DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE, INDIANA 47522-5000

IN REPLY REFER TO:
5090
Ser 095/9074
29 MAR 1999

U.S. Environmental Protection Agency, Region V
Waste, Pesticides, & Toxics Division
Waste Management Branch
Illinois, Indiana, and Michigan Section
Attn: Ms. Carol Witt-Smith (DW-8J)
77 West Jackson Blvd.
Chicago, IL 60604

Dear Ms. Witt-Smith:

Crane Division, Naval Surface Warfare Center (NAVSURFWARCENDIV Crane) submits for review and approval two copies of the Draft Audit Demonstration Report - Field Test Kits and Wiley Mill Riffle Splitter for Full Scale Bioremediation Operations as enclosure (1). Enclosure (2) is the required certification statement.

NAVSURFWARCENDIV Crane point of contact is Ms. Christine D. Freeman, Code 09511, telephone 812-854-4423.

Sincerely,

Phillip A. Keith, for

[illegible] Environmental Protection Department
[illegible] Direction of
the Commander

Encl:
(1) Draft Audit Demonstration Report for FS Operations
(2) Certification Statement

Copy to (w/o encls):
ADMINISTRATIVE RECORD (w/encls)
COMNAVSEASYSCOM (SEA OOT)
IDEM (S. Riddle)
MK Cleveland (B. Venkatesh)
TolTest Crane
SOUTHNAVFACENGCOM (Code 1864)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Philip R. Keith, acting

SIGNATURE

JAMES HUNSICKER

DIRECTOR, ENVIRONMENTAL PROTECTION DEPARTMENT

TITLE

29 MAR 1999

DATE

Enclosure (2)

COMMENT RESOLUTION ON THE INTERNAL DRAFT AUDIT DEMONSTRATION REPORT FIELD TEST KITS AND WILEY MILL/RIFFLE SPLITTER FOR FULL SCALE OPERATIONS

GENERAL COMMENTS

1. For future volumes of this report, please double-side the pages.
2. This report should be a stand-alone document. Limit all references to specific sections of documents referenced and include the sections as an appendix.
3. Use the acronym "WM/RS" for "Wiley Mill/Riffle Splitter".

GENERAL RESPONSES

1. Comment noted. Pages in all appendices were already double-sided. The text will be double-sided in future revisions to this report.
2. Comment noted. However, rather than include sections of the approved Full-Scale Quality Assurance Project Plan (FS-QAPP) or the Full-Scale Operations Plan for Soils Bioremediation Facility (FS-OP), appropriate sections have been referenced accordingly.
3. Comment noted. The suggested acronyms have been added.

SPECIFIC COMMENTS

COMMENT 1: p. i Paragraph two, labeled "Sample Homogenization Audit Demonstration", contains information pertaining to paragraph three. Please rewrite this section so that the labeled sections only discuss related topics. Also, include a little more detail for the results (include more data numbers).

RESPONSE 1: *The Sample Homogenization Audit Demonstration executive summary does not have any information related to the Field Test Kit Audit Demonstration. The text has been rewritten to include more detail of the results.*

COMMENT 2: p. i ¶2 In the last sentence, spell out "NSWC". Also, spell out "NSWC" in the last sentence of p. ii.

RESPONSE 2: *The text has been revised.*

COMMENT 3: p. i ¶3

(a) Add the following to the second sentence, "... using the field test kits during pre-excavation sampling."

(b) Add the name brand of field test kits used to the second sentence.

(c) Modify the fourth sentence as follows, "...evaluate the reliability of the field test..."

RESPONSE 3:

(a) Text has been revised.
(b) The name brand has been added to the text.
(c) Text has been revised.

COMMENT 4: Acronyms and Abbreviations Make the following corrections to the list:

(a) Add- "MK" - Morrison Knudsen
(b) Couldn't find "QAPP" in the text; it was always spelled out.
(c) Add - "%D" - percent difference
(d) Add- "WM/RS" - Wiley Mill/Riffle Splitter
(e) Add- "°C" - Degree Centigrade
(f) Add- "U.S.EPA" - United States Environmental Protection Agency

RESPONSE 4:

Acronyms and abbreviations have been revised as specified.

COMMENT 5: p. 1-1 §1.1

(a) Rewrite the first sentence as follows, "The audit demonstrations were performed on ~~two~~ three windrows from full-scale operations."
(b) Rewrite the second sentence as follows, "Windrows S-001 ~~was~~ and S-005 were utilized for the ..."

RESPONSE 5:

(a) The Wiley Mill Riffle Splitter was performed on two windrows from full-scale operations. The field test kit audit demonstration was perfomred on a windrow N-30%, which was a pilot-scale sized windrow.
(b) Text has been revised.

COMMENT 6: p. 1-1 §1.1.1 Spell out "USEPA" and use "U.S.EPA" on p.v.

RESPONSE 6: *Comment noted, and text has been revised.*

COMMENT 7: p 2-5 §2.3 Please discuss RPD and %D in this Test Results Section.

RESPONSE 7: *Additional information has been added to discuss the RPD and %D in section 2.3.*

COMMENT 8: p. 2-5 §2.4 ¶2 In the last sentence spell out "°C" for first reference.

RESPONSE 8: *Text has been revised.*

COMMENT 9: p. 2-13 §2.5 ¶1 In the fourth sentence, list the value of the high RPD for TNT.

RESPONSE 9: *The text has been revised to include this value.*

COMMENT 10: p. 2-13 §2.5 ¶1 The fifth sentence starts out with, "This elevated RPD is attributable to" and stops. The next page begins another paragraph. Please complete the first paragraph.

RESPONSE 10: *These pages have been corrected to include the remainder of the paragraph.*

COMMENT 11: p. 3-1 §3.1 ¶1 Remove the third sentence, "The results demonstrate ...", and relocate the sentence in §3.3.

RESPONSE 11: *The sentence has been removed and relocated as directed.*

COMMENT 12: p. 3-1 §3.1 ¶2 Instead of referencing Field SOP 3.0 §2.2, include the text to explain the sampling procedures in more detail in this section.

RESPONSE 12: *Additional information pertaining to sampling procedures has been provided in this section.*

COMMENT 13: p. 3-1 §3.2 Spell out "SDI Ensys ®" after first usage.

RESPONSE 13: *Text has been revised.*

COMMENT 14: p. 3-2 §3.2 Add more detail from all the referenced sections in this paragraph.

RESPONSE 14: *Additional information pertaining to the referenced section has been provided in order to provide general information regarding the references provided.*

COMMENT 15: p. 3-2 §3.3

(a) Add a description for a "false positive" and "false negative".
(b) For clarification, rewrite the first sentence as follows, "...comparison of field screening ~~and~~ versus laboratory analysis is..."
(c) Rewrite second sentence as follows, "...a detailed analytical summary..."
(d) Change title of Table 3-1 to, "Summary of Field Test Kits vs. Lab Comparison"

RESPONSE 15:

(a) These descriptions have been incorporated in section 3.3.
(b) Text has been revised.
(c) Text has been revised.
(d) The title of Table 3-1 has been revised.

COMMENT 16: p. 3-3 §3.4.1 ¶3

(a) In sentence four, instead of saying, "On one day of analysis", state day of analysis.
(b) Rewrite sentence five as follows, "Because ~~this~~ the check standard ..."
(c) Rewrite sentence six as follows, "Results for ~~this~~ *(fill in day as in sentence four)* day may be considered..."

RESPONSE 16:

(a) Text has been revised.
(b) Text has been revised.
(c) Text has been revised.

COMMENT 17: p. 3-3 §3.4.1 ¶4 In the last sentence, change "sixty" to "60" for consistency.

RESPONSE 17: *Text has been revised.*

COMMENT 18: p. 3-14 §3.4.3 ¶4 In the last sentence, please list the two instances by name in the text.

RESPONSE 18: *Additional information has been added to identify the two instances.*

Audit Demonstration Report
Field Test Kits and Wiley Mill/Riffle Splitter

Full-Scale Bioremediation
NSWC Crane
Crane, Indiana

Unit Identification Code: N00164
Contract No. N62467-93-D-1106

April 2000
Revision 2

Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina
29419-9010

AUDIT DEMONSTRATION REPORT
FIELD TEST KITS AND WILEY MILL RIFFLE SPLITTER

FULL-SCALE BIOREMEDIATION
NSWC CRANE
CRANE, INDIANA

April 19, 2000
Revision 2

CONTRACT N62467-93-D-1106
DELIVERY ORDER #0009
STATEMENT OF WORK #007

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Date 4/19/2000

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Date 4/19/2000

EXECUTIVE SUMMARY

The purpose of this report is to present the conclusions resulting from two sampling audit demonstrations performed at the Naval Surface Warfare Center Crane, in Crane, Indiana. The audit demonstrations targeted two areas, including the effectiveness of the field sampling homogenization process and a field test kit demonstration on compost material. On-site bioremediation of explosives compound contaminated soil utilizing a windrow composting process began as the preferred interim measures treatment alternative. These audit demonstrations were performed during initial composting activities of full-scale operations.

Sample Homogenization Audit Demonstration

The first audit demonstrated the effectiveness of the sample homogenizing process defined in the Quality Assurance Project Plan for Full-Scale Operations [MK, 1998a]. The different amendments used in the composting process challenges the ability to collect representative samples for analysis. The Environmental Protection Agency, Region 5 suggested using a Wiley Mill/Riffle Splitter to improve homogeneity of the compost samples. Fifteen samples (five on Day 0 Windrow S-001, five on Day 0 Windrow S-005 and five on Day Last Windrow S-005) were collected for this demonstration. This audit demonstration compared the explosive compound results of these 15 samples composited using the standard technique and 15 samples composited using the Wiley Mill/ Riffle Splitter. The results of the five samples on Day 0 Windrow S-001 were averaged to obtain the average windrow concentration. Similarly, the five samples on Day 0 Windrow S-005 and the five samples on Day Last Windrow S-005 were averaged to obtain two additional average windrow concentrations. Of these 45 average explosive compound concentrations reported, an 8% difference was found between the Wiley Mill/Riffle Splitter and the standard compositing technique. Based on this data, it is clear that both techniques provide results that meet the data quality objectives set for this project. However, the Wiley Mill/Riffle Splitter has three disadvantages including: impact to overall windrow processing schedule due to increased drying time; additional on-site laboratory space required; and a potential for cross-contamination. Additionally, the standard homogenization technique is significantly easier to implement. Therefore, it is recommended that the standard technique be used for full-scale operations at Naval Surface Warfare Center Crane.

Field Test Kit Audit Demonstration

The second audit demonstrated that field test kits could successfully monitor the degradation of compost contaminated with explosive compounds. During pilot-scale activities, a soil matrix was successfully analyzed using the Strategic Diagnostic Incorporated, EnSys® field test kits during pre-excavation sampling. The field test kits were not used to evaluate the compost matrix consisting of chicken manure, straw, and soil during pilot-scale testing. This audit was designed to evaluate the reliability of the

field test kits in this compost matrix for the analysis of two specific explosive compounds during full-scale operations. Forty-eight samples were analyzed by both field test kits and an off-site analytical laboratory to identify false positives and false negatives. Less than 10% of the data showed false positives or false negatives, which meets the criteria established for this demonstration. The field test kits provide adequate data which will monitor specific explosive compound concentrations to identify when confirmation samples for all explosive compounds can be collected for off-site laboratory analysis of the windrows. Based on the interpretation of the data obtained during this audit demonstration, it is recommended that the field test kits be used for full-scale operations at Naval Surface Warfare Center Crane for windrow monitoring in a compost matrix type.

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ACRONYMS AND ABBREVIATIONS

%D	percent difference
°C	degree Centigrade
2A46DT	2-Amino-4,6-dintrotoluene
4A26DT	4-Amino-2,6-dinitrotoluene
24DNT	2,4-dintrotoluene
FS-QAPP	Full-Scale Quality Assurance Project Plan
HMX	cyclotetremethylenetetranitramine
LCS	lab control sample
LCSD	lab control sample duplicate
MS	matrix spike
MK	Morrison Knudsen Corporation
MSD	matrix spike duplicate
MG/KG	milligrams per kilogram
NSWC	Naval Surface Warfare Center
PETN	pentaerythritol tetranitrate
QC	quality control
RDX	cyclotrimethylenetrinitramine
RPD	relative percent difference
SDI	Stragetic Diagnostics Incorporated
SOP	Standard Operating Procedure
TNT	2,4,6-trinitrotoluene
U.S. EPA	U.S. Environmental Protection Agency
WM/RS	Wiley Mill/Riffle Splitter

1.0
INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

Full-scale operations of the Soils Bioremediation Facility began April 13, 1998 at the Naval Surface Warfare Center (NSWC) Crane Division in Crane, Indiana. Two audit demonstrations of full-scale operations were performed during initial composting activities to demonstrate the effectiveness of field activities described in the *Quality Assurance Project Plan for Full-Scale Operations (FS-QAPP)* [MK, 1998a]. The objective of the first audit was to demonstrate that field test kits for explosive compounds could successfully monitor the degradation of explosive contamination in a compost matrix. The objective of the second audit was to demonstrate the effectiveness of the sample homogenizing process defined in the *FS-QAPP* [MK, 1998a]. These two demonstrations are described in the following sections. The purpose of this report is to present and evaluate the two audit demonstration results and make recommendations based on interpretation of the analytical data.

Full-scale operation windrows S-001 and S-005 were utilized for the Wiley Mill/Riffle Splitter (WM/RS) demonstration. Refer to *Initial Batch Report* [MK, 1998b] for windrow construction and operational details of windrow S-001. A pilot-scale Windrow, N-30%, was utilized for the field test kit audit demonstration. Refer to the *30% Soil Loading Batch Report,* [MK, 1998d] for windrow construction and operational details of windrow N-30%.

1.1.1 Wiley Mill/Riffle Splitter Analysis vs. Standard Homogenization

The different amendments used in the composting process challenge the ability to collect a representative sample for analysis because of the difficulty in mixing straw, chicken manure, and soil. A WM/RS had been suggested by United States Environmental Protection Agency (U.S. EPA) Region 5 to improve homogeneity of samples because of the grinding and mixing actions of the WM/RS. This device grinds a sample and then splits the original sample into two aliquots which is believed to more adequately represent the windrow sampling location.

The results from standard homogenization techniques described in Section 4.0 of the *FS-QAPP* [MK, 1998a] were compared to results of the WM/RS, to demonstrate that comparable results are obtained utilizing either homogenizing technique.

1.1.2 Field Test Kit Analysis vs. Laboratory Analysis

The results from explosive field test kits were compared to laboratory data to verify that acceptable data was obtained using field test kits. The proposed purpose of the field test kit results is to monitor the progress of the explosive compound degradation within

the compost windrows and to determine when final confirmation samples can be collected. The objective of this audit demonstration is to identify if "false negatives" (i.e., detected by the laboratory method, but not by the field method) and "false positives" (i.e., detected by the field method, but not by the laboratory method) are present. The acceptance criteria is that no more than ten percent of all the samples should result in "false negatives" or "false positives".

2.0
WILEY MILL/RIFFLE SPLITTER

The purpose of this section is to summarize the results of the WM/RS audit demonstration and present recommendations based on the interpretation of the analytical data for this audit.

2.1 SAMPLING PROCEDURES

Five compost samples were to be collected on Day 0 and end of cycle (estimated to be day 28) from the first compost windrow during full-scale operations. Day 0 samples were collected from windrow S-001. However, because of scheduling difficulties, the end of cycle samples were not collected. As a result, windrow S-005 was utilized to repeat this study for Day 0 and end of cycle analysis (Day 15). Day 0 results of both the windrows (S-001 and S-005) are presented in this report as the greatest variability of the compost matrix would be expected to occur on Day 0 due to compost heterogeneity initially after building the windrow.

On each day of sampling (i.e., Day 0 and end of cycle), fifteen samples were collected to obtain a representative measure of the windrow. For this study, five of these samples were split from the fifteen samples on Day 0 and end of cycle. Samples were collected utilizing the field homogenization technique described in Appendix A, Field SOP 3.0 of the *FS-QAPP* [MK, 1998a]. In this technique, field personnel use a stainless steel bowl and spoon to mix the sample and then divide the homogenized sample to obtain a representative aliquot to submit to the laboratory. The five samples randomly chosen from the fifteen samples collected for windrow monitoring were separated into two aliquots. The first aliquot was labeled R1 and placed in the refrigerator for storage on-site until both aliquots could be transported to the laboratory. The second aliquot was labeled R2 and air dried on-site. After drying, the aliquot was homogenized and split using the WM/RS. This technique resulted in two R2 aliquots from the splitting process of the WM/RS. The second aliquot from the Riffle Splitter was returned to the windrow because the purpose of this study was not to study the splitting ability of the Riffle Splitter. Both aliquots, R1 and R2, were submitted to the laboratory for analysis to determine the comparability of the standard homogenization technique (R1) and the WM/RS (R2). Data from Day 0 windrow S-001 as well as data from Day 0 and Day Last representing two sets from windrow S-005 are presented in Table 2-1 to establish a correlation of the results.

2.2 TEST METHOD DESCRIPTION

Analysis of explosive compounds was performed at Southwest Laboratories according to the laboratory standard operating procedures provided in Appendix C, page C2-29, of the *FS-QAPP* [MK, 1998a].

TABLE 2-1 REPLICATE SAMPLE SUMMARY REPORT

Windrow				Using Standard Homogenization		Using Wiley Mill/ Riffle-Splitter			
Number	Age	Compound	Cross-Section	Sample Result ug/kg	Standard Deviation	Sample Result ug/kg	Standard Deviation	% D	RPD
S001	0	135TNB		12500	0	12500	0	0	0.0
S001	0	13DNB		12500	0	12500	0	0	0.0
S001	0	246TNT	3-1	54100		71000		23.8	
			5-2	3360		11400		70.5	
			7-3	261000		291000		10.3	
			9-1	135000		144000		6.3	
			11-2	1260		10200		87.6	
			Average	90944	109466	105520	117281	16	14.8
S001	0	24DNT		12500	0	12500	0	0	0.0
S001	0	26DNT		13000	0	13000	0	0	0.0
S001	0	2A46DT	3-1	12500		4000		-212.5	
			5-2	12500		12500		0	
			7-3	12500		12500		0	
			9-1	8470		10600		20.1	
			11-2	12500		12500		0	
			Average	11694	1802	10420	3682	-11	11.5
S001	0	2NT		12500	0	12500	0	0	0.0
S001	0	3NT		12500	0	12500	0	0	0.0
S001	0	4A26DT	3-1	18100		15700		-15.3	
			5-2	4120		3750		-9.9	
			7-3	14100		12500		-12.8	
			9-1	26400		30300		12.9	
			11-2	12500		12500		0	
			Average	15044	8139	14950	9665	-1	0.6
S001	0	4NT		12500	0	12500	0	0	0.0
S001	0	HMX	3-1	120000		117000		-2.6	
			5-2	35100		42000		16.4	
			7-3	204000		188000		-8.5	
			9-1	182000		195000		6.7	
			11-2	13400		23100		42.0	
			Average	110900	85231	113020	79824	2	1.9
S001	0	NB		13000	0	13000	0	0	0.0
S001	0	PETN		12500	0	12500	0	0	0.0
S001	0	RDX	3-1	946000		1010000		6.3	
			5-2	185000		278000		33.5	
			7-3	1810000		1680000		-7.7	
			9-1	1490000		1570000		5.1	
			11-2	92400		159000		41.9	
			Average	904680	765122	939400	706682	4	3.8
S001	0	TETRYL		32500	0	32500	0	0	0.0

Sample results in this table represent the average concentration of each explosive contaminant. The average concentration was calculated by using the result when concentrations were above the reporting limit. For those results which fell below the reporting limit, the value of the reporting limit was used in the calculation. When concentrations were detected above the reporting limit, detailed results of each cross-section value has been provided with the percent difference between the two methods calculated.

