11-22-93	11-23-93	0.0002	ND	DAQ
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	0.048	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-02-93	0.02	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	200	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.01	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	0.172	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1 — LCS ID: 1981.LCSW1 — MS ID: 1981.01MS

Extraction Blank ID: NA — LCSD ID: 1981.LCSW2 — DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-20-93
Date Reported: 12-08-93
Report Number: I986CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYSED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1986.01	129-1001	WATER	11-19-93	11-22-93	1	376			
1986.02	AWD1-1001	WATER	11-19-93	11-22-93	1	461			
1986.03	120-1001	WATER	11-19-93	11-22-93	1	2950			
1986.04	MW14-1001	WATER	11-19-93	11-22-93	1	2440			
1986.05	MW12-1001	WATER	11-19-93	11-22-93	1	638			
			QUALITY ASSURANCE/QUALITY CONTROL						
1986.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-22-93	1	ND			
1986.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-22-93	1	147	152		97
986.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-22-93	1	152	152	3.3	100
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-22-93	1	374		0.5	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-22-93	1	447	71		100

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-20-93
Date Reported: 12-08-93
Report Number: 1986NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1986.01	129-1001	WATER	11-19-93	11-21-93	0.5	1.4			
1986.02	AWD1-1001	WATER	11-19-93	11-21-93	0.1	0.8			
1986.03	120-1001	WATER	11-19-93	11-21-93	100	376			
1986.04	MW14-1001	WATER	11-19-93	11-21-93	5	5.6			
1986.05	MW12-1001	WATER	11-19-93	11-21-93	0.1	ND			
QUALITY ASSURANCE/QUALITY CONTROL									
1986.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-21-93	0.1	ND			
1986.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-21-93	0.1	0.39	0.40		98
1986.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-21-93	0.1	0.39	0.40	0.0	98
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-21-93	0.5	1.3		7.4	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-21-93	0.5	3.7	2.00		115

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-20-93
Date Reported: 12-08-93
Report Number: I986SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1986.01	129-1001	WATER	11-19-93	11-23-93	10	69			
1986.02	AWD1-1001	WATER	11-19-93	11-23-93	10	49			
1986.03	120-1001	WATER	11-19-93	11-23-93	5	34			
1986.04	MW14-1001	WATER	11-19-93	11-23-93	5	20			
1986.05	MW12-1001	WATER	11-19-93	11-23-93	25	58			
			QUALITY ASSURANCE/QUALITY CONTROL						
1981.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-23-93	5	ND			
1981.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	185	197		94
981.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	174	197	6.1	88
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-23-93	10	68		1.5	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-23-93	10	78	8		112

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : 1986

JOB NUMBER : H93-7850
REPORT DATE : 6-DEC-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	129-1001	Water	19-NOV-1993

EXPLOSIVES, EPA 8330		1			
1,3-DNB	µg/L	< 0.10			
2,4-DNT	µg/L	< 0.10			
2,6-DNT	µg/L	< 0.10			
HMX	µg/L	< 0.10			
NB	µg/L	< 0.10			
2-NT	µg/L	< 0.10			
3-NT	µg/L	< 0.10			
4-NT	µg/L	< 0.10			
RDX	µg/L	< 0.10			
Tetryl	µg/L	< 0.10			
1,3,5-TNB	µg/L	< 0.10			
2,4,6-TNT	µg/L	< 0.10			

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

SUMMARY REPORT

CLIENT : PDP Analytical Services
CONTACT : Mr. Bruce Howbert
PROJECT : 1986

JOB NUMBER : H93-7850
REPORT DATE : 6-DEC-1993

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
2	AWD1-1001	Groundwater	19-NOV-1993
3	120-1001	Groundwater	19-NOV-1993
4	MW14-1001	Groundwater	19-NOV-1993
5	MW12-1001	Groundwater	19-NOV-1993

EXPLOSIVES, EPA 8330		2	3	4	5
1,3-DNB	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2,4-DNT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2,6-DNT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
HMX	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
NB	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2-NT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
3-NT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
4-NT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
RDX	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
Tetryl	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
1,3,5-TNB	µg/L	< 0.10	< 0.10	< 0.10	< 0.10
2,4,6-TNT	µg/L	< 0.10	< 0.10	< 0.10	< 0.10

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES INC Client Sample ID: NA
Project Name: LONGHORN AAP PDP Sample ID: 1981V.WLCS1 (LAB CONTROL SAMPLE)
Project No.: NA Report No.: B6765

Date Sampled: NA
Date Received: NA
Date Reported: 12/08/93

GC/MS-VOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6765
Date Analyzed: 11/30/93
Analyst: HZZ

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,1,-Dichloroethene	50	59	118	(61-145)
Benzene	50	64	128 *	(76-127)
Chlorobenzene	50	62	124	(75-130)
Toluene	50	66	132 *	(76-125)
Trichloroethene	50	54	108	(71-120)

all associated results are non-detect
⇒ no flags

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	99
Bromofluorobenzene	50	(86-115)	97

Method Blank: 1981.V.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
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Client: AWD TECHNOLOGIES, INC. Episode No.: 1986	Project Name: LONGHORN AAP Project No.: NA

CASE NARRATIVE

Six water samples were received for analysis on 11/20/93. All explosive samples were subcontracted to NDRC Laboratories and upon receipt, will be forwarded under separate cover.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

VOLATILES:

The following samples required a dilution to get analyte concentrations within the calibration range:

"129-1001"	1:50 dilution
"MW14-1001"	1:50
"MW12-1001"	1:50
"AWD-1001"	1:500
"120-1001"	1:2500

Two Lab Control Sample compounds were determined to be slightly above the QC limits.

SEMIVOLATILES:

Samples 1986.01-.05 were re-extracted and analyzed due to acid surrogates and/or internal standards being outside the QC limits. The re-extractions and re-analyses were performed outside of EPA recommended holding times and yielded the same QC problems. Matrix interferences are the suspected cause of this phenomenon.

Two Lab Control Samples were determined to be outside the QC limits.

TOTAL METALS:

Due to the high concentrations of iron present in the sample, the matrix spike added to the sample was saturated, preventing accurate determination of the recovery. Trace levels of calcium were noted in the method blank.

Matrix interferences are suspected for total selenium by graphite furnace atomic absorption analyses based on the matrix spike recovery. A post digest spike was added to each determination to compensate for potential matrix interferences.

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	129-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.01	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1864	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1864
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	58	Phenol-d5	75	(10-94)	14
2-Fluorobiphenyl	50	(43-116)	150 *	2-Fluorophenol	75	(21-100)	37
Terphenyl-d14	50	(33-141)	154 *	2,4,6-Tribromphenol	75	(10-123)	41

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	129-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.01RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5147	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5147
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
.-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	6 *	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	23 *	2-Fluorophenol	75	(21-100)	18 *
Terphenyl-d14	50	(33-141)	24 *	2,4,6-Tribromphenol	75	(10-123)	11

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD PDP ID: NA

009968

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1869	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1869
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND R	Benzo(a)pyrene	10	ND R
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	53 J	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	7 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND R
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	37 J
4-Nitrophenol	30	ND	Nitrobenzene	10	ND R
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	14 J
Benzoic Acid	10	ND	Phenanthrene	10	ND R
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	87	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	41 *	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	101	2,4,6-Tribromphenol	75	(10-123)	46

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009969

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:AWD1-1001
Project Name: LONGHORN AAP PDP Sample ID: 1986.02RA
Project No.: NA Report No.: A5149

Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/15/93

Method Ref.: SW846-8270
GC/MS File ID: A5149
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	11
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	39	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	3 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	18 J
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	5 *
2-Fluorobiphenyl	50	(43-116)	40 *	2-Fluorophenol	75	(21-100)	27
Terphenyl-d14	50	(33-141)	48	2,4,6-Tribromphenol	75	(10-123)	43

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009970

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1873	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1873
Sample Volume:	1000 ml	Date Analyzed:	12/02/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	9 J
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	99	Phenol-d5	75	(10-94)	1 *
2-Fluorobiphenyl	50	(43-116)	94	2-Fluorophenol	75	(21-100)	7 *
Terphenyl-d14	50	(33-141)	104	2,4,6-Tribromphenol	75	(10-123)	80

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009971

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	120-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.03RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5148	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5148
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	5 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	62	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	58	2,4,6-Tribromphenol	75	(10-123)	10

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

009972

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW14-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.04	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1865	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1865
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	57	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	65	2-Fluorophenol	75	(21-100)	1 *
Terphenyl-d14	50	(33-141)	81	2,4,6-Tribromphenol	75	(10-123)	15

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: MA

PDP ANALYTICAL SERVICES
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009973

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:MW14-1001
Project Name: LONGHORN AAP PDP Sample ID: 1986.04RA
Project No.: NA Report No.: A5150

Date Sampled: 11/19/93
Date Received: 11/20/93
Date Reported: 12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0
Multiplying Factor: 1.00 Date Extracted: 12/07/93
Sample Volume: 1000 ml Date Analyzed: 12/15/93
Extract Volume: 1.0 ml

Method Ref.: SW846-8270
GC/MS File ID: A5150
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	23*	Phenol-d5	75	(10-94)	2 *
2-Fluorobiphenyl	50	(43-116)	42*	2-Fluorophenol	75	(21-100)	10 *
Terphenyl-d14	50	(33-141)	40	2,4,6-Tribromphenol	75	(10-123)	25

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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009974

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW12-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.05	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1866	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1866
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	70	Phenol-d5	75	(10-94)	4 *
2-Fluorobiphenyl	50	(43-116)	88	2-Fluorophenol	75	(21-100)	7 *
Terphenyl-d14	50	(33-141)	97	2,4,6-Tribromphenol	75	(10-123)	12

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP.ID: MA

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009975

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW12-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.05RA	Date Received:	11/20/93
Project No.:	NA	Report No.:	A5151	Date Reported:	12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5151
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZS
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	0 *	Phenol-d5	75	(10-94)	9 *
2-Fluorobiphenyl	50	(43-116)	74 *	2-Fluorophenol	75	(21-100)	10 *
Terphenyl-d14	50	(33-141)	23 *	2,4,6-Tribromphenol	75	(10-123)	5 *

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1986.02MS MSD ID: 1986.02MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009976

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02 MS (MATRIX SPIKE)	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1870	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1870
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	40	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	28	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	56	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	16	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	29	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	20	Nitrobenzene	10	ND
Acenaphthene	10	50	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	47
Anthracene	10	ND	Pentachlorophenol	30	55
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	0
			Pyrene	10	41

QUALITY ASSURANCE/QUALITY CONTROL

QC sample => no flags

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	94	Penol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	3 *	2-Fluorophenol	75	(21-100)	16 *
Terphenyl-d14	50	(33-141)	94	2,4,6-Tribromphenol	75	(10-123)	47

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

009977

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	AWD1-1001	Date Sampled:	11/19/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1986.02 MSD (MATRIX SPIKE DUP)	Date Received:	11/20/93
Project No.:	LH18.24	Report No.:	D1871	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/24/93	GC/MS File ID:	D1871
Sample Volume:	1000 ml	Date Analyzed:	12/01/93	Analyst:	MA
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	38	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	29	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	39	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
4-Chlorophenol	10	10	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	20	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	24	Nitrobenzene	10	ND
Acenaphthene	10	50	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	48
Anthracene	10	ND	Pentachlorophenol	30	35
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	0
			Pyrene	10	40

QUALITY ASSURANCE/QUALITY CONTROL QC sample ⇒ no flags

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	85	Penol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	2 *	2-Fluorophenol	75	(21-100)	5 *
Terphenyl-d14	50	(33-141)	93	2,4,6-Tribromphenol	75	(10-123)	29

Method Blank: 1981S.WBLK1 LCS ID: 1981S.WLCS1 MS ID: NA MSD ID: NA DUP ID: NA

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LABORATORY REPORT

Client: AWD TECHNOLOGIES INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: NA
PDP Sample ID: 1981S.WLCS1 (LAB CONTROL SAMPLE)
Report No.: D1876
Date Sampled: NA
Date Received: NA
Date Reported: 12/08/93

GC/MS-SEMIVOLATILES

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 11/24/93
Date Analyzed: 12/02/93
Method Ref.: SW846-8270
GC/MS File ID: D1876
Analyst: MA

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	15	30 *	(39-98)
1,4-Dichlorobenzene	50	21	42	(36-97)
2,4-Dinitrotoluene	50	27	54	(24-96)
2-Chlorophenol	75	77	103	(27-123)
4-Chloro-3-methylphenol	75	32	43	(23-97)
4-Nitrophenol	75	7	9 *	(10-80)
\cenaphthene	50	25	50	(46-118)
N-Nitroso-Di-N-propylamine	50	43	86	(41-116)
Pentachlorophenol	75	28	37	(9-103)
Phenol	75	33	44	(12-110)
Pyrene	50	26	52	(26-127)

associated results are estimated

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	45	Phenol-d5	75	(10-94)	37
2-Fluorobiphenyl	50	(43-116)	50	2-Fluorophenol	75	(21-100)	57
Terphenyl-d14	50	(33-141)	55	2,4,6-Tribromophenol	75	(10-123)	44

Method Blank: 1981.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
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009979

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/20/93
Date Reported: 12/08/93
Report No.: B187071

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: MA

SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1986.02	MS Sample ID:	1986.02MS	MSD Sample ID:	1986.02MSD
Date Analyzed:	12/01/93	Date Analyzed:	12/01/93	Date Analyzed:	12/01/93
GC/MS File ID:	D1869	GC/MS File ID:	D1870	GC/MS File ID:	D1871

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	40	80	(39-98)
1,4-Dichlorobenzene	50	ND	28	56	(36-97)
2,4-Dinitrotoluene	50	ND	56	112 *	(24-96)
2-Chlorophenol	75	ND	16	21 *	(27-123)
4-Chloro-3-methylphenol	75	ND	29	39	(23-97)
4-Nitrophenol	75	ND	20	27	(10-80)
Acenapthene	50	ND	50	100	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	47	94	(41-116)
Pentachlorophenol	75	~~ND~~ 18 J	55	~~73~~ 49	(9-103)
Phenol	75	ND	0	0 *	(12-110)
Pyrene	50	ND	41	82	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	38	76	5.1	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	29	58	3.5	~~40~~ 28	(36-97)
2,4-Dinitrotoluene	50	ND	39	78	35.8	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	10	13 *	47.1	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	20	27	36.4	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	24	32	16.9	~~42~~ 50	(10-80)
Acenapthene	50	ND	50	100	0.0	~~31~~ 31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	48	96	2.1	~~50~~ 38	(41-116)
Pentachlorophenol	75	~~ND~~ 18 J	35	~~47~~ 23	~~43.3~~ 72.2	~~30~~ 50	(9-103)
Phenol	75	ND	0	0 *	NC	~~50~~ 42	(12-110)
Pyrene	50	ND	40	80	2.5	~~31~~ 31	(26-127)

* = Values outside of QC limits

RPD: 5 out of 11 outside limits
Spike Recovery: 5 out of 22 outside limits

all transcription/calculation errors corrected by JJS 8/8/94

no flags based on MS/MSD criteria alone.

000056

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C3-1001 (MS/DUP)
PDP Sample ID: 1981.01 (MS/DUP)
Report Number: I981MSD

Date Sampled: 11-18-93
Date Received: 11-19-93
Date Reported: 12-03-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	11-23-93	12-02-93	0.63	0.55	13.6	2.00	2.44	90
Antimony	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.50	100
Arsenic	SW-846 7060	11-23-93	12-01-93	ND	ND	NC	0.040	0.039	98
Barium	SW-846 6010	11-23-93	12-02-93	0.825	0.865	4.7	2.00	2.69	93
Beryllium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.048	96
Cadmium	SW-846 6010	11-23-93	12-02-93	0.0053	ND	NC	0.050	0.049	87
Calcium	SW-846 6010	11-23-93	12-02-93	46.1	49.4	6.9	NA	47.4	NA
Chromium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.20	0.19	95
Cobalt	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Copper	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.25	0.25	100
Iron	SW-846 6010	11-23-93	12-02-93	22.0	23.0	4.4	1.00	23.20	NC*
Lead	SW-846 7421	11-23-93	12-01-93	ND	ND	NC	0.020	0.017	85
Magnesium	SW-846 6010	11-23-93	12-02-93	16.3	17.5	7.1	NA	16.8	NA
Manganese	SW-846 6010	11-23-93	12-02-93	0.998	1.06	6.0	0.50	1.49	98
Mercury	SW-846 7470	11-23-93	12-02-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Potassium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	NA	ND	NA
Selenium	SW-846 7740	11-23-93	12-01-93	ND	ND	NC	0.010	0.003	30
Silver	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.043	86
Sodium	SW-846 6010	11-23-93	12-02-93	105	112	6.5	NA	108	NA
Thallium	SW-846 7841	11-23-93	11-30-93	ND	ND	NC	0.050	0.051	102
Vanadium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	11-23-93	12-02-93	0.061	0.064	4.8	0.50	0.54	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
LCS ID: 1981.LCSW1

TCLP Blank ID: NA
LCSD ID: 1981.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: NA
PDP Sample ID: 1981.PBW1 (PREPARATION BLANK)
Report Number: I981PBW

Date Sampled: NA
Date Received: NA
Date Reported: 12-03-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: ug/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	11-23-93	12-02-93	0.1	ND	MBB
Antimony	SW-846 6010	11-23-93	12-02-93	0.06	ND	MBB
Arsenic	SW-846 7060	11-23-93	12-01-93	0.005	ND	MBB
Barium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Beryllium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Cadmium	SW-846 6010	11-23-93	12-02-93	0.005	ND	MBB
Calcium	SW-846 6010	11-23-93	12-02-93	0.2	0.23	MBB
Chromium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Cobalt	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Copper	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB
Iron	SW-846 6010	11-23-93	12-02-93	0.1	ND	MBB
Lead	SW-846 7421	11-23-93	12-01-93	0.005	ND	MBB
Magnesium	SW-846 6010	11-23-93	12-02-93	0.2	ND	MBB
Manganese	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Mercury	SW-846 7470	11-23-93	12-02-93	0.0002	ND	DAO
Nickel	SW-846 6010	11-23-93	12-02-93	0.04	ND	MBB
Potassium	SW-846 6010	11-23-93	12-02-93	5	ND	MBB
Selenium	SW-846 7740	11-23-93	12-01-93	0.005	ND	MBB
Silver	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Sodium	SW-846 6010	11-23-93	12-02-93	0.5	ND	MBB
Thallium	SW-846 7841	11-23-93	11-30-93	0.005	ND	MBB
Vanadium	SW-846 6010	11-23-93	12-02-93	0.01	ND	MBB
Zinc	SW-846 6010	11-23-93	12-02-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA
LCS ID: NA
MS ID: NA

Extraction Blank ID: NA
LCSD ID: NA
DUP ID: NA

all associated results are >5x blank contam. ⇒ no flags

blank contam.

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1987
INCHCAPE TESTING SERVICES -- Job Number H93-7855

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1987
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-7855

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 22, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1987. Included in this work order are six (6) groundwater samples, one (1) field duplicate pair, and one (1) trip blank.

Groundwater Samples

LH18,24-MW7-1001	LH18,24-130-1001
LH18,24-102-1001	LH18,24-MW18-1001
LH18,24-MW9-1001	LH18,24-MW18-1001-QC

Trip Blank

Trip Blank

Field Duplicates

Sample LH18,24-MW18-1001-QC is a field duplicate of LH18,24-MW18-1001

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC,

SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-7855. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the selenium results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were received in good condition and were properly preserved with the exception of sample LH18,24-102-1001 which had one broken bottle on receipt by the laboratory. Since this did not impact the analysis, no action was necessary. All samples were analyzed within the proper holding times.

Contamination was found for acetone in the trip blank and methylene chloride in the method blank analyzed on December 2, 1993. Since all sample results were either non-detect

or greater than 10 times the associated blank result, the data was not impacted. All other blank results were free from target analyte contamination.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

An examination of the field duplicate pair showed them to be comparable.

3.0 Semivolatiles.

3.1 Accuracy. All surrogate and LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPD between the matrix spike and matrix spike duplicate for pyrene was high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and were properly preserved with the exception of sample LH18,24-MW18-1001 which had one missing bottle on receipt by the laboratory. Since this did not impact the analysis, no action was necessary.

The recommended holding time was exceeded for the extraction of all samples. Therefore, all results in all analyses were qualified as estimated, "UJ", as they were all non-detect. The method blank was free of target compound contamination.

An examination of the field duplicate pair showed them to be comparable.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

An examination of the field duplicate pair showed them to be comparable.

5.0 TAL Metals.

5.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 20 percent. Therefore, all sample results for selenium have been rejected "R", and should be considered unreliable as they were all non-detect.

5.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. The samples were prepared and analyzed within appropriate holding times and the preparation blanks were free of all target analyte contamination.

A comparison of the field duplicate results showed them to have differences greater than 2XCRDL (contract required detection limit) for aluminum and chromium which was the control limit implemented when at least one sample result was less than 5XCRDL. In addition, the RPD between the samples exceeded 35 percent for iron.

Analyte	Control Limit	Sample MW18-1001 mg/L	Sample MW18-1001-QC mg/L	RPD
Aluminum	±0.400	1.3	0.3	125
Chromium	±0.020	0.055	0.016	110
Iron		40	23.4	52.4

As a result, these analytes were qualified as estimated, "J", in these samples.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

An examination of the field duplicate pair showed them to be comparable.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable

level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Note that the method blank and LCS that apply to the volatile analyses performed on December 6, 1993 were not provided with the data package. Since the only sample analyzed on this date was the trip blank, no action was necessary.

Note that an undiluted sample analysis was not provided for sample LH18,24-MW9-1001 in the volatile organics analysis. As a result, the reported quantitation limits for this sample were elevated.