TABLE 2-1 REPLICATE SAMPLE SUMMARY REPORT (continued)

Windrow				Using Standard Homogenization		Using Wiley Mill/ Riffle-Splitter			
Number	Age	Compound	Cross-Section	Sample Result ug/kg	Standard Deviation	Sample Result ug/kg	Standard Deviation	% D	RPD
S005	0	135TNB		250	0	250	0	0	0.0
S005	0	13DNB		250	0	250	0	0	0.0
S005	0	246TNT	3-1	250		4080		93.9	
			5-2	1570		2670		41.2	
			7-3	1420		3430		58.6	
			9-1	1300		4110		68.4	
			11-2	331		250		-32.4	
			Average	974.2	632	2908	1598	199	99.6
S005	0	24DNT	3-1	250		873		71.4	
			5-2	250		250		0	
			7-3	250		250		0	
			9-1	250		250		0	
			11-2	250		250		0	
			Average	250	0	375	279	50	39.9
S005	0	26DNT		260	0	260	0	0	0.0
S005	0	2A46DT		250	0	250	0	0	0.0
S005	0	2NT		250	0	250	0	0	0.0
S005	0	3NT		250	0	250	0	0	0.0
S005	0	4A26DT		250	0	250	0	0	0.0
S005	0	4NT		250	0	250	0	0	0.0
S005	0	HMX	3-1	2920		13000		77.5	
			5-2	14800		19900		25.6	
			7-3	18300		25700		28.8	
			9-1	30600		47400		35.4	
			11-2	15600		5890		-164.9	
			Average	16444	9876	22378	15836	36	30.6
S005	0	NB		260	0	260	0	0	0.0
S005	0	PETN		250	0	250	0	0	0.0
S005	0	RDX	3-1	41000		99100		58.6	
			5-2	97000		138000		29.7	
			7-3	132000		176000		25.	
			9-1	213000		305000		30.2	
			11-2	96700		52900		-82.8	
			Average	115940	63292	154200	95885	33	28.3
S005	0	TETRYL		650	0	650	0	0	0.0

Sample results in this table represent the average concentration of each explosive contaminant. The average concentration was calculated by using the result when concentrations were above the reporting limit. For those results which fell below the reporting limit, the value of the reporting limit was used in the calculation. When concentrations were detected above the reporting limit, detailed results of each cross-section value has been provided with the percent difference between the two methods calculated.

TABLE 2-1 REPLICATE SAMPLE SUMMARY REPORT (continued)

Windrow				Using Standard Homogenization		Using Wiley Mill/ Riffle-Splitter			
Number	Age	Compound	Cross-Section	Sample Result ug/kg	Standard Deviation	Sample Result ug/kg	Standard Deviation	% D	RPD
S005	15	135TNB		250	0	250	0	0	0.0
S005	15	13DNB		250	0	250	0	0	0.0
S005	15	246TNT		250	0	250	0	0	0.0
S005	15	24DNT		250	0	250	0	0	0.0
S005	15	26DNT		260	0	260	0	0	0.0
S005	15	2A46DT		250	0	250	0	0	0.0
S005	15	2NT		250	0	250	0	0	0.0
S005	15	3NT		250	0	250	0	0	0.0
S005	15	4A26DT		250	0	250	0	0	0.0
S005	15	4NT		250	0	250	0	0	0.0
S005	15	HMX		2200	0	2200	0	0	0.0
S005	15	NB		260	0	260	0	0	0.0
S005	15	PETN		250	0	250	0	0	0.0
S005	15	RDX		1000	0	1000	0	0	0.0
S005	15	TETRYL		650	0	650	0	0	0.0

Sample results in this table represent the average concentration of each explosive contaminant. The average concentration was calculated by using the result when concentrations were above the reporting limit. For those results which fell below the reporting limit, the value of the reporting limit was used in the calculation. When concentrations were detected above the reporting limit, detailed results of each cross-section value has been provided with the percent difference between the two methods calculated.

2.3 TEST RESULTS

Table 2-1 includes a summary of the three sampling events that were performed using the WM/RS. Raw data, including chromatograms and calibration summaries are presented in Appendix A through Appendix F. Table 2-1 calculates the agreement among the set of replicate measures using relative percent difference (RPD) and the percent difference (%D). The %D was calculated as the difference between the standard homogenization and the WM/RS result divided by the standard homogenization technique result. The RPD was calculated as the difference between the standard homogenization and the WM/RS result divided by the average of the two techniques. Although acceptable RPD values were not established for this study, these values were calculated in order to compare values with acceptance criteria for laboratory duplicates.

The results of the samples collected on Day 0 show high concentrations of cyclotrimethylenetrinitramine (RDX), cyclotetremethylenetetranitramine (HMX), and 2,4,6-trinitrotoluene (TNT). In addition concentrations of 2-Amino-4,6-dintrotoluene (2A46DT), 4-Amino-2,6-dintrotoluene (4A26DT), and 2,4-dinitrotoluene (24DNT) were found in samples collected on Day 0. No other analytes were detected above the reporting limit in Day 0 samples. In addition, all samples collected using either homogenizing technique on Day Last had values less than the reporting limit for all explosive compounds.

2.4 DATA QUALITY CONTROL

All data from the WM/RS sampling events were verified and at least 10% of the samples were validated by MK personnel following the procedures outlined in Section 9.0 of the *FS-QAPP* [MK, 1998a]. Data was compared with field and laboratory quality control (QC) sample data to assess its usability for supporting operational decisions. The results of data verification and validation are presented in this section.

The data were verified by reviewing chain-of-custody forms, sample preservation records, analytical holding times, requested turnaround times, sample data in comparison to QC data, and reporting requirements. In addition, at least 10% of the samples were validated by performing a thorough review of the analytical data utilizing laboratory analytical records to assess laboratory performance in relation to quality control criteria, data quality objectives, and procedural requirements. All samples were received by the laboratory in good condition (i.e., there were no broken containers, and custody seals were intact) and at a recorded temperature of 4 degrees Centigrade (°C) $\pm$ 2°C.

2.4.1 Field Quality Control

Analytical results for the field blanks, equipment rinsates, and field duplicates were

evaluated to identify potential sources of error introduced during sampling, transportation, and storage. These field QC parameters were collected at the frequency required in Table 4-3 of the *FS-QAPP* [MK, 1998a]. A summary of the field QC associated with each sampling event for the WM/RS is shown in Table 2-2. The raw data from the laboratory are presented in Appendix G.

Field blank sample results were evaluated to identify any sources of contamination in the reagent grade rinse water and/or general atmospheric conditions in the field. Reagent grade water (from the same source used for sampling equipment decontamination) was poured into appropriate sample containers to verify the water source. Explosive contaminants of concern were not detected in any field blanks, indicating that no cross-contamination occurred from the reagent grade water or during shipping and storage.

The equipment rinsate blanks were collected by rinsing decontaminated sampling equipment with reagent grade water, collecting the rinse water in appropriate sample containers and then submitting the rinse water for analysis. One rinse blank was collected for every twenty samples collected. Results are used to evaluate the effectiveness of decontamination procedures in preventing sample cross-contamination. No explosive contaminants were detected in any of the equipment rinsate blanks associated with these sampling events. These results indicate that decontamination procedures have been properly implemented to prevent cross-contamination.

Field duplicates were collected simultaneously with the original sample by using the same sampling equipment at the same location to determine the potential variability introduced by compost heterogeneity and sampling technique. One duplicate sample was analyzed for every ten samples collected. The RPD between the sample and duplicate was calculated during the validation process to determine the sampling precision. The RPD for most compost samples did not exceed 25%. Although specific RPD criteria for field duplicates were not established, levels can be compared to the acceptable RPD values for laboratory duplicates which is currently 40%. In two circumstances elevated RPDs for field duplicates existed. These values, however were associated with "P" flags from the analytical data. The "P" flag indicates a higher than acceptable difference between the primary and confirmation column on the instrument which exceeds a 40% difference. This variability may be due to matrix interference which may have increased the variability in the field duplicates of 4A26DT of windrow S-001 Day 0 and RDX of windrow S-005 Day 0.

2.4.2 Laboratory Quality Control

The laboratory performed method blank, sample matrix spike (MS), sample matrix spike duplicate (MSD), surrogate, laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) analyses to evaluate laboratory accuracy and precision. A summary of the laboratory quality control data for each batch processed for the WM/RS

TABLE 2-2 SUMMARY OF FIELD QUALITY CONTROL FOR WILEY MILL/RIFFLE SPLITTER SAMPLING

	Associated Field QC for Sampling Event of Pile S-001 Day 0					
COMPOUND	Sample	Field Dup	% RPD	Field Blank	Field Blank	Rinse Blank
Sample ID	BIOS00100091	BIOS00100091FD		BIOFB052798	FMFAB0317	BIORB041598
Lab ID	33609.12	33609.13		34140.16	33193.15	33609.19
Sample Date	4/15/98	4/15/98		5/27/98	3/17/98	4/15/98
Units	UG/KG	UG/KG	%	UG/L	UG/L	UG/L
HMX	247,000	225,000	9.32	13.0 U	13.0 U	13.0 U
RDX	1,840,000	1,790,000	2.75	14.0 U	14.0 U	14.0 U
TNB	12,500 U	12,500 U	0	7.30 U	7.30 U	7.30 U
DNB	12,500 U	12,500 U	0	4.00 U	4.00 U	4.00 U
TETRYL	32,500 U	32,500 U	0	10.0 U	10.0 U	10.0 U
NB	13,000 U	13,000 U	0	7.00 U	7.00 U	7.00 U
TNT	178,000	210,000	16.49	6.40 U	6.40 U	6.40 U
4 ADNT	28500 P	13400 P	72.1 P	7.00 U	7.00 U	7.00 U
2 ADNT	9010 J	6680 J	0	12.0 U	12.0 U	12.0 U
2,6 DNT	13,000 U	13,000 U	0	9.40 U	9.40 U	9.40 U
2,4 DNT	12,500 U	12,500 U	0	5.70 U	5.70 U	5.70 U
2 NT	12,500 U	12,500 U	0	12.0 U	12.0 U	12.0 U
4 NT	12,500 U	12,500 U	0	8.00 U	8.00 U	8.00 U
3 NT	12,500 U	12,500 U	0	7.90 U	7.90 U	7.90 U
PETN	12,500 U	12,500 U	0	20.0 U	N.A.	20.0 U

N.A. = Not Analyzed
RPD = Relative Percent Difference

Data Qualifiers
- U = Not Detected
- J = Estimated value below quantitation limit
- P = Greater than 40% difference on secondary confirmation column
- X = Result suffers from intereference which prevented accurate quantitation.

Units
- UG/KG = Micrograms/Kilogram
- UG/L = Micrograms/Liter

TABLE 2-2 SUMMARY OF FIELD QUALITY CONTROL FOR WILEY MILL/RIFFLE SPLITTER SAMPLING (continued)

COMPOUND	Associated Field QC for Sampling Event of Pile S-005 Day 0				
	Sample	Field Dup	% RPD	Field Blank	Rinse Blank
Sample ID	BIOS00500053	BIOS00500053FD		BIOFB052798	BIORB060398
Lab ID	34266.08	34266.09		34140.16	34266.19
Sample Date	6/3/98	6/3/98		5/27/98	6/3/98
Units	UG/KG	UG/KG	%	UG/L	UG/L
HMX	2200 U	22,000 U	0	13.0 U	13.0 U
RDX	14,900	20600 P	32.1 P	14.0 U	14.0 U
TNB	250 U	2500 U	0	7.30 U	7.30 U
DNB	250 U	2500 U	0	4.00 U	4.00 U
TETRYL	650 UX	6500 UX	0	10.0 U	10.0 U
NB	260 U	2600 U	0	7.00 U	7.00 U
TNT	250 U	2500 U	0	6.40 U	6.40 U
4 ADNT	250 U	2500 U	0	7.00 U	7.00 U
2 ADNT	250 U	2500 U	0	12.0 U	12.0 U
2,6 DNT	260 U	2600 U	0	9.40 U	9.40 U
2,4 DNT	250 U	2500 U	0	5.70 U	5.70 U
2 NT	250 U	2500 U	0	12.0 U	12.0 U
4 NT	250 U	2500 U	0	8.00 U	8.00 U
3 NT	250 U	2500 U	0	7.90 U	7.90 U
PETN	250 U	250 U	0	20.0 U	20.0 U

N.A. = Not Analyzed
RPD = Relative Percent Difference

Data Qualifiers
U = Not Detected
J = Estimated value below quantitation limit
P = Greater than 40% difference on secondary confirmation column
X = Result suffers from intereference which prevented accurate quantitation.

Units
UG/KG = Micrograms/Kilogram
UG/L = Micrograms/Liter

TABLE 2-2 SUMMARY OF FIELD QUALITY CONTROL FOR WILEY MILL/RIFFLE SPLITTER SAMPLING (continued)

	Associated Field QC for Sampling Event of Pile S-001 Day 0					
COMPOUND	Sample	Field Dup	% RPD	Field Blank	Field Blank	Rinse Blank
Sample ID	BIOS00100091	BIOS00100091FD		BIOFB052798	FMFAB0317	BIORB041598
Lab ID	33609.12	33609.13		34140.16	33193.15	33609.19
Sample Date	04/15/1998	04/15/1998		05/27/1998	03/17/1998	04/15/1998
Units	UG/KG	UG/KG	%	UG/L	UG/L	UG/L
HMX	247,000	225,000	9.32	13.0 U	13.0 U	13.0 U
RDX	1,840,000	1,790,000	2.75	14.0 U	14.0 U	14.0 U
TNB	12,500 U	12,500 U	0	7.30 U	7.30 U	7.30 U
DNB	12,500 U	12,500 U	0	4.00 U	4.00 U	4.00 U
TETRYL	32,500 U	32,500 U	0	10.0 U	10.0 U	10.0 U
NB	13,000 U	13,000 U	0	7.00 U	7.00 U	7.00 U
TNT	178,000	210,000	16.49	6.40 U	6.40 U	6.40 U
4 ADNT	28500 P	13400 P	72.1 P	7.00 U	7.00 U	7.00 U
2 ADNT	9010 J	6680 J	0	12.0 U	12.0 U	12.0 U
2,6 DNT	13,000 U	13,000 U	0	9.40 U	9.40 U	9.40 U
2,4 DNT	12,500 U	12,500 U	0	5.70 U	5.70 U	5.70 U
2 NT	12,500 U	12,500 U	0	12.0 U	12.0 U	12.0 U
4 NT	12,500 U	12,500 U	0	8.00 U	8.00 U	8.00 U
3 NT	12,500 U	12,500 U	0	7.90 U	7.90 U	7.90 U
PETN	12,500 U	12,500 U	0	20.0 U	N.A.	20.0 U

N.A. = Not Analyzed
RPD = Relative Percent Difference

Data Qualifiers
- U = Not Detected
- J = Estimated value below quantitation limit
- P = Greater than 40% difference on secondary confirmation column
- X = Result suffers from intereference which prevented accurate quantitation.

Units
- UG/KG = Micrograms/Kilogram
- UG/L = Micrograms/Liter

demonstration is presented in Table 2-3. Raw data from the laboratory are presented in Appendix H.

Laboratory method blanks were prepared and analyzed with the samples in order to evaluate potential target compounds or interferences from laboratory glassware, reagents, and/or solvents used in the preparation and analysis of samples. Laboratory method blanks do not show the presence of any target analytes above the reporting limits. Results of the method blanks are acceptable for all analysis.

The LCS and LCSD are samples prepared in the laboratory, consisting of clean soil or water spiked with known amounts of target analytes which is processed through the same preparation as field samples. Evaluation of the spike recoveries, and the variability between the LCS and LCSD, gives an indication of analysis accuracy and precision in a clean matrix. Laboratory control spike precision and accuracy results were acceptable for most of the target analytes associated with WM/RS samples. On Day 0 analysis of windrow S-001 had varied recoveries between the LCS and the LCSD. This resulted in an elevated RPD for tetryl. However, because most of the samples showed non-detectable levels of tetryl, the data are not adversely affected.

Sample MS and MSD are field samples which have been spiked with a known amount of target analytes and processed through the preparation and analysis with the field samples. Evaluation of the spike recoveries, and the variability between the MS and MSD, gives an indication of analysis accuracy and precision in the sample matrix. MS/MSD accuracy and precision can be affected by concentrations of both target and non-target compounds present in the original field sample, as well as the matrix of the sample itself. Three matrix spikes were performed during the WM/RS sampling, two matrix spikes were performed on samples produced through regular homogenization, and one matrix spike was performed on a sample collected using the WM/RS. Recoveries for most sets of MS/MSD analyses are acceptable for the target analytes. Precision and accuracy results for HMX, RDX, and TNT were affected by the high concentrations of these analytes in the Day 0 samples of S-001 and S-005 used for matrix spiking. Further, pentaerythritol tetranitrate (PETN) was not recovered in the Day 0 matrix spikes because of the dilution required for analysis, and the analyte being diluted out in the 1:50 dilution. Because the corresponding LCS/LCSD accuracy and precision are acceptable in these instances, the MS/MSD results are attributable to the sample concentration of analytes originally in the sample.

Surrogate spikes are known amounts of non-target compounds which are spiked into all samples prior to sample preparation in order to evaluate the efficiency of the sample preparation and analysis. Surrogate recoveries were generally acceptable.

The QC data demonstrate acceptable accuracy and precision when compared to the project's data quality objectives. The data meet the data quality objectives and therefore considered usable to support project decisions.

TABLE 2-3 SUMMARY OF LABORATORY QC FOR WILEY MILL/RIFFLE SPLITTER SAMPLING

	Associated Lab QC for Sampling Event of Pile S-001 Day 0											
COMPOUND	Matrix Spike		Matrix Spike Dup				Lab Control		Lab Control Dup			
Sample ID	BIOS00100031-R2		BIOS00100031-R2									
Lab ID	33673.03		33673.04		% RPD		LC0421SG		LD0421SG		% RPD	
Sample Date	4/15/98		4/15/98									
Units	% REC		% REC		%		% REC		% REC		%	
Acceptable Limits	19 - 137 %		19 - 137 %		0 - 40		19 - 137 %		19 - 137 %		0 - 40	
HMX	242	*	11	*	182.6	*	110		109		0.9	
RDX	284	*	1,450	*	134.5	*	99		96		3.1	
TNB	100		88		12.8		95		102		7.1	
DNB	122		114		6.8		105		105		0.0	
TETRYL	95		86		9.9		29		94		105.7	*
NB	108		97		10.7		103		101		2.0	
TNT	158		194	*	20.5		99		100		1.0	
4 ADNT	119		113		5.2		133		100		28.3	
2 ADNT	110		107		2.8		103		102		1.0	
2,6 DNT	120		104		14.3		99		98		1.0	
2,4 DNT	109		112		2.7		103		103		0.0	
2 NT	72		88		20.0		105		105		0.0	
4 NT	63		81		25.0		102		104		1.9	
3 NT	70		74		5.6		102		103		1.0	
PETN	0	*	0	*	0.0		105		102		2.9	

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

TABLE 2-3 SUMMARY OF LABORATORY QC FOR WILEY MILL/RIFFLE SPLITTER SAMPLING (continued)

COMPOUND	Associated Lab QC for Sampling Event of Pile S-005 Day 0											
	Matrix Spike		Matrix Spike Dup				Lab Control		Lab Control Dup			
Sample ID	BIOS0050003		BIOS0050003									
Lab ID	34266		34266		% RPD		LC0613SA		LD0613SA		% RPD	
Sample Date												
Units	% REC		% REC		%		% REC		% REC		%	
Acceptable Limits	19 - 137 %		19 - 137 %		0 - 40		19 - 137 %		19 - 137 %		0 - 40	
HMX	116		82		34.3		100		98		2.0	
RDX	505	*	432	*	15.6		97		98		1.0	
TNB	82		80		2.5		104		102		1.9	
DNB	82		85		3.6		99		98		1.0	
TETRYL	31	*	53		52.4	*	79		73		7.9	
NB	75		88		16.0		101		102		1.0	
TNT	75		78		3.9		83		82		1.2	
4 ADNT	76		86		12.3		105		105		0.0	
2 ADNT	77		86		11.0		101		100		1.0	
2,6 DNT	72		79		9.3		96		95		1.0	
2,4 DNT	92		98		6.3		112		109		2.7	
2 NT	80		77		3.8		107		104		2.8	
4 NT	49		82		50.4	*	105		100		4.9	
3 NT	78		79		1.3		98		94		4.2	
PETN	100		101		0.0		84		89		5.8	

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

TABLE 2-3 SUMMARY OF LABORATORY QC FOR WILEY MILL/RIFFLE SPLITTER SAMPLING (continued)

COMPOUND	Associated Lab QC for Sampling Event of Pile S-005 Day Final					
	Matrix Spike	Matrix Spike Dup	% RPD	Lab Control	Lab Control Dup	% RPD
Sample ID	BIOS00515091R1	BIOS00515091R1				
Lab ID	34654	34654		LC0707SC	LD0707SC	
Sample Date						
Units	% REC	% REC	%	% REC	% REC	%
Acceptable Limits	19 - 137 %	19 - 137 %	0 - 40	19 - 137 %	19 - 137 %	0 - 40
HMX	85	84	1.2	93	86	7.8
RDX	80	80	0.0	85	79	7.3
TNB	92	93	1.1	95	87	8.8
DNB	82	82	0.0	77	71	8.1
TETRYL	57	61	6.8	60	61	1.7
NB	66	67	1.5	69	63	9.1
TNT	79	79	0.0	77	71	8.1
4 ADNT	79	79	0.0	79	72	9.3
2 ADNT	91	91	0.0	92	84	9.1
2,6 DNT	88	88	0.0	86	82	4.8
2,4 DNT	93	92	1.1	91	83	9.2
2 NT	96	96	0.0	94	86	8.9
4 NT	96	96	0.0	98	89	9.6
3 NT	94	94	0.0	95	87	8.8
PETN	95	102	7.1	101	100	1.0

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

2.5 SUMMARY

In order to assess the comparability of the WM/RS and the standard homogenization technique, the RPD and the %D were calculated for each sample. The RPD and %D values are shown in Table 2-1. It can be seen that all except one RPD value is less than 40% for the target analytes. One analyte, TNT had a high RPD of 99.6% in comparison to the other values. This elevated RPD is attributable to the increased variability seen at lower explosive compound contamination levels.