Sample LH18,24-MW9-1001 and LH18,24-MW18-1001 had raised detection limits in the nitrate as nitrogen analysis even though the results were non-detect. Since no problems were encountered, no action was taken.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW7-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.01	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6798	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6798
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	64
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	75
1,1-Dichloroethene	5	34	Chloromethane	10	ND
1,2-Dichloroethane	5	131	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
utanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	43	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~500~~ 5	~~7621 E~~ 18200
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	82
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	91

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	102-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.02	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6801	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6801
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW9-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.03	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6853	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B6853
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	50.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
',2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	ND
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	3335
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	130-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.04	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6803	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6803
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	14
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
4-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW18-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.05	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6810	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6810
Sample Volume:	5.0 ml	Date Analyzed:	12/02/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
dutanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	55
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	150
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 1987V.WBLK1 LCS ID: 1987V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK # 2	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.06	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6904	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6904
Sample Volume:	5.0 ml	Date Analyzed:	12/06/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
dutanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	126	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	98
Toluene-d8	50	(88-110)	106
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK2 LCS ID: 1990V.WLCS2 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW18-1001 QC	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.07	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6800	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6800
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
utanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	46
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	129
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

ent:	AWD TECHNOLOGIES	Client Sample ID:	MW7-1001	Date Sampled:	11/22/93
.roject Name:	LONGHORN AAP	PDP Sample ID:	1987.01	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5068	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5068
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
hloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	61
2-Fluorobiphenyl	50	(43-116)	71	2-Fluorophenol	75	(21-100)	69
Terphenyl-d14	50	(33-141)	65	2,4,6-Tribromphenol	75	(10-123)	61

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

010000

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LABORATORY REPORT

'ient: AWD TECHNOLOGIES
..oject Name: LONGHORN AAP
Project No.: NA

Client Sample ID:102-1001
PDP Sample ID: 1987.02
Report No.: A5070

Date Sampled: 11/22/93
Date Received: 11/23/93
Date Reported: 12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/30/93
Date Analyzed: 12/07/93

Method Ref.: SW846-8270
GC/MS File ID: A5070
Analyst: HZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
hloronaphthalene	10	ND	Dibenzofuran	10	ND
chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

..rogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	62	Phenol-d5	75	(10-94)	62
2-Fluorobiphenyl	50	(43-116)	70	2-Fluorophenol	75	(21-100)	59
Terphenyl-d14	50	(33-141)	74	2,4,6-Tribromphenol	75	(10-123)	59

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

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010001

LABORATORY REPORT

ient:	AWD TECHNOLOGIES	Client Sample ID:	MW9-1001	Date Sampled:	11/22/93
roject Name:	LONGHORN AAP	PDP Sample ID:	1987.03	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5071	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5071
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	42	Phenol-d5	75	(10-94)	48
2-Fluorobiphenyl	50	(43-116)	49	2-Fluorophenol	75	(21-100)	44
Terphenyl-d14	50	(33-141)	66	2,4,6-Tribromphenol	75	(10-123)	56

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

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010002

LABORATORY REPORT

ent:	AWD TECHNOLOGIES	Client Sample ID:	130-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.04	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5083	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5083
Sample Volume:	1000 ml	Date Analyzed:	12/08/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)		COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,2,4-Trichlorobenzene	10	ND	u J	Benzo(a)pyrene	10	ND	u J
1,2-Dichlorobenzene	10	ND		Benzo(b)fluroanthene	10	ND	
1,3-Dichlorobenzene	10	ND		Benzo(g,h,i)perylene	10	ND	
1,4-Dichlorobenzene	10	ND		Benzo(k)fluroanthene	10	ND	
2,4,5-Tricholorophenol	10	ND		Benzyl Alcohol	10	ND	
2,4,6-Trichlorophenol	10	ND		Bis(2-chloroethoxy)methane	10	ND	
2,4-Dichlorophenol	10	ND		Bis(2-chloroethyl) ether	10	ND	
2,4-Dimethylphenol	10	ND		Bis(2-chloroisopropyl)ether	10	ND	
2,4-Dinitrophenol	30	ND		Bis(2-ethylhexyl)phthalate	10	ND	
2,4-Dinitrotoluene	10	ND		Butylbenzylphthalate	10	ND	
2,6-Dinitrotoluene	10	ND		Chrysene	10	ND	
Chloronaphthalene	10	ND		Dibenzofuran	10	ND	
4-Chlorophenol	10	ND		Dibenzo(a,h)anthracene	10	ND	
2-Methylnaphthalene	10	ND		Diethylphthalate	10	ND	
2-Methylphenol	10	ND		Dimethyl phthalate	10	ND	
2-Nitroaniline	30	ND		Di-n-Butylphthalate	10	ND	
2-Nitrophenol	10	ND		Di-n-octylphthalate	10	ND	
3,3-Dichlorobenzidine	10	ND		Fluoranthene	10	ND	
3-Nitroaniline	30	ND		Fluorene	10	ND	
4,6-Dinitro 2-methylphenol	30	ND		Hexachlorobenzene	10	ND	
4-Bromophenyl-phenylether	10	ND		Hexachlorobutadiene	10	ND	
4-Chloroaniline	10	ND		Hexachlorocyclopentadiene	10	ND	
4-Chlorophenyl-phenylether	10	ND		Hexachloroethane	10	ND	
4-Chloro-3-methylphenol	10	ND		Indeno(1,2,3-cd)pyrene	10	ND	
4-Methylphenol	10	ND		Isophorone	10	ND	
4-Nitroaniline	30	ND		Naphthalene	10	ND	
4-Nitrophenol	30	ND		Nitrobenzene	10	ND	
Acenaphthene	10	ND		N-Nitrosodiphenylamine	10	ND	
Acenaphthylene	10	ND		N-Nitroso-Di-N-propylamine	10	ND	
Anthracene	10	ND		Pentachlorophenol	30	ND	
Benzoic Acid	10	ND		Phenanthrene	10	ND	
Benzo(a)anthracene	10	ND		Phenol	10	ND	
				Pyrene	10	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	48	Phenol-d5	75	(10-94)	57
2-Fluorobiphenyl	50	(43-116)	56	2-Fluorophenol	75	(21-100)	53
Terphenyl-d14	50	(33-141)	54	2,4,6-Tribromphenol	75	(10-123)	51

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

010003

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

ent:	AWD TECHNOLOGIES	Client Sample ID:	MW18-1001	Date Sampled:	11/22/93
roject Name:	LONGHORN AAP	PDP Sample ID:	1987.05	Date Received:	11/23/93
Project No.:	NA	Report No.:	D2010	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	D2010
Sample Volume:	1000 ml	Date Analyzed:	12/14/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
hloronaphthalene	10	ND	Dibenzofuran	10	ND
4-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	38	Phenol-d5	75	(10-94)	40
2-Fluorobiphenyl	50	(43-116)	43	2-Fluorophenol	75	(21-100)	43
Terphenyl-d14	50	(33-141)	62	2,4,6-Tribromphenol	75	(10-123)	63

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010004

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW18-1001-QC	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.07	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5049	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5049
Sample Volume:	1000 ml	Date Analyzed:	12/03/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	38	Phenol-d5	75	(10-94)	56
2-Fluorobiphenyl	50	(43-116)	56	2-Fluorophenol	75	(21-100)	43
Terphenyl-d14	50	(33-141)	81	2,4,6-Tribromphenol	75	(10-123)	47

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW7-1001
PDP Sample ID: 1987.01
Report Number: I98701

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.10		MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.005		HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.144		MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	0.005		MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	19.5		MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.694		MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.011		MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.89		MBB
ad	SW-846 7421	12-13-93	12-14-93	0.005	ND		HM
agnesium	SW-846 6010	12-15-93	12-20-93	0.2	13.9		MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.076		MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.18		MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND		MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	282		MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.05	ND		HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.011		MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.021		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 102-1001
PDP Sample ID: 1987.02
Report Number: I98702

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	34.2	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.334	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	5.4	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.057	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.026	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.038	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	41.6	MBB
d	SW-846 7421	12-13-93	12-14-93	0.005	0.024	HM
,nesium	SW-846 6010	12-15-93	12-20-93	0.2	6.3	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.144	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.048	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.1	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	14.6	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.090	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.163	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW9-1001
PDP Sample ID: 1987.03
Report Number: I98703

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	1.1	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.043	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	1.8	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.247	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	1.8	MBB
‘ad	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
.gnesium	SW-846 6010	12-15-93	12-20-93	0.2	1.0	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.099	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	13.8	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.022	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010008

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 130-1001
PDP Sample ID: 1987.04
Report Number: I98704

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.2	4.0	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.12	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.006	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.02	0.252	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.4	61.6	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.2	3.5	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.05	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.4	40.7	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.02	0.564	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.08	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	10	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	1	793	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001
PDP Sample ID: 1987.05
Report Number: I98705

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	1.3	J	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.005		HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.279		MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	7.8		MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.055	J	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	40.0	J	MBB
ad	SW-846 7421	12-13-93	12-14-93	0.005	ND		HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.3		MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.537		MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND		MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND		MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	62.3		MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND		HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001-QC
PDP Sample ID: 1987.07
Report Number: I98707

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.3 J	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.244	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	7.6	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.016 J	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	23.4 J	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.1	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.513	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.01	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	61.9	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-23-93
Date Reported: 12-20-93
Report Number: I987CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1987.01	MW7-1001	WATER	11-22-93	11-23-93	1	474			
1987.02	102-1001	WATER	11-22-93	11-23-93	1	18			
1987.03	MW9-1001	WATER	11-22-93	11-23-93	1	22			
1987.04	130-1001	WATER	11-22-93	11-23-93	1	1640			
1987.05	MW18-1001	WATER	11-22-93	11-23-93	1	151			
1987.07	MW18-1001-QC	WATER	11-22-93	11-23-93	1	144			
			QUALITY ASSURANCE/QUALITY CONTROL						
1987.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-23-93	1	ND			
987.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	1	149	152		98
1987.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	1	152	152	2.0	100
1987.01 (DUP)	MW7-1001 (DUP)	WATER	11-22-93	11-23-93	1	456		3.9	
1987.01 (MS)	MW7-1001 (MS)	WATER	11-22-93	11-23-93	1	518	44		100

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-23-93
Date Reported: 12-20-93
Report Number: I987NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: DAO

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1987.01	MW7-1001	WATER	11-22-93	11-24-93	0.5	5.4			
1987.02	102-1001	WATER	11-22-93	11-24-93	0.5	1.9			
1987.03	MW9-1001	WATER	11-22-93	11-24-93	0.2	ND			
1987.04	130-1001	WATER	11-22-93	11-24-93	0.2	0.2			
1987.05	MW18-1001	WATER	11-22-93	11-24-93	0.2	ND			
1987.07	MW18-1001-QC	WATER	11-22-93	11-24-93	0.2	0.2			
				QUALITY ASSURANCE/QUALITY CONTROL					
1987.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-24-93	0.1	ND			
87.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.34	0.40		85
987.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.35	0.40	2.9	88
1987.01 (DUP)	MW7-1001 (DUP)	WATER	11-22-93	11-24-93	0.5	5.7		5.4	
1987.01 (MS)	MW7-1001 (MS)	WATER	11-22-93	11-24-93	0.5	7.3	2.0		95

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-23-93
Date Reported: 12-20-93
Report Number: I987SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1987.01	MW7-1001	WATER	11-22-93	11-23-93	10	48			
1987.02	102-1001	WATER	11-22-93	11-23-93	25	152			
1987.03	MW9-1001	WATER	11-22-93	11-23-93	5	14			
1987.04	130-1001	WATER	11-22-93	11-23-93	25	151			
1987.05	MW18-1001	WATER	11-22-93	11-23-93	5	ND			
1987.07	MW18-1001-QC	WATER	11-22-93	11-23-93	5	6			
			QUALITY ASSURANCE/QUALITY CONTROL						
1987.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-23-93	5	ND			
1987.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	206	197		105
1987.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	195	197	5.5	99
1986.01	129-1001	WATER	11-19-93	11-23-93	10	69			
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-23-93	10	68		1.5	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-23-93	10	78	8		112

010014

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NDRC Laboratories

11155 South Main
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Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-1
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW7-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	86.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010015

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DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-2
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 102-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	90.0 %

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010016

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DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-3
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW9-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	62.0 %

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DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-4
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 130-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	57.0 %

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DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-5
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW18-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	82.0 %

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DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-6
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW18-1001-QC
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	78.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

AWD Technologies Inc

010020

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW7-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.01	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6798	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6798
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	64
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	75
1,1-Dichloroethene	5	34	Chloromethane	10	ND
1,2-Dichloroethane	5	131	Cis-1,3-Dichloropropene	5	ND
.2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	43	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	7621 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	82
Toluene-d8	50	(88-110)	95
Bromofluorobenzene	50	(86-115)	91

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW7-1001 (DL)	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.01DL (DILUTION)	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6852	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B6852
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	100.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
2-Dichloropropane	500	ND	Dibromochloromethane	500	ND
-Butanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	ND
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	18300
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	102-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.02	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6801	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6801
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW9-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.03	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6853	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B6853
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	50.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	ND
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	3335
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	130-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.04	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6803	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6803
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	14
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
',2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
.-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW18-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.05	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6810	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6810
Sample Volume:	5.0 ml	Date Analyzed:	12/02/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	55
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	150
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	105
Bromofluorobenzene	50	(86-115)	103

Method Blank ID: 1987V.WBLK1 LCS ID: 1987V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK # 2	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.06	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6904	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6904
Sample Volume:	5.0 ml	Date Analyzed:	12/06/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
`-Dichloropropane	5	ND	Dibromochloromethane	5	ND
. dutanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	126	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	98
Toluene-d8	50	(88-110)	106
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK2 LCS ID: 1990V.WLCS2 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

010028

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW18-1001 QC	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.07	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6800	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6800
Sample Volume:	5.0 ml	Date Analyzed:	12/01/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	46
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	129
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	94

Method Blank ID: 1983V.WBLK1 LCS ID: 1983V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW7-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.01	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5068	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5068
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	61
2-Fluorobiphenyl	50	(43-116)	71	2-Fluorophenol	75	(21-100)	69
Terphenyl-d14	50	(33-141)	65	2,4,6-Tribromphenol	75	(10-123)	61

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	102-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.02	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5070	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5070
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	62	Phenol-d5	75	(10-94)	62
2-Fluorobiphenyl	50	(43-116)	70	2-Fluorophenol	75	(21-100)	59
Terphenyl-d14	50	(33-141)	74	2,4,6-Tribromphenol	75	(10-123)	59

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW9-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.03	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5071	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5071
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	42	Phenol-d5	75	(10-94)	48
2-Fluorobiphenyl	50	(43-116)	49	2-Fluorophenol	75	(21-100)	44
Terphenyl-d14	50	(33-141)	66	2,4,6-Tribromphenol	75	(10-123)	56

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010032

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	130-1001	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.04	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5083	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5083
Sample Volume:	1000 ml	Date Analyzed:	12/08/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	48	Phenol-d5	75	(10-94)	57
2-Fluorobiphenyl	50	(43-116)	56	2-Fluorophenol	75	(21-100)	53
Terphenyl-d14	50	(33-141)	54	2,4,6-Tribromphenol	75	(10-123)	51

Method Blank:	1987S.WBLK1	LCS ID:	1987S.WLCS1	MS ID:	1987.07MS	MSD ID:	1987.07MSD	DUP ID:	NA

010033

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

ient:	AWD TECHNOLOGIES	Client Sample ID:	MW18-1001	Date Sampled:	11/22/93
roject Name:	LONGHORN AAP	PDP Sample ID:	1987.05	Date Received:	11/23/93
Project No.:	NA	Report No.:	D2010	Date Reported:	12/15/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	D2010
Sample Volume:	1000 ml	Date Analyzed:	12/14/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	38	Phenol-d5	75	(10-94)	40
2-Fluorobiphenyl	50	(43-116)	43	2-Fluorophenol	75	(21-100)	43
Terphenyl-d14	50	(33-141)	62	2,4,6-Tribromphenol	75	(10-123)	63

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW18-1001-QC	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.07	Date Received:	11/23/93
Project No.:	NA	Report No.:	A5049	Date Reported:	12/14/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5049
Sample Volume:	1000 ml	Date Analyzed:	12/03/93	Analyst:	HZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	38	Phenol-d5	75	(10-94)	56
2-Fluorobiphenyl	50	(43-116)	56	2-Fluorophenol	75	(21-100)	43
Terphenyl-d14	50	(33-141)	81	2,4,6-Tribromphenol	75	(10-123)	47

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW7-1001
PDP Sample ID: 1987.01
Report Number: I98701

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.10	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.005	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.144	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	0.005	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	19.5	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.694	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.011	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.89	MBB
ead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
agnesium	SW-846 6010	12-15-93	12-20-93	0.2	13.9	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.076	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.18	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	282	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.011	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.021	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 102-1001
PDP Sample ID: 1987.02
Report Number: I98702

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	34.2	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.334	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	5.4	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.057	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.026	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.038	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	41.6	MBB
`d	SW-846 7421	12-13-93	12-14-93	0.005	0.024	HM
,nesium	SW-846 6010	12-15-93	12-20-93	0.2	6.3	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.144	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.048	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.1	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	14.6	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.090	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.163	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW9-1001
PDP Sample ID: 1987.03
Report Number: I98703

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	1.1	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.043	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	1.8	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.247	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	1.8	MBB
ad	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
..agnesium	SW-846 6010	12-15-93	12-20-93	0.2	1.0	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.099	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	13.8	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.022	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 130-1001
PDP Sample ID: 1987.04
Report Number: I98704

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.2	4.0	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.12	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.006	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.02	0.252	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.4	61.6	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.2	3.5	MBB
ead	SW-846 7421	12-13-93	12-14-93	0.05	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.4	40.7	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.02	0.564	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.08	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	10	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	1	793	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001
PDP Sample ID: 1987.05
Report Number: I98705

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	1.3	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.005	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.279	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	7.8	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.055	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	40.0	MBB
Id	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.3	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.537	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	62.3	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001-QC
PDP Sample ID: 1987.07
Report Number: I98707

Date Sampled: 11-22-93
Date Received: 11-23-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.3	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.244	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	7.6	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.016	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	23.4	MBB
d	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
ynesium	SW-846 6010	12-15-93	12-20-93	0.2	4.1	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.513	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.01	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	61.9	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-23-93
Date Reported: 12-20-93
Report Number: I987CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1987.01	MW7-1001	WATER	11-22-93	11-23-93	1	474			
1987.02	102-1001	WATER	11-22-93	11-23-93	1	18			
1987.03	MW9-1001	WATER	11-22-93	11-23-93	1	22			
1987.04	130-1001	WATER	11-22-93	11-23-93	1	1640			
1987.05	MW18-1001	WATER	11-22-93	11-23-93	1	151			
1987.07	MW18-1001-QC	WATER	11-22-93	11-23-93	1	144			
			QUALITY ASSURANCE/QUALITY CONTROL						
1987.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-23-93	1	ND			
1987.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	1	149	152		98
1987.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	1	152	152	2.0	100
1987.01 (DUP)	MW7-1001 (DUP)	WATER	11-22-93	11-23-93	1	456		3.9	
1987.01 (MS)	MW7-1001 (MS)	WATER	11-22-93	11-23-93	1	518	44		100

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-23-93
Date Reported: 12-20-93
Report Number: I987NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: DAO

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1987.01	MW7-1001	WATER	11-22-93	11-24-93	0.5	5.4			
1987.02	102-1001	WATER	11-22-93	11-24-93	0.5	1.9			
1987.03	MW9-1001	WATER	11-22-93	11-24-93	0.2	ND			
1987.04	130-1001	WATER	11-22-93	11-24-93	0.2	0.2			
1987.05	MW18-1001	WATER	11-22-93	11-24-93	0.2	ND			
1987.07	MW18-1001-QC	WATER	11-22-93	11-24-93	0.2	0.2			
			QUALITY ASSURANCE/QUALITY CONTROL						
1987.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-24-93	0.1	ND			
87.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.34	0.40		85
987.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.35	0.40	2.9	88
1987.01 (DUP)	MW7-1001 (DUP)	WATER	11-22-93	11-24-93	0.5	5.7		5.4	
1987.01 (MS)	MW7-1001 (MS)	WATER	11-22-93	11-24-93	0.5	7.3	2.0		95

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-23-93
Date Reported: 12-20-93
Report Number: I987SOLF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1987.01	MW7-1001	WATER	11-22-93	11-23-93	10	48			
1987.02	102-1001	WATER	11-22-93	11-23-93	25	152			
1987.03	MW9-1001	WATER	11-22-93	11-23-93	5	14			
1987.04	130-1001	WATER	11-22-93	11-23-93	25	151			
1987.05	MW18-1001	WATER	11-22-93	11-23-93	5	ND			
1987.07	MW18-1001-QC	WATER	11-22-93	11-23-93	5	6			
			QUALITY ASSURANCE/QUALITY CONTROL						
1987.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-23-93	5	ND			
1987.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	206	197		105
1987.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-23-93	5	195	197	5.5	99
1986.01	129-1001	WATER	11-19-93	11-23-93	10	69			
1986.01 (DUP)	129-1001 (DUP)	WATER	11-19-93	11-23-93	10	68		1.5	
1986.01 (MS)	129-1001 (MS)	WATER	11-19-93	11-23-93	10	78	8		112

010044

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-1
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW7-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	86.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010045

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-2
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 102-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	90.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010046

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-3
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW9-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	62.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010047

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-4
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : 130-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	57.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010048

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-5
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW18-1001
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	82.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010049

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 23-NOV-1993

REPORT NUMBER : H93-7855-6
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW18-1001-QC
PROJECT : 1987
DATE SAMPLED : 22-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	78.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

AMC Technologies Inc.