Although acceptable RPD values were not established for this comparability, it can be compared to the acceptable RPD values for laboratory duplicates which is currently 40%. It is expected, however, that more variability would be seen in field duplicates rather than laboratory duplicates. The reason for this variability is because field duplicates are collected from the windrow which is large in volume in comparison to the sample aliquot used for laboratory duplicate analysis (i.e., a sample jar is better for obtaining two homogenous aliquots than the entire windrow sampling location).

The %D value, shown in Table 2-1, is calculated as the difference of the standard homogenization result and the WM/RS result divided by the standard homogenization result ([R1-R2]/R1). Of the 45 average explosive compound concentrations reported, 20% of those had values greater than the reporting limit. The average %D value for those samples with levels above the reporting limit was 39%. This represents only an 8% difference between all the explosive compounds using the WM/RS. This comparability demonstrates that a significant difference does not occur with the results of the explosive compound analysis analyzed after processing with the WM/RS. On examination of the nine analytes where values above the reporting limit were obtained, 78% had higher values in the WM/RS while 22% showed higher values of explosives resulting from the standard homogenization technique. The results in Table 2-1 show that more variability between the WM/RS and the standard homogenization technique occurs in lower concentrations of explosive contaminants. However, this increased variablity, and bias towards higher values in the WM/RS does not have a significant impact on the outcome of the windrow based on the clean-up objective values.

From the data presented in Table 2-1 and the review of the RPD and %D, it is clear that comparable data can be obtained from either homogenization technique utilized. The WM/RS technique, however, has three disadvantages compared to the standard homogenization technique. First, the material must be air dried to prevent clogging the grinder. Air drying requires 3 to 5 days, therefore extending the schedule for sending the samples to the laboratory. Additionally, air drying in the laboratory will be performed as required by the analytical method, EPA Method 8330. Second, field laboratory space and equipment constraints make it impractical to implement this procedure for full-scale operation with all three compost buildings in operation. Finally, there is a potential for cross-contamination resulting from the lack of an acceptable decontamination procedure for the extended use of the WM/RS. Decontamination using the method described in the *FS-QAPP* [MK, 1998a] is not appropriate for this piece of equipment because bearings and other delicate parts of the equipment may be damaged by contact with water.

3.0
FIELD TEST KIT ANALYSIS

The purpose of this section is to compare the results of the field test kits and the off-site analytical laboratory and make recommendations based on the interpretation of this analytical data. RDX, HMX, and TNT are the major explosive contaminants present at NSWC Crane based on previous sample results. Field test kits provide a cost effective method of determining approximate concentrations of explosive compounds and minimize the number of samples submitted for off-site analysis. There is currently no field test kit available for the analysis of HMX, however, field test kits were used for RDX and TNT analysis. RDX and TNT are representative of the explosive compounds present in the soil and give a good indication of the degradation of the other explosive compounds.

3.1 SAMPLING PROCEDURES

Samples were collected from the 30% soil loading windrow for analysis by both field test kits and off-site analysis on days 0, 5, 10, and 60. Samples were analyzed both in the laboratory and using field test kits to ensure that comparable results can be obtained by either method. Samples collected on day 40 have been included in the summary table of the results shown in Appendix I. These results are not included in the technical evaluation of the data because they were not scheduled in the scope of this audit demonstration, however, they demonstrate similar results seen in Days 0, 5, and 10.

Three sampling locations were selected at each cross-section according to the sampling plan provided in Field SOP 3.0 Section 2.2 of the *FS-QAPP* [MK, 1998a]. The pilot-scale-size windrow required four cross sections to be sampled on each day of analysis. Twelve samples were collected on each day on Day 0, 5, 10, and 60 of composting activities.

3.2 TEST METHOD DESCRIPTION

The samples were homogenized using the standard homogenization technique described in the *FS-QAPP* [MK, 1998a] and split in the field. The standard homogenization technique involves forming a composite sample in a stainless steel bowl, removing vegetation and large rocks, and using a pestle or spoon to break up and homogenize the soil until it is mixed thoroughly. One sample aliquot was analyzed in the field for TNT and RDX using the Strategic Diagnostic Incorporated, (SDI) EnSys® field test kits and the other aliquot was submitted to Southwest Laboratories for analysis by EPA Method 8330. Field sample analysis was performed by extracting 20 grams of soil with acetone and analyzing the resultant extract by spectrophotometer. Quantitation is based on colorimetric comparison of the sample to that of known calibration standards within a working range of 1.0 mg/kg to 30.0 mg/kg. Absorbance

readings are collected directly from the spectrophotometer and used to calculate the concentration of the compound based on the known calibration standards. Field SOP 5.0 for the field analysis of compost material is provided in Appendix A of the *FS-QAPP* [MK, 1998a] and provides specifications of the extraction and spectrophotometric analysis of compost material. Sample analysis by Southwest Laboratories was performed following their standard operating procedure which is based on EPA Method 8330. The Laboratory Standard Operating Procedure for Method 8330 is provided in Appendix C, page C2-29, of the *FS-QAPP* [MK, 1998a] which details extraction and analysis using high performance liquid chromatography.

3.3 TEST RESULTS

The results of the comparison of field screening versus laboratory analysis is summarized in Table 3-1. False positives are analytes which were detected by the field method, but not by the laboratory method, while false negatives are analytes which were not detected by the field method, but showed detectable levels in laboratory analysis. Appendix I contains the raw data from the field test kits and a detailed analytical summary of the field test kits and laboratory analysis. Raw data, including chromatograms and calibration summaries from the laboratory analysis, are presented in Appendix J through Appendix Q. The results demonstrate that the field tests kits used on the compost matrix are sufficient to monitor the progress of composting operations and determine if confirmation samples can be collected.

TABLE 3-1 SUMMARY OF FIELD TEST KITS VS. LABORATORY ANALYSIS COMPARISON

Windrow Age	RDX ANALYSIS		TNT ANALYSIS	
	False Positive	False Negative	False Positive	False Negative
Day 0	0	0	0	2
Day 5	0	0	0	1
Day 10	0	1	0	1
Day 40	0	3	1	1
Day 60	0	11	0	1

3.4 DATA QUALITY CONTROL

The data for Field Test Kit and Laboratory Analysis for comparison of results were verified and at least 10% of the samples were validated by MK personnel following the

procedures outlined in Section 9.0 of the *FS-QAPP* [MK, 1998a]. Data was compared with field and laboratory QC sample data to assess its usability for supporting operational decisions. The results of data verification and validation are presented in this section.

3.4.1 Test Kits Quality Control

Field test kits were utilized to obtain quantitative results of the explosive levels of RDX and TNT in the field. During the analysis, quality control including a zero background absorbance check , a QC check standard, and a sample duplicate were analyzed to assess the precision and accuracy of the field test kits. A summary of the field QC results is presented in Table 3-2.

In each batch processed for either RDX or TNT analysis, the spectrometer was checked to verify zero absorbance at the correct wavelength. In addition, method blanks were prepared and analyzed with the samples in order to evaluate potential target compounds or interferences from glassware and reagents used in the preparation and analysis of samples. RDX and TNT were not detected in any of the blanks associated with these sampling events.

QC check standards, from a prepared test kit standard, were analyzed at a frequency of one standard for every twenty samples. The QC check standards were analyzed to provide an indication of analysis accuracy. Results of most field check standards had recoveries between 77% and 122% which were acceptable for both RDX and TNT analysis. On Day 5 of analysis, the check standard recovered at 123%. Because the check standard was within 1% of the acceptable limit, analysis was continued. Results for RDX concentrations on Day 5 may be considered biased high by approximately 1% because of suspected direct correlation between the elevated recovery of the check standard and sample results. However, because of the high levels of RDX found on Day 5, the estimated values did not have any impact on composting activities.

Sample duplicates consisting of two separate aliquots of a single sample were analyzed at a frequency of one duplicate for every twenty samples collected to evaluate the precision of the field test kits. The relative percent difference between the sample and duplicate were calculated to evaluate the results. Most duplicates had acceptable RPD values less than 45% for both RDX and TNT. In two sample duplicates, however, elevated RPD values were determined to exceed the acceptable limits. On Day 0, a triplicate sample was analyzed to confirm the results obtained for RDX. On Day 60, an elevated RPD was obtained for RDX analysis because one replicate was below detectable limits, and the other slightly above. RPD calculations from Day 60 have values less than five times the detectable limit and are susceptible to elevated RPD results because of the variability that occurs at this low level near the detection limit.

TABLE 3-2 SUMMARY OF FIELD QC FOR FIELD TEST KITS

Day	Analysis	ABS-blank	ABS-check std	% RECOVERY	Method Blank	Sample	Sample Dup	% RPD	
Acceptable limits				77 - 122%				0 - 45 %	
DAY 0	RDX	0.000	0.195	87.1	0.8	64.5	138.8	73.1	*
					0.9	64.5	170	90.0	*
						138.8	170	20.2	
DAY 0	TNT	0.002	0.337	99.1	5.0 U	7.3	7.3	0.0	
DAY 5	RDX	0.002	0.276	123.2	0.88 U	19.7	19	3.6	
DAY 5	TNT	0.001	0.348	102.4	5.0 U	3.25 J	3.6 J	10.2	
DAY 10	RDX	0.000	0.258	115.2	0.88 U	0.29 J	0.39 J	29.4	
DAY 10	TNT	0.001	0.332	97.6	5.0 U	5.0 U	5.0 U	0.0	
DAY 60	RDX	0.000	0.208	92.9	0.88 U	0.88 J	3.3	115.8	*
DAY 60	TNT	0.000	0.319	93.8	5.0 U	5.0 U	5.0 U	0.0	

Data Qualifiers
U = Not Detected
J = Estimated value below quantiation limit

RPD = Relative Percent Difference
ABS = Absorbance Reading

* Note: Sample duplicate RPD exceeded acceptable limits.

3.4.2 Field Quality Control

Analytical results for the field blanks, equipment rinsates, and field duplicates were evaluated to identify potential sources of error introduced during sampling, transportation and storage. These field QC parameters were collected at the frequency required in Table 4-3 of the *FS-QAPP* [MK, 1998a]. A summary of the field QC associated with each sampling event for the field test kit and laboratory comparison is shown in Table 3-3. Raw data from the laboratory are presented in Appendix R.

All field blanks and equipment rinse blanks had undetectable levels of explosives. This indicates that no explosive cross-contamination occurred from the deionized water, during shipping and storage, or from sampling equipment. Also, one field duplicate sample was analyzed for every ten compost samples colected. The RPD between the sample and the duplicate was calculated during the validation process to determine the sampling precision. In most instances RPD values were less than 25%. However, in some cases, where positive values were detected in one replicate and undetectable levels were obtained in the replicate, elevated RPD values were noted. This is attributed to the non-homogeneous matrix type, and the inability to accurately quantify values at or near the level of detection.

3.4.3 Laboratory Quality Control

The laboratory performed method blank, MS, MSD, surrogate, LCS, and LCSD analyses to evaluate laboratory accuracy and precision. A summary of the laboratory quality control data for each batch processed for the field test kit and laboratory analysis comparison is presented in Table 3-4. The QC results from the laboratory are presented in Appendix S.

Laboratory method blanks were prepared and analyzed with the samples in order to evaluate potential target compounds or interferences from laboratory glassware, reagents and/or solvents used in the preparation and analysis of samples. Laboratory method blanks did not show the presence of any target analytes above the reporting limits. Results of the method blanks were acceptable for all analyses.

The LCS and LCSD are samples prepared in the laboratory, consisting of clean soil or water spiked with known amounts of target analytes which are processed through the same preparation as field samples. Evaluation of the spike recoveries, and the variability between the LCS and LCSD, gives an indication of analysis accuracy and precision in a clean matrix. Laboratory control spike precision and accuracy results were acceptable for all target analytes associated with Field Test Kit/Laboratory Analysis Comparison samples.

TABLE 3-3 SUMMARY OF FIELD QUALITY CONTROL FOR FIELD TEST KITS AND LABORATORY COMPARISON STUDY

	Associated Field QC for Day 0 Sampling				
COMPOUND	Sample	Field Dup	% RPD	Field Blank	Rinse Blank
Sample ID	BION30%00D1	BION30%00D1FD		BIOFB052798	BIOR042798
Lab ID	33783.12	33783.13		34140.16	33783.16
Sample Date	4/27/98	4/27/98		5/27/98	4/27/98
Units	UG/KG	UG/KG	%	UG/L	UG/L
HMX	51,200	64,800	23.45	13.0 U	13.0 U
RDX	357,000	445,000	21.95	14.0 U	14.0 U
TNB	6,250 U	6,250 U	0	7.30 U	7.30 U
DNB	6,250 U	6,250 U	0	4.00 U	4.00 U
TETRYL	16,200 U	16,200 U	0	10.0 U	10.0 U
NB	6,500 U	6,500 U	0	7.00 U	7.00 U
TNT	27,600	32,400	16.00	6.40 U	6.40 U
4 ADNT	3,550 JP	6,250 U	0	7.00 U	7.00 U
2 ADNT	6,250 U	6,250 U	0	12.0 U	12.0 U
2,6 DNT	6,250 U	6,250 U	0	9.40 U	9.40 U
2,4 DNT	6,250 U	6,250 U	0	5.70 U	5.70 U
2 NT	6,250 U	6,250 U	0	12.0 U	12.0 U
4 NT	6,250 U	6,250 U	0	8.00 U	8.00 U
3 NT	6,250 U	6,250 U	0	7.90 U	7.90 U
PETN	6,250 U	6,250 U	0	20.0 U	20.0 U

N.A. = Not Analyzed

Data Qualifiers

U = Not Detected

J = Estimated value below quantitation limit

P = Greater than 25% difference on secondary confirmation column

Units

UG/KG = Micrograms/Kilogram

UG/L = Micrograms/Liter

TABLE 3-3 SUMMARY OF FIELD QUALITY CONTROL FOR FIELD TEST KITS AND LABORATORY COMPARISON STUDY (continued)

COMPOUND	Associated Field QC for Day 5 Sampling				
	Sample	Field Dup	% RPD	Field Blank	Rinse Blank
Sample ID	BION30%05C2	BION30%05C2FD		BIOFB052798	BIORB050798
Lab ID	33847.08	33847.09		34140.16	33911.20
Sample Date	5/2/98	5/2/98		5/27/98	57/98
Units	UG/KG	UG/KG	%	UG/L	UG/L
HMX	32,300	33,200	2.75	13.0 U	13.0 U
RDX	87,200	94,500	8.04	14.0 U	14.0 U
TNB	1,250 U	1,250 U	0	7.30 U	7.30 U
DNB	1,250 U	1,250 U	0	4.00 U	4.00 U
TETRYL	3,250 U	3,250 U	0	10.0 U	10.0 U
NB	1,300 U	1,300 U	0	7.00 U	7.00 U
TNT	19,000	9470 J	66.95	6.40 U	6.40 U
4 ADNT	1,250 U	1,250 U	0	7.00 U	7.00 U
2 ADNT	1,250 U	1,250 U	0	12.0 U	12.0 U
2,6 DNT	1,300 U	1,300 U	0	9.40 U	9.40 U
2,4 DNT	1,250 U	1,250 U	0	5.70 U	5.70 U
2 NT	1,250 U	1,250 U	0	12.0 U	12.0 U
4 NT	1,250 U	1,250 U	0	8.00 U	8.00 U
3 NT	1,250 U	1,250 U	0	7.90 U	7.90 U
PETN	1,250 U	1,250 U	0	20.0 U	20.0 U

N.A. = Not Analyzed

Data Qualifiers

U = Not Detected

J = Estimated value below quantitation limit

P = Greater than 25% difference on secondary confirmation column

Units

UG/KG = Micrograms/Kilogram

UG/L = Micrograms/Liter

TABLE 3-3 SUMMARY OF FIELD QUALITY CONTROL FOR FIELD TEST KITS AND LABORATORY COMPARISON STUDY (continued)

COMPOUND	Associated Field QC for Day 10 Sampling				
	Sample	Field Dup	% RPD	Field Blank	Rinse Blank
Sample ID	BION30%10B3	BION30%10B3FD		BIOFB052798	BIORB050798
Lab ID	33910.08	33910.09		34140.16	33910.16
Sample Date	5/7/98	5/7/98		5/27/98	5/7/98
Units	UG/KG	UG/KG	%	UG/L	UG/L
HMX	2,200 U	3,030 P	31.70	13.0 U	13.0 U
RDX	857 J	4,820	139.62	14.0 U	14.0 U
TNB	250 U	250 U	0	7.30 U	7.30 U
DNB	250 U	250 U	0	4.00 U	4.00 U
TETRYL	650 U	650 U	0	10.0 U	10.0 U
NB	260 U	260 U	0	7.00 U	7.00 U
TNT	250 U	568 P	77.7	6.40 U	6.40 U
4 ADNT	250 U	250 U	0	7.00 U	7.00 U
2 ADNT	250 U	250 U	0	12.0 U	12.0 U
2,6 DNT	260 U	260 U	0	9.40 U	9.40 U
2,4 DNT	250 U	250 U	0	5.70 U	5.70 U
2 NT	250 U	250 U	0	12.0 U	12.0 U
4 NT	250 U	250 U	0	8.00 U	8.00 U
3 NT	250 U	250 U	0	7.90 U	7.90 U
PETN	650 U	650 U	0	20.0 U	20.0 U

N.A. = Not Analyzed

Data Qualifiers

U = Not Detected

J = Estimated value below quantitation limit

P = Greater than 25% difference on secondary confirmation column

Units

UG/KG = Micrograms/Kilogram

UG/L = Micrograms/Liter

TABLE 3-3 SUMMARY OF FIELD QUALITY CONTROL FOR FIELD TEST KITS AND LABORATORY COMPARISON STUDY (continued)

COMPOUND	Associated Field QC for Day 60 Sampling				
	Sample	Field Dup	% RPD	Field Blank	Rinse Blank
Sample ID	BION30%60B3	BION30%60B3FD		BIOFB052798	BIORB062698
Lab ID	34581.06	34581.07		34140.16	34581.16
Sample Date	6/26/98	6/26/98		5/27/98	6/26/98
Units	UG/KG	UG/KG	%	UG/L	UG/L
HMX	2200 U	2200 U	0	13.0 U	13.0 U
RDX	4160 P	3520 P	16.7	14.0 U	14.0 U
TNB	250 U	250 U	0	7.30 U	7.30 U
DNB	250 U	250 U	0	4.00 U	4.00 U
TETRYL	650 U	650 U	0	10.0 U	10.0 U
NB	260 U	260 U	0	7.00 U	7.00 U
TNT	359	138 J	88.9 J	6.40 U	6.40 U
4 ADNT	250 U	250 U	0	7.00 U	7.00 U
2 ADNT	250 U	250 U	0	12.0 U	12.0 U
2,6 DNT	260 U	260 U	0	9.40 U	9.40 U
2,4 DNT	250 U	250 U	0	5.70 U	5.70 U
2 NT	250 U	250 U	0	12.0 U	12.0 U
4 NT	250 U	250 U	0	8.00 U	8.00 U
3 NT	250 U	250 U	0	7.90 U	7.90 U
PETN	250 U	250 U	0	20.0 U	20.0 U

N.A. = Not Analyzed

Data Qualifiers

U = Not Detected

J = Estimated value below quantitation limit

P – Greater than 25% difference on secondary confirmation column

Units

UG/KG = Micrograms/Kilogram

UG/L = Micrograms/Liter

TABLE 3-4 SUMMARY OF LABORATORY QC FOR TEST KITS/LABORATORY COMPARISON

	Associated Lab QC for Day 0 Sampling											
COMPOUND	Matrix Spike		Matrix Spike Dup				Lab Control		Lab Control Dup			
Sample ID	BION30%00B3		BION30%00B3									
Lab ID	33783.07		33783.08		% RPD		LC0429SF		LD0429SF		% RPD	
Sample Date	4/27/98		4/27/98									
Units	% REC		% REC		%		% REC		% REC		%	
Acceptable Limits	19 - 137 %		19 - 137 %		0 - 40		19 - 137 %		19 - 137 %		0 - 40	
HMX	44		126	*	96.5	*	118		117		0.9	
RDX	158	*	421	*	90.8	*	102		100		2.0	
TNB	95		89		6.5		113		110		2.7	
DNB	121		132		8.7		114		113		0.9	
TETRYL	33		23		35.7		113		106		6.4	
NB	95		91		4.3		110		109		0.9	
TNT	100		128		24.6		106		105		0.9	
4 ADNT	135		152	*	11.8		109		107		1.9	
2 ADNT	143	*	149	*	4.1		108		107		0.9	
2,6 DNT	106		137		25.5		108		107		0.9	
2,4 DNT	103		107		3.8		109		108		0.9	
2 NT	92		84		9.1		110		109		0.9	
4 NT	79		82		3.7		110		109		0.9	
3 NT	81		77		5.1		113		112		0.9	
PETN	0	*	0	*	0.0		115		104		10.0	

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

TABLE 3-4 SUMMARY OF LABORATORY QC FOR TEST KITS/LABORATORY COMPARISON (continued)

	Associated Lab QC for Day 5 Sampling											
COMPOUND	Matrix Spike		Matrix Spike Dup				Lab Control		Lab Control Dup			
Sample ID	BION30%05D1		BION30%05D1									
Lab ID	33847.12		33847.13		% RPD		LC0505SE		LD0421SG		% RPD	
Sample Date	5/2/98		5/2/98									
Units	% REC		% REC		%		% REC		% REC		%	
Acceptable Limits	19 - 137 %		19 - 137 %		0 - 40		19 - 137 %		19 - 137 %		0 - 40	
HMX	152	*	126		18.7		115		101		13.0	
RDX	262	*	148	*	55.6	*	105		94		11.1	
TNB	98		97		1.0		103		91		12.4	
DNB	117		120		2.5		117		101		14.7	
TETRYL	91		83		9.2		96		98		2.1	
NB	105		107		1.9		109		97		11.7	
TNT	94		104		10.1		96		85		12.2	
4 ADNT	117		124		5.8		120		100		18.2	
2 ADNT	96		108		11.8		105		92		13.2	
2,6 DNT	102		107		4.8		106		94		12.0	
2,4 DNT	100		105		4.9		107		93		14.0	
2 NT	106		105		0.9		107		95		11.9	
4 NT	103		107		3.8		110		98		11.5	
3 NT	112		105		6.5		110		98		11.5	
PETN	97		107		9.8		106		103		2.9	

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

TABLE 3-4 SUMMARY OF LABORATORY QC FOR TEST KITS/LABORATORY COMPARISON (continued)

COMPOUND	Associated Lab QC for Day 10 Sampling					
	Matrix Spike	Matrix Spike Dup		Lab Control	Lab Control Dup	
Sample ID	BION30%10A1	BION30%10A1				
Lab ID	33910.02	33910.03	% RPD	LC0511SA	LD0421SG	% RPD
Sample Date	5/7/98	5/7/98				
Units	% REC	% REC	%	% REC	% REC	%
Acceptable Limits	19 - 137 %	19 - 137 %	0 - 40	19 - 137 %	19 - 137 %	0 - 40
HMX	82	101	20.8	110	113	2.7
RDX	51	68	28.6	82	83	1.2
TNB	63	86	30.9	82	84	2.4
DNB	65	91	33.3	90	91	1.1
TETRYL	33	45	30.8	43	48	11.0
NB	61	88	36.2	93	95	2.1
TNT	62	76	20.3	78	80	2.5
4 ADNT	63	89	34.2	94	94	0.0
2 ADNT	55	80	37.0	83	84	1.2
2,6 DNT	71	99	32.9	100	102	2.0
2,4 DNT	61	88	36.2	91	92	1.1
2 NT	69	100	36.7	102	104	1.9
4 NT	68	98	36.1	102	104	1.9
3 NT	57	83	37.1	86	89	3.4
PETN	77	78	1.3	100	97	3.0

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

TABLE 3-4 SUMMARY OF LABORATORY QC FOR TEST KITS/LABORATORY COMPARISON (continued)

COMPOUND	Associated Lab QC for Day 60 Sampling					
	Matrix Spike	Matrix Spike Dup		Lab Control	Lab Control Dup	
Sample ID	BION30%60C3	BION30%60C3				
Lab ID	34581.11	34581.12	% RPD	LC0421SG	LD0421SG	% RPD
Sample Date	6/26/98	6/26/98				
Units	% REC	% REC	%	% REC	% REC	%
Acceptable Limits	19 - 137 %	19 - 137 %	0 - 40	19 - 137 %	19 - 137 %	0 - 40
HMX	93	94	1.1	97	99	2.0
RDX	87	77	12.2	95	96	1.0
TNB	96	95	1.0	97	99	2.0
DNB	91	91	0.0	90	92	2.2
TETRYL	26	23	12.2	91	84	8.0
NB	89	89	0.0	97	98	1.0
TNT	72	73	1.4	77	78	1.3
4 ADNT	81	81	0.0	88	95	7.7
2 ADNT	90	89	1.1	91	92	1.1
2,6 DNT	88	88	0.0	88	90	2.2
2,4 DNT	101	100	1.0	100	102	2.0
2 NT	99	99	0.0	98	100	2.0
4 NT	90	89	1.1	90	92	2.2
3 NT	88	86	2.3	86	88	2.3
PETN	98	98	0.0	98	101	3.0

RPD = Relative Percent Difference

* = Percent Recovery outside of acceptable limits.

Surrogate spikes are known amounts of non-target compounds which are spiked into all samples prior to sample preparation in order to evaluate the efficiency of the sample preparation and analysis. Surrogate recoveries were generally acceptable, although in two instances the surrogate performance appears to be affected by the dilution of samples. The first instance occurred during analysis of aliquot A3 from Day 0 where 212% recovery was obtained on a 10 times dilution of the sample. Further dilution brought the concentration of the analytes within range, as well as the surrogate recovery to 68% which is within acceptable limits. The second instance where surrogate recovery exceeded acceptable ranges occurred on a 10 times dilution of sample D3 from Day 5 with surrogate recovery of 217%. Further dilution was not required for accurate quantitation, and the elevated surrogate recovery was not re-analyzed to confirm matrix interference.

Sample MS and MSD are field samples which have been spiked with a known amount of target analytes and processed through the preparation and analysis with the field samples. Evaluation of the spike recoveries, and the variability between the MS and MSD, gives an indication of analysis accuracy and precision in the sample matrix. MS/MSD accuracy and precision can be affected by concentrations of both target and non-target compounds present in the original field sample, as well as the matrix of the sample itself. Results for most sets of MS/MSD analyses were acceptable for the target analytes. Precision and accuracy results for HMX and RDX were affected by the high concentrations of these analytes in the Day 0 and Day 5 samples used for matrix spiking. 4A26DT and 2A46DT had high spike recoveries in the Day 0 MS and MSD, which may indicate these analyte results are biased high in the corresponding samples. However, because most of the samples showed these analytes at nondetectable levels, or at levels below the reporting limits, the data are not adversely affected. PETN was not recovered in the Day 0 matrix spikes because of the dilution required for analysis, and the analyte being diluted out in the 1:50 dilution. Because the corresponding LCS/LCSD accuracy and precision were acceptable in all instances where sample matrix spike results did not meet criteria listed in the QAPP, the analysis was correctly performed. Matrix spike data for Day 10 and Day 60 had acceptable recoveries for all explosive compounds.

The QC data demonstrate that analyses has acceptable accuracy and precision when compared to the project's data quality objectives. The confirmation data meets the project's data quality objectives and are therefore considered usable to support project decisions.

3. 5 SUMMARY

The field test kit results were compared with the laboratory results for TNT and RDX to identify "false negatives" (ie., detected by the laboratory method, but not by the field method) and "false positives" (ie., detected by the field method, but not by the laboratory method).

There were no false positive detected for either RDX or TNT in Day 0, 5, 10 and 60. In five instances false negatives existed for TNT. In two of these cases, the field test kits provided estimated values that were less than the test kits recommended detectable level. Therefore only 6% of the field test kit results caused false negative results. Examining these instances where false negatives occurred, the values detected by the laboratory were all more than 30% below the industrial cleanup goal of 64 mg/kg.

RDX showed only one false negative for analysis of Day 0, 5, and 10. On day 60, a significant number of potentially false negatives occurred. The laboratory data shows low level RDX concentrations that have all been flagged with "P" codes to represent a deviation of greater than 40% between the primary and secondary confirmation column. Re-analysis confirmed the original values determined from the primary column. This large difference between columns may be due to an interfering chromatogram peak coeluting with the target analyte. However, these levels were not detected in the field test kits which may indicate that these values are indeed interferences. In addition, the levels of RDX detected on Day 60 exceed the levels of RDX seen on Day 10 and Day 40 which may further demonstrate an interfering peak in the laboratory analysis.

RDX was detected in 32 of the 48 samples analyzed by both the field test kits and the off-site laboratory methods. RDX concentrations ranged from non-detect to 510 mg/kg. Due to the high concentrations in a number of these samples, significant dilutions were required for both field test kit methods and laboratory analysis. Only one of the 24 samples collected on Day 0 and Day 5 was within the calibration range of the field test kits and did not require any dilution. TNT was detected in 9 of the 48 samples collected by both the field test kits and the off-site laboratory methods. TNT concentrations ranged from non-detect to 57.2 mg/kg.

To compare the field test kits results with the laboratory results for TNT and RDX, the difference in the sensitivity of the two methods must be addressed. It is important to note that the reporting limits for the field test kits are higher than those of the off-site laboratory. The reporting limit for RDX is 0.88 mg/kg and 5.0 mg/kg for TNT for the field test kits. The laboratory reporting limit for RDX and TNT analysis performed by Southwest Laboratories were both at 0.25 mg/kg. In cases where the laboratory detected either TNT or RDX below the level achievable by the appropriate field test kit, results were deemed to be in agreement since both the field test kits and off-site laboratory analysis achieved their specific objectives.

The field test kits have been used in initial full-scale operations to assist in the process monitoring of explosive degradation within the compost windrows to determine when final confirmation sample can be collected. Significant numbers of false negatives and false positives do not exist. Since an off-site laboratory will be used for the final confirmation results in the final compost windrows, the field test kits are successful in defining the time at which analytical samples can be submitted to the off-site laboratory for analysis. The accuracy of the field test kits is not critical and only needs to

approximate the concentration levels and provide a low percentage of false negative values. The laboratory and field screening results indicate that the use of the SDI Ensys® test kits resulted in low false positive and false negative rates. Based on these data quality objectives, the field test kits are considered acceptable for use in a compost matrix.

4.0
CONCLUSION

The results of the samples collected from the WM/RS and the standard homogenization technique show an 8% difference between the two homogenization techniques. Both techniques are suitable to provide results that meet the data quality objectives for this project. The standard homogenization technique however, is significantly easier to implement and integrate into the field operations while maximizing the treatment of contaminated soil for explosive compounds. Therefore, it is recommended to use the standard homogenization technique described in the *FS-QAPP* [MK, 1998a] for sample collection during full-scale operations at NSWC Crane.

The results of the field test kit analysis and the laboratory analysis show that field test kits provide adequate data for process sampling of the compost material. Fewer than 10% of the samples showed false negative or false positive results for either RDX or TNT. The test kits will be utilized at least weekly to monitor RDX and TNT concentrations to identify when confirmation samples for all explosive compounds can be collected for off-site analysis of the windrows by monitoring the windrows on the final day of composting activity. Field test kits will not be used exclusively for windrow monitoring because of the limited compounds analyzed. The field test kit analysis followed by confirmation off-site laboratory analysis as described in the *Full-Scale Operational Plan* [MK,1998c] and the *FS-QAPP* [MK, 1998a] is recommended for the full-scale operations at NSWC Crane.

5.0
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MK, 1998b *Windrow S-001, Batch Report*, Full-Scale Bioremediation, NEWC Crane, Crane, Indiana. Delivery Order Number 0009, Contract N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, August 5, 1998.

MK, 1998c. *Full-Scale Operational Plan,* Soils Bioremediation Facility, NSWC Crane, Crane, Indiana. Delivery Order Number 0009, Contract Number N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, March 12, 1998

MK, 1998d *30% Soil Loading Batch Report,* Full-Scale Bioremediation, NEWC Crane, Crane, Indiana. Delivery Order Number 0009, Contract N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, August 7, 1998.

APPENDIX A
RAW DATA OF WINDROW S-001 DAY 0
FOR WILEY MILL/RIFFLE SPLITTER

TABLE OF CONTENTS

DESCRIPTION	PAGES
Raw Data of Windrow S-001 Day 0	90 pages

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-03-1-R1

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.01

Sample Amt: 2g % Moisture 31.90 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	120000	
121-82-4	RDX	946000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	54100	
1946-51-0	4ADNT	18100	P
35572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

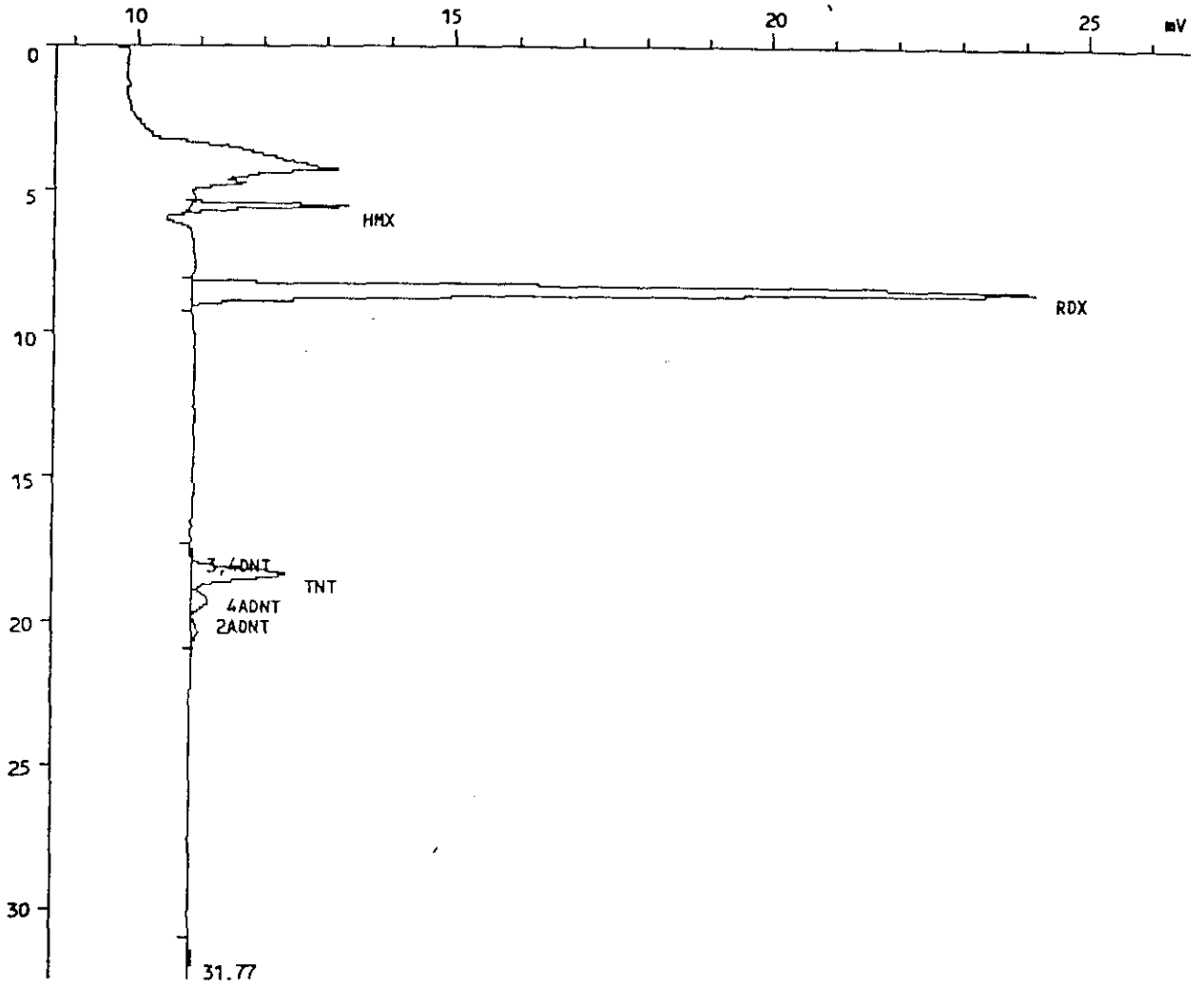
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,22,1

Sample name.....: BIO-S-001-00-03-1-R1 100X
Sample ID.....: 33673.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 09:33:16
Reported on 27-Apr-98 at 11:55:46



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,22,1

Acquired on 26-Apr-98 at 09:33:16
Modified on 27-Apr-82 at 11:43:10
Reported on 27-Apr-98 at 11:43:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-03-1-R1 100X
Sample ID.....: 33673.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

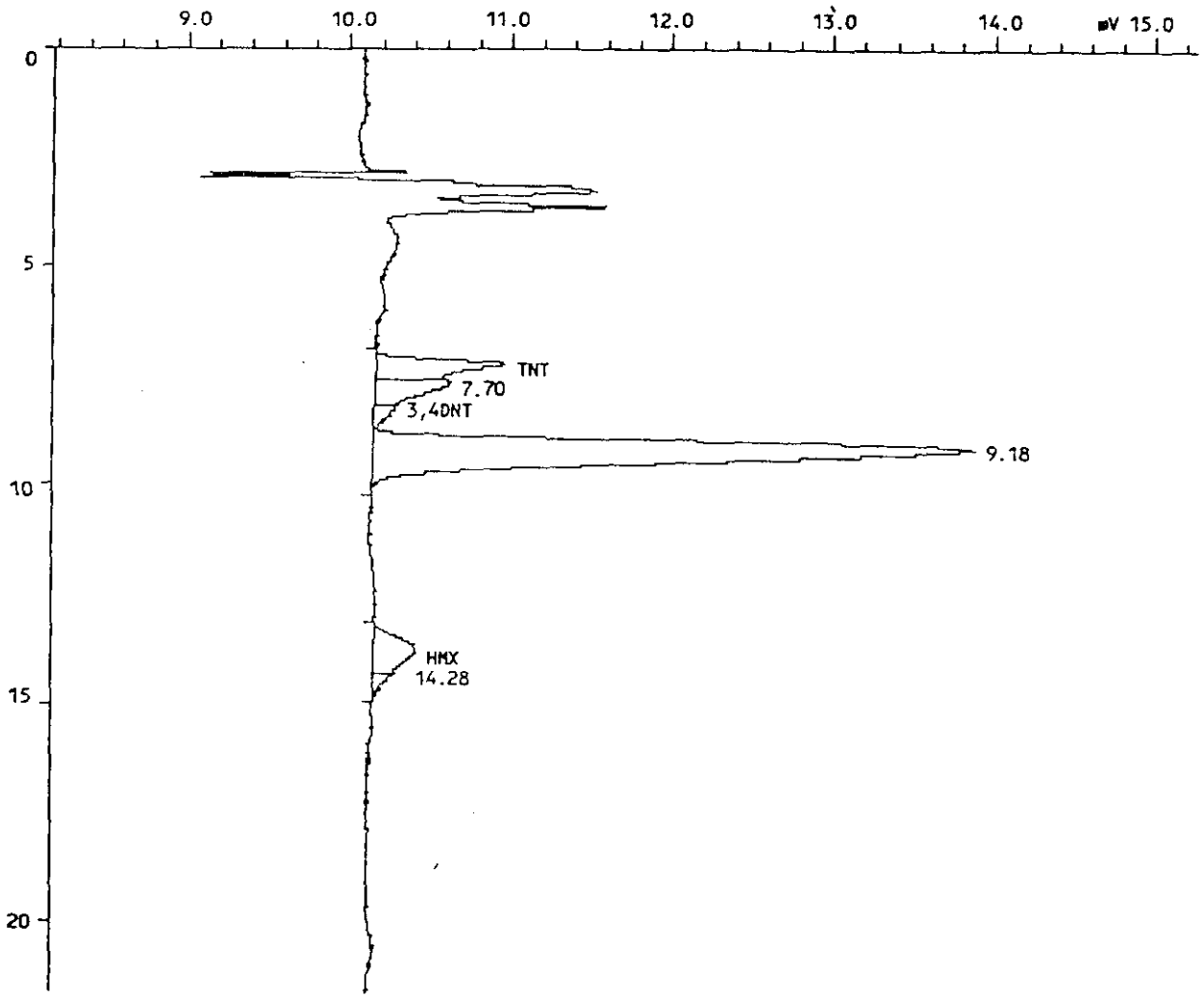
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	2512	27094	120419.484	HMX
2	8.576	13306	306576	945637.313	RDX
3	17.685	37	699	1528.845	3,4DNT
4	18.336	1502	41157	54082.652	TNT
5	19.237	284	9840	18101.965	4ADNT
6	20.251	89	2901	3679.272	2ADNT
Total		17729	388267	1143449.500	
Residual		59	2417	3066.195	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,3,1