APPENDIX B
SUPPORT DOCUMENTATION

PDP Analytical Services

SAMPLE RECEIPT AND LOGIN CHECKLIST

010051

EPISODE #: 1987 DATE/TIME REC'D: 11/23/93-1010 # OF COOLERS REC'D: 3 COOLER TEMP.: Iced

CLIENT NAME: ALS Technologies # OF AQUEOUS SAMPLES RECEIVED: 7

PROJECT NAME/NUMBER: Longhorn-AAP # OF SOIL SAMPLES RECEIVED: Ø

DESCRIBE PACKING USED IN COOLER: Packing peanuts # OF OTHER (SPECIFY): Ø

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: 2 on Lid SEAL DATE: 11/22/93 SEAL NAME:

SAMPLE CONTAINER SEALS: PRESENT (ABSENT) INTACT BROKEN

	YES	NO
SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FedEx AIRBILL NO.: 0667049336 0667048362 0667048351	✓	
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND TAPED INSIDE THE LID?	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?	✓	
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	~~✓~~	✓
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?		✓
BOTTLES BROKEN OR LEAKING?	✓	
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?	✓	
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S:	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?	✓	
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		
WHO WAS CALLED? BY WHOM? DATE:		

COMMENTS & RESOLUTIONS: I discussed with Bruce Hastert, COC specifies Trip Blk #3/Bottle is labelled as Trip Blk 2. MW-18-1001 only 4 1L Lass bottles were rec'd. One 40ml VOA broken on 102-1001

LOGGED IN BY: [signature] DATE: 11/23/93

100013

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW7-1001 (DL)	Date Sampled:	11/22/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.01DL (DILUTION)	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6852	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	100.00	GC/MS File ID:	B6852
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	100.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	500	ND	Carbon tetrachloride	500	ND
1,1,2,2-Tetrachloroethane	500	ND	Chlorobenzene	500	ND
1,1,2-Trichloroethane	500	ND	Chloroethane	1000	ND
1,1-Dichloroethane	500	ND	Chloroform	500	ND
1,1-Dichloroethene	500	ND	Chloromethane	1000	ND
1,2-Dichloroethane	500	ND	Cis-1,3-Dichloropropene	500	ND
?-Dichloropropane	500	ND	Dibromochloromethane	500	ND
dutanone	1000	ND	Ethylbenzene	500	ND
2-Chloroethyl vinyl ether	1000	ND	Methylene chloride	500	ND
2-Hexanone	1000	ND	Styrene	500	ND
4-Methyl-2-pentanone	1000	ND	Tetrachloroethene	500	ND
Acetone	1000	ND	Toluene	500	ND
Benzene	500	ND	Total xylenes	500	ND
Bromodichloromethane	500	ND	Total-1,2-Dichloroethene	500	ND
Bromoform	500	ND	Trans-1,3-Dichloropropene	500	ND
Bromomethane	1000	ND	Trichloroethene	500	18300
Carbon disulfide	500	ND	Vinyl acetate	1000	ND
			Vinylchloride	1000	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	NA	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	NA	PDP Sample ID:	1987V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B6807	Date Reported:	12/09/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6807
Sample Volume:	5.0 ml	Date Analyzed:	12/02/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
?-Dichloropropane	5	ND	Dibromochloromethane	5	ND
..-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	103
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK # 2	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1987.06	Date Received:	11/23/93
Project No.:	NA	Report No.:	B6904	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6904
Sample Volume:	5.0 ml	Date Analyzed:	12/06/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
-Dichloropropane	5	ND	Dibromochloromethane	5	ND
utanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	126	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	98
Toluene-d8	50	(88-110)	106
Bromofluorobenzene	50	(86-115)	102

Method Blank ID: 1990V.WBLK2 LCS ID: 1990V.WLCS2 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010055

LABORATORY REPORT

ent: AWD TECHNOLOGIES,INC.
..oject Name: LONGHORN AAP
Project No.: NA

Date Received: 11/23/93
Date Reported: 12/16/93
Report No.: A505267

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZZ

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1987.07	MS Sample ID: 1987.07MS	MSD Sample ID: 1987.07MSD
Date Analyzed: 12/03/93	Date Analyzed: 12/05/93	Date Analyzed: 12/07/93
GC/MS File ID: A5049	GC/MS File ID: A5052	GC/MS File ID: A5067

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	39	78	(39-98)
1,4-Dichlorobenzene	50	ND	27	54	(36-97)
2,4-Dinitrotoluene	50	ND	54	108 *	(24-96)
2-Chlorophenol	75	ND	70	93	(27-123)
4-Chloro-3-methylphenol	75	ND	80	107 *	(23-97)
4-Nitrophenol	75	ND	81	108 *	(10-80)
ıapthene	50	ND	47	94	(46-118)
.. ıitroso-Di-N-propylamine	50	ND	36	72	(41-116)
Pentachlorophenol	75	ND	75	100	(9-103)
Phenol	75	ND	69	92	(12-110)
Pyrene	50	ND	47	94	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	31	62	22.9	~~42~~ 23	(39-98)
1,4-Dichlorobenzene	50	ND	21	42	25.0	~~40~~ 25	(36-97)
2,4-Dinitrotoluene	50	ND	38	76	34.8 *	~~28~~ 35	(24-96)
2-Chlorophenol	75	ND	57	76	20.1	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	57	76	33.9 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	53	71	41.3	~~42~~ 50	(10-80)
Acenapthene	50	ND	38	76	21.2	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	28	56	25.0	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	52	69	36.7	~~38~~ 50	(9-103)
Phenol	75	ND	52	69	28.6	~~50~~ 42	(12-110)
Pyrene	50	ND	32	64	38.0 *	31	(26-127)

Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

000054

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001-QC (MS/DUP)
PDP Sample ID: 1987.07 (MS/DUP)
Report Number: I987MSD

Date Sampled: 11-22-93
Date Received:11-23-93
Date Reported:12-20-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units: mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-20-93	0.3	0.2	(40)	2.00	2.15	92
Antimony	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-13-93	12-15-93	ND	ND	NC	0.040	0.036	90
Barium	SW-846 6010	12-15-93	12-20-93	0.244	0.244	0	2.00	2.14	95
Beryllium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Cadmium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Calcium	SW-846 6010	12-15-93	12-20-93	7.6	7.5	1.3	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-20-93	0.016	0.015	6.5	0.20	0.20	92
Cobalt	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Copper	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-20-93	23.4	22.4	4.4	1.00	24.60	~~NC~~ (20)
Lead	SW-846 7421	12-13-93	12-14-93	ND	ND	NC	0.020	0.020	100
Magnesium	SW-846 6010	12-15-93	12-20-93	4.1	4.0	2.5	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-20-93	0.513	0.503	2.0	0.50	0.99	95
Mercury	SW-846 7470	11-29-93	11-29-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.51	102
Potassium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-13-93	12-15-93	ND	ND	NC	0.010	0.002	(20)
Silver	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-20-93	61.9	63.6	2.7	NA	NA	NA
Thallium	SW-846 7841	12-13-93	12-14-93	ND	ND	NC	0.050	0.044	88
Vanadium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	12-15-93	12-20-93	ND	0.020	NC	0.50	0.50	100

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1

LCS ID: 1987.LCSW1

TCLP Blank ID: NA

LCSD ID: 1987.LCSW2

LONGHORN ARMY AMMUNITION PLANT
FIELD DUPLICATES
COMPARISON OF HITS ONLY
INORGANICS ANALYSES
EPISODE 1987

010057

Analyte	Control Limit	Sample MW18-1001 MG/L	Duplicate MW18-1001-QC MG/L	% RPD
Aluminum	+/- 0.400	1.3	0.3	125.0
Arsenic	+/- 0.010	0.005	ND	200.0
Barium	+/- 0.400	0.279	0.244	13.4
Calcium	+/- 10.00	7.8	7.6	2.6
Chromium	+/- 0.020	0.055	0.016	109.9
Iron	35%	40	23.4	52.4
Magnesium	+/- 10.00	4.3	4.1	4.8
Manganese	35%	0.537	0.513	4.6
Sodium	35%	62.3	61.9	0.6

Control Limits = +/- 2X CRDL for values < 5X CRD, otherwise RPD of 35%.

PDP ANALYTICAL SERVICES

24900 Pitkin Drive, Suite 300 • Spring, Texas 77386 • Phone (713)363-2233

Client: AWD Technologies, Inc. Episode No.: 1987	Project Name: Longhorn AAP Project No.: NA

CASE NARRATIVE

Seven water samples were received for analysis on 11/23/93. All holding times were met.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

VOLATILES:

Sample "MW7-1001" was analyzed at a 1:100 dilution and sample "MW9-1001" at 1:50 dilution to get analyte concentrations within the calibration range.

"Trip Blank #2" showed Acetone at 125mg/L level, caused possibly by field or laboratory contamination.

SEMIVOLATILES:

The MS/MSD was performed on sample "MW18-1001 QC". Recoveries of three compounds are high in the MS and MSD. RPD's are also outiside the QC range.

TOTAL METALS:

Due to the high concentrations of iron present in the sample, the matrix spike added to the sample was saturated, preventing accurate determination of the recovery.

Matrix interferences are suspected for total selenium by graphite furnace atomic absorption analyses based on the matrix spike recovery. A post digest spike was added to each determination to compensate for potential matrix interferences.

High RPD was noted for total aluminum. This was because the sample and duplicate values were close to the reporting limit.

Sample "130-1001" required dilution during ICP analysis due to the sodium in the sample exceeding the upper linear range of the instrument.

010059

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1990
INCHCAPE TESTING SERVICES -- Job Number H93-7925

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1990
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-7925

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 23, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1990. Included in this work order are six (6) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-MW17-1001	LH18,24-MW10-1001
LH18,24-MW13-1001	LH18,24-MW11-1001
LH18,24-C2-1001	LH18/24-MW16-1001

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively.

Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-7925. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the semivolatile results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate, laboratory control sample (LCS), and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were within control limits.

2.2 Precision. The relative percent differences (RPDs) reported for the MS/MSD data were all within acceptable quality control limits.

2.3 Representativeness. All samples were preserved and received in good condition.

The dilution of sample LH18,24-MW11-1001 was performed outside of the recommended holding time. As a result, all dilution values were qualified as estimated, "J" and "UJ", for positive and non-detect results, respectively. Note that the dilution of sample LH18,24-MW11-1001 contained a level of methylene chloride roughly 3 times higher than the original analysis. Since methylene chloride is a common laboratory contaminant, this discrepancy between the two values can be reasonably attributed to laboratory contamination even though none was found in the associated blanks. The original analysis result was not qualified and is reported on the validated data summary.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site-related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

Contamination was found for acetone in the trip blank. Since all sample results were non-detect for this compound, the data was not impacted. All other blank results were free form target analyte contamination.

Note that when a dilution was run to bring the result for trichloroethene within calibration range for sample LH18,24-MW11-1001, the dilution result was less than the result obtained in the original analysis. Since holding time was exceeded in dilution run all results would be expected to be biased low. Therefore, in order to be conservative, the original result was retained on the validated data summary and was qualified, "J", estimated.

3.0 Semivolatiles.

3.1 Accuracy. The percent recoveries for surrogates nitrobenzene-d5 and 2-fluorobiphenyl were low and the percent recovery of surrogate 2-fluorophenol was below 10 percent and in the original analysis of sample LH18,24-MW11-1001. As a result, all acid extractable compounds in the original analysis of this sample have been rejected, "R", and should be considered unreliable as they are all non-detect. The remaining base/neutral compounds were qualified as estimated, "UJ", since they also were all non-detect. Where there are two (or three) sets of data available for a sample due to re-extraction (or re-extraction/reanalysis) based on surrogate recoveries outside control limits, only the best data has been reported in the validated data summary.

All LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPD between the matrix spike and matrix spike duplicate for pyrene was high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 **Representativeness.** All samples were received in good condition and were properly preserved with the exception of sample LH18,24-MW16-1001 which had one broken bottle on receipt by the laboratory. Since this did not impact the analysis, no action was necessary.

The recommended holding time was grossly exceeded for the re-extraction and re-extraction/reanalysis of sample LH18,24-MW20-1001. Therefore, all results in these analyses were rejected, "R", as they were all non-detect. All blanks were free of target compound contamination.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 **Accuracy.** The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 **Precision.** The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 **Representativeness.** All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 **Accuracy.** All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 30 percent. Therefore, all sample results for selenium have been qualified as estimated, "UJ", and should be considered biased low.

5.2 **Precision.** The difference between the sample and its laboratory duplicate exceeded the control limit of $\pm$CRDL (for sample results less than 5 times the CRDL) for

cadmium. Therefore, all results were qualified as estimated, "UJ", as they are all non-detect. All other LCS and sample duplicate RPDs were within acceptable control ranges.

5.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times.

All blank results were free from target analyte contamination.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Note that the method blank, LCS and MS/MSD that apply to the volatile analyses performed on December 15, 1993 were not provided with the data package. In addition, the

method blank, LCS, and MS/MSD that apply to the semivolatile re-extraction and re-extraction/reanalysis of sample Lh18,24-MW11-1001 were also not provided. Since these apply only to the dilution run of sample LH18,24-MW11-1001 (for volatiles) and the re-extraction and re-extraction/reanalysis of the same sample (for semivolatiles) which were previously qualified due to holding time exceedances, no further action was taken.

Samples LH18,24-MW10-1001 and LH18,24-MW16-1001 had raised detection limits in the nitrate as nitrogen analysis even though the results were non-detect. Since no problems were encountered, no action was taken.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for the metals analyses were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW17-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.01	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6858	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6858
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	12
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	34
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	107
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW13-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.02	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6890	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6890
Sample Volume:	5.0 ml	Date Analyzed:	12/06/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	34
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	28
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	90
Toluene-d8	50	(88-110)	108
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1990V.WBLK2 LCS ID: 1990V.WLCS2 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C2-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.03	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6864	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6864
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	12
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	26
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	86
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW10-1001
PDP Sample ID: 1990.04
Report No.: B6865

Date Sampled: 11/23/93
Date Received: 11/24/93
Date Reported: 12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6865
Date Analyzed: 12/03/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	4 J
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
`-Butanone	10	ND	Ethylbenzene	5	ND
.-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	61
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	130
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6866	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6866
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	5	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	113
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	300 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	92
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW16-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.06	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6861	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6861
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	10
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	27
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK # 7	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.07	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6857	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6857
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	15	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	90
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010076

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW17-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.01	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5074	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5074
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	71	Phenol-d5	75	(10-94)	79
2-Fluorobiphenyl	50	(43-116)	79	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	86	2,4,6-Tribromphenol	75	(10-123)	69

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010077

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW13-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.02	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5075	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5075
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	6 J J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	78	Phenol-d5	75	(10-94)	92
2-Fluorobiphenyl	50	(43-116)	87	2-Fluorophenol	75	(21-100)	85
Terphenyl-d14	50	(33-141)	85	2,4,6-Tribromphenol	75	(10-123)	88

Method Blank: 1987S.WBLK1 **LCS ID:** 1987S.WLCS1 **MS ID:** 1987.07MS **MSD ID:** 1987.07MSD **DUP ID:** NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010078

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C2-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.03	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5076	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5076
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	72	Phenol-d5	75	(10-94)	78
2-Fluorobiphenyl	50	(43-116)	81	2-Fluorophenol	75	(21-100)	77
Terphenyl-d14	50	(33-141)	91	2,4,6-Tribromphenol	75	(10-123)	78

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010079

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW10-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.04	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5077	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5077
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	82
2-Fluorobiphenyl	50	(43-116)	85	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	84	2,4,6-Tribromphenol	75	(10-123)	70

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5078	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5078
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND UJ	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND UJ	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND UJ	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND UJ	Fluoranthene	10	ND
3-Nitroaniline	30	ND UJ	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND UJ	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND UJ	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND UJ	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND UJ
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	17 *	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	42 *	2-Fluorophenol	75	(21-100)	2 *
Terphenyl-d14	50	(33-141)	66	2,4,6-Tribromphenol	75	(10-123)	39

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:MW16-1001 Date Sampled: 11/23/93
Project Name: LONGHORN AAP PDP Sample ID: 1990.06 Date Received: 11/24/93
Project No.: NA Report No.: A5079 Date Reported: 11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-8270
Multiplying Factor: 1.00 Date Extracted: 11/30/93 GC/MS File ID: A5079
Sample Volume: 1000 ml Date Analyzed: 12/07/93 Analyst: HZZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	68	Phenol-d5	75	(10-94)	77
2-Fluorobiphenyl	50	(43-116)	79	2-Fluorophenol	75	(21-100)	72
Terphenyl-d14	50	(33-141)	90	2,4,6-Tribromphenol	75	(10-123)	68

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW17-1001
PDP Sample ID: 1990.01
Report Number: I99001

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	0.14	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.304	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND us	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	41.4	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.018	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	0.026	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	2.96	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	14.6	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.689	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	0.20	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND us	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	104	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.01	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.034	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
Extraction Blank ID: NA

LCS ID: 1990.LCSW1
LCSD ID: 1990.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW13-1001
PDP Sample ID: 1990.02
Report Number: I99002

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.346	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	30.0	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.013	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	39.5	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	9.8	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	1.04	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	73.9	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C2-1001
PDP Sample ID: 1990.03
Report Number: I99003

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.363	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND ~T	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	16.8	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	46.6	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	10.1	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	1.15	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND ~T	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	67.4	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1 | LCS ID: 1990.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1990.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW10-1001
PDP Sample ID: 1990.04
Report Number: I99004

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.480	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND uj	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	19.8	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	45.2	MBB
ad	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
agnesium	SW-846 6010	12-09-93	12-15-93	0.2	11.0	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.984	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND uj	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	90.2	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1 | LCS ID: 1990.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1990.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW11-1001
PDP Sample ID: 1990.05
Report Number: I99005

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	6.20	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.135	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND uJ	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	3.4	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.016	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	3.79	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	2.3	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.057	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND uJ	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	24.7	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1 | LCS ID: 1990.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1990.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW16-1001
PDP Sample ID: 1990.06
Report Number: I99006

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.005	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.311	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND ST	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	15.4	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.021	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	48.0	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	8.6	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.564	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.01	ND SD	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	58.6	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.01	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.033	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number:NA

Date Received:11-24-93
Date Reported:12-17-93
Report Number:I990CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.02	MW13-1001	WATER	11-23-93	12-03-93	1	209			
1990.03	C2-1001	WATER	11-23-93	12-03-93	1	173			
1990.04	MW10-1001	WATER	11-23-93	12-03-93	1	229			
1990.05	MW11-1001	WATER	11-23-93	12-03-93	1	14			
1990.06	MW16-1001	WATER	11-23-93	12-03-93	1	160			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-24-93
Date Reported: 12-17-93
Report Number: I990NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1990.01	MW17-1001	WATER	11-23-93	11-24-93	0.1	0.22			
1990.02	MW13-1001	WATER	11-23-93	11-24-93	0.2	0.85			
1990.03	C2-1001	WATER	11-23-93	11-24-93	0.2	0.28			
1990.04	MW10-1001	WATER	11-23-93	11-24-93	0.2	ND			
1990.05	MW11-1001	WATER	11-23-93	11-24-93	0.2	1.5			
1990.06	MW16-1001	WATER	11-23-93	11-24-93	0.2	ND			
			QUALITY ASSURANCE/QUALITY CONTROL						
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-24-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.343	0.40		86
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.351	0.40	2.3	88
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	11-24-93	0.1	0.22		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	11-24-93	0.1	0.57	0.40		88

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-24-93
Date Reported: 12-17-93
Report Number: I990SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.02	MW13-1001	WATER	11-23-93	12-07-93	5	21			
1990.03	C2-1001	WATER	11-23-93	12-07-93	5	42			
1990.04	MW10-1001	WATER	11-23-93	12-07-93	5	12			
1990.05	MW11-1001	WATER	11-23-93	12-07-93	5	34			
1990.06	MW16-1001	WATER	11-23-93	12-07-93	5	9.9			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	< 3	110
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-1
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW17-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	93.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010092

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-2
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW13-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	46.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010093

Inchcape Testing Services
NDRC Laboratories

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-3
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C2-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	69.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010094

Inchcape Testing Services
NDRC Laboratories

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-4
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW10-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	83.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

Inchcape Testing Services
NDRC Laboratories

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-5
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW11-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	65.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010096

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-6
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW16-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	55.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW17-1001
PDP Sample ID: 1990.01
Report No.: B6858

Date Sampled: 11/23/93
Date Received: 11/24/93
Date Reported: 12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B6858
Date Analyzed: 12/03/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	12
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	34
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	107
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW13-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.02	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6890	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6890
Sample Volume:	5.0 ml	Date Analyzed:	12/06/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	34
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	28
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	90
Toluene-d8	50	(88-110)	108
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1990V.WBLK2 LCS ID: 1990V.WLCS2 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C2-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.03	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6864	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6864
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	12
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	26
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	86
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID: MW10-1001
PDP Sample ID: 1990.04
Report No.: B6865
Date Sampled: 11/23/93
Date Received: 11/24/93
Date Reported: 12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0
Method Ref.: SW846-8240
GC/MS File ID: B6865
Date Analyzed: 12/03/93
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	4 J
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	61
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	130
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	89
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6866	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6866
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	5	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	113
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	300 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	92
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05RE	Date Received:	11/24/93
Project No.:	NA	Report No.:	B7059	Date Reported:	12/21/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER		
Multiplying Factor:	2.50	Method Ref.:	SW846-8240
Sample Volume:	5.0 ml	GC/MS File ID:	B7059
Dilution:	2.5	Date Analyzed:	12/15/93
		Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	13	ND	Carbon tetrachloride	13	ND
1,1,2,2-Tetrachloroethane	13	ND	Chlorobenzene	13	ND
1,1,2-Trichloroethane	13	ND	Chloroethane	25	ND
1,1-Dichloroethane	13	ND	Chloroform	13	ND
1,1-Dichloroethene	13	ND	Chloromethane	25	ND
1,2-Dichloroethane	13	ND	Cis-1,3-Dichloropropene	13	ND
1,2-Dichloropropane	13	ND	Dibromochloromethane	13	ND
2-Butanone	25	ND	Ethylbenzene	13	ND
2-Chloroethyl vinyl ether	25	ND	Methylene chloride	13	340
2-Hexanone	25	ND	Styrene	13	ND
4-Methyl-2-pentanone	25	ND	Tetrachloroethene	13	ND
Acetone	25	ND	Toluene	13	ND
Benzene	13	ND	Total xylenes	13	ND
Bromodichloromethane	13	ND	Total-1,2-Dichloroethene	13	ND
Bromoform	13	ND	Trans-1,3-Dichloropropene	13	ND
Bromomethane	25	ND	Trichloroethene	13	250
Carbon disulfide	13	ND	Vinyl acetate	25	ND
			Vinylchloride	25	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW16-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.06	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6861	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6861
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	10
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	27
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	87
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK # 7	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.07	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6857	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6857
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	15	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	90
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010106

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW17-1001
PDP Sample ID: 1990.01
Report No.: A5074

Date Sampled: 11/23/93
Date Received: 11/24/93
Date Reported: 11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/30/93
Date Analyzed: 12/07/93

Method Ref.: SW846-8270
GC/MS File ID: A5074
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	71	Phenol-d5	75	(10-94)	79
2-Fluorobiphenyl	50	(43-116)	79	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	86	2,4,6-Tribromphenol	75	(10-123)	69

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010107

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW13-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.02	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5075	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5075
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	6 J
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	78	Phenol-d5	75	(10-94)	92
2-Fluorobiphenyl	50	(43-116)	87	2-Fluorophenol	75	(21-100)	85
Terphenyl-d14	50	(33-141)	85	2,4,6-Tribromphenol	75	(10-123)	88

Method Blank:	1987S.WBLK1	LCS ID: 1987S.WLCS1	MS ID: 1987.07MS	MSD ID: 1987.07MSD	DUP ID: NA

PDP ANALYTICAL SERVICES
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010108

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C2-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.03	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5076	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5076
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	72	Phenol-d5	75	(10-94)	78
2-Fluorobiphenyl	50	(43-116)	81	2-Fluorophenol	75	(21-100)	77
Terphenyl-d14	50	(33-141)	91	2,4,6-Tribromphenol	75	(10-123)	78

Method Blank:	1987S.WBLK1	LCS ID: 1987S.WLCS1	MS ID: 1987.07MS	MSD ID: 1987.07MSD	DUP ID: NA

PDP ANALYTICAL SERVICES
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010109

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW10-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.04	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5077	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5077
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	74	Phenol-d5	75	(10-94)	82
2-Fluorobiphenyl	50	(43-116)	85	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	84	2,4,6-Tribromphenol	75	(10-123)	70

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05	Date Received:	11/24/93
Project No.:	NA	Report No.:	A5078	Date Reported:	11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	11/30/93	GC/MS File ID:	A5078
Sample Volume:	1000 ml	Date Analyzed:	12/07/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	17 *	Phenol-d5	75	(10-94)	19
2-Fluorobiphenyl	50	(43-116)	42 *	2-Fluorophenol	75	(21-100)	2 *
Terphenyl-d14	50	(33-141)	66	2,4,6-Tribromphenol	75	(10-123)	39

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010111

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05 RA	Date Received:	11//24/93
Project No.:	NA	Report No.:	A5254	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	A5254
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	67	Phenol-d5	75	(10-94)	49
2-Fluorobiphenyl	50	(43-116)	88	2-Fluorophenol	75	(21-100)	81
Terphenyl-d14	50	(33-141)	98	2,4,6-Tribromphenol	75	(10-123)	83

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010112

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05 RA RE	Date Received:	11//24/93
Project No.:	NA	Report No.:	D2164	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2164
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	MZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	60	Phenol-d5	75	(10-94)	52
2-Fluorobiphenyl	50	(43-116)	78	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	104	2,4,6-Tribromphenol	75	(10-123)	101

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010113

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW16-1001
PDP Sample ID: 1990.06
Report No.: A5079

Date Sampled: 11/23/93
Date Received: 11/24/93
Date Reported: 11/17/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 11/30/93
Date Analyzed: 12/07/93

Method Ref.: SW846-8270
GC/MS File ID: A5079
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(K)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	68	Phenol-d5	75	(10-94)	77
2-Fluorobiphenyl	50	(43-116)	79	2-Fluorophenol	75	(21-100)	72
Terphenyl-d14	50	(33-141)	90	2,4,6-Tribromphenol	75	(10-123)	68

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: 1987.07MS MSD ID: 1987.07MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW17-1001
PDP Sample ID: 1990.01
Report Number: I99001

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	0.14	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.304	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	41.4	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.018	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	0.026	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	2.96	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	14.6	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.689	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	0.20	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	104	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.01	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.034	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
Extraction Blank ID: NA

LCS ID: 1990.LCSW1
LCSD ID: 1990.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW13-1001
PDP Sample ID: 1990.02
Report Number: I99002

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	MBB
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.345	HM
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.095	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	30.0	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.013	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	39.5	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	9.8	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	1.04	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	73.9	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C2-1001
PDP Sample ID: 1990.03
Report Number: I99003

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.363	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	16.8	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	46.6	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	10.1	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	1.15	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	67.4	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW10-1001
PDP Sample ID: 1990.04
Report Number: I99004

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.480	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	19.8	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	45.2	MBB
ead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	11.0	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.984	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	90.2	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW11-1001
PDP Sample ID: 1990.05
Report Number: I99005

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	6.20	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	ND	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.135	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	3.4	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.016	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	3.79	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	2.3	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.057	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.05	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	24.7	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.005	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.032	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW16-1001
PDP Sample ID: 1990.06
Report Number: I99006

Date Sampled: 11-23-93
Date Received: 11-24-93
Date Reported: 12-15-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-09-93	12-15-93	0.1	ND	MBB
Antimony	SW-846 6010	12-09-93	12-15-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-13-93	12-15-93	0.005	0.005	HM
Barium	SW-846 6010	12-09-93	12-15-93	0.01	0.311	MBB
Beryllium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-09-93	12-15-93	0.005	ND	MBB
Calcium	SW-846 6010	12-09-93	12-15-93	0.2	15.4	MBB
Chromium	SW-846 6010	12-09-93	12-15-93	0.01	0.021	MBB
Cobalt	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Copper	SW-846 6010	12-09-93	12-15-93	0.02	ND	MBB
Iron	SW-846 6010	12-09-93	12-15-93	0.1	48.0	MBB
Lead	SW-846 7421	12-13-93	12-14-93	0.005	ND	HM
Magnesium	SW-846 6010	12-09-93	12-15-93	0.2	8.6	MBB
Manganese	SW-846 6010	12-09-93	12-15-93	0.01	0.564	MBB
Mercury	SW-846 7470	11-29-93	11-29-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-09-93	12-15-93	0.04	ND	MBB
Potassium	SW-846 6010	12-09-93	12-15-93	5	ND	MBB
Selenium	SW-846 7740	12-13-93	12-15-93	0.01	ND	HM
Silver	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Sodium	SW-846 6010	12-09-93	12-15-93	0.5	58.6	MBB
Thallium	SW-846 7841	12-13-93	12-14-93	0.01	ND	HM
Vanadium	SW-846 6010	12-09-93	12-15-93	0.01	ND	MBB
Zinc	SW-846 6010	12-09-93	12-15-93	0.02	0.033	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1990.PBW1
LCS ID: 1990.LCSW1
MS ID: 1981.01MS
Extraction Blank ID: NA
LCSD ID: 1990.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-24-93
Date Reported: 12-17-93
Report Number: I990CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.02	MW13-1001	WATER	11-23-93	12-03-93	1	209			
1990.03	C2-1001	WATER	11-23-93	12-03-93	1	173			
1990.04	MW10-1001	WATER	11-23-93	12-03-93	1	229			
1990.05	MW11-1001	WATER	11-23-93	12-03-93	1	14			
1990.06	MW16-1001	WATER	11-23-93	12-03-93	1	160			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-24-93
Date Reported: 12-17-93
Report Number: I990NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1990.01	MW17-1001	WATER	11-23-93	11-24-93	0.1	0.22			
1990.02	MW13-1001	WATER	11-23-93	11-24-93	0.2	0.85			
1990.03	C2-1001	WATER	11-23-93	11-24-93	0.2	0.28			
1990.04	MW10-1001	WATER	11-23-93	11-24-93	0.2	ND			
1990.05	MW11-1001	WATER	11-23-93	11-24-93	0.2	1.5			
1990.06	MW16-1001	WATER	11-23-93	11-24-93	0.2	ND			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	11-24-93	0.1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.343	0.40		86
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	11-24-93	0.1	0.351	0.40	2.3	88
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	11-24-93	0.1	0.22		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	11-24-93	0.1	0.57	0.40		88

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 11-24-93
Date Reported: 12-17-93
Report Number: I990SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4

Units: mg/L

Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.02	MW13-1001	WATER	11-23-93	12-07-93	5	21			
1990.03	C2-1001	WATER	11-23-93	12-07-93	5	42			
1990.04	MW10-1001	WATER	11-23-93	12-07-93	5	12			
1990.05	MW11-1001	WATER	11-23-93	12-07-93	5	34			
1990.06	MW16-1001	WATER	11-23-93	12-07-93	5	9.9			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197		110
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

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NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-1
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW17-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	93.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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NDRC Laboratories

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-2
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW13-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	46.0 %

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Raj Naran
Vice President, General Manager

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-3
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : C2-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	69.0 %

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-4
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW10-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	83.0 %

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Raj Naran
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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-5
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW11-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	65.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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DATE RECEIVED : 24-NOV-1993

REPORT NUMBER : H93-7925-6
REPORT DATE : 6-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pilkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Groundwater
ID MARKS : MW16-1001
PROJECT : 1990
DATE SAMPLED : 23-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	55.0 %

Inchcape Testing Services

Raj Narain
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

010130

MIPR#	SWD LAB#	Chest#	Temp.

shipped 11-23

1990.01

GROUNDWATER MONITORING WELL CHAIN OF CUSTODY

U.S. Army Corps of Engineers
Tulsa District, Tulsa, Okla.

Location: Longhorn AAP Date: 11-23-93 Time: 0925

Site: 18 & 24 Well #: MW-17

Proj. Engineer: AWD Ext#: 3448

LH18,24 - mw17 - 1001

CONTAINERS

Glass	Plastic	Vial	Chest#	C/Seal#
~~5~~ (5)	~~1~~ (1)	~~4~~ (3)		

VOA	Chest#
Int:	

PARAMETERS SAMPLED

	pH, Conductivity & Temperature	EPA Method	(0)
✓	Semi-Volatiles	8270	(2)
✓	Explosives	8330	(2)
	Herbicides/Pesticides & PCB's (2,4-D & 2,4,5-TP)	8150/8080	(2)
✓	Nitrate, SO4, Cl (352.1/375.4/325.3)	~~300.0~~	(1)
✓	Total Metals (Ag, As, Ba, Cd, Cr, Hg, Ni, Pb, Sb, Se & Tl) (6000/7000)	6010/7041 7060/7470 7740/7841	[1]
✓	Volatile Organics + Trip Blank 4	8240	(3)

Trip Blank #7 received. Lot #4

1990.03

1990.01

* Containers: () = Amber Glass [] = Plastic {} = Vials

CUSTODY RECORD

Relinquished by	Received by	Date	Time

LHAAP/CW/FM1/27JAN92

000004

010131

PDP Analytical Services

SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 1990 DATE/TIME REC'D: 10/24/93 10:00 # OF COOLERS REC'D: 3 COOLER TEMP.: Iced

CLIENT NAME: AWD Technologies # OF AQUEOUS SAMPLES RECEIVED: 7

PROJECT NAME/NUMBER: Longhorn AAP # OF SOIL SAMPLES RECEIVED: 0

DESCRIBE PACKING USED IN COOLER: Newspaper, peanuts & Absorbent pads # OF OTHER (SPECIFY): 0

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: 2ea Cooler - across lid SEAL DATE: 10/23/93 SEAL NAME:

SAMPLE CONTAINER SEALS: PRESENT (ABSENT) INTACT BROKEN

	YES	NO
SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: Fed Ex AIRBILL NO.: 753456999765 753456999776	✓	
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER? 0667048340		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND TAPED INSIDE THE LID?	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?	✓ cw	✓
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	✓	
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	(X)
BOTTLES BROKEN OR LEAKING?		✓
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?	✓	
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S:	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?		✓
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		
WHO WAS CALLED? BY WHOM? DATE:		

COMMENTS & RESOLUTIONS: One bottle for MW-11a SVOAs broken in shipment

Trip Blank #7 received not #4 as COC says.

LOGGED IN BY: DATE:

100011

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	TRIP BLANK # 7	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.07	Date Received:	11/24/93
Project No.:	NA	Report No.:	B6857	Date Reported:	12/15/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B6857
Sample Volume:	5.0 ml	Date Analyzed:	12/03/93
Dilution:	1.0	Analyst:	HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	15	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	90
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1990V.WBLK1 LCS ID: 1990V.WLCS1 MS ID: 1983.01MS MSD ID: 1983.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05RE	Date Received:	11/24/93
Project No.:	NA	Report No.:	B7059	Date Reported:	12/21/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	2.50	GC/MS File ID:	B7059
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	2.5	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)		COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,1,1-Trichloroethane	13	ND	uJ	Carbon tetrachloride	13	ND	uJ
1,1,2,2-Tetrachloroethane	13	ND		Chlorobenzene	13	ND	
1,1,2-Trichloroethane	13	ND		Chloroethane	25	ND	
1,1-Dichloroethane	13	ND		Chloroform	13	ND	
1,1-Dichloroethene	13	ND		Chloromethane	25	ND	
1,2-Dichloroethane	13	ND		Cis-1,3-Dichloropropene	13	ND	
1,2-Dichloropropane	13	ND		Dibromochloromethane	13	ND	
2-Butanone	25	ND		Ethylbenzene	13	ND	
2-Chloroethyl vinyl ether	25	ND		Methylene chloride	13	340	J
2-Hexanone	25	ND		Styrene	13	ND	uJ
4-Methyl-2-pentanone	25	ND		Tetrachloroethene	13	ND	
Acetone	25	ND		Toluene	13	ND	
Benzene	13	ND		Total xylenes	13	ND	
Bromodichloromethane	13	ND		Total-1,2-Dichloroethene	13	ND	
Bromoform	13	ND		Trans-1,3-Dichloropropene	13	ND	
Bromomethane	25	ND		Trichloroethene	13	250	J
Carbon disulfide	13	ND		Vinyl acetate	25	ND	uJ
				Vinylchloride	25	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	91
Toluene-d8	50	(88-110)	98
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010134

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW11-1001	Date Sampled:	11/23/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1990.05 RA	Date Received:	11//24/93
Project No.:	NA	Report No.:	A5254	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	A5254
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND R	Benzo(a)pyrene	10	ND R
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	67	Phenol-d5	75	(10-94)	49
2-Fluorobiphenyl	50	(43-116)	88	2-Fluorophenol	75	(21-100)	81
Terphenyl-d14	50	(33-141)	98	2,4,6-Tribromphenol	75	(10-123)	83

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010135

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID:MW11-1001
PDP Sample ID: 1990.05 RA RE
Report No.: D2164
Date Sampled: 11/23/93
Date Received: 11//24/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/28/93
Method Ref.: SW846-8270
GC/MS File ID: D2164
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)		COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,2,4-Trichlorobenzene	10	ND	R	Benzo(a)pyrene	10	ND	R
1,2-Dichlorobenzene	10	ND		Benzo(b)fluroanthene	10	ND	
1,3-Dichlorobenzene	10	ND		Benzo(g,h,i)perylene	10	ND	
1,4-Dichlorobenzene	10	ND		Benzo(k)fluroanthene	10	ND	
2,4,5-Tricholorophenol	10	ND		Benzyl Alcohol	10	ND	
2,4,6-Trichlorophenol	10	ND		Bis(2-chloroethoxy)methane	10	ND	
2,4-Dichlorophenol	10	ND		Bis(2-chloroethyl) ether	10	ND	
2,4-Dimethylphenol	10	ND		Bis(2-chloroisopropyl)ether	10	ND	
2,4-Dinitrophenol	30	ND		Bis(2-ethylhexyl)phthalate	10	ND	
2,4-Dinitrotoluene	10	ND		Butylbenzylphthalate	10	ND	
2,6-Dinitrotoluene	10	ND		Chrysene	10	ND	
2-Chloronaphthalene	10	ND		Dibenzofuran	10	ND	
2-Chlorophenol	10	ND		Dibenzo(a,h)anthracene	10	ND	
2-Methylnaphthalene	10	ND		Diethylphthalate	10	ND	
2-Methylphenol	10	ND		Dimethyl phthalate	10	ND	
2-Nitroaniline	30	ND		Di-n-Butylphthalate	10	ND	
2-Nitrophenol	10	ND		Di-n-octylphthalate	10	ND	
3,3-Dichlorobenzidine	10	ND		Fluoranthene	10	ND	
3-Nitroaniline	30	ND		Fluorene	10	ND	
4,6-Dinitro 2-methylphenol	30	ND		Hexachlorobenzene	10	ND	
4-Bromophenyl-phenylether	10	ND		Hexachlorobutadiene	10	ND	
4-Chloroaniline	10	ND		Hexachlorocyclopentadiene	10	ND	
4-Chlorophenyl-phenylether	10	ND		Hexachloroethane	10	ND	
4-Chloro-3-methylphenol	10	ND		Indeno(1,2,3-cd)pyrene	10	ND	
4-Methylphenol	10	ND		Isophorone	10	ND	
4-Nitroaniline	30	ND		Naphthalene	10	ND	
4-Nitrophenol	30	ND		Nitrobenzene	10	ND	
Acenaphthene	10	ND		N-Nitrosodiphenylamine	10	ND	
Acenaphthylene	10	ND		N-Nitroso-Di-N-propylamine	10	ND	
Anthracene	10	ND		Pentachlorophenol	30	ND	
Benzoic Acid	10	ND		Phenanthrene	10	ND	
Benzo(a)anthracene	10	ND		Phenol	10	ND	
				Pyrene	10	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	60	Phenol-d5	75	(10-94)	52
2-Fluorobiphenyl	50	(43-116)	78	2-Fluorophenol	75	(21-100)	79
Terphenyl-d14	50	(33-141)	104	2,4,6-Tribromphenol	75	(10-123)	101

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA
Client Sample ID:NA
PDP Sample ID: 1987.07MSD (MATRIX SPIKE DUP)
Report No.: A5067
Date Sampled: 11/22/93
Date Received: 11/23/93
Date Reported: 12/16/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml
Dilution: 1.0
Date Extracted: 11/30/93
Date Analyzed: 12/07/93
Method Ref.: SW846-8270
GC/MS File ID: A5067
Analyst: SYA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	31	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	21	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	38	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	57	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	57	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	53	Nitrobenzene	10	ND
Acenaphthene	10	38	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	28
Anthracene	10	ND	Pentachlorophenol	30	52
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	52
			Pyrene	10	32

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	64	Penol-d5	75	(10-94)	112
2-Fluorobiphenyl	50	(43-116)	71	2-Fluorophenol	75	(21-100)	106
Terphenyl-d14	50	(33-141)	73	2,4,6-Tribromphenol	75	(10-123)	106

Method Blank: 1987S.WBLK1 LCS ID: 1987S.WLCS1 MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010137

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Date Received: 11/23/93
Date Reported: 12/16/93
Report No.: A505267

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.: SW846-8270 Sample Matrix: WATER Analyst: HZZ

SAMPLE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE
PDP Sample ID: 1987.07	MS Sample ID: 1987.07MS	MSD Sample ID: 1987.07MSD
Date Analyzed: 12/03/93	Date Analyzed: 12/05/93	Date Analyzed: 12/07/93
GC/MS File ID: A5049	GC/MS File ID: A5052	GC/MS File ID: A5067

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	39	78	(39-98)
1,4-Dichlorobenzene	50	ND	27	54	(36-97)
2,4-Dinitrotoluene	50	ND	54	108 *	(24-96)
2-Chlorophenol	75	ND	70	93	(27-123)
4-Chloro-3-methylphenol	75	ND	80	107 *	(23-97)
4-Nitrophenol	75	ND	81	108 *	(10-80)
Acenapthene	50	ND	47	94	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	36	72	(41-116)
Pentachlorophenol	75	ND	75	100	(9-103)
Phenol	75	ND	69	92	(12-110)
Pyrene	50	ND	47	94	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	31	62	22.9	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	21	42	25.0	~~40~~ 28	(36-97)
2,4-Dinitrotoluene	50	ND	38	76	34.8 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	57	76	20.1	~~38~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	57	76	33.9 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	53	71	41.3	~~42~~ 50	(10-80)
Acenapthene	50	ND	38	76	21.2	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	28	56	25.0	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	52	69	36.7	~~38~~ 50	(9-103)
Phenol	75	ND	52	69	28.6	~~50~~ 42	(12-110)
Pyrene	50	ND	32	64	38.0 *	31	(26-127)

* = Values outside of QC limits

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C3-1001 (MS/DUP)
PDP Sample ID: 1981.01 (MS/DUP)
Report Number: I981MSD

Date Sampled: 11-18-93
Date Received:11-19-93
Date Reported:12-03-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	11-23-93	12-02-93	0.63	0.55	13.6	2.00	2.44	90
Antimony	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.50	100
Arsenic	SW-846 7060	11-23-93	12-01-93	ND	ND	NC	0.040	0.039	98
Barium	SW-846 6010	11-23-93	12-02-93	0.825	0.865	4.7	2.00	2.69	93
Beryllium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.048	96
Cadmium	SW-846 6010	11-23-93	12-02-93	0.0053	ND	NC	0.050	0.049	87
Calcium	SW-846 6010	11-23-93	12-02-93	46.1	49.4	6.9	NA	47.4	NA
Chromium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.20	0.19	95
Cobalt	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Copper	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.25	0.25	100
Iron	SW-846 6010	11-23-93	12-02-93	22.0	23.0	4.4	1.00	23.20	NC* 120 ok
Lead	SW-846 7421	11-23-93	12-01-93	ND	ND	NC	0.020	0.017	85
Magnesium	SW-846 6010	11-23-93	12-02-93	16.3	17.5	7.1	NA	16.8	NA
Manganese	SW-846 6010	11-23-93	12-02-93	0.998	1.06	6.0	0.50	1.49	98
Mercury	SW-846 7470	11-22-93	11-23-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Potassium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	NA	ND	NA
Selenium	SW-846 7740	11-23-93	12-01-93	ND	ND	NC	0.010	0.003	30
Silver	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.043	86
Sodium	SW-846 6010	11-23-93	12-02-93	105	112	6.5	NA	108	NA
Thallium	SW-846 7841	11-23-93	11-30-93	ND	ND	NC	0.050	0.051	102
Vanadium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	11-23-93	12-02-93	0.061	0.064	4.8	0.50	0.54	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1

LCS ID: 1981.LCSW1

TCLP Blank ID: NA

LCSD ID: 1981.LCSW2

iron spike %R is ok since sample result is > 4x spike added.

010139

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1998
INCHCAPE TESTING SERVICES -- Job Number H93-8067

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1998
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8067

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on November 30, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1998. Included in this work order are four (4) groundwater samples, one (1) field duplicate pair, one (1) equipment rinsate blank, and one (1) trip blank.

Groundwater Samples

LH18,24-MW8-1001
LH18,24-MW8-1001-QC
LH18,24-MW19-1001
LH18,24-MW20-1001

Trip Blank

Trip Blank

Equipment Blank

LH18,24-MW8-1001-EB

Field Duplicates

Field Duplicates

Sample LH18,24-MW8-1001-QC is a field duplicate of LH18,24-MW8-1001

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively. Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8067. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

All compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and laboratory control sample (LCS) percent recoveries were within control limits.

The percent recovery of trichloroethene in the matrix spike and matrix spike duplicate (MS/MSD) was low. Since qualification is not based on MS/MSD criteria alone, no action was taken.