Sample name.....: BIO-S-001-00-03-1-R1 100X
Sample ID.....: 33673.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 17:57:34
Reported on 09-May-98 at 14:46:03



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,3,1

Acquired on 24-Apr-98 at 17:57:34
Modified on 09-May-82 at 14:40:04
Reported on 09-May-98 at 14:40:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-03-1-R1 100X
Sample ID.....: 33673.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

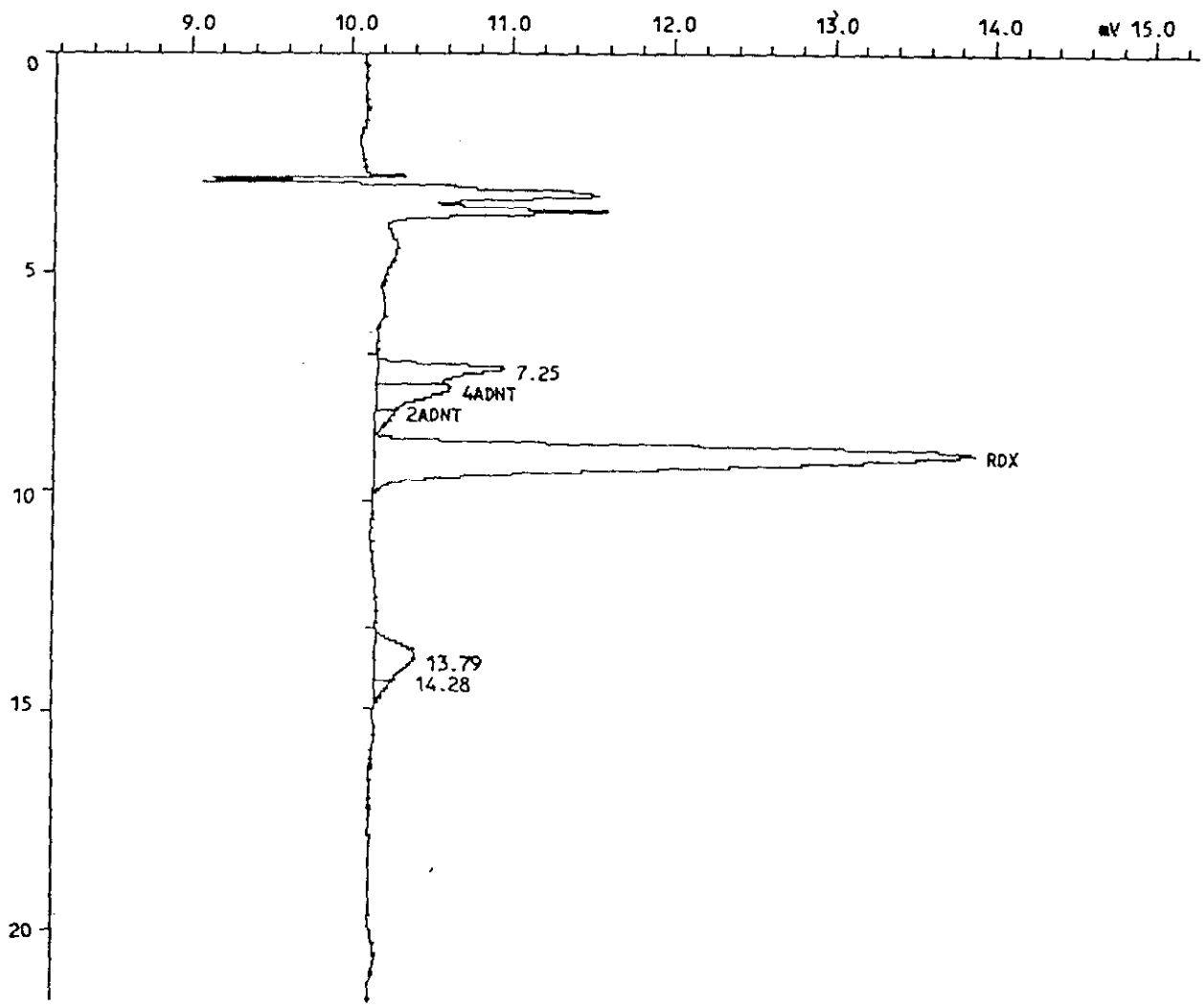
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.253	795	16422	65372.918	TNT
3	8.219	131	2339	17611.078	3,4DNT
5	13.787	256	10461	104301.633	HMX
Total		1182	29222	187285.625	
Residual		4315	133926	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,3,1

Sample name.....: BIO-S-001-00-03-1-R1 100X
Sample ID.....: 33673.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 17:57:34
Reported on 09-May-98 at 14:55:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,3,1

Acquired on 24-Apr-98 at 17:57:34
Modified on 09-May-82 at 14:47:20
Reported on 09-May-98 at 14:47:21

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-03-1-R1 100X
Sample ID.....: 33673.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.696	460	11965	75396.391	4ADNT
3	8.219	131	2339	9258.714	2ADNT
4	9.179	3724	119795	902753.875	RDX
Total		4316	134100	987409.000	
Residual		1181	29048	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-03-1-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.01

Sample Amt: 2g % Moisture 31.90 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

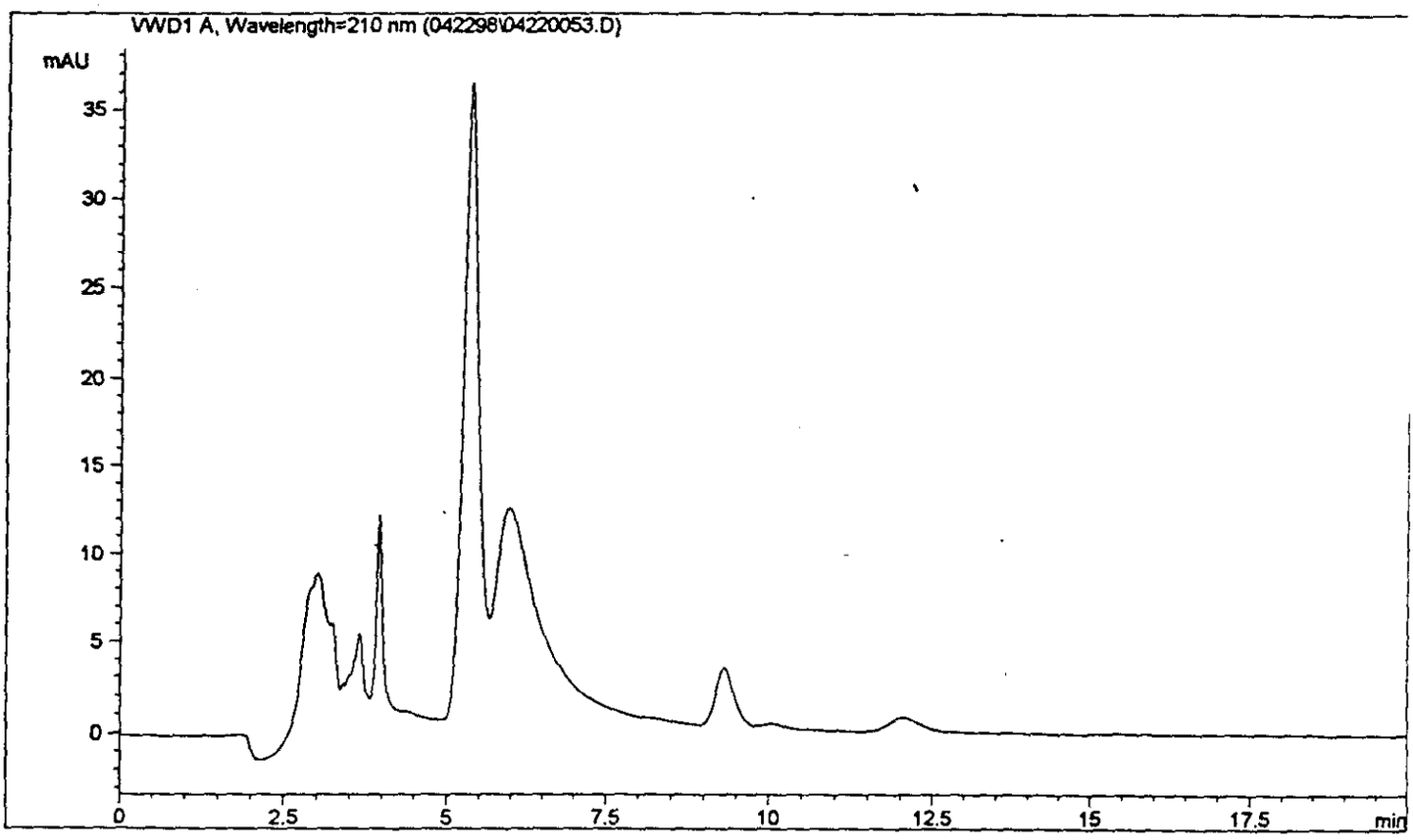
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

FORM I

Injection Date	: Thu, 23. Apr. 1998	Seq Line	: 53
Sample Name	: 33673.01	Vial No.	: 53
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-03-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.02

Sample Amt: 2g % Moisture 3.84 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	117000	
121-82-4	RDX	1010000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	71000	
1946-51-0	4ADNT	15700	P
35572-78-2	2ADNT	4000	J
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

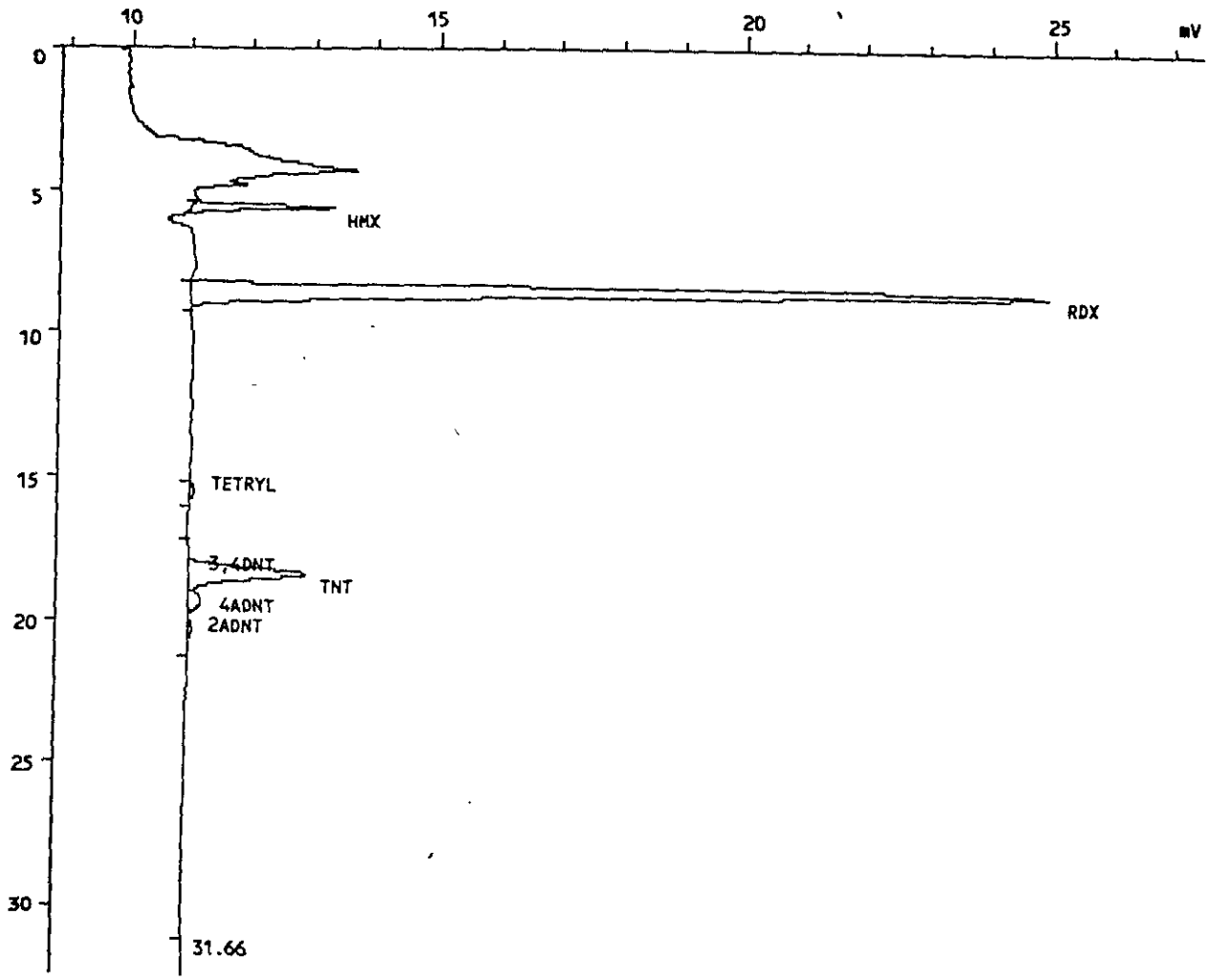
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,23,1

Sample name.....: BIO-S-001-00-03-1-R2 100X
Sample ID.....: 33673.02
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 10:17:53
Reported on 27-Apr-98 at 11:56:08



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,23,1

Acquired on 26-Apr-98 at 10:17:53
Modified on 27-Apr-82 at 11:42:52
Reported on 27-Apr-98 at 11:42:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-03-1-R2 100X
Sample ID.....: 33673.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

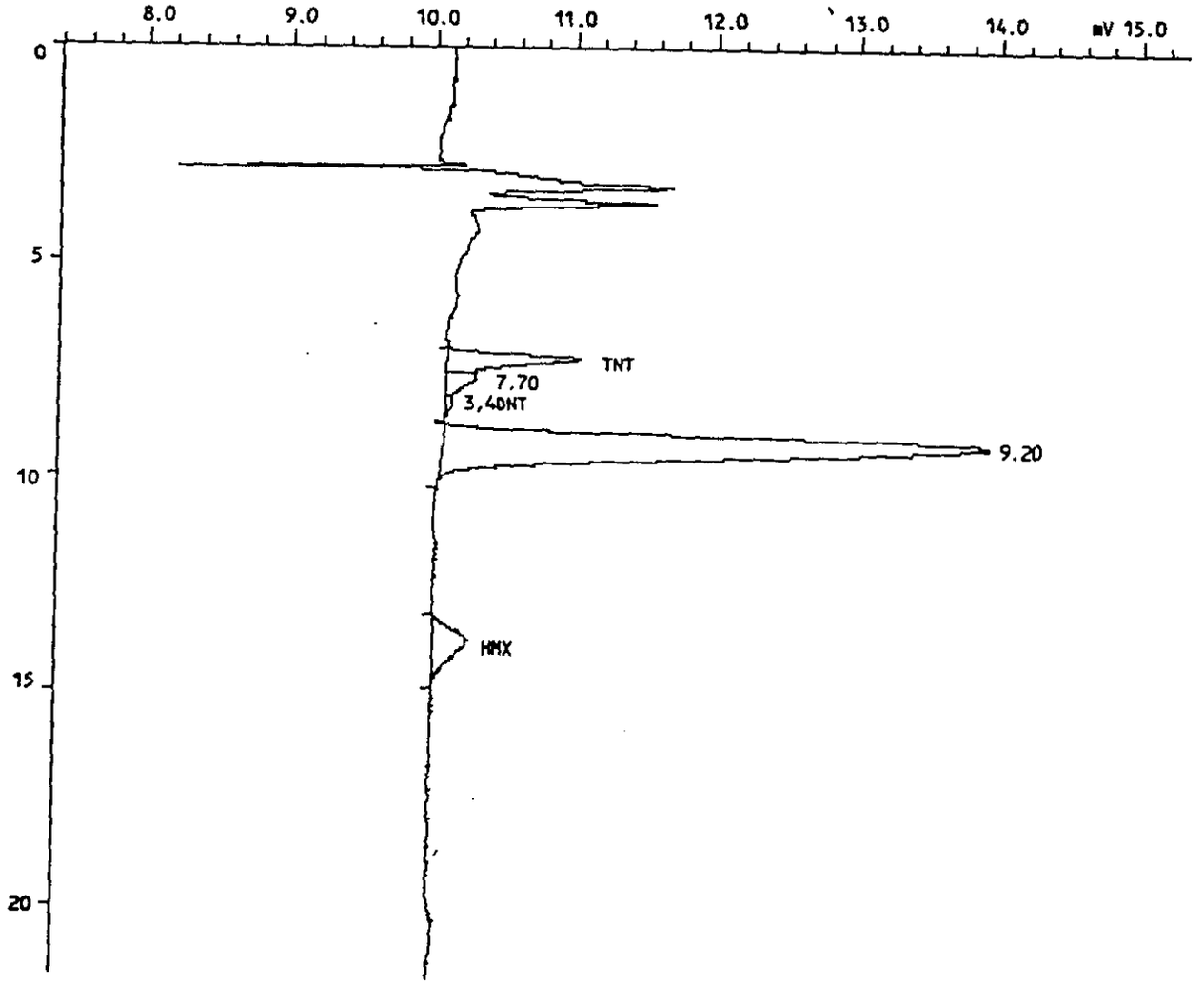
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	2360	26388	117278.109	HMX *
2	8.581	13940	326878	1008260.625	RDX *
3	15.451	76	2157	5479.597	TETRYL
4	17.851	34	576	1261.266	3,4DNT
5	18.384	1919	53999	70957.992	TNT
6	19.301	232	8558	15743.259	4ADNT * P
7	20.400	84	3153	3998.675	2ADNT * J
Total		18645	421709	1222979.500	
Residual		45	1981	2512.067	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,4,1

Sample name.....: BIO-S-001-00-03-1-R2 100X
Sample ID.....: 33673.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 18:40:58
Reported on 09-May-98 at 14:45:35



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,4,1

Acquired on 24-Apr-98 at 18:40:58
Modified on 09-May-82 at 14:40:18
Reported on 09-May-98 at 14:40:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-03-1-R2 100X
Sample ID.....: 33673.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

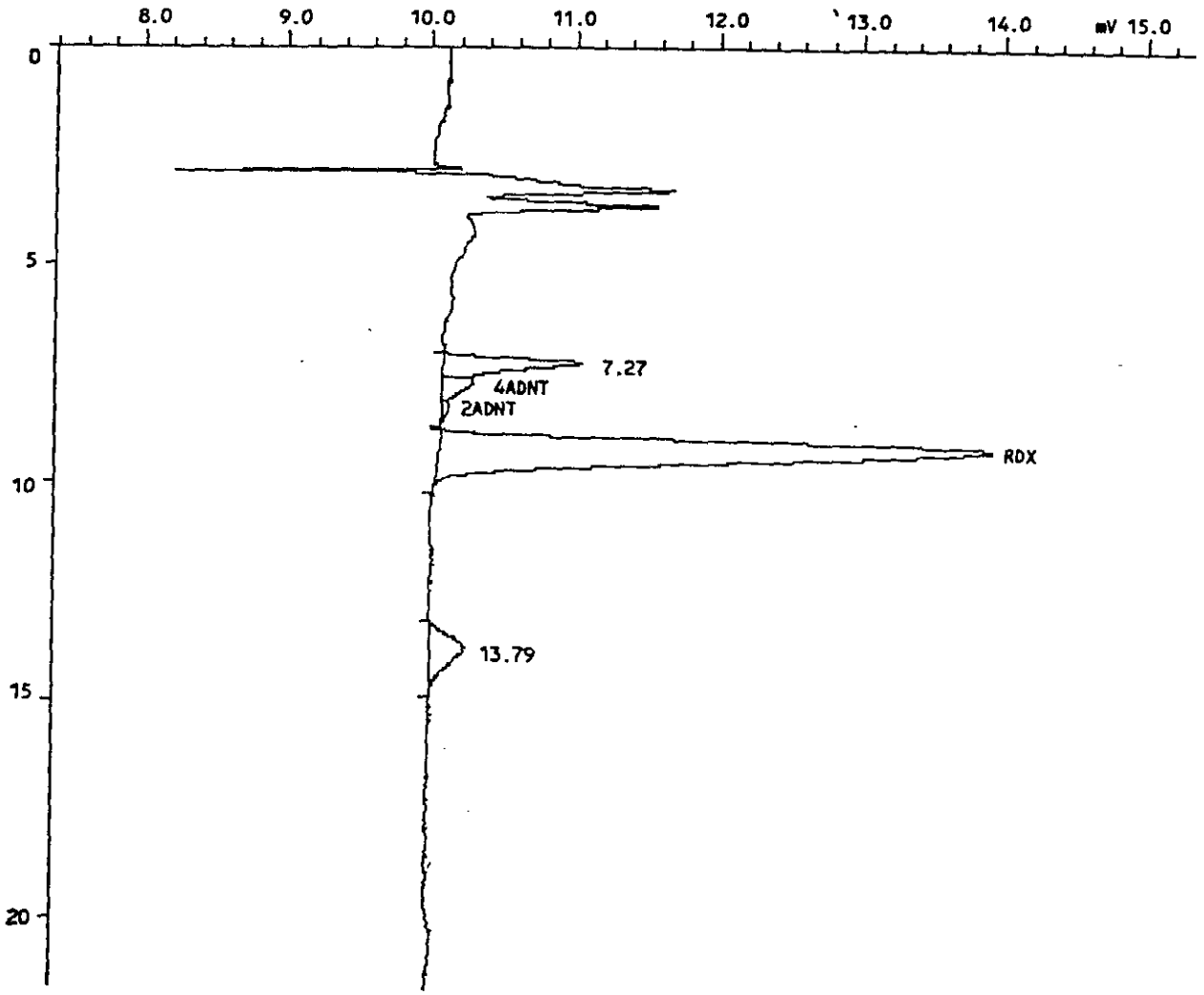
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.269	966	17180	68392.383	TNT
3	8.357	60	1293	9732.729	3,4DNT
5	13.787	243	10246	102157.773	HMX
Total		1269	28719	180282.875	
Residual		4087	128318	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,4,1

Sample name.....: BIO-S-001-00-03-1-R2 100X
Sample ID.....: 33673.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 18:40:58
Reported on 09-May-98 at 14:54:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,4,1

Acquired on 24-Apr-98 at 18:40:58
Modified on 09-May-82 at 14:47:34
Reported on 09-May-98 at 14:47:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-03-1-R2 100X
Sample ID.....: 33673.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.701	219	4825	30405.676	4ADNT
3	8.357	60	1293	5116.811	2ADNT
4	9.200	3868	123493	930616.125	RDX
Total		4146	129611	966138.625	
Residual		1209	27427	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-03-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.02

Sample Amt: 2g % Moisture 3.84 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

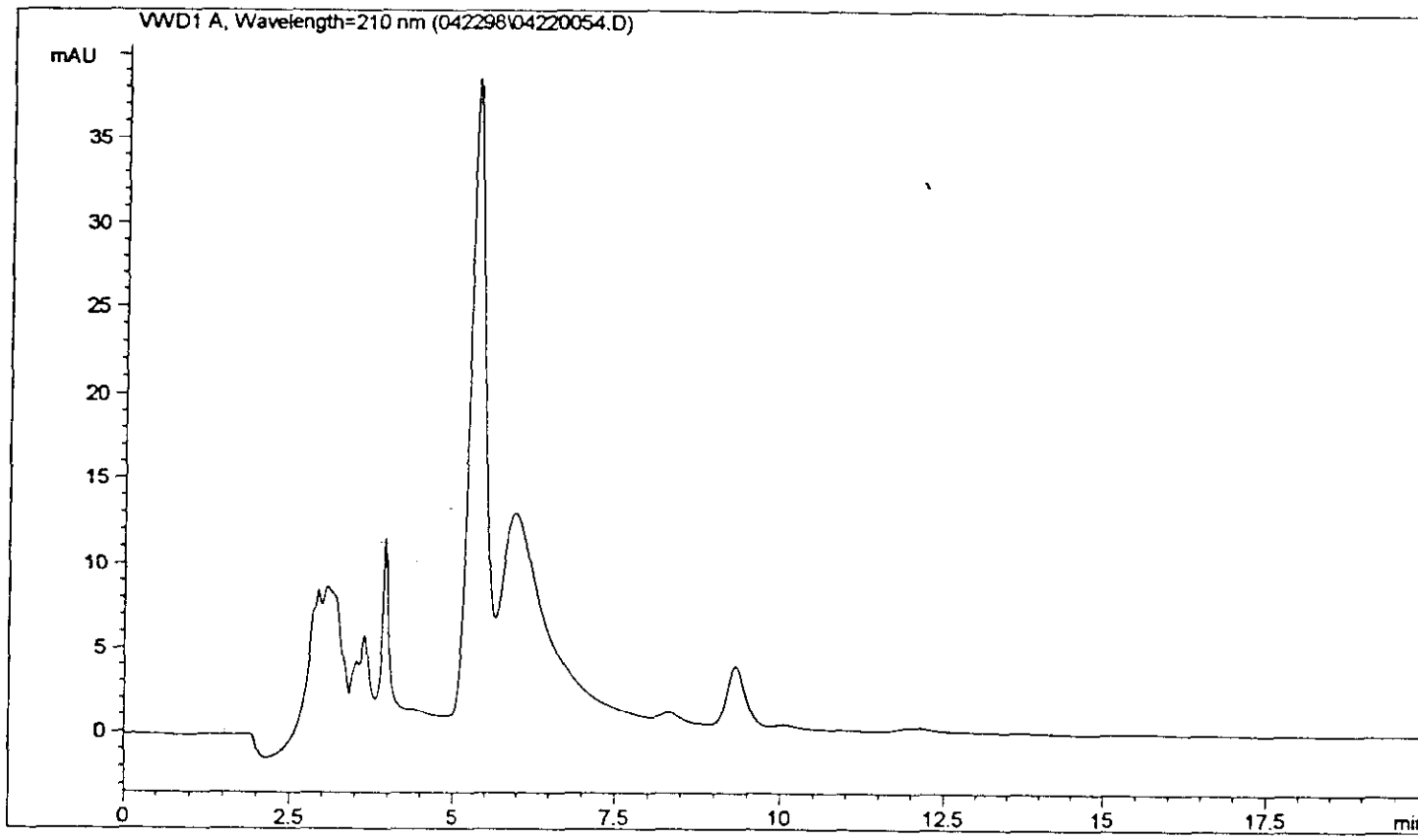
FORM I

Injection Date : Thu, 23. Apr. 1998
Sample Name : 33673.02
Acq Operator : SS

Seq Line : 54
Vial No. : 54
Inj. No. : 1
Inj. Vol. : 200

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-05-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.03

Sample Amt: 2g % Moisture 45.93 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	35100	J
121-82-4	RDX	185000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	3360	JP
1946-51-0	4ADNT	4120	JP
5572-78-2	2ADNT	12500	U
06-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

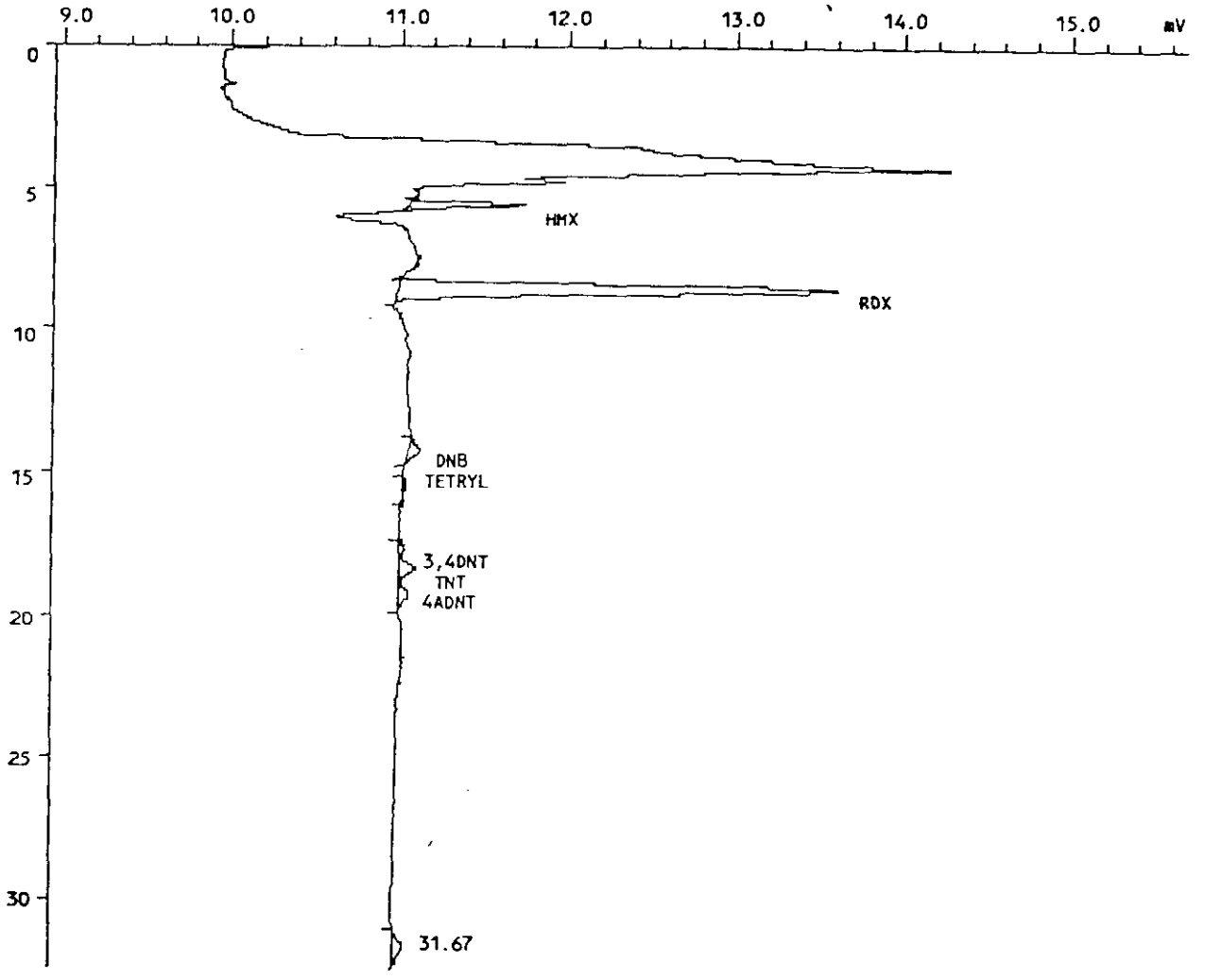
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,26,1

Sample name.....: BIO-S-001-00-05-2-R1 100X
Sample ID.....: 33673.03
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 12:31:46
Reported on 27-Apr-98 at 11:57:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,26,1

Acquired on 26-Apr-98 at 12:31:46
Modified on 27-Apr-82 at 11:41:48
Reported on 27-Apr-98 at 11:41:50

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-05-2-R1 100X
Sample ID.....: 33673.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

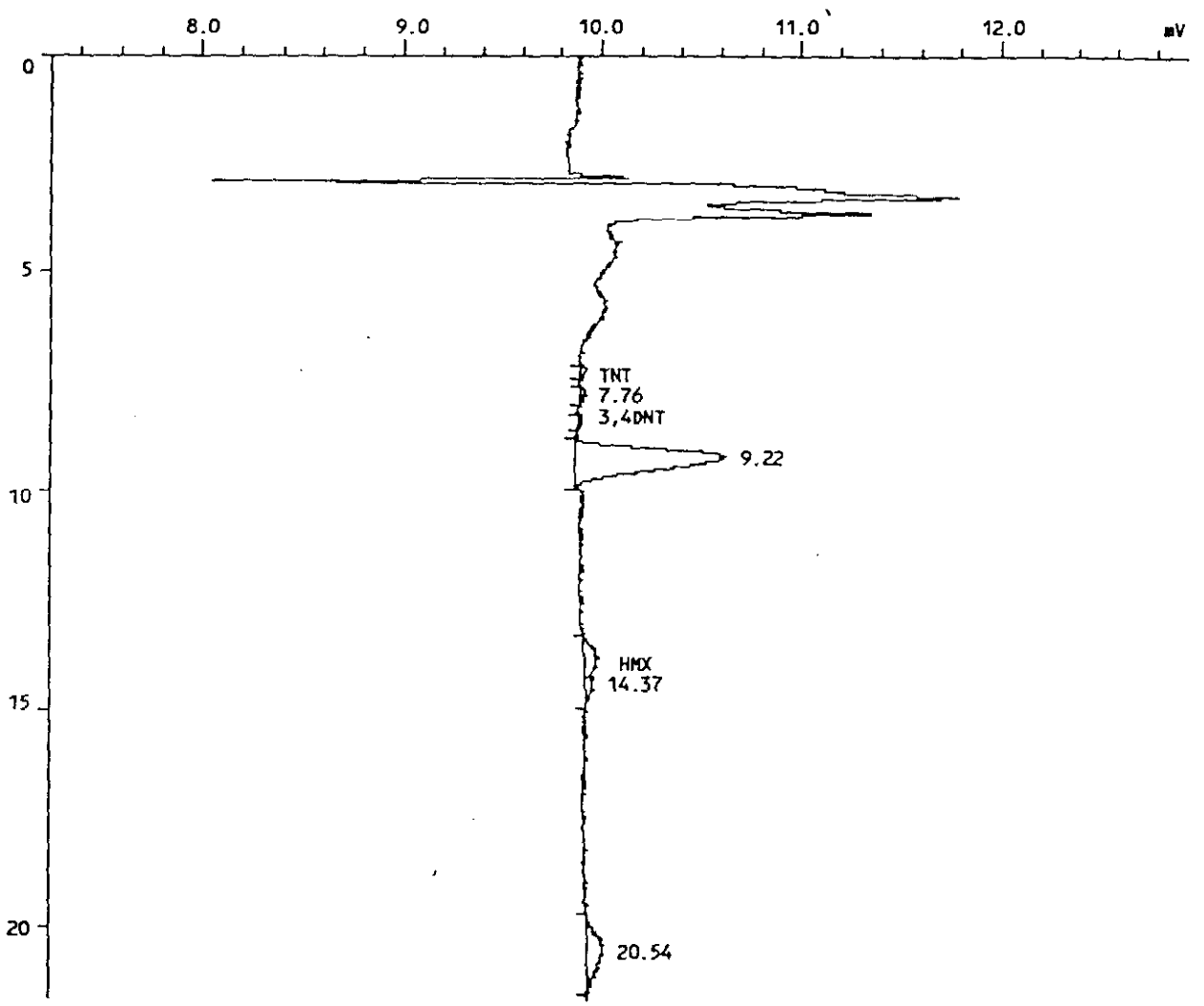
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	711	7908	35146.016	HMX * J
2	8.581	2630	60071	185289.281	RDX *
3	14.245	85	2260	2164.005	DNB
4	15.392	30	788	2002.750	TETRYL
5	17.717	38	826	1808.162	3,4DNT 90
6	18.331	97	2556	3359.309	TNT * JP
7	19.221	68	2239	4118.254	4ADNT * JP
Total		3659	76648	233887.766	
Residual		58	2422	4456.288	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,5,1

Sample name.....: BIO-S-001-00-05-2-R1 100X
Sample ID.....: 33673.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 19:24:22
Reported on 09-May-98 at 14:45:14



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,5,1

Acquired on 24-Apr-98 at 19:24:22
Modified on 09-May-82 at 14:40:32
Reported on 09-May-98 at 14:40:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-05-2-R1 100X
Sample ID.....: 33673.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

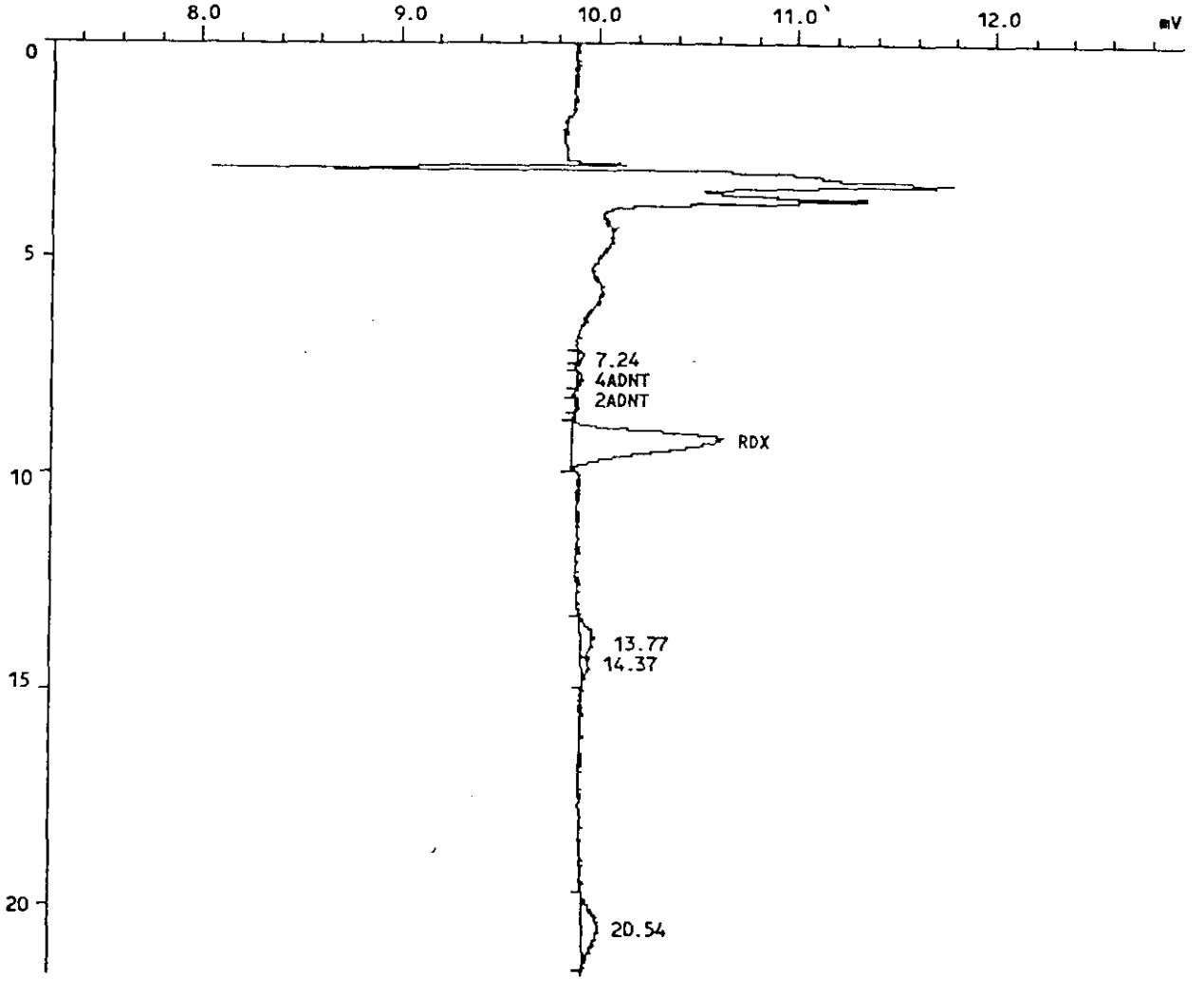
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.243	37	360	1432.246	TNT
3	8.357	30	344	2589.508	3,4DNT
5	13.771	73	2479	24712.852	HMX
Total		140	3182	28734.605	
Residual		913	29433	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,5,1

Sample name.....: BIO-S-001-00-05-2-R1 100X
Sample ID.....: 33673.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 19:24:22
Reported on 09-May-98 at 14:54:34



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,5,1

Acquired on 24-Apr-98 at 19:24:22
Modified on 09-May-82 at 14:47:48
Reported on 09-May-98 at 14:47:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-05-2-R1 100X
Sample ID.....: 33673.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.760	29	349	2196.859	4ADNT
3	8.357	30	344	1361.388	2ADNT
4	9.216	755	23676	178415.438	RDX
Total		814	24368	181973.688	
Residual		239	8247	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-05-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.03

Sample Amt: 2g % Moisture 45.93 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