2.2 **Precision.** The relative percent difference (RPD) between the MS/MSD percent recoveries for trichloroethene exceeded control limits. Since qualification is not based on MS/MSD criteria alone, no action was taken. All other RPDs were within control.

2.3 **Representativeness.** All samples were preserved and received in good condition.

All sample analyses were performed outside of the recommended holding time. As a result, all sample values were qualified as estimated, "J" and "UJ", for positive and non-detect results, respectively. Note that the dilution of sample LH18,24-MW8-1001-QC contained a level of methylene chloride roughly three times higher than the original analysis. Since methylene chloride is a common laboratory contaminant this discrepancy between the two values can be reasonably attributed to laboratory contamination. Since these results were already qualified due to holding time criteria, no further action was necessary. The original analysis result is reported on the validated data summary.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site-related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

All blanks were free of target compound contamination.

An examination of the field duplicates found them to be comparable.

3.0 Semivolatiles.

3.1 **Accuracy.** The percent recovery of surrogate phenol-d5 was below 10 percent in the original analysis of sample LH18,24-MW20-1001. As a result, all acid extractable compounds in the original analysis of this sample have been rejected, "R", and should be considered unreliable as they are all non-detects. Where there are two sets of data available for a sample due to re-extraction based on surrogate recoveries outside control limits only the best data has been reported in the validated data summary.

The laboratory control sample (LCS) extracted on December 20, 1993 had a high percent recovery for 2,4-dinitrotoluene. Since all the sample results were non-detect, no action was necessary. All other LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPDs between the matrix spike and matrix spike duplicate for several compounds were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved.

The recommended holding time was exceeded for the re-extraction of sample LH18,24-MW20-1001. Therefore, all results in this sample were qualified, "UJ", estimated, as they were all non-detect. Both method blanks were free of target compound contamination.

An examination of the field duplicates found them to be comparable.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved, were received in good condition, and were analyzed within acceptable holding times.

Contamination was found for chloride in the equipment rinsate blank. Since all the sample results were non-detect, the data was not impacted. All other blanks were free of target analyte contamination.

An examination of the field duplicates found them to be comparable.

5.0 TAL Metals.

5.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 30 percent. Therefore, all sample results for selenium have been qualified as estimated, "UJ", and should be considered biased low.

5.2 Precision. The difference between the sample and its laboratory duplicate exceeded the control limit of ±CRDL (for sample results less than 5 times the CRDL) for cadmium. Therefore, all results were qualified as estimated, "UJ", as they are all non-detect. All other LCS and sample duplicate RPDs were within acceptable control ranges.

5.3 Representativeness. All samples were received in good condition and preserved upon receipt by the laboratory. It was assumed that since only one day elapsed between sample collection and receipt the sample integrity was maintained. All samples were analyzed within appropriate holding times.

Contamination was found for lead in the preparation blank and zinc in the equipment rinsate blank. As a result, all zinc concentrations less than 5 times that found in the blank were qualified as non-detect, "U". Since lead was not detected in any of the samples, this data was not impacted. All other blank results were free from target analyte contamination.

An examination of the field duplicates found them to be comparable.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 **Precision.** All MS/MSD RPDs were within acceptable quality control limits.

6.3 **Representativeness.** All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. All blanks were free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

An examination of the field duplicates found them to be comparable.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for the metals analyses were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. All results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW8-1001
PDP Sample ID: 1998.01
Report No.: B7021

Date Sampled: 11/30/93
Date Received: 12/01/93
Date Reported: 12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7021
Date Analyzed: 12/14/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND U	Carbon tetrachloride	5	ND U
1,1,2,2-Tetrachloroethane	5	ND U	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	3 J J	Chloroethane	10	ND
1,1-Dichloroethane	5	ND U	Chloroform	5	ND
1,1-Dichloroethene	5	ND U	Chloromethane	10	ND
1,2-Dichloroethane	5	140 J	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND U	Dibromochloromethane	5	ND
4-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	74
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	3 J J
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND U
Bromomethane	10	ND	Trichloroethene	~~5~~ 250	~~4900 E~~ 6100 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND U
			Vinylchloride	10	ND U

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW8-1001-QC
PDP Sample ID: 1998.02
Report No.: B7022

Date Sampled: 11/30/93
Date Received: 12/01/93
Date Reported: 12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7022
Date Analyzed: 12/14/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND UJ	Carbon tetrachloride	5	ND UJ
1,1,2,2-Tetrachloroethane	5	ND UJ	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	3 J	Chloroethane	10	ND
1,1-Dichloroethane	5	ND UJ	Chloroform	5	8 J
1,1-Dichloroethene	5	ND UJ	Chloromethane	10	ND UJ
1,2-Dichloroethane	5	135 J	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND UJ	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	86 J
2-Hexanone	10	ND	Styrene	5	ND UJ
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~5~~ 50	~~4950 E~~ 7100 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND UJ
			Vinylchloride	10	ND UJ

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001-EB	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.03	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7036	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7036
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: MW19-1001
PDP Sample ID: 1998.04
Report No.: B7024

Date Sampled: 11/30/93
Date Received: 12/01/93
Date Reported: 12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7024
Date Analyzed: 12/14/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	61
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	59
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW20-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.05	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7025	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7025
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND U	Carbon tetrachloride	5	ND U
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16 J
2-Hexanone	10	ND	Styrene	5	ND U
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	8 J
Carbon disulfide	5	ND	Vinyl acetate	10	ND U
			Vinylchloride	10	ND U

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.06	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7026	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7026
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

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PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5250	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5250
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	86	Phenol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	2[illegible]
Terphenyl-d14	50	(33-141)	92	2,4,6-Tribromphenol	75	(10-123)	66

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: N/A

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010156

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW8-1001 QC
PDP Sample ID: 1998.02
Report No.: D2020

Date Sampled: 11/30/93
Date Received: 12/01/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/15/93

Method Ref.: SW846-8270
GC/MS File ID: D2020
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	87	Phenol-d5	75	(10-94)	74
2-Fluorobiphenyl	50	(43-116)	99	2-Fluorophenol	75	(21-100)	62
Terphenyl-d14	50	(33-141)	128	2,4,6-Tribromphenol	75	(10-123)	43

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010157

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001 EB	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.03	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2035	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2035
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	52	Phenol-d5	75	(10-94)	26
2-Fluorobiphenyl	50	(43-116)	50	2-Fluorophenol	75	(21-100)	36
Terphenyl-d14	50	(33-141)	64	2,4,6-Tribromphenol	75	(10-123)	63

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 010025

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010158

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW19-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.04	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2162	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2162
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	54	Phenol-d5	75	(10-94)	17
2-Fluorobiphenyl	50	(43-116)	57	2-Fluorophenol	75	(21-100)	26
Terphenyl-d14	50	(33-141)	70	2,4,6-Tribromphenol	75	(10-123)	64

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010159

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW20-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.05 RA	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5251	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	~~12/07/93~~ 12/20/93	GC/MS File ID:	A5251
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND UJ	Benzo(a)pyrene	10	ND UJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	54
2-Fluorobiphenyl	50	(43-116)	92	2-Fluorophenol	75	(21-100)	77
Terphenyl-d14	50	(33-141)	107	2,4,6-Tribromphenol	75	(10-123)	84

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID:

010160

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001
PDP Sample ID: 1998.01
Report Number: I99801

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.26	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.183	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND u J	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	5.0	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.018	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.33	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.1	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.156	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.025	ND u J	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	89.8	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.027 u	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1981.01D

000030

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001-QC
PDP Sample ID: 1998.02
Report Number: I99802

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.35	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.188	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND uJ	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	5.4	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.012	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.019	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.42	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.4	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.159	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.025	ND uJ	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	90.5	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.037 J	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001-EB
PDP Sample ID: 1998.03
Report Number: I99803

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND ut	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.005	ND ut	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW19-1001
PDP Sample ID: 1998.04
Report Number: I99804

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.3	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.05	0.082	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.025	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.025	ND ~5	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	1	159	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.5	147	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	1	87.6	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.05	2.7	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	25	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.01	ND ~5	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	2.5	1260	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1981.01MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW20-1001
PDP Sample ID: 1998.05
Report Number: I99805

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	11.6	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.220	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	18.7	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.263	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.010	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.018 J	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	7.38	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	5.2	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.064	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.11	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	39.3	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.015	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
Extraction Blank ID: NA

LCS ID: 1987.LCSW1
LCSD ID: 1987.LCSW2

MS ID: 1981.01MS
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-03-93	1	112			
1998.02	MW8-1001-QC	WATER	11-30-93	12-03-93	1	113			
1998.03	MW8-1001-EB	WATER	11-30-93	12-03-93	1	2			
1998.04	MW19-1001	WATER	11-30-93	12-03-93	1	2140			
1998.05	MW20-1001	WATER	11-30-93	12-03-93	1	12			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-01-93	0.5	3.6			
1998.02	MW8-1001-QC	WATER	11-30-93	12-01-93	0.5	3.4			
1998.03	MW8-1001-EB	WATER	11-30-93	12-01-93	0.1	ND			
1998.04	MW19-1001	WATER	11-30-93	12-01-93	0.1	ND			
1998.05	MW20-1001	WATER	11-30-93	12-01-93	0.1	0.2			
			QUALITY ASSURANCE/QUALITY CONTROL						
1998.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-01-93	0.1	ND			
1998.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-01-93	0.1	0.38	0.40		95
1998.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-01-93	0.1	0.36	0.40	5.4	90
1998.01 (DUP)	MW8-1001 (DUP)	WATER	11-30-93	12-01-93	0.5	3.6		0.0	
1998.01 (MS)	MW8-1001 (MS)	WATER	11-30-93	12-01-93	0.5	5.3	2.0		85

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-07-93	5	29			
1998.02	MW8-1001-QC	WATER	11-30-93	12-07-93	5	30			
1998.03	MW8-1001-EB	WATER	11-30-93	12-07-93	5	ND			
1998.04	MW19-1001	WATER	11-30-93	12-07-93	100	430			
1998.05	MW20-1001	WATER	11-30-93	12-07-93	5	28			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.8	110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-1
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW8-1001
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	97.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
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Fax. 713-661-2661

DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-2
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW8-1001-QC
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	107 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010170

Inchcape Testing Services
NDRC Laboratories

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DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-3
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW8-1001-EB
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	107 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010171

Inchcape Testing Services
NDRC Laboratories

11155 South Main
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DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-4
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW19-1001
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	104 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010172

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
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DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-5
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW20-1001
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7021	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7021
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	3 J	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	140	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	74
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	3 J
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	4900 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001 (DL)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01DL (DILUTION)	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7027	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7027
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
.,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	ND
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	6100
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001-QC	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.02	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7022	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7022
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	3 J	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	8
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	135	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	86
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	4950 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	94
Toluene-d8	50	(88-110)	101
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001-QC (DL)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.02DL (DILUTION)	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7028	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7028
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	250
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	7100
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001-EB	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.03	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7036	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7036
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	97

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW19-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.04	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7024	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7024
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	61
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	59
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW20-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.05	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7025	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7025
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	16
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	8
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	98

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP BLANK	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.06	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7026	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7026
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5250	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5250
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	86	Phenol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	27
Terphenyl-d14	50	(33-141)	92	2,4,6-Tribromphenol	75	(10-123)	66

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010183

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001 QC	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.02	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2020	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2020
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	87	Phenol-d5	75	(10-94)	74
2-Fluorobiphenyl	50	(43-116)	99	2-Fluorophenol	75	(21-100)	62
Terphenyl-d14	50	(33-141)	128	2,4,6-Tribromphenol	75	(10-123)	43

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID:

PDP ANALYTICAL SERVICES
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010184

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001 EB	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.03	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2035	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2035
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	52	Phenol-d5	75	(10-94)	26
2-Fluorobiphenyl	50	(43-116)	50	2-Fluorophenol	75	(21-100)	36
Terphenyl-d14	50	(33-141)	64	2,4,6-Tribromphenol	75	(10-123)	63

Method Blank:	1986S.WBLK2	LCS ID:	1986S.WLCS2	MS ID:	1998.01MS	MSD ID:	1998.01MSD

DUP ID: 010025

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010185

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW19-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.04	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2162	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2162
Sample Volume:	1000 ml	Date Analyzed:	12/28/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	54	Phenol-d5	75	(10-94)	17
2-Fluorobiphenyl	50	(43-116)	57	2-Fluorophenol	75	(21-100)	26
Terphenyl-d14	50	(33-141)	70	2,4,6-Tribromphenol	75	(10-123)	64

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010186

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW20-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.05	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2027	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2027
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	50	Phenol-d5	75	(10-94)	2 *
2-Fluorobiphenyl	50	(43-116)	52	2-Fluorophenol	75	(21-100)	30
Terphenyl-d14	50	(33-141)	10 *	2,4,6-Tribromphenol	75	(10-123)	34

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 1998.01DUP

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010187

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW20-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.05 RA	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5251	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5251
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	63	Phenol-d5	75	(10-94)	54
2-Fluorobiphenyl	50	(43-116)	92	2-Fluorophenol	75	(21-100)	77
Terphenyl-d14	50	(33-141)	107	2,4,6-Tribromphenol	75	(10-123)	84

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP: 010028

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001
PDP Sample ID: 1998.01
Report Number: I99801

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.26	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.183	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	5.0	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.018	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.33	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.1	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.156	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.025	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	89.8	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.027	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001-QC
PDP Sample ID: 1998.02
Report Number: I99802

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.35	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.188	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	5.4	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.012	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.019	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.42	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	4.4	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.159	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.025	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	90.5	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.025	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.037	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001-EB
PDP Sample ID: 1998.03
Report Number: I99803

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.005	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW19-1001
PDP Sample ID: 1998.04
Report Number: I99804

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.3	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.05	0.082	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.025	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.025	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	1	159	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.5	147	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	1	87.6	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.05	2.7	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	25	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.01	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	2.5	1260	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.05	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW20-1001
PDP Sample ID: 1998.05
Report Number: I99805

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	11.6	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.220	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	18.7	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.263	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.010	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	0.018 J	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	7.38	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	5.2	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.064	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.11	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	39.3	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.015	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-03-93	1	112			
1998.02	MW8-1001-QC	WATER	11-30-93	12-03-93	1	113			
1998.03	MW8-1001-EB	WATER	11-30-93	12-03-93	1	2			
1998.04	MW19-1001	WATER	11-30-93	12-03-93	1	2140			
1998.05	MW20-1001	WATER	11-30-93	12-03-93	1	12			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-01-93	0.5	3.6			
1998.02	MW8-1001-QC	WATER	11-30-93	12-01-93	0.5	3.4			
1998.03	MW8-1001-EB	WATER	11-30-93	12-01-93	0.1	ND			
1998.04	MW19-1001	WATER	11-30-93	12-01-93	0.1	ND			
1998.05	MW20-1001	WATER	11-30-93	12-01-93	0.1	0.2			
				QUALITY ASSURANCE/QUALITY CONTROL					
1998.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-01-93	0.1	ND			
1998.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-01-93	0.1	0.38	0.40		95
1998.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-01-93	0.1	0.36	0.40	5.4	90
1998.01 (DUP)	MW8-1001 (DUP)	WATER	11-30-93	12-01-93	0.5	3.6		0.0	
1998.01 (MS)	MW8-1001 (MS)	WATER	11-30-93	12-01-93	0.5	5.3	2.0		85

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-07-93	5	29			
1998.02	MW8-1001-QC	WATER	11-30-93	12-07-93	5	30			
1998.03	MW8-1001-EB	WATER	11-30-93	12-07-93	5	ND			
1998.04	MW19-1001	WATER	11-30-93	12-07-93	100	430			
1998.05	MW20-1001	WATER	11-30-93	12-07-93	5	28			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197		110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

010196

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-1
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW8-1001
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	97.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010197

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
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Fax. 713-661-2661

DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-2
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW8-1001-QC
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	107 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010198

Inchcape Testing Services
NDRC Laboratories

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Houston, TX 77025
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DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-3
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW8-1001-EB
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	107 %

Inchcape Testing Services

Raj Narain
Vice President, General Manager

010199

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
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Fax. 713-661-2661

DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-4
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW19-1001
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	104 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010200

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2061

DATE RECEIVED : 1-DEC-1993

REPORT NUMBER : H93-8067-5
REPORT DATE : 15-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW20-1001
PROJECT : PDP Analytical
DATE SAMPLED : 30-NOV-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	50.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP Analytical Services

010202

SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 1498 DATE/TIME REC'D: 12-1-93 1000 # OF COOLERS REC'D: 3 COOLER TEMP.: ICED

CLIENT NAME: AND TECHNOLOGIES # OF AQUEOUS SAMPLES RECEIVED: 5

PROJECT NAME/NUMBER: LONGHORN AAP # OF SOIL SAMPLES RECEIVED: ~~0~~

DESCRIBE PACKING USED IN COOLER: BUBBLE WRAP # OF OTHER (SPECIFY): ~~0~~

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: FRONT + BACK SEAL DATE: _____ SEAL NAME: _____

SAMPLE CONTAINER SEALS: PRESENT (ABSENT) INTACT BROKEN

	YES	NO
SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FED X AIRBILL NO.: 9746021714 7534564432 7534570013	✓	
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND TAPED INSIDE THE LID?	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?		✓
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	✓	
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	
BOTTLES BROKEN OR LEAKING?		✓
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?		
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S: _____	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?	<1%	
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		
WHO WAS CALLED? _____ BY WHOM? _____ DATE: _____		

COMMENTS & RESOLUTIONS: TAL METALS CONTAINERS WERE @ pH 4-5. MORE NITRIC WAS ADDED UPON RECEIPT BY LAB.

LOGGED IN BY: Brenda Rockett DATE: 12-1-93

000011

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Date Received:	12/02/93
Project Name:	LONGHORN AAP	Date Reported:	12/20/93
Project No.:	NA	Report No.:	B703233

GC/MS-VOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.:	SW846-8240	Sample Matrix:	WATER	Analyst:	MA
SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1999.04	MS Sample ID:	1999.004MS	MSD Sample ID:	1999.04MSD
Date Analyzed:	12/14/93	Date Analyzed:	12/14/93	Date Analyzed:	12/14/93
GC/MS File ID:	B7030	GC/MS File ID:	B7032	GC/MS File ID:	B7033

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	(61-145)
Benzene	50	ND	53	106	(76-127)
Chlorobenzene	50	ND	56	112	(75-130)
Toluene	50	ND	54	108	(76-125)
Trichloroethene	50	140	170	60 *	(71-120)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	0.0	14	(61-145)
Benzene	50	ND	51	102	3.8	11	(76-127)
Chlorobenzene	50	ND	53	106	5.5	13	(75-130)
Toluene	50	ND	53	106	1.9	13	(76-125)
Trichloroethene	50	140	160	40 *	40.0 *	14	(71-120)

* = Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 2 out of 10 outside limits

010204

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1999S.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	A5256	Date Reported:	12/28

GC/MS-SEMIVOLATILES

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.0	Date Extracted:	12/20/93	GC/MS File ID:	A5256
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	45	90	(39-98)
1,4-Dichlorobenzene	50	40	80	(36-97)
2,4-Dinitrotoluene	50	50	100	(24-96)
2-Chlorophenol	75	69	92	(27-123)
4-Chloro-3-methylphenol	75	27	36	(23-97)
4-Nitrophenol	75	19	25	(10-80)
Acenaphthene	50	52	104	(46-118)
N-Nitroso-Di-N-propylamine	50	37	74	(41-116)
Pentachlorophenol	75	16	21	(9-103)
Phenol	75	26	35	(12-110)
Pyrene	50	43	86	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	88	Phenol-d5	75	(10-94)	40
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	71
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromophenol	75	(10-123)	80

Method Blank: 1999S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010205

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001 (MS)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MS (MATRIX SPIKE)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5162	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5162
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	9	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	8	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	20	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	14	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	19	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	30	Nitrobenzene	10	ND
Acenaphthene	10	16	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	3
Anthracene	10	ND	Pentachlorophenol	30	21
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	15
			Pyrene	10	15

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	20 *	Penol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	26 *	2-Fluorophenol	75	(21-100)	15 *
Terphenyl-d14	50	(33-141)	36	2,4,6-Tribromphenol	75	(10-123)	29

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: NA MSD ID: NA DUP 010051

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010206

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW8-1001 (MSD)
PDP Sample ID: 1998.01MSD (MATRIX SPIKE DUP)
Report No.: A5163

Date Sampled: 11/30/93
Date Received: 12/01/93
Date Reported: 12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/16/93

Method Ref.: SW846-8270
GC/MS File ID: A5163
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	20	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	18	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	0	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
`-Chlorophenol	10	12	Dibenzo(a,h)anthracene	10	ND
-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	5	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	14	Nitrobenzene	10	ND
Acenaphthene	10	19	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	7
Anthracene	10	ND	Pentachlorophenol	30	14
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	12
			Pyrene	10	14

QUALITY ASSURANCE/QUALITY CONTROL

·ogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	(32 *)	Penol-d5	75	(10-94)	17
2-Fluorobiphenyl	50	(43-116)	(35 *)	2-Fluorophenol	75	(21-100)	(18 *)
Terphenyl-d14	50	(33-141)	35	2,4,6-Tribromphenol	75	(10-123)	19

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010207

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Date Received:	11/30/93
Project Name:	LONGHORN AAP	Date Reported:	12/28/93
Project No.:	NA	Report No.:	A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.:	SW846-8270	Sample Matrix:	WATER	Analyst:	RZZ
SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1998.01	MS Sample ID:	1998.01MS	MSD Sample ID:	1998.01MSD
Date Analyzed:	12/27/93	Date Analyzed:	12/16/93	Date Analyzed:	12/16/93
GC/MS File ID:	A5250	GC/MS File ID:	A5162	GC/MS File ID:	A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~42~~ 28	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	66.0 *	~~40~~ 29	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ 38	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~30~~ 40	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~28~~ 42	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ 50	(10-80)
Acenapthene	50	ND	19	38 *	17.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ 38	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~30~~ 50	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ 42	(12-110)
Pyrene	50	ND	14	28	6.9	31	(26-127)

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: NA
PDP Sample ID: 1987.PBW1 (PREPARATION BLANK)
Report Number: I987PBW

Date Sampled: NA
Date Received: NA
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
ead	SW-846 7421	12-14-93	12-17-93	0.005	0.093	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.005	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID: NA
LCS ID: NA
MS ID: NA