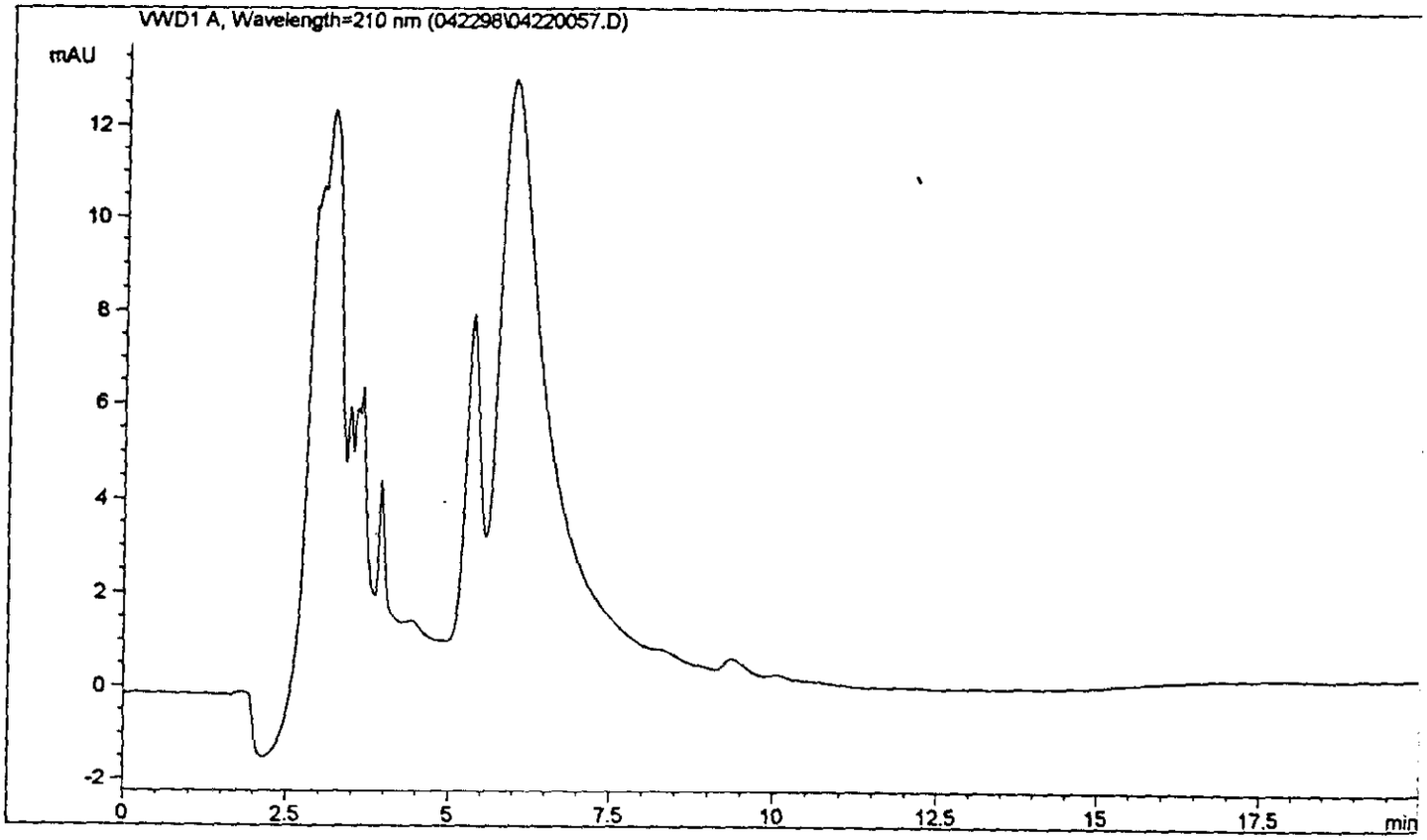
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

FORM I

Injection Date	: Thu, 23. Apr. 1998	Seq Line	: 57
Sample Name	: 33673.03	Vial No.	: 57
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

==========

*** End of Report ***

C4 4/27/98 5:38:20 PM SS

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-05-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.04

Sample Amt: 2g % Moisture 6.42 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	42000	J
121-82-4	RDX	278000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	11400	J
1946-51-0	4ADNT	3750	JP
35572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

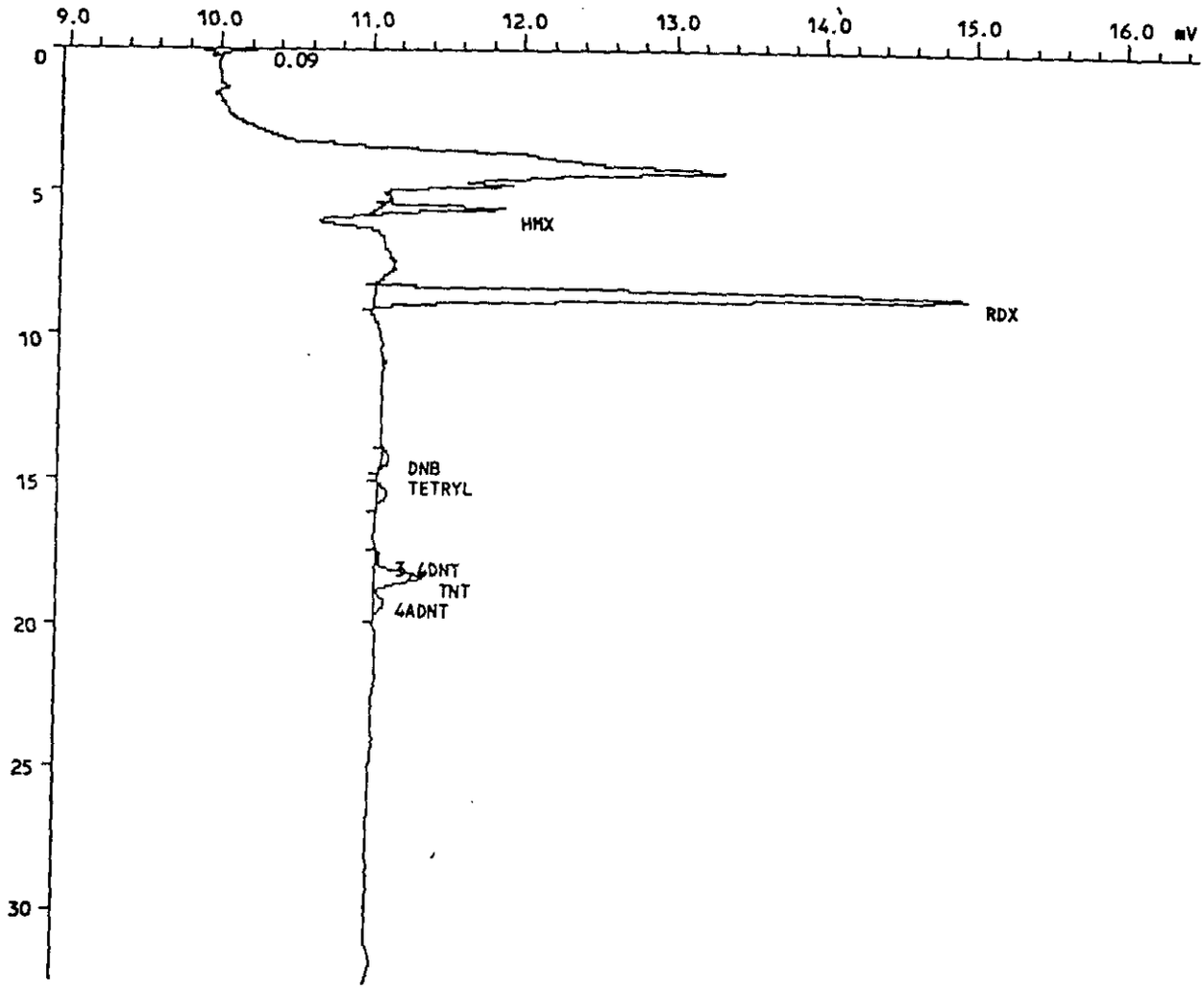
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,27,1

Sample name.....: BIO-S-001-00-05-2-R2 100X
Sample ID.....: 33673.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 13:16:23
Reported on 27-Apr-98 at 11:57:33



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,27,1

Acquired on 26-Apr-98 at 13:16:23
Modified on 27-Apr-82 at 11:41:32
Reported on 27-Apr-98 at 11:41:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-05-2-R2 100X
Sample ID.....: 33673.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

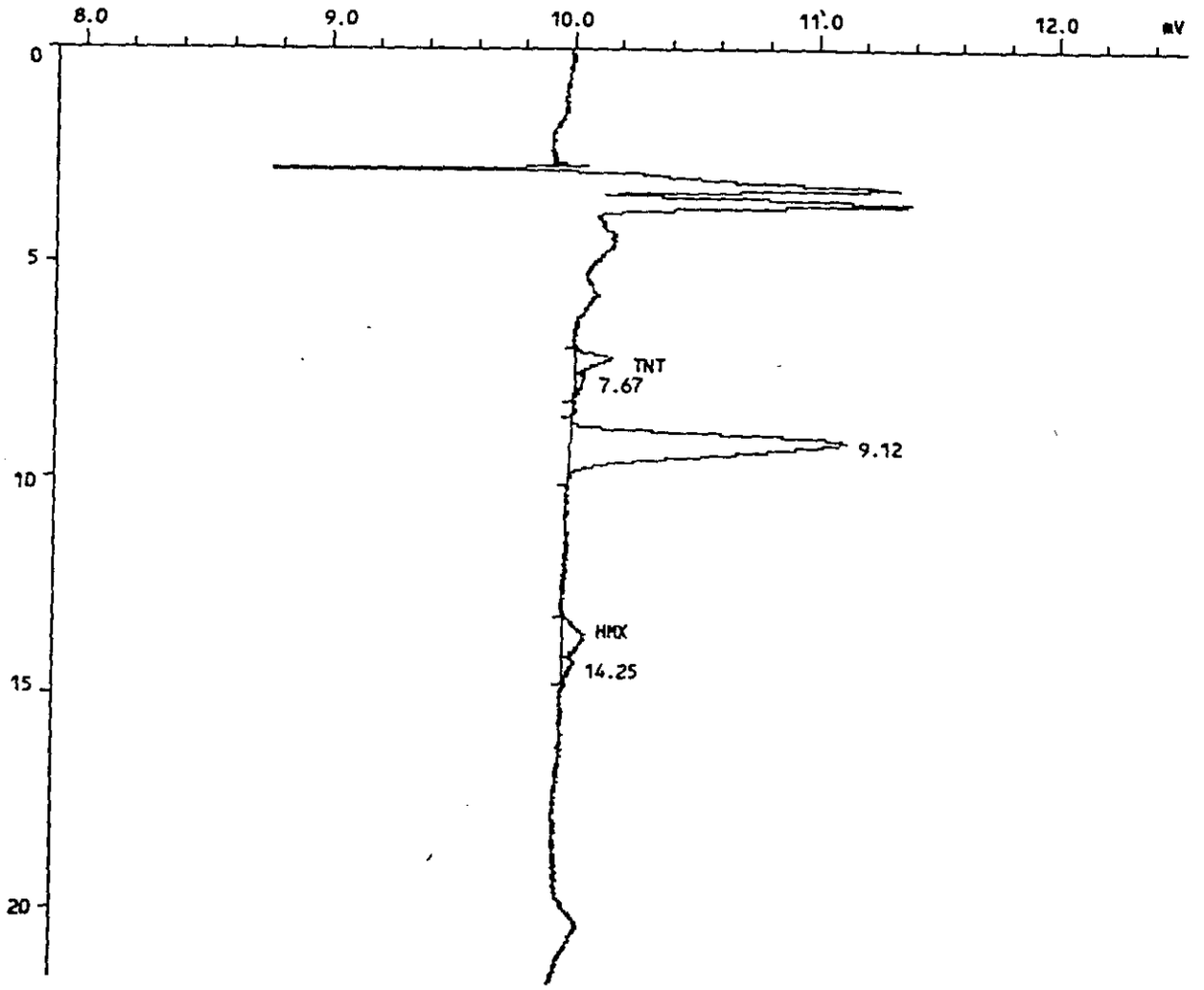
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.611	852	9444	41973.809	HMX
3	8.576	3946	90065	277807.969	RDX
4	14.315	54	1550	1484.462	DNB
5	15.397	68	1960	4979.986	TETRYL
6	17.659	29	478	1046.620	3,4DNT
7	18.341	308	8666	11387.735	TNT
8	19.333	69	2037	3747.961	4ADNT
Total		5326	114202	342428.594	
Residual		275	1273	2342.633	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,6,1

Sample name.....: BIO-S-001-00-05-2-R2 100X
Sample ID.....: 33673.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 20:07:46
Reported on 09-May-98 at 14:44:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,6,1

Acquired on 24-Apr-98 at 20:07:46
Modified on 09-May-82 at 14:40:46
Reported on 09-May-98 at 14:40:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-05-2-R2 100X
Sample ID.....: 33673.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

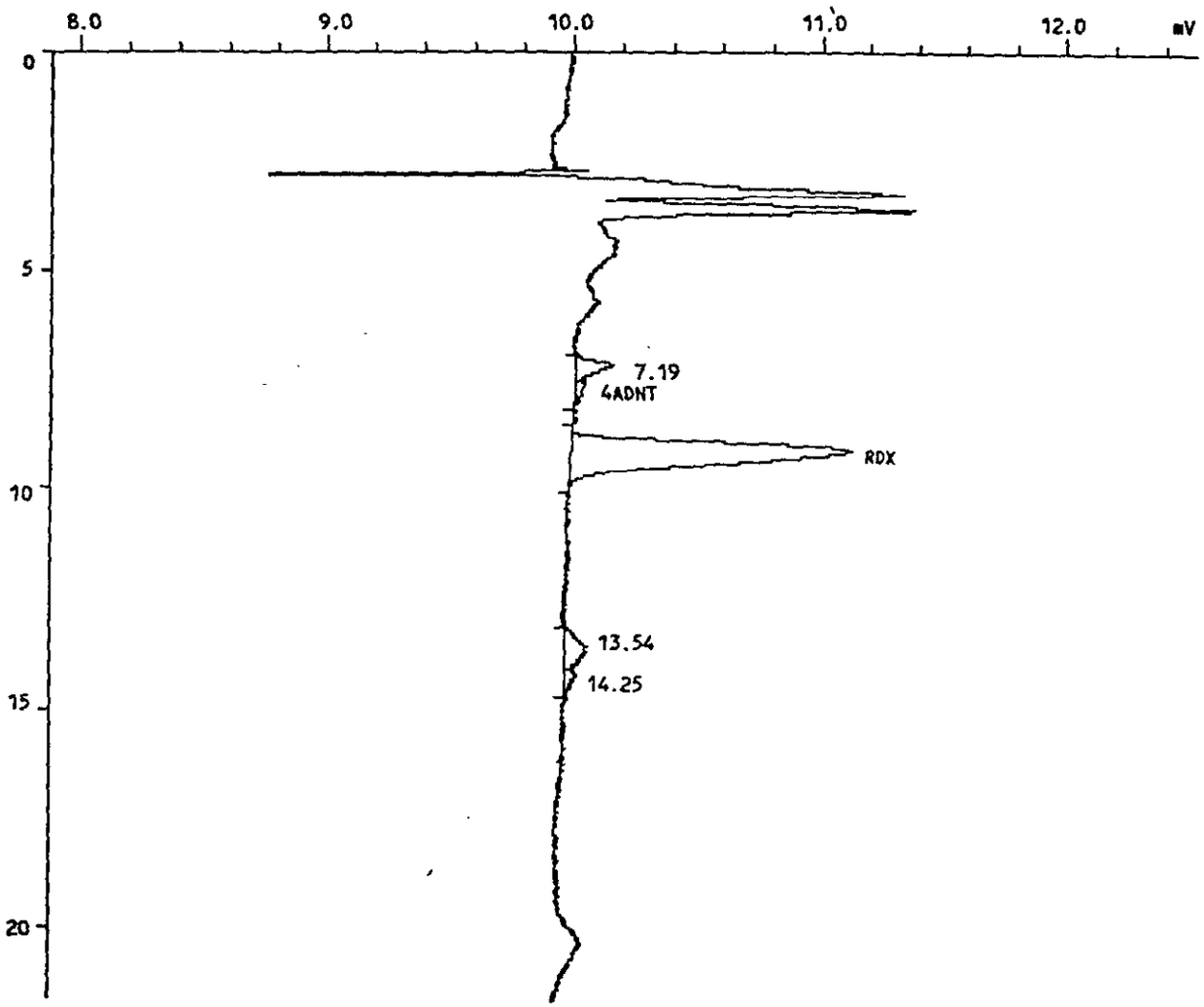
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.189	152	2604	10365.419	TNT
4	13.541	94	3245	32351.057	HMX
Total		246	5849	42716.477	
Residual		1229	38336	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,6,1

Sample name.....: BIO-S-001-00-05-2-R2 100X
Sample ID.....: 33673.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 20:07:46
Reported on 09-May-98 at 14:54:06



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,6,1

Acquired on 24-Apr-98 at 20:07:46
Modified on 09-May-82 at 14:48:02
Reported on 09-May-98 at 14:48:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-05-2-R2 100X
Sample ID.....: 33673.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.669	47	961	6057.492	4ADNT
3	9.120	1131	36262	273263.125	RDX
Total		1178	37223	279320.625	
Residual		296	6961	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-05-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.04

Sample Amt: 2g % Moisture 6.42 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

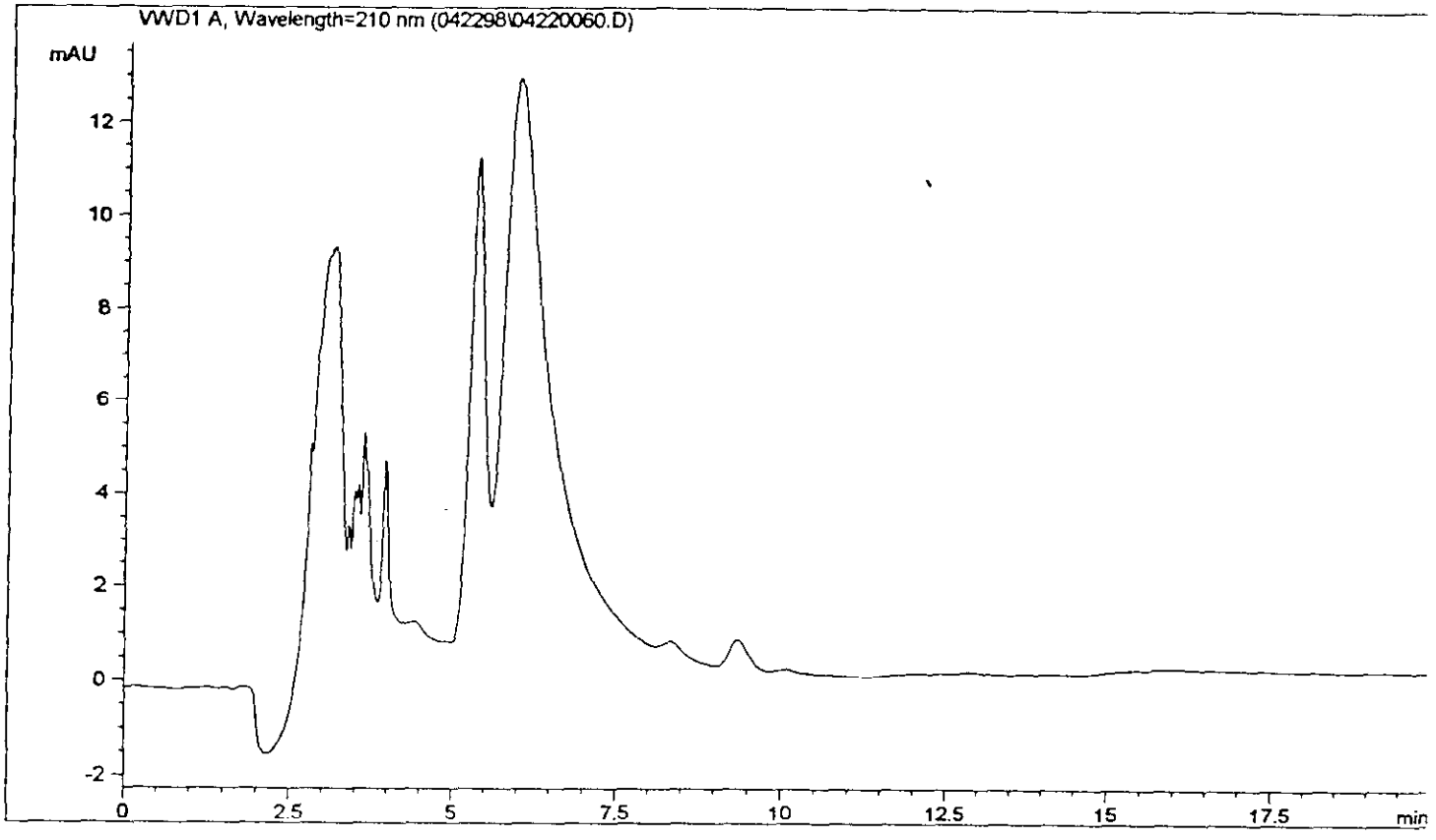
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

FORM I

Injection Date	: Fri, 24. Apr. 1998	Seq Line	: 60
Sample Name	: 33673.04	Vial No.	: 60
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-07-3-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.05

Sample Amt: 2g % Moisture 24.43 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	204000	
121-82-4	RDX	1810000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	261000	
1946-51-0	4ADNT	14100	
5572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