Extraction Blank ID: NA
LCSD ID: NA
DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C3-1001 (MS/DUP)
PDP Sample ID: 1981.01 (MS/DUP)
Report Number: I981MSD

Date Sampled: 11-18-93
Date Received:11-19-93
Date Reported:12-03-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER — Units mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	11-23-93	12-02-93	0.63	0.55	13.6	2.00	2.44	90
Antimony	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.50	100
Arsenic	SW-846 7060	11-23-93	12-01-93	ND	ND	NC	0.040	0.039	98
Barium	SW-846 6010	11-23-93	12-02-93	0.825	0.865	4.7	2.00	2.69	93
Beryllium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.048	96
Cadmium	SW-846 6010	11-23-93	12-02-93	0.0053	ND	NC	0.050	0.049	87
Calcium	SW-846 6010	11-23-93	12-02-93	46.1	49.4	6.9	NA	47.4	NA
Chromium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.20	0.19	95
Cobalt	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Copper	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.25	0.25	100
Iron	SW-846 6010	11-23-93	12-02-93	22.0	23.0	4.4	1.00	23.20	NC* 120
Lead	SW-846 7421	11-23-93	12-01-93	ND	ND	NC	0.020	0.017	85
Magnesium	SW-846 6010	11-23-93	12-02-93	16.3	17.5	7.1	NA	16.8	NA
Manganese	SW-846 6010	11-23-93	12-02-93	0.998	1.06	6.0	0.50	1.49	98
Mercury	SW-846 7470	11-23-93	12-02-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Potassium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	NA	ND	NA
Selenium	SW-846 7740	11-23-93	12-01-93	ND	ND	NC	0.010	0.003	30
Silver	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.050	0.043	86
Sodium	SW-846 6010	11-23-93	12-02-93	105	112	6.5	NA	108	NA
Thallium	SW-846 7841	11-23-93	11-30-93	ND	ND	NC	0.050	0.051	102
Vanadium	SW-846 6010	11-23-93	12-02-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	11-23-93	12-02-93	0.061	0.064	4.8	0.50	0.54	96

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1981.PBW1
TCLP Blank ID: NA

LCS ID: 1981.LCSW1
LCSD ID: 1981.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001 (DL)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01DL (DILUTION)	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7027	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7027
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND U	Carbon tetrachloride	250	ND U
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	ND
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	6100 J
Carbon disulfide	250	ND	Vinyl acetate	500	ND U
			Vinylchloride	500	ND U

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW8-1001-QC (DL)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.02DL (DILUTION)	Date Received:	12/01/93
Project No.:	NA	Report No.:	B7028	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	50.00	GC/MS File ID:	B7028
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	50.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	250	ND	Carbon tetrachloride	250	ND
1,1,2,2-Tetrachloroethane	250	ND	Chlorobenzene	250	ND
1,1,2-Trichloroethane	250	ND	Chloroethane	500	ND
1,1-Dichloroethane	250	ND	Chloroform	250	ND
1,1-Dichloroethene	250	ND	Chloromethane	500	ND
1,2-Dichloroethane	250	ND	Cis-1,3-Dichloropropene	250	ND
1,2-Dichloropropane	250	ND	Dibromochloromethane	250	ND
2-Butanone	500	ND	Ethylbenzene	250	ND
2-Chloroethyl vinyl ether	500	ND	Methylene chloride	250	250
2-Hexanone	500	ND	Styrene	250	ND
4-Methyl-2-pentanone	500	ND	Tetrachloroethene	250	ND
Acetone	500	ND	Toluene	250	ND
Benzene	250	ND	Total xylenes	250	ND
Bromodichloromethane	250	ND	Total-1,2-Dichloroethene	250	ND
Bromoform	250	ND	Trans-1,3-Dichloropropene	250	ND
Bromomethane	500	ND	Trichloroethene	250	7100
Carbon disulfide	250	ND	Vinyl acetate	500	ND
			Vinylchloride	500	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	97
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010212

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW20-1001	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.05	Date Received:	12/01/93
Project No.:	NA	Report No.:	D2027	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2027
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND R	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND R	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND R	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND R	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND R	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND R	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND R	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND R	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND R
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND R
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	50	Phenol-d5	75	(10-94)	2 *
2-Fluorobiphenyl	50	(43-116)	52	2-Fluorophenol	75	(21-100)	30
Terphenyl-d14	50	(33-141)	10 *	2,4,6-Tribromphenol	75	(10-123)	34

Method Blank:	1986S.WBLK2	LCS ID:	1986S.WLCS2	MS ID:	1998.01MS	MSD ID:	1998.01MSD

DUP ID: 1998.01127

010213

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW8-1001-EB
PDP Sample ID: 1998.03
Report Number: I99803

Date Sampled: 11-30-93
Date Received: 12-01-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.005	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.030	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1981.01MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1981.01D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-01-93
Date Reported: 12-20-93
Report Number: I998CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 | Units: mg/L | Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1998.01	MW8-1001	WATER	11-30-93	12-03-93	1	112			
1998.02	MW8-1001-QC	WATER	11-30-93	12-03-93	1	113			
1998.03	MW8-1001-EB	WATER	11-30-93	12-03-93	1	(2)			
1998.04	MW19-1001	WATER	11-30-93	12-03-93	1	2140			
1998.05	MW20-1001	WATER	11-30-93	12-03-93	1	12			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

010215

FINAL

CHEMICAL DATA QA/QC REPORT
INTERIM REMEDIAL ACTION
BURNING GROUND 3 AND
UNLINED EVAPORATION POND
LHAAP UNITS 18 AND 24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

PREPARED FOR

UNITED STATES ARMY CORPS OF ENGINEERS
TULSA DISTRICT

PREPARED BY

AWD TECHNOLOGIES, INC.
ROCKVILLE, MARYLAND

PDP ANALYTICAL SERVICES -- Episode 1999
INCHCAPE TESTING SERVICES -- Job Number H93-8078

AUGUST 31, 1994
USACE CONTRACT DACA56-93-D-0016
DELIVERY ORDER 0002
AWD PROJECT 2379

LONGHORN ARMY AMMUNITION PLANT, TEXAS
BURNING GROUND 3 AND UNLINED EVAPORATION POND
INTERIM REMEDIAL ACTION
PDP ANALYTICAL SERVICES -- EPISODE 1999
AND
INCHCAPE TESTING SERVICES -- JOB NUMBER H93-8078

1.0 Discussion.

This set of samples was collected from the Burning Ground 3 and the Unlined Evaporation Pond areas of the Longhorn Army Ammunition Plant in Karnack, Texas on December 1, 1993 as part of the Interim Remedial Action Investigation. The sampling activity was conducted by AWD Technologies, Inc. (AWD) for the U.S. Army Corps of Engineers (COE), Tulsa District. After collection, the samples were sent to the PDP Analytical Services laboratory in Spring, Texas and were placed under Episode Number 1999. Included in this work order are four (4) groundwater samples and one (1) trip blank. There were no field duplicates in this set of samples.

Groundwater Samples

LH18,24-125-1001
LH18,24-C6-1001
LH18,24-MW4-1001
LH18,24-MW5-1001

Trip Blank

Trip Blank

All samples, except the trip blank, were analyzed for volatile organic chemicals (VOCs), semivolatile organic chemicals (SVOCs), target analyte list (TAL) metals, chloride, nitrate as nitrogen, sulfate, and explosives. The trip blank was only analyzed for VOCs. All VOC, SVOC, metals, and explosive analyses were performed by U.S. EPA SW-846 methodologies: 8240, 8270, 6000/7000 series, and 8330, respectively. The chloride, nitrate, and sulfate analyses were performed according to U.S. EPA Methods 325.3, 352.1, and 375.4, respectively.

Note that PDP Analytical Services subcontracted the explosive analyses to Inchcape Testing Services, an NDRC laboratory, and that these results are therefore reported under a separate cover having Job Number H93-8078. Since the laboratories did not supply any of the analytical raw data in their deliverable packages, data validation has been performed on the limited basis of examining QA/QC summary reports.

Other than the metal results that were rejected, "R", all compounds and analytes were successfully analyzed in all samples. The organic analytical data were evaluated by the following quality assurance/quality control (QA/QC) parameters where applicable: technical holding times and preservation, system monitoring compound/surrogate spike recoveries, method blanks, matrix spike/matrix spike duplicates (MS/MSDs), laboratory control samples, field QC, and transcription. The inorganic analytical data were evaluated by the following QA/QC parameters where applicable: technical holding times and preservation, laboratory blanks, matrix spike recoveries, laboratory duplicates, laboratory control samples, field QC, and transcription. Validated sample analysis results are listed on the attached data summary forms. Areas of concern with respect to data quality and usability are discussed below.

2.0 Volatiles.

2.1 Accuracy. All surrogate and laboratory control sample (LCS) percent recoveries were within control limits.

The percent recovery of trichloroethene in the matrix spike and matrix spike duplicate (MS/MSD) was low. Since qualification is not based on MS/MSD criteria alone, no action was taken.

2.2 Precision. The relative percent difference (RPD) between the MS/MSD percent recoveries for trichloroethene exceeded control limits. Since qualification is not based on MS/MSD criteria alone, no action was taken. All other RPDs were within control.

2.3 Representativeness. All samples were preserved, were received in good condition, and were analyzed within the proper holding times.

Contamination for methylene chloride was found in the method blank analyzed on December 15, 1993. As a result, all sample concentrations less than 10 times the associated

blank results were qualified as non-detects, "U". The trip blank and remaining method blank were free of target compound contamination.

Please note that although values reported for methylene chloride are high enough that they appear to be "real" or site-related concentrations, the data user should exercise caution when utilizing these results; it is difficult to be certain that they are not attributable to blank contamination with the given laboratory information.

3.0 Semivolatiles.

3.1 Accuracy. Acid and base/neutral extractable surrogates for the original analyses of samples LH18,24-MW5-1001 and LH18,24-C6-1001 had percent recoveries less than 10 percent. As a result, all compounds in the original analyses of these samples have been rejected, "R", and should be considered unreliable as they are all non-detects. Note that several surrogate recoveries were above control limits for the re-extraction and re-extraction/reanalysis of sample LH18,24-MW5-1001 which was a consequence of low internal standard area counts as stated in the case narrative. As a result, all results for these analyses were qualified as estimated, "UJ", since they were all non-detect. Where there are two (or three) sets of data available for a sample due to re-extraction (or re-extraction/reanalysis) based on surrogate recoveries outside control limits only the best data has been reported in the validated data summary.

The laboratory control sample (LCS) extracted on December 20, 1993 had a high percent recovery for 2,4-dinitrotoluene. Since all the sample results were non-detect, no action was necessary. All other LCS percent recoveries were within control limits.

Several of the MS/MSD percent recoveries were out of control, but no action was taken since qualification of data should not be based solely on MS/MSD criteria.

3.2 Precision. The RPDs between the matrix spike and matrix spike duplicate for several compounds were high, but no action was taken since data qualification should not be based on MS/MSD criteria alone.

3.3 Representativeness. All samples were received in good condition and they were all properly preserved.

The recommended holding time was exceeded for the re-extractions of samples LH18,24-MW5-1001 and LH18,24-C6-1001 and the re-extraction/reanalysis of sample LH18,24-MW5-1001. Therefore, all results in these samples were qualified, "UJ", estimated, as they were all non-detect. Both method blanks were free of target compound contamination.

4.0 Anions.

Chloride, nitrate as nitrogen, and sulfate were all analyzed as anions by the aforementioned wet chemistry methods.

4.1 Accuracy. The laboratory control sample and matrix spike percent recoveries were all within acceptable quality control limits for all three parameters.

4.2 Precision. The LCS and sample duplicate RPDs were all within acceptable control limits.

4.3 Representativeness. All samples were properly preserved and were received in good condition. All blanks were free of target analyte contamination and all samples were analyzed within acceptable holding times.

5.0 TAL Metals.

5.1 Accuracy. All LCS and matrix spike percent recoveries were within acceptable control limits, except for the matrix spike recovery of selenium which was 20 percent. Therefore, all sample results for selenium have been rejected, "R", and should be considered unreliable as they were all non-detect.

5.2 Precision. All LCS and sample duplicate RPDs were within acceptable quality control ranges.

5.3 Representativeness. All samples were received in good condition and preserved upon receipt by the laboratory. It was assumed that since only one day elapsed between sample collection and receipt the sample integrity was maintained. All samples were analyzed within appropriate holding times.

Contamination was found for lead in the preparation blank. Since lead was not detected in any of the samples no action was warranted. All other preparation blanks were free from target analyte contamination.

6.0 Explosives.

6.1 Accuracy. All surrogate, LCS, and MS/MSD percent recoveries were within acceptable quality control limits.

6.2 Precision. All MS/MSD RPDs were within acceptable quality control limits.

6.3 Representativeness. All samples were properly preserved and were received in good condition by the laboratory. All samples were prepared and analyzed within appropriate holding times. The method blank was free of target compound contamination; however, not all target compounds were reported with the method blank data.

Note that in order to evaluate the explosive data, the validator had to adapt some of the semivolatile quality control criteria. For example, spike recoveries and RPD values were evaluated by using expanded QC guidelines of chemically similar semivolatile compounds. The SVOC aqueous holding time criteria was also used to validate the explosive data.

7.0 Notes.

The laboratory reports positive organic results that are below the quantitation limits but above the instrument detection limits (IDLs) as estimated, "J", since there is an unacceptable level of confidence in the detection and accurate reporting of concentrations less than the quantitation limits.

Please note that the LCS provided with the semivolatile sample extractions on December 20, 1993 was a TCLP LCS while the samples were groundwater. Since all the percent recoveries were within control limits and no further problems were encountered, no action was taken on the data.

There were no tentatively identified compounds (TICs) reported by the laboratory for the volatile or semivolatile fractions of any sample.

Please note that several results in the metals analysis were reported at elevated detection limits which is indicative of sample dilutions, although raw data was not provided and this could not be verified.

The matrix spike and duplicate analyses for furnace elements and mercury were performed on a batch sample which was not digested on the same day as the samples in this sample delivery group (SDG). Since no problems were found and the batch sample was from the same site, no action was taken.

Please note that all transcription and calculation errors found have been corrected in the support documentation and in the data summary of this report.

8.0 Conclusion.

These data were reviewed according to the U.S. EPA's National Functional Guidelines for Organic Data Review (June, 1991), the U.S. EPA's Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses (July, 1988), and with reference to method requirements. The results are presented in the data summary of this report and should be accepted as qualified. With the exception of the values that have been rejected, all results and data meet the requirements of the data quality objective (DQO) for this site and are deemed acceptable and valid for the intended use.

9.0 Information Regarding Report Content.

Attachments:

1. Glossary of data qualifier codes.
2. Data Summary. This may include:
   a) All positive results with qualifier codes, if applicable;
   b) All unusable detection limits qualified with "R"; and
   c) All estimated detection limits qualified with "UJ".
3. Appendix A - Results as reported by the laboratory.
4. Appendix B - Support Documentation which includes details to support the statements made in this report.

GLOSSARY OF DATA QUALIFIER CODES

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result. The result is unusable.

CODES RELATED TO QUANTITATION

(can be used for positive results and sample quantitation limits)

J = Analyte present. Reported value may not be accurate or precise.

UJ = Not detected. Quantitation limit may be inaccurate or imprecise.

DATA SUMMARY

010224

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	125-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.01	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7045	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7045
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010225

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW4-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.02	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7046	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7046
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	3 J
1,1-Dichloroethene	5	9	Chloromethane	10	ND
1,2-Dichloroethane	5	10	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
Butanone	10	ND	Ethylbenzene	5	ND
-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	180
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	~~5~~ 50	~~713~~ 760
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	91

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010226

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW5-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.03	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7029	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7029
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	73
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	140
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	101
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1998V.MBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010227

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID: C6-1001
PDP Sample ID: 1999.04
Report No.: B7030

Date Sampled: 12/01/93
Date Received: 12/02/93
Date Reported: 12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7030
Date Analyzed: 12/14/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	210
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	139
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

010228

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP-BLANK	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.05	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7031	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7031
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010229

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	125-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.01	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2028	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2028
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	53	Phenol-d5	75	(10-94)	22
2-Fluorobiphenyl	50	(43-116)	58	2-Fluorophenol	75	(21-100)	38
Terphenyl-d14	50	(33-141)	85	2,4,6-Tribromphenol	75	(10-123)	78

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NR

010101

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010230

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW4-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.02	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2029	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2029
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	88	Phenol-d5	75	(10-94)	36
2-Fluorobiphenyl	50	(43-116)	87	2-Fluorophenol	75	(21-100)	57
Terphenyl-d14	50	(33-141)	109	2,4,6-Tribromphenol	75	(10-123)	61

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

000002

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010231

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:MW5-1001 Date Sampled: 12/01/93
Project Name: LONGHORN AAP PDP Sample ID: 1999.03 RA Date Received: 12/02/93
Project No.: NA Report No.: A5252 Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-827
Multiplying Factor: 1.00 Date Extracted: 12/20/93 GC/MS File ID: A5252
Sample Volume: 1000 ml Date Analyzed: 12/27/93 Analyst: HZZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND aJ	Benzo(a)pyrene	10	ND aJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	49	Phenol-d5	75	(10-94)	[illegible]
2-Fluorobiphenyl	50	(43-116)	231 *	2-Fluorophenol	75	(21-100)	[illegible]
Terphenyl-d14	50	(33-141)	1934 *	2,4,6-Tribromphenol	75	(10-123)	[illegible] *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: [illegible]

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010232

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C6-1001	Date Sampled:	12/01/93
roject Name:	LONGHORN AAP	PDP Sample ID:	1999.04 RA	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2175	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2175
Sample Volume:	1000 ml	Date Analyzed:	12/29/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
Chloronaphthalene	10	ND	Dibenzofuran	10	ND
Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	52	Phenol-d5	75	(10-94)	61
2-Fluorobiphenyl	50	(43-116)	83	2-Fluorophenol	75	(21-100)	64
Terphenyl-d14	50	(33-141)	111	2,4,6-Tribromphenol	75	(10-123)	107

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

D00025

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC Client Sample ID: 125-1001 Date Sampled: 12-01-93
Project Name: LONGHORN AAP PDP Sample ID: 1999.01 Date Received: 12-02-93
Project Number: NA Report Number: I99901 Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	9.3	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.149	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	1.9	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.012	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	9.2	MBB
ead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
agnesium	SW-846 6010	12-15-93	12-20-93	0.2	1.9	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.043	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	25.7	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.017	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.042	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 LCS ID: 1987.LCSW1 MS ID: 1987.07MS

Extraction Blank ID: NA LCSD ID: 1987.LCSW2 DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

010234

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW4-1001
PDP Sample ID: 1999.02
Report Number: I99902

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND		MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND		HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.183		MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	50.2		MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.639		MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	1.2		MBB
ead	SW-846 7421	12-14-93	12-17-93	0.01	ND		HM
agnesium	SW-846 6010	12-15-93	12-20-93	0.2	48.5		MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.285		MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.062		MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND		MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	395		MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND		HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.025		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010235

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW5-1001
PDP Sample ID: 1999.03
Report Number: I99903

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND		MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND		HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	1.38		MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	35.5		MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.026		MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.31		MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND		HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	36.8		MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.078		MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND		DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.043		MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND		MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	114		MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND		HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.043		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010236

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C6-1001
PDP Sample ID: 1999.04
Report Number: I99904

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT		ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.28		MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND		MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND		HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	1.08		MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND		MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	33.2		MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.019		MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND		MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	39.2		MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND		HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	19.8		MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	1.46		MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND		DAC
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND		MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND		MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	R	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	222		MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND		HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND		MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.052		MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1
MS ID: 1987.07MS

Extraction Blank ID: NA
LCSD ID: 1987.LCSW2
DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

010237

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-02-93
Date Reported: 12-20-93
Report Number: I999CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1999.01	125-1001	WATER	12-01-93	12-03-93	1	27			
1999.02	MW4-1001	WATER	12-01-93	12-03-93	1	652			
1999.03	MW5-1001	WATER	12-01-93	12-03-93	1	308			
1999.04	C6-1001	WATER	12-01-93	12-03-93	1	448			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

010238

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-02-93
Date Reported: 12-20-93
Report Number: I999NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1999.01	125-1001	WATER	12-01-93	12-03-93	0.5	2.5			
1999.02	MW4-1001	WATER	12-01-93	12-03-93	0.1	0.2			
1999.03	MW5-1001	WATER	12-01-93	12-03-93	0.5	5.0			
1999.04	C6-1001	WATER	12-01-93	12-03-93	0.1	0.4			
QUALITY ASSURANCE/QUALITY CONTROL									
1999.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	0.1	ND			
1999.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.33	0.40		82
99.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.37	0.40	11.4	92
998.01	MW8-1001	WATER	11-30-93	12-01-93	0.5	3.6			
1998.01 (DUP)	MW8-1001 (DUP)	WATER	11-30-93	12-01-93	0.5	3.6		0.0	
1998.01 (MS)	MW8-1001 (MS)	WATER	11-30-93	12-01-93	0.5	5.3	2.0		85

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

010239

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-02-93
Date Reported: 12-20-93
Report Number: I999SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1999.01	125-1001	WATER	12-01-93	12-07-93	5	11			
1999.02	MW4-1001	WATER	12-01-93	12-07-93	5	32			
1999.03	MW5-1001	WATER	12-01-93	12-07-93	5	ND			
1999.04	C6-1001	WATER	12-01-93	12-07-93	5	5			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
1990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197	2.8	110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

000034

010240

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-1
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : 125-001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	88.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010241

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-2
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW4-1001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	86.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010242

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-3
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW5-1001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	89.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010243

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-4
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : C6-1001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	88.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX A
RESULTS AS REPORTED BY THE LABORATORY

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	125-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.01	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7045	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7045
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	101

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW4-1001
PDP Sample ID: 1999.02
Report No.: B7046

Date Sampled: 12/01/93
Date Received: 12/02/93
Date Reported: 12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 5.0 ml
Dilution: 1.0

Method Ref.: SW846-8240
GC/MS File ID: B7046
Date Analyzed: 12/15/93
Analyst: MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	3 J
1,1-Dichloroethene	5	9	Chloromethane	10	ND
1,2-Dichloroethane	5	10	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
9utanone	10	ND	Ethylbenzene	5	ND
Chloroethyl vinyl ether	10	ND	Methylene chloride	5	180
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	713 E
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	91

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	95
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	105

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW4-1001 (DL)	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.02DL (DILUTION)	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7048	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7048
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	10.0	Analyst:	NA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
1,2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
,-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	150
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	760
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	70

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW5-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.03	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7029	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7029
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	73
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	140
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	101
Toluene-d8	50	(88-110)	104
Bromofluorobenzene	50	(86-115)	100

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	C6-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.04	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7030	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7030
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	210
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	139
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	99
Toluene-d8	50	(88-110)	100
Bromofluorobenzene	50	(86-115)	99

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	TRIP-BLANK	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.05	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7031	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7031
Sample Volume:	5.0 ml	Date Analyzed:	12/14/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
1,2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
2-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	ND
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	96
Toluene-d8	50	(88-110)	97
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 1998V.WBLK1 LCS ID: 1998V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
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010251

LABORATORY REPORT

lient:	AWD TECHNOLOGIES,INC.	Client Sample ID:	125-1001	Date Sampled:	12/01/93
roject Name:	LONGHORN AAP	PDP Sample ID:	1999.01	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2028	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2028
Sample Volume:	1000 ml	Date Analyzed:	12/15/93	Analyst:	HEZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	53	Phenol-d5	75	(10-94)	22
2-Fluorobiphenyl	50	(43-116)	58	2-Fluorophenol	75	(21-100)	38
Terphenyl-d14	50	(33-141)	85	2,4,6-Tribromphenol	75	(10-123)	78

Method Blank: 1997S.WBLK1 LCS ID: 1997S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

010251

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233 010252

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:MW4-1001 Date Sampled: 12/01/93
Project Name: LONGHORN AAP PDP Sample ID: 1999.02 Date Received: 12/02/93
Project No.: NA Report No.: D2029 Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-8270
Multiplying Factor: 1.00 Date Extracted: 12/07/93 GC/MS File ID: D2029
Sample Volume: 1000 ml Date Analyzed: 12/15/93 Analyst: HZZ
Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	88	Phenol-d5	75	(10-94)	36
2-Fluorobiphenyl	50	(43-116)	87	2-Fluorophenol	75	(21-100)	57
Terphenyl-d14	50	(33-141)	109	2,4,6-Tribromphenol	75	(10-123)	61

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2

010253

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW5-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.03	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2040	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2040
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	0 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	6 *	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	51	2,4,6-Tribromphenol	75	(10-123)	47

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 0021

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713) 363-2233

010254

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW5-1001
PDP Sample ID: 1999.03 RA
Report No.: A5252

Date Sampled: 12/01/93
Date Received: 12/02/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/27/93

Method Ref.: SW846-827
GC/MS File ID: A5252
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	49	Phenol-d5	75	(10-94)	10
2-Fluorobiphenyl	50	(43-116)	231 *	2-Fluorophenol	75	(21-100)	14
Terphenyl-d14	50	(33-141)	4934 *	2,4,6-Tribromphenol	75	(10-123)	211 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: [illegible]

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

010255

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:MW5-1001
PDP Sample ID: 1999.03 RA RE
Report No.: D2171

Date Sampled: 12/01/93
Date Received: 12/02/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/20/93
Date Analyzed: 12/28/93

Method Ref.: SW846-8270
GC/MS File ID: D2171
Analyst: HZX

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	56	Phenol-d5	75	(10-94)	16
2-Fluorobiphenyl	50	(43-116)	228 *	2-Fluorophenol	75	(21-100)	84
Terphenyl-d14	50	(33-141)	2345 *	2,4,6-Tribromphenol	75	(10-123)	263 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID:

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT 010256

Client: AWD TECHNOLOGIES,INC.
Project Name: LONGHORN AAP
Project No.: NA

Client Sample ID:C6-1001
PDP Sample ID: 1999.04
Report No.: D2031

Date Sampled: 12/01/93
Date Received: 12/02/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER
Multiplying Factor: 1.00
Sample Volume: 1000 ml
Extract Volume: 1.0 ml

Dilution: 1.0
Date Extracted: 12/07/93
Date Analyzed: 12/15/93

Method Ref.: SW846-8270
GC/MS File ID: D2031
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

rrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	0 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	0 *	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	87	2,4,6-Tribromphenol	75	(10-123)	62

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: 0002

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010257

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	C6-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.04 RA	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2175	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/20/93	GC/MS File ID:	D2175
Sample Volume:	1000 ml	Date Analyzed:	12/29/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

urrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	52	Phenol-d5	75	(10-94)	61
2-Fluorobiphenyl	50	(43-116)	83	2-Fluorophenol	75	(21-100)	64
Terphenyl-d14	50	(33-141)	111	2,4,6-Tribromphenol	75	(10-123)	107

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

000025

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT 010258

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: 125-1001
PDP Sample ID: 1999.01
Report Number: I99901

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	9.3	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.149	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	1.9	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.012	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	9.2	MBB
ead	SW-846 7421	12-14-93	12-17-93	0.005	ND	HM
gnesium	SW-846 6010	12-15-93	12-20-93	0.2	1.9	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.043	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	25.7	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	0.017	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.042	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW4-1001
PDP Sample ID: 1999.02
Report Number: I99902

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	0.183	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	50.2	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.639	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	1.2	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	48.5	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.285	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.062	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	395	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.025	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW5-1001
PDP Sample ID: 1999.03
Report Number: I99903

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	1.38	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	35.5	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	0.026	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	0.31	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	36.8	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	0.078	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	0.043	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	114	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.043	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: C6-1001
PDP Sample ID: 1999.04
Report Number: I99904

Date Sampled: 12-01-93
Date Received: 12-02-93
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	0.28	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	1.08	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	33.2	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	0.019	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	39.2	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.01	ND	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	19.8	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	1.46	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAC
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.05	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	222	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.05	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	0.052	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1 | LCS ID: 1987.LCSW1 | MS ID: 1987.07MS

Extraction Blank ID: NA | LCSD ID: 1987.LCSW2 | DUP ID: 1987.07D

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-02-93
Date Reported: 12-20-93
Report Number: I999CL

WET CHEMISTRY PARAMETER: Chloride

Method Reference: EPA 325.3 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1999.01	125-1001	WATER	12-01-93	12-03-93	1	27			
1999.02	MW4-1001	WATER	12-01-93	12-03-93	1	652			
1999.03	MW5-1001	WATER	12-01-93	12-03-93	1	308			
1999.04	C6-1001	WATER	12-01-93	12-03-93	1	448			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	1	ND			
990.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	142	152		93
990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	1	144	152	1.4	95
1990.01	MW17-1001	WATER	11-23-93	12-03-93	1	218			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-03-93	1	218		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-03-93	1	236	17.7		102

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3

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-02-93
Date Reported: 12-20-93
Report Number: I999NIT

WET CHEMISTRY PARAMETER: Nitrate as N

Method Reference: EPA 352.1 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1999.01	125-1001	WATER	12-01-93	12-03-93	0.5	2.5			
1999.02	MW4-1001	WATER	12-01-93	12-03-93	0.1	0.2			
1999.03	MW5-1001	WATER	12-01-93	12-03-93	0.5	5.0			
1999.04	C6-1001	WATER	12-01-93	12-03-93	0.1	0.4			
QUALITY ASSURANCE/QUALITY CONTROL									
1999.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-03-93	0.1	ND			
1999.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.33	0.40		82
999.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-03-93	0.1	0.37	0.40	11.4	92
998.01	MW8-1001	WATER	11-30-93	12-01-93	0.5	3.6			
1998.01 (DUP)	MW8-1001 (DUP)	WATER	11-30-93	12-01-93	0.5	3.6		0.0	
1998.01 (MS)	MW8-1001 (MS)	WATER	11-30-93	12-01-93	0.5	5.3	2.0		85

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas; 77386 (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Date Received: 12-02-93
Date Reported: 12-20-93
Report Number: I999SULF

WET CHEMISTRY PARAMETER: Sulfate

Method Reference: EPA 375.4 Units: mg/L Analyst: HM

PDP LABORATORY ID	CLIENT ID	SAMPLE MATRIX	DATE SAMPLED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	SPIKE ADDED OR TRUE VALUE	RELATIVE PERCENT DIFFERENCE	PERCENT RECOVERY
1999.01	125-1001	WATER	12-01-93	12-07-93	5	11			
1999.02	MW4-1001	WATER	12-01-93	12-07-93	5	32			
1999.03	MW5-1001	WATER	12-01-93	12-07-93	5	ND			
1999.04	C6-1001	WATER	12-01-93	12-07-93	5	5			
				QUALITY ASSURANCE/QUALITY CONTROL					
1990.PBW1	(PREPARATION BLK)	AQUEOUS	NA	12-07-93	5	ND			
90.LCSW1	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	211	197		107
1990.LCSW2	(LAB CONTROL STD)	AQUEOUS	NA	12-07-93	5	216	197		110
1990.01	MW17-1001	WATER	11-23-93	12-07-93	5	19			
1990.01 (DUP)	MW17-1001 (DUP)	WATER	11-23-93	12-07-93	5	19		0.0	
1990.01 (MS)	MW17-1001 (MS)	WATER	11-23-93	12-07-93	5	25	8.0		75

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Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-1
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : 125-001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	88.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010266

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-2
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW4-1001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	86.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010267

Inchcape Testing Services
NDRC Laboratories

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Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-3
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : MW5-1001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	89.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

010268

Inchcape Testing Services
NDRC Laboratories

11155 South Main
Houston, TX 77025
Tel. 713-661-8150
Fax. 713-661-2661

DATE RECEIVED : 2-DEC-1993

REPORT NUMBER : H93-8078-4
REPORT DATE : 16-DEC-1993

SAMPLE SUBMITTED BY : PDP Analytical Services
ADDRESS : 24900 Pitkin Dr. Suite 300
: Spring, TX 77386
ATTENTION : Mr. Bruce Howbert

SAMPLE MATRIX : Water
ID MARKS : C6-1001
PROJECT : PDP
DATE SAMPLED : 1-DEC-1993
ANALYSIS METHOD : EPA 8330

EXPLOSIVES		
TEST REQUESTED	DETECTION LIMIT	RESULTS
1,3-DNB	0.10 µg/L	< 0.10 µg/L
2,4-DNT	0.10 µg/L	< 0.10 µg/L
2,6-DNT	0.10 µg/L	< 0.10 µg/L
HMX	0.10 µg/L	< 0.10 µg/L
NB	0.10 µg/L	< 0.10 µg/L
2-NT	0.10 µg/L	< 0.10 µg/L
3-NT	0.10 µg/L	< 0.10 µg/L
4-NT	0.10 µg/L	< 0.10 µg/L
RDX	0.10 µg/L	< 0.10 µg/L
Tetryl	0.10 µg/L	< 0.10 µg/L
1,3,5-TNB	0.10 µg/L	< 0.10 µg/L
2,4,6-TNT	0.10 µg/L	< 0.10 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
3,4-DNT	7.0 µg/L	88.0 %

Inchcape Testing Services

Raj Naran
Vice President, General Manager

APPENDIX B
SUPPORT DOCUMENTATION

PDP ANALYTICAL SERVICES

24900 Pitkin Drive, Suite 300 • Spring, Texas 77386 • Phone (713)363-2233

Client: AWD TECHNOLOGIES, INC. Episode No.: 1999	Project Name: LOMGHORN AAP Project No.: NA

CASE NARRATIVE

Five water samples were received for analysis on 12/02/93. All holding times were met.

All batch quality control (QC) results (Duplicates, Matrix Spikes, Matrix Spike Duplicates) are included in this data package. Batch QC may or may not have been performed on your samples. If it was, the QC reports will reference your sample and project information. If batch QC was not performed on your samples, then the client, sample and project information is reported as "NA" (Not Applicable).

VOLATILES:

Sample "MW4-1001" was high in Trichloroethene and a dilution of 1:10 was required to bring the concentration within calibration range.

SEMIVOLATILES:

Samples "MW5-1001" and "C6-1001" were re-extracted due to surrogate failures. The re-extraction was performed out of holding time.

The re-extraction and re-analysis of sample "MW5-1001" showed internal standards outside the QC range. All surrogates were affected by the low interanl standards area counts. Upon re-analysis of the re-extraction, the same pattern was observed.

INORGANICS:

Due to the high concentrations of iron present in the sample, the matrix spike added to the sample was saturated, preventing accurate determination of the recovery.

High RPD was noted in the duplicate determination of total aluminum due to the results being close to the reporting limit.

Matrix interferences are suspected for total selenium by graphite furnace atomic absorption analyses based on the matrix spike recovery. A post digestion spike was added to each determination to compensate for potential matrix interferences.

The preparation blank for total lead was noted to be high. This was not considered significant due to good laboratory control sample recoveries and the fact that no lead was detected in any of the samples.

010271

PDP Analytical Services

SAMPLE RECEIPT AND LOGIN CHECKLIST

EPISODE #: 1999 DATE/TIME REC'D: 12-2-93 0930 # OF COOLERS REC'D: 2 COOLER TEMP.: ICED

CLIENT NAME: AWD TECHNOLOGIES # OF AQUEOUS SAMPLES RECEIVED: _____

PROJECT NAME/NUMBER: LONGHORN AAP # OF SOIL SAMPLES RECEIVED: _____

DESCRIBE PACKING USED IN COOLER: NEWSPAPER + PEANUTS # OF OTHER (SPECIFY): _____

COOLER CHAIN OF CUSTODY SEALS: (PRESENT) ABSENT (INTACT) BROKEN

HOW MANY & WHERE: 3 ON EACH / FRONT + BACK SEAL DATE: 12-1-93 SEAL NAME: C J ILLEGIBLE

SAMPLE CONTAINER SEALS: PRESENT ABSENT INTACT BROKEN

	YES	NO
SHIPPING SLIP PRESENT (AIRBILL, ETC.)? CARRIER NAME: FED X AIRBILL NO.: 9743847643 9743847654	✓	
WERE SAMPLES SCREENED FOR RADIOACTIVITY USING A GEIGER COUNTER?		✓
CHAIN OF CUSTODY PRESENT?	✓	
WERE CUSTODY PAPERS SEALED IN A PLASTIC BAG AND ~~TAPED INSIDE THE LID~~?	✓	
CHAIN OF CUSTODY SIGNED AND DATED?	✓	
WERE CUSTODY PAPERS FILLED OUT PROPERLY (INK, SIGNED, ETC.)?	✓	
WAS PROJECT IDENTIFIABLE FROM CUSTODY PAPERS?	✓	
WERE ALL BOTTLES SEALED IN SEPARATE PLASTIC BAGS?		✓
CHAIN OF CUSTODY AGREES WITH BOTTLE COUNT?	✓	
WERE BOTTLE LABELS COMPLETE (ID, DATE, TIME, SIGNATURE, PRESERVATIVE, ETC.)?	✓	
CHAIN OF CUSTODY AGREES WITH LABELS?	✓	
BOTTLES BROKEN OR LEAKING?		✓
WERE CORRECT CONTAINERS USED FOR THE TESTS INDICATED?	✓	
WERE CORRECT PRESERVATIVES ADDED TO SAMPLES?	✓	
VOA SAMPLES FILLED COMPLETELY? IF NO, LIST SAMPLE #'S: _____	✓	
AQUEOUS VOA SAMPLES PRESERVED?	✓	
WAS A SUFFICIENT AMOUNT OF SAMPLE SENT FOR TESTS INDICATED?	✓	
SHORT HOLDING TIME PARAMETERS?	✓	
SEDIMENT PRESENT IN AQUEOUS SAMPLES?	✓	
PROJECT MANAGER CALLED AND STATUS DISCUSSED? IF YES, GIVE DETAILS IN THE COMMENTS & RESOLUTIONS.		
WHO WAS CALLED? _____ BY WHOM? _____ DATE: _____		

COMMENTS & RESOLUTIONS: < 1% SEDIMENT. pH OF METALS CONTAINERS @ ~ 6. SAMPLES WERE REPRESERVED UPON RECEIPT.

LOGGED IN BY: Bruce A. Rhodes DATE: 12-2-93

000009

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1999V.WBLK1 (METHOD BLANK)	Date Received:	NA
Project No.:	NA	Report No.:	B7043	Date Reported:	12/21/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	1.00	GC/MS File ID:	B7043
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	1.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	5	ND	Carbon tetrachloride	5	ND
1,1,2,2-Tetrachloroethane	5	ND	Chlorobenzene	5	ND
1,1,2-Trichloroethane	5	ND	Chloroethane	10	ND
1,1-Dichloroethane	5	ND	Chloroform	5	ND
1,1-Dichloroethene	5	ND	Chloromethane	10	ND
1,2-Dichloroethane	5	ND	Cis-1,3-Dichloropropene	5	ND
',2-Dichloropropane	5	ND	Dibromochloromethane	5	ND
-Butanone	10	ND	Ethylbenzene	5	ND
2-Chloroethyl vinyl ether	10	ND	Methylene chloride	5	3 J
2-Hexanone	10	ND	Styrene	5	ND
4-Methyl-2-pentanone	10	ND	Tetrachloroethene	5	ND
Acetone	10	ND	Toluene	5	ND
Benzene	5	ND	Total xylenes	5	ND
Bromodichloromethane	5	ND	Total-1,2-Dichloroethene	5	ND
Bromoform	5	ND	Trans-1,3-Dichloropropene	5	ND
Bromomethane	10	ND	Trichloroethene	5	ND
Carbon disulfide	5	ND	Vinyl acetate	10	ND
			Vinylchloride	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	88
Toluene-d8	50	(88-110)	96
Bromofluorobenzene	50	(86-115)	96

Method Blank ID: NA LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Date Received:	12/02/93
Project Name:	LONGHORN AAP	Date Reported:	12/20/93
Project No.:	NA	Report No.:	B703233

GC/MS-VOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.:	SW846-8240	Sample Matrix:	WATER	Analyst:	MA
SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1999.04	MS Sample ID:	1999.004MS	MSD Sample ID:	1999.04MSD
Date Analyzed:	12/14/93	Date Analyzed:	12/14/93	Date Analyzed:	12/14/93
GC/MS File ID:	B7030	GC/MS File ID:	B7032	GC/MS File ID:	B7033

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	(61-145)
Benzene	50	ND	53	106	(76-127)
Chlorobenzene	50	ND	56	112	(75-130)
Toluene	50	ND	54	108	(76-125)
Trichloroethene	50	140	170	60 *	(71-120)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,1,-Dichloroethene	50	ND	57	114	0.0	14	(61-145)
Benzene	50	ND	51	102	3.8	11	(76-127)
Chlorobenzene	50	ND	53	106	5.5	13	(75-130)
Toluene	50	ND	53	106	1.9	13	(76-125)
Trichloroethene	50	140	160	40 *	40.0 *	14	(71-120)

* = Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 2 out of 10 outside limits

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	OHM CORPORATION	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	TINKER AFB	PDP Sample ID:	1997S.TLCS1 (TCLP LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	14SSS	Report No.:	D1967	Date Reported:	12/12/93

GC/MS-TCLP SEMIVOLATILES

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.0	Date Extracted:	12/07/93	GC/MS File ID:	D1967
Sample Volume:	1000 ml	Date Analyzed:	12/10/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,4-Dichlorobenzene	100	61	61	(36-97)
2,4,5-Trichlorophenol	100	74	74	(9-103)
2,4,6-Trichlorophenol	100	73	73	(9-103)
2,4-Dinitrotoluene	100	72	72	(24-96)
2-Methylphenol	100	58	58	(23-97)
3+4-Methylphenols	200	90	45	(23-97)
Hexachlorobenzene	100	71	71	(36-97)
exachlorobutadiene	100	69	69	(30-140)
Hexachloroethane	100	61	61	(30-140)
Nitrobenzene	100	83	83	(35-120)
Pentachlorophenol	100	66	66	(9-103)
Pyridine	100	22	22	(9-103)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	73	Phenol-d5	75	(10-94)	25
2-Fluorobiphenyl	50	(43-116)	71	2-Fluorophenol	75	(21-100)	41
Terphenyl-d14	50	(33-141)	82	2,4,6-Tribromop	75	(10-123)	87

Method Blank ID: 1997S.WBLK1 LCS ID: NA MS ID:NA MSD ID: NA DUP ID: NA

TCLP Blank ID: 1997S.TBLK1

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	NA	Date Sampled:	NA
Project Name:	LONGHORN AAP	PDP Sample ID:	1999S.WLCS1 (LAB CONTROL SAMPLE)	Date Received:	NA
Project No.:	NA	Report No.:	A5256	Date Reported:	12/28

GC/MS-SEMIVOLATILES

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.0	Date Extracted:	12/20/93	GC/MS File ID:	A5256
Sample Volume:	1000 ml	Date Analyzed:	12/27/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	LCS TRUE VALUE (ug/L)	LCS RESULT (ug/L)	LCS % REC.	LCS REC. LIMITS
1,2,4-Trichlorobenzene	50	45	90	(39-98)
1,4-Dichlorobenzene	50	40	80	(36-97)
2,4-Dinitrotoluene	50	50	100	(24-96)
2-Chlorophenol	75	69	92	(27-123)
4-Chloro-3-methylphenol	75	27	36	(23-97)
4-Nitrophenol	75	19	25	(10-80)
Acenaphthene	50	52	104	(46-118)
N-Nitroso-Di-N-propylamine	50	37	74	(41-116)
Pentachlorophenol	75	16	21	(9-103)
Phenol	75	26	35	(12-110)
Pyrene	50	43	86	(26-127)

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Rec
Nitrobenzene-d5	50	(35-114)	88	Phenol-d5	75	(10-94)	40
2-Fluorobiphenyl	50	(43-116)	90	2-Fluorophenol	75	(21-100)	71
Terphenyl-d14	50	(33-141)	99	2,4,6-Tribromophenol	75	(10-123)	80

Method Blank: 1999S.WBLK1 LCS ID: NA MS ID: NA MSD ID: NA DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010276

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001 (MS)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MS (MATRIX SPIKE)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5162	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5162
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	9	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	8	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	20	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	14	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	19	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	30	Nitrobenzene	10	ND
Acenaphthene	10	16	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	3
Anthracene	10	ND	Pentachlorophenol	30	21
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	15
			Pyrene	10	15

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	20 *	Phenol-d5	75	(10-94)	20
2-Fluorobiphenyl	50	(43-116)	26 *	2-Fluorophenol	75	(21-100)	15 *
Terphenyl-d14	50	(33-141)	36	2,4,6-Tribromphenol	75	(10-123)	29

Method Blank:	1986S.WBLK2	LCS ID: 1986S.WLCS2	MS ID: NA	MSD ID: NA	SDG 010045

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010277

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW8-1001 (MSD)	Date Sampled:	11/30/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1998.01MSD (MATRIX SPIKE DUP)	Date Received:	12/01/93
Project No.:	NA	Report No.:	A5163	Date Reported:	12/27/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	A5163
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	20	Benzo(a)pyrene	10	ND
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	18	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	0	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	12	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	5	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	14	Nitrobenzene	10	ND
Acenaphthene	10	19	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	7
Anthracene	10	ND	Pentachlorophenol	30	14
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	12
			Pyrene	10	14

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recover
Nitrobenzene-d5	50	(35-114)	32 *	Phenol-d5	75	(10-94)	17
2-Fluorobiphenyl	50	(43-116)	35 *	2-Fluorophenol	75	(21-100)	18 *
Terphenyl-d14	50	(33-141)	35	2,4,6-Tribromphenol	75	(10-123)	19

Method Blank: 1986S.WBLK2 LCS ID: 1986S.WLCS2 MS ID: NA MSD ID: NA DUP

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010278

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Date Received:	11/30/93
Project Name:	LONGHORN AAP	Date Reported:	12/28/93
Project No.:	NA	Report No.:	A516263

GC/MS-SEMIVOLATILES (MATRIX SPIKE AND MATRIX SPIKE DUPLICATE RECOVERY SUMMARY)

Method Ref.:	SW846-8270	Sample Matrix:	WATER	Analyst:	HZZ
SAMPLE		MATRIX SPIKE		MATRIX SPIKE DUPLICATE	
PDP Sample ID:	1998.01	MS Sample ID:	1998.01MS	MSD Sample ID:	1998.01MSD
Date Analyzed:	12/27/93	Date Analyzed:	12/16/93	Date Analyzed:	12/16/93
GC/MS File ID:	A5250	GC/MS File ID:	A5162	GC/MS File ID:	A5163

MATRIX SPIKE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	9	18 *	(39-98)
1,4-Dichlorobenzene	50	ND	8	16 *	(36-97)
2,4-Dinitrotoluene	50	ND	20	40	(24-96)
2-Chlorophenol	75	ND	14	19 *	(27-123)
4-Chloro-3-methylphenol	75	ND	19	25	(23-97)
4-Nitrophenol	75	ND	30	40	(10-80)
Acenapthene	50	ND	16	32 *	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	3	6 *	(41-116)
Pentachlorophenol	75	ND	21	28	(9-103)
Phenol	75	ND	15	20	(12-110)
Pyrene	50	ND	15	30	(26-127)

MATRIX SPIKE DUPLICATE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	RPD	QC LIMITS RPD.	QC LIMITS REC.
1,2,4-Trichlorobenzene	50	ND	20	40	76.0 *	~~17~~ *	(39-98)
1,4-Dichlorobenzene	50	ND	18	36	66.0 *	~~40~~ *	(36-97)
2,4-Dinitrotoluene	50	ND	0	0 *	200.0 *	~~28~~ *	(24-96)
2-Chlorophenol	75	ND	12	16 *	17.0	~~38~~ ~~50~~	(27-123)
4-Chloro-3-methylphenol	75	ND	5	7 *	113.0 *	~~28~~ ~~42~~	(23-97)
4-Nitrophenol	75	ND	14	19	71.0 *	~~42~~ ~~50~~	(10-80)
Acenapthene	50	ND	19	38 *	17.0	31	(46-118)
N-Nitroso-Di-N-propylamine	50	ND	7	14 *	80.0 *	~~50~~ ~~35~~	(41-116)
Pentachlorophenol	75	ND	14	19	38.0	~~38~~ ~~50~~	(9-103)
Phenol	75	ND	12	16	22.2	~~50~~ ~~42~~	(12-110)
Pyrene	50	ND	14	28	6.9	31	(26-127)

* = Values outside of QC limits

RPD: 6 out of 11 outside limits
Spike Recovery: 10 out of 22 outside limits

PDP ANALYTICAL SERVICES
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LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: NA
PDP Sample ID: 1987.PBW1 (PREPARATION BLANK)
Report Number: I987PBW

Date Sampled: NA
Date Received: NA
Date Reported: 12-20-93

TOTAL METALS (DATA SHEET)

Sample Matrix: WATER

Units: mg/L

ANALYTE	METHOD	DATE PREPARED	DATE ANALYZED	QUANTITATION LIMIT	RESULT	ANALYST
Aluminum	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Antimony	SW-846 6010	12-15-93	12-20-93	0.06	ND	MBB
Arsenic	SW-846 7060	12-14-93	12-17-93	0.005	ND	HM
Barium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Beryllium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Cadmium	SW-846 6010	12-15-93	12-20-93	0.005	ND	MBB
Calcium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Chromium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Cobalt	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Copper	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB
Iron	SW-846 6010	12-15-93	12-20-93	0.1	ND	MBB
Lead	SW-846 7421	12-14-93	12-17-93	0.005	0.093	HM
Magnesium	SW-846 6010	12-15-93	12-20-93	0.2	ND	MBB
Manganese	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Mercury	SW-846 7470	12-02-93	12-03-93	0.0002	ND	DAO
Nickel	SW-846 6010	12-15-93	12-20-93	0.04	ND	MBB
Potassium	SW-846 6010	12-15-93	12-20-93	5	ND	MBB
Selenium	SW-846 7740	12-14-93	12-16-93	0.005	ND	HM
Silver	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Sodium	SW-846 6010	12-15-93	12-20-93	0.5	ND	MBB
Thallium	SW-846 7841	12-14-93	12-17-93	0.005	ND	HM
Vanadium	SW-846 6010	12-15-93	12-20-93	0.01	ND	MBB
Zinc	SW-846 6010	12-15-93	12-20-93	0.02	ND	MBB

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:NA | LCS ID: NA | MS ID: NA

Extraction Blank ID: NA | LCSD ID: NA | DUP ID: NA

010280

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES, INC
Project Name: LONGHORN AAP
Project Number: NA

Client Sample ID: MW18-1001-QC (MS/DUP)
PDP Sample ID: 1987.07 (MS/DUP)
Report Number: I987MSD

Date Sampled: 11-22-93
Date Received:11-23-93
Date Reported:12-20-93

METALS (MATRIX SPIKE AND DUPLICATE)

Sample Matrix: WATER

Units mg/L

ELEMENT	METHOD	DATE PREPARED	DATE ANALYZED	SAMPLE VALUE	DUPLICATE VALUE	RPD (20)	SPIKE ADDED	MATRIX SPIKE VALUE	PERCENT RECOVERY (75-125)
Aluminum	SW-846 6010	12-15-93	12-20-93	0.3	0.2	40	2.00	2.15	92
Antimony	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Arsenic	SW-846 7060	12-13-93	12-15-93	ND	ND	NC	0.040	0.036	90
Barium	SW-846 6010	12-15-93	12-20-93	0.244	0.244	0	2.00	2.14	95
Beryllium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Cadmium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.049	98
Calcium	SW-846 6010	12-15-93	12-20-93	7.6	7.5	1.3	NA	NA	NA
Chromium	SW-846 6010	12-15-93	12-20-93	0.016	0.015	6.5	0.20	0.20	92
Cobalt	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.49	98
Copper	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.25	0.24	96
Iron	SW-846 6010	12-15-93	12-20-93	23.4	22.4	4.4	1.00	24.60	NC* 120
Lead	SW-846 7421	12-13-93	12-14-93	ND	ND	NC	0.020	0.020	100
Magnesium	SW-846 6010	12-15-93	12-20-93	4.1	4.0	2.5	NA	NA	NA
Manganese	SW-846 6010	12-15-93	12-20-93	0.513	0.503	2.0	0.50	0.99	95
Mercury	SW-846 7470	11-29-93	11-29-93	ND	ND	NC	0.0010	0.0010	100
Nickel	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.51	102
Potassium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	NA	NA	NA
Selenium	SW-846 7740	12-13-93	12-15-93	ND	ND	NC	0.010	0.002	(20)
Silver	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.050	0.045	90
Sodium	SW-846 6010	12-15-93	12-20-93	61.9	63.6	2.7	NA	NA	NA
Thallium	SW-846 7841	12-13-93	12-14-93	ND	ND	NC	0.050	0.044	88
Vanadium	SW-846 6010	12-15-93	12-20-93	ND	ND	NC	0.50	0.48	96
Zinc	SW-846 6010	12-15-93	12-20-93	ND	0.020	NC	0.50	0.50	100

QUALITY ASSURANCE/QUALITY CONTROL

Method Blank ID:1987.PBW1
LCS ID: 1987.LCSW1

TCLP Blank ID: NA
LCSD ID: 1987.LCSW2

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client:	AWD TECHNOLOGIES, INC.	Client Sample ID:	MW4-1001 (DL)	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.02DL (DILUTION)	Date Received:	12/02/93
Project No.:	NA	Report No.:	B7048	Date Reported:	12/20/93

GC/MS-VOLATILE ORGANICS (DATA SHEET)

Sample Matrix:	WATER	Method Ref.:	SW846-8240
Multiplying Factor:	10.00	GC/MS File ID:	B7048
Sample Volume:	5.0 ml	Date Analyzed:	12/15/93
Dilution:	10.0	Analyst:	MA

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,1,1-Trichloroethane	50	ND	Carbon tetrachloride	50	ND
1,1,2,2-Tetrachloroethane	50	ND	Chlorobenzene	50	ND
1,1,2-Trichloroethane	50	ND	Chloroethane	100	ND
1,1-Dichloroethane	50	ND	Chloroform	50	ND
1,1-Dichloroethene	50	ND	Chloromethane	100	ND
1,2-Dichloroethane	50	ND	Cis-1,3-Dichloropropene	50	ND
',2-Dichloropropane	50	ND	Dibromochloromethane	50	ND
2-Butanone	100	ND	Ethylbenzene	50	ND
2-Chloroethyl vinyl ether	100	ND	Methylene chloride	50	150 B
2-Hexanone	100	ND	Styrene	50	ND
4-Methyl-2-pentanone	100	ND	Tetrachloroethene	50	ND
Acetone	100	ND	Toluene	50	ND
Benzene	50	ND	Total xylenes	50	ND
Bromodichloromethane	50	ND	Total-1,2-Dichloroethene	50	ND
Bromoform	50	ND	Trans-1,3-Dichloropropene	50	ND
Bromomethane	100	ND	Trichloroethene	50	760
Carbon disulfide	50	ND	Vinyl acetate	100	ND
			Vinylchloride	100	70

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
1,2-Dichloroethane-d4	50	(76-114)	93
Toluene-d8	50	(88-110)	102
Bromofluorobenzene	50	(86-115)	95

Method Blank ID: 1999V.WBLK1 LCS ID: 1999V.WLCS1 MS ID: 1999.04MS MSD ID: 1999.04MSD DUP ID: NA

PDP ANALYTICAL SERVICES
24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

010282

LABORATORY REPORT

Client:	AWD TECHNOLOGIES,INC.	Client Sample ID:	MW5-1001	Date Sampled:	12/01/93
Project Name:	LONGHORN AAP	PDP Sample ID:	1999.03	Date Received:	12/02/93
Project No.:	NA	Report No.:	D2040	Date Reported:	12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix:	WATER	Dilution:	1.0	Method Ref.:	SW846-8270
Multiplying Factor:	1.00	Date Extracted:	12/07/93	GC/MS File ID:	D2040
Sample Volume:	1000 ml	Date Analyzed:	12/16/93	Analyst:	HZZ
Extract Volume:	1.0 ml				

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)		COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,2,4-Trichlorobenzene	10	ND	R	Benzo(a)pyrene	10	ND	R
1,2-Dichlorobenzene	10	ND		Benzo(b)fluroanthene	10	ND	
1,3-Dichlorobenzene	10	ND		Benzo(g,h,i)perylene	10	ND	
1,4-Dichlorobenzene	10	ND		Benzo(k)fluroanthene	10	ND	
2,4,5-Tricholorophenol	10	ND		Benzyl Alcohol	10	ND	
2,4,6-Trichlorophenol	10	ND		Bis(2-chloroethoxy)methane	10	ND	
2,4-Dichlorophenol	10	ND		Bis(2-chloroethyl) ether	10	ND	
2,4-Dimethylphenol	10	ND		Bis(2-chloroisopropyl)ether	10	ND	
2,4-Dinitrophenol	30	ND		Bis(2-ethylhexyl)phthalate	10	ND	
2,4-Dinitrotoluene	10	ND		Butylbenzylphthalate	10	ND	
2,6-Dinitrotoluene	10	ND		Chrysene	10	ND	
Chloronaphthalene	10	ND		Dibenzofuran	10	ND	
.-Chlorophenol	10	ND		Dibenzo(a,h)anthracene	10	ND	
2-Methylnaphthalene	10	ND		Diethylphthalate	10	ND	
2-Methylphenol	10	ND		Dimethyl phthalate	10	ND	
2-Nitroaniline	30	ND		Di-n-Butylphthalate	10	ND	
2-Nitrophenol	10	ND		Di-n-octylphthalate	10	ND	
3,3-Dichlorobenzidine	10	ND		Fluoranthene	10	ND	
3-Nitroaniline	30	ND		Fluorene	10	ND	
4,6-Dinitro 2-methylphenol	30	ND		Hexachlorobenzene	10	ND	
4-Bromophenyl-phenylether	10	ND		Hexachlorobutadiene	10	ND	
4-Chloroaniline	10	ND		Hexachlorocyclopentadiene	10	ND	
4-Chlorophenyl-phenylether	10	ND		Hexachloroethane	10	ND	
4-Chloro-3-methylphenol	10	ND		Indeno(1,2,3-cd)pyrene	10	ND	
4-Methylphenol	10	ND		Isophorone	10	ND	
4-Nitroaniline	30	ND		Naphthalene	10	ND	
4-Nitrophenol	30	ND		Nitrobenzene	10	ND	
Acenaphthene	10	ND		N-Nitrosodiphenylamine	10	ND	
Acenaphthylene	10	ND		N-Nitroso-Di-N-propylamine	10	ND	
Anthracene	10	ND		Pentachlorophenol	30	ND	
Benzoic Acid	10	ND		Phenanthrene	10	ND	
Benzo(a)anthracene	10	ND		Phenol	10	ND	
				Pyrene	10	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	0 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	6 *	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	51	2,4,6-Tribromphenol	75	(10-123)	47

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: NA

PDP ANALYTICAL SERVICES 010283

24900 Pitkin Drive, Suite 300; Spring, Texas 77386; Phone (713)363-2233

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:MW5-1001 Date Sampled: 12/01/93

Project Name: LONGHORN AAP PDP Sample ID: 1999.03 RA RE Date Received: 12/02/93

Project No.: NA Report No.: D2171 Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0 Method Ref.: SW846-8270

Multiplying Factor: 1.00 Date Extracted: 12/20/93 GC/MS File ID: D2171

Sample Volume: 1000 ml Date Analyzed: 12/28/93 Analyst: HZZ

Extract Volume: 1.0 ml

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)
1,2,4-Trichlorobenzene	10	ND uJ	Benzo(a)pyrene	10	ND uJ
1,2-Dichlorobenzene	10	ND	Benzo(b)fluroanthene	10	ND
1,3-Dichlorobenzene	10	ND	Benzo(g,h,i)perylene	10	ND
1,4-Dichlorobenzene	10	ND	Benzo(k)fluroanthene	10	ND
2,4,5-Tricholorophenol	10	ND	Benzyl Alcohol	10	ND
2,4,6-Trichlorophenol	10	ND	Bis(2-chloroethoxy)methane	10	ND
2,4-Dichlorophenol	10	ND	Bis(2-chloroethyl) ether	10	ND
2,4-Dimethylphenol	10	ND	Bis(2-chloroisopropyl)ether	10	ND
2,4-Dinitrophenol	30	ND	Bis(2-ethylhexyl)phthalate	10	ND
2,4-Dinitrotoluene	10	ND	Butylbenzylphthalate	10	ND
2,6-Dinitrotoluene	10	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Dibenzofuran	10	ND
2-Chlorophenol	10	ND	Dibenzo(a,h)anthracene	10	ND
2-Methylnaphthalene	10	ND	Diethylphthalate	10	ND
2-Methylphenol	10	ND	Dimethyl phthalate	10	ND
2-Nitroaniline	30	ND	Di-n-Butylphthalate	10	ND
2-Nitrophenol	10	ND	Di-n-octylphthalate	10	ND
3,3-Dichlorobenzidine	10	ND	Fluoranthene	10	ND
3-Nitroaniline	30	ND	Fluorene	10	ND
4,6-Dinitro 2-methylphenol	30	ND	Hexachlorobenzene	10	ND
4-Bromophenyl-phenylether	10	ND	Hexachlorobutadiene	10	ND
4-Chloroaniline	10	ND	Hexachlorocyclopentadiene	10	ND
4-Chlorophenyl-phenylether	10	ND	Hexachloroethane	10	ND
4-Chloro-3-methylphenol	10	ND	Indeno(1,2,3-cd)pyrene	10	ND
4-Methylphenol	10	ND	Isophorone	10	ND
4-Nitroaniline	30	ND	Naphthalene	10	ND
4-Nitrophenol	30	ND	Nitrobenzene	10	ND
Acenaphthene	10	ND	N-Nitrosodiphenylamine	10	ND
Acenaphthylene	10	ND	N-Nitroso-Di-N-propylamine	10	ND
Anthracene	10	ND	Pentachlorophenol	30	ND
Benzoic Acid	10	ND	Phenanthrene	10	ND
Benzo(a)anthracene	10	ND	Phenol	10	ND
			Pyrene	10	ND

QUALITY ASSURANCE/QUALITY CONTROL

urrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	56	Phenol-d5	75	(10-94)	16
2-Fluorobiphenyl	50	(43-116)	228 *	2-Fluorophenol	75	(21-100)	84
Terphenyl-d14	50	(33-141)	2345 *	2,4,6-Tribromphenol	75	(10-123)	263 *

Method Blank: 1999S.WBLK1 LCS ID: 1999S.WLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: [illegible]

PDP ANALYTICAL SERVICES
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010284

LABORATORY REPORT

Client: AWD TECHNOLOGIES,INC. Client Sample ID:C6-1001
Project Name: LONGHORN AAP PDP Sample ID: 1999.04
Project No.: NA Report No.: D2031

Date Sampled: 12/01/93
Date Received: 12/02/93
Date Reported: 12/28/93

GC/MS-SEMIVOLATILES (DATA SHEET)

Sample Matrix: WATER Dilution: 1.0
Multiplying Factor: 1.00 Date Extracted: 12/07/93
Sample Volume: 1000 ml Date Analyzed: 12/15/93
Extract Volume: 1.0 ml

Method Ref.: SW846-8270
GC/MS File ID: D2031
Analyst: HZZ

COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)		COMPOUND	QUANTITATION LIMIT (ug/L)	RESULTS (ug/L)	
1,2,4-Trichlorobenzene	10	ND	R	Benzo(a)pyrene	10	ND	R
1,2-Dichlorobenzene	10	ND		Benzo(b)fluroanthene	10	ND	
1,3-Dichlorobenzene	10	ND		Benzo(g,h,i)perylene	10	ND	
1,4-Dichlorobenzene	10	ND		Benzo(k)fluroanthene	10	ND	
2,4,5-Tricholorophenol	10	ND		Benzyl Alcohol	10	ND	
2,4,6-Trichlorophenol	10	ND		Bis(2-chloroethoxy)methane	10	ND	
2,4-Dichlorophenol	10	ND		Bis(2-chloroethyl) ether	10	ND	
2,4-Dimethylphenol	10	ND		Bis(2-chloroisopropyl)ether	10	ND	
2,4-Dinitrophenol	30	ND		Bis(2-ethylhexyl)phthalate	10	ND	
2,4-Dinitrotoluene	10	ND		Butylbenzylphthalate	10	ND	
2,6-Dinitrotoluene	10	ND		Chrysene	10	ND	
2-Chloronaphthalene	10	ND		Dibenzofuran	10	ND	
2-Chlorophenol	10	ND		Dibenzo(a,h)anthracene	10	ND	
2-Methylnaphthalene	10	ND		Diethylphthalate	10	ND	
2-Methylphenol	10	ND		Dimethyl phthalate	10	ND	
2-Nitroaniline	30	ND		Di-n-Butylphthalate	10	ND	
2-Nitrophenol	10	ND		Di-n-octylphthalate	10	ND	
3,3-Dichlorobenzidine	10	ND		Fluoranthene	10	ND	
3-Nitroaniline	30	ND		Fluorene	10	ND	
4,6-Dinitro 2-methylphenol	30	ND		Hexachlorobenzene	10	ND	
4-Bromophenyl-phenylether	10	ND		Hexachlorobutadiene	10	ND	
4-Chloroaniline	10	ND		Hexachlorocyclopentadiene	10	ND	
4-Chlorophenyl-phenylether	10	ND		Hexachloroethane	10	ND	
4-Chloro-3-methylphenol	10	ND		Indeno(1,2,3-cd)pyrene	10	ND	
4-Methylphenol	10	ND		Isophorone	10	ND	
4-Nitroaniline	30	ND		Naphthalene	10	ND	
4-Nitrophenol	30	ND		Nitrobenzene	10	ND	
Acenaphthene	10	ND		N-Nitrosodiphenylamine	10	ND	
Acenaphthylene	10	ND		N-Nitroso-Di-N-propylamine	10	ND	
Anthracene	10	ND		Pentachlorophenol	30	ND	
Benzoic Acid	10	ND		Phenanthrene	10	ND	
Benzo(a)anthracene	10	ND		Phenol	10	ND	
				Pyrene	10	ND	

QUALITY ASSURANCE/QUALITY CONTROL

Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery	Surrogate	Spike Added (ug/L)	QC Limits (Recovery)	% Recovery
Nitrobenzene-d5	50	(35-114)	0 *	Phenol-d5	75	(10-94)	0 *
2-Fluorobiphenyl	50	(43-116)	0 *	2-Fluorophenol	75	(21-100)	0 *
Terphenyl-d14	50	(33-141)	87	2,4,6-Tribromphenol	75	(10-123)	62

Method Blank: 1997S.WBLK1 LCS ID: 1997S.TLCS1 MS ID: 1998.01MS MSD ID: 1998.01MSD DUP ID: N/A