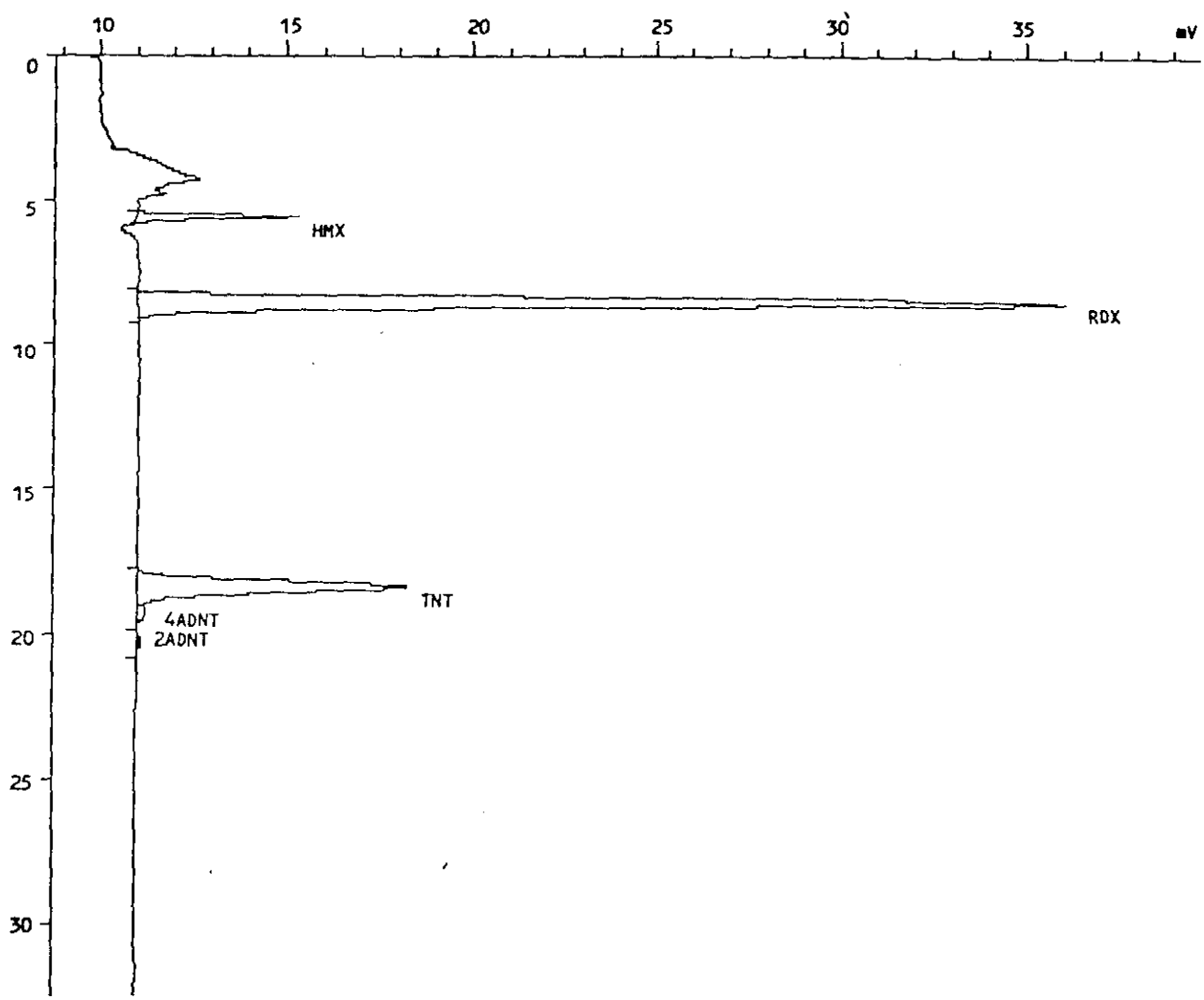
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,30,1

Sample name.....: BIO-S-001-00-07-3-R1 100X
Sample ID.....: 33673.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 15:30:16
Reported on 27-Apr-98 at 17:50:43



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,30,1

Acquired on 26-Apr-98 at 15:30:16
Modified on 27-Apr-82 at 17:48:22
Reported on 27-Apr-98 at 17:48:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 17:41:26
Method file.....: EXPLOS Last modified on 27-Apr-82 at 17:42:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-07-3-R1 100X
Sample ID.....: 33673.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

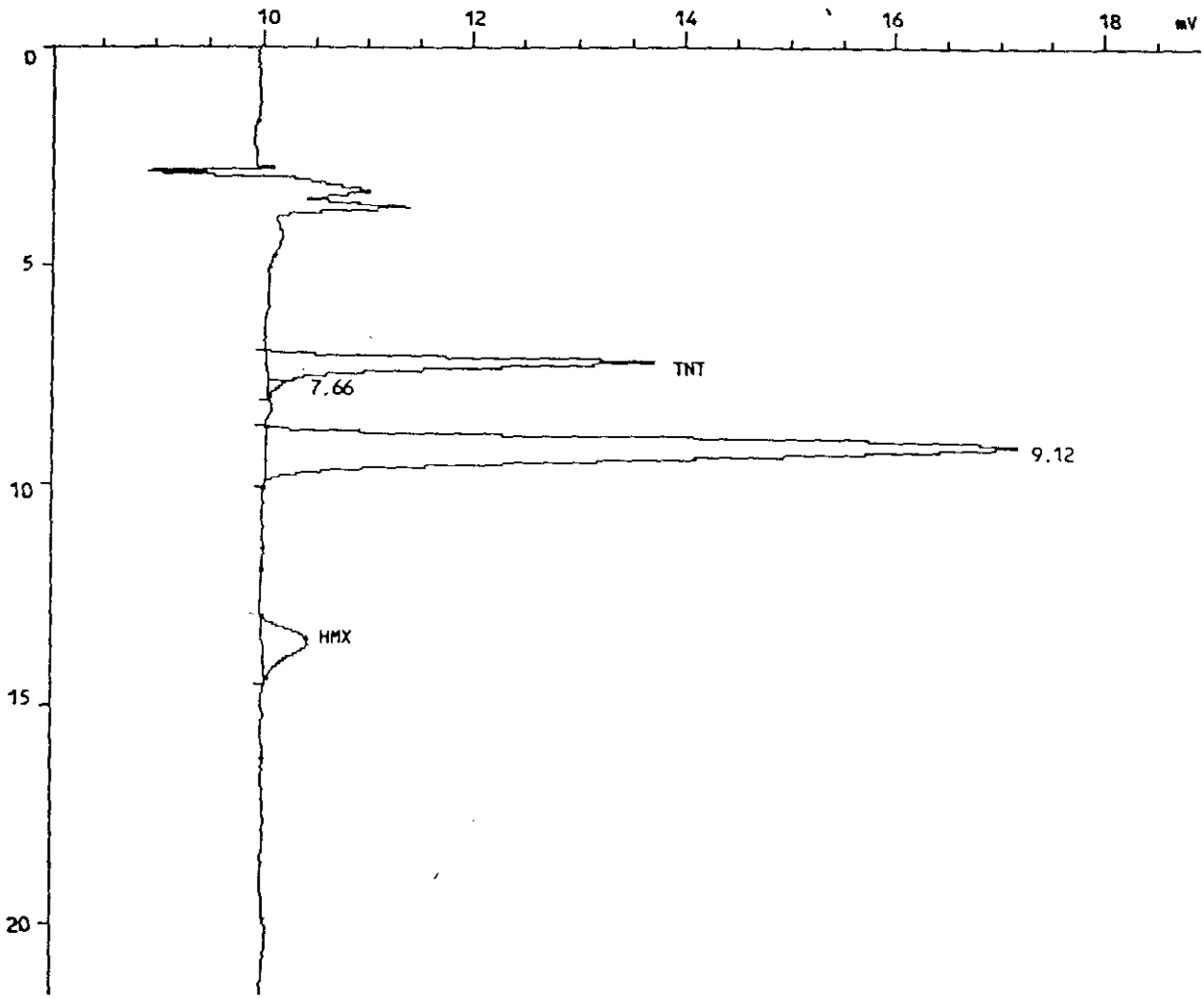
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	4350	45893	203969.000	HMX *
2	8.576	25130	585923	1807289.875	RDX *
3	18.336	7196	198667	261060.766	TNT *
4	19.259	225	7656	14084.367	4ADNT *
5	20.245	82	2783	3529.831	2ADNT
Total		36983	840923	2289933.750	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,9,1

Sample name.....: BIO-S-001-00-07-3-R1 100X
Sample ID.....: 33673.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 22:17:58
Reported on 09-May-98 at 14:44:31



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,9,1

Acquired on 24-Apr-98 at 22:17:58
Modified on 09-May-82 at 14:41:00
Reported on 09-May-98 at 14:41:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-07-3-R1 100X
Sample ID.....: 33673.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

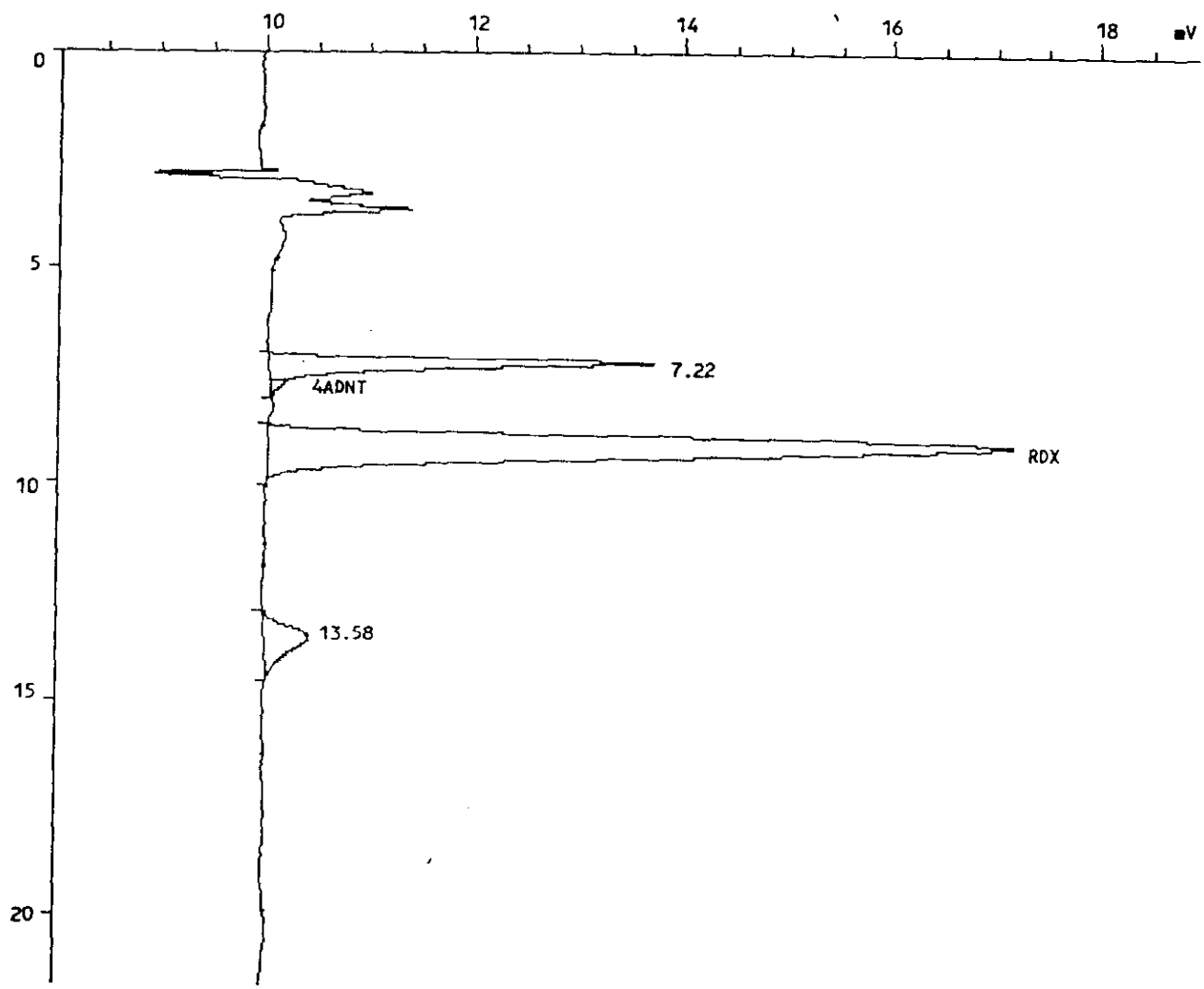
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.221	3669	63159	251429.047	TNT
4	13.584	440	18899	188420.609	HMX
Total		4109	82058	439849.656	
Residual		7360	227053	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,9,1

Sample name.....: BIO-S-001-00-07-3-R1 100X
Sample ID.....: 33673.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 22:17:58
Reported on 09-May-98 at 14:53:36



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,9,1

Acquired on 24-Apr-98 at 22:17:58
Modified on 09-May-82 at 14:48:16
Reported on 09-May-98 at 14:48:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-07-3-R1 100X
Sample ID.....: 33673.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.664	209	1992	12549.568	4ADNT
3	9.120	7151	225061	1696015.250	RDX
Total		7360	227053	1708564.875	
Residual		4109	82058	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-07-3-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.05

Sample Amt: 2g % Moisture 24.43 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

FORM I

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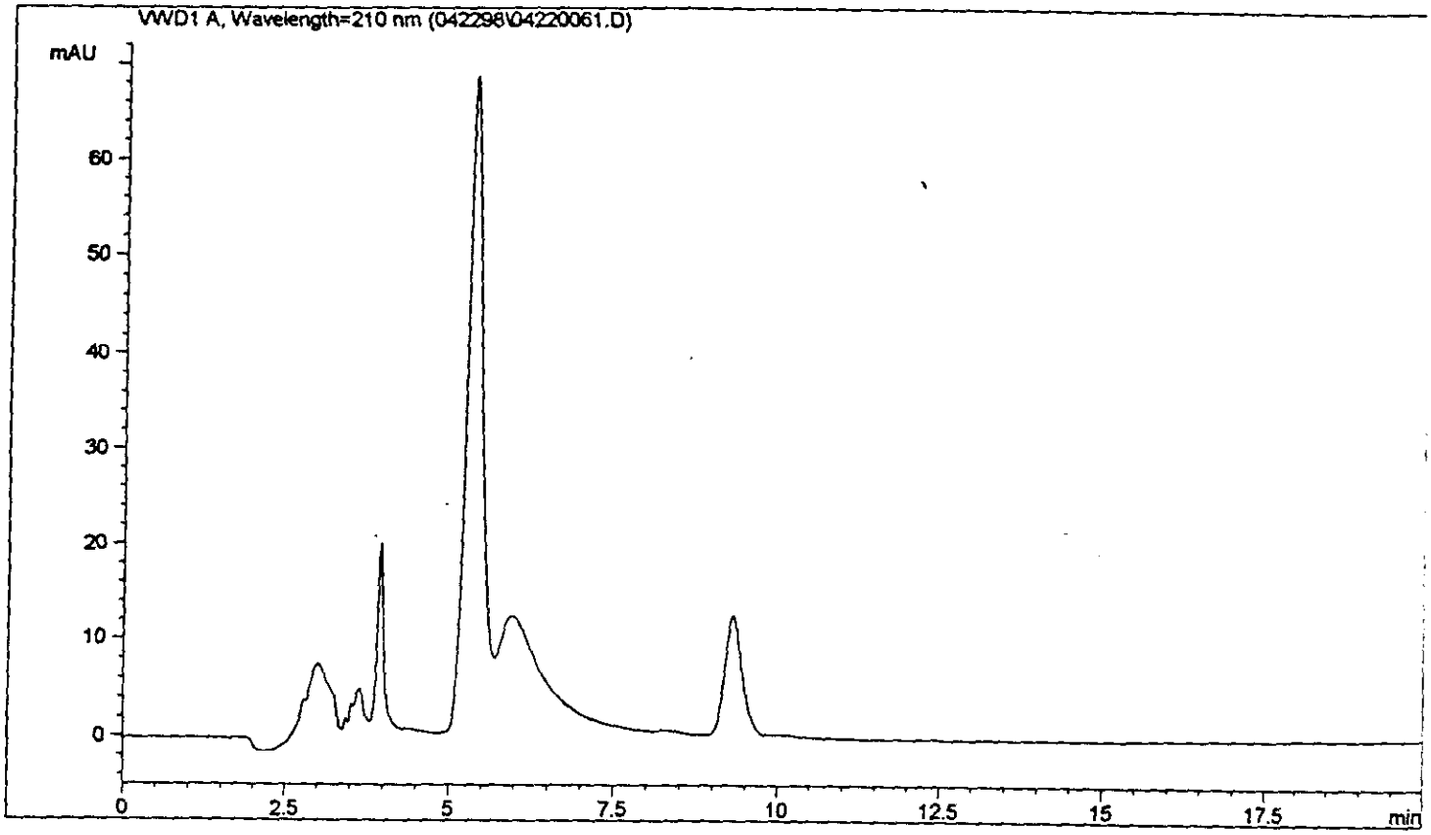
Injection Date	: Fri, 24. Apr. 1998	Seq Line	: 61
Sample Name	: 33673.05	Vial No.	: 61
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-07-3-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.06

Sample Amt: 2g % Moisture 2.42 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	188000	
121-82-4	RDX	1680000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	291000	
1946-51-0	4ADNT	12500	U
35572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

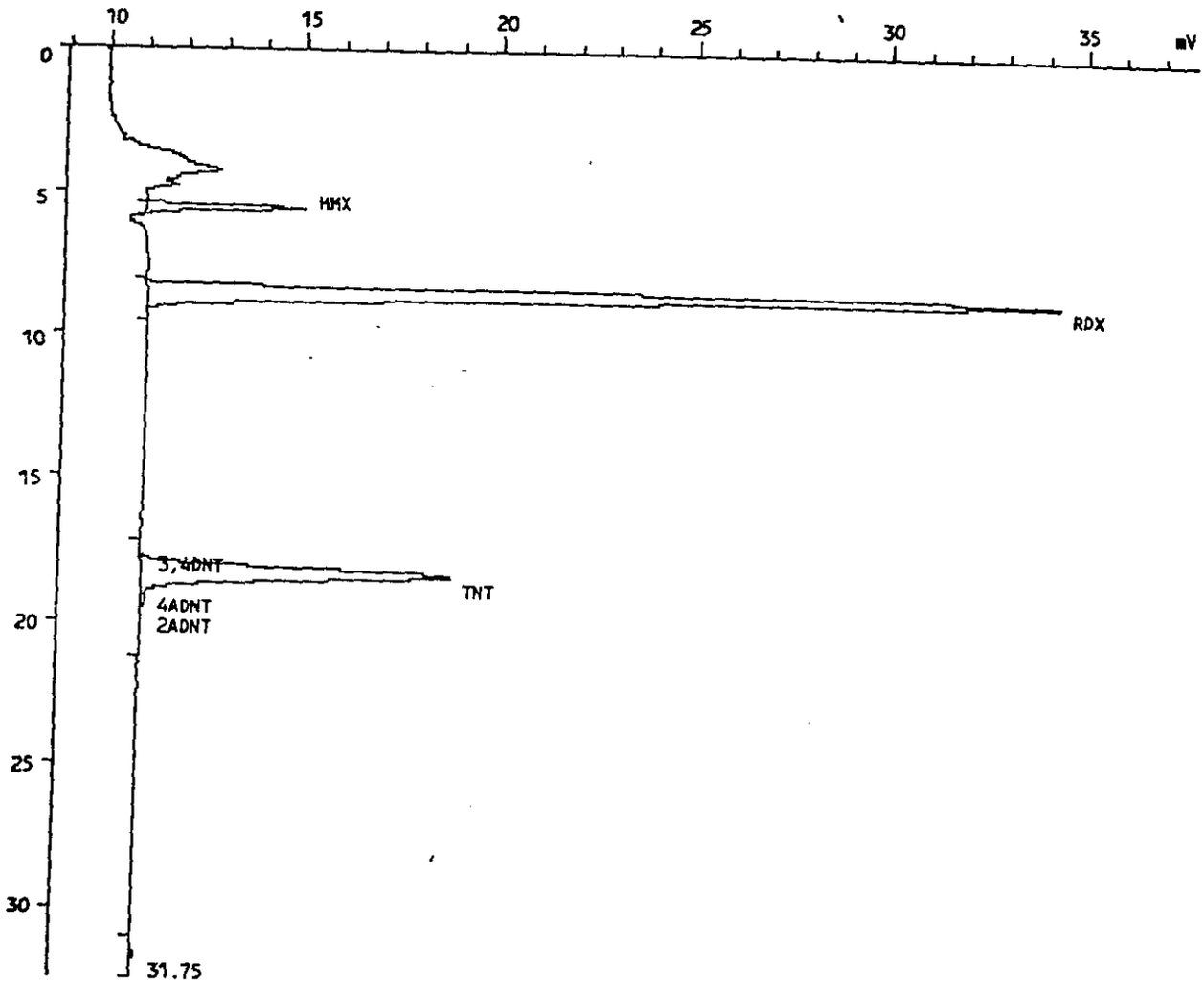
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,31,1

Sample name.....: BIO-S-001-00-07-3-R2 100X
Sample ID.....: 33673.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 16:14:53
Reported on 27-Apr-98 at 11:58:27



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,31,1

Acquired on 26-Apr-98 at 16:14:53
Modified on 27-Apr-82 at 11:40:50
Reported on 27-Apr-98 at 11:40:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-07-3-R2 100X
Sample ID.....: 33673.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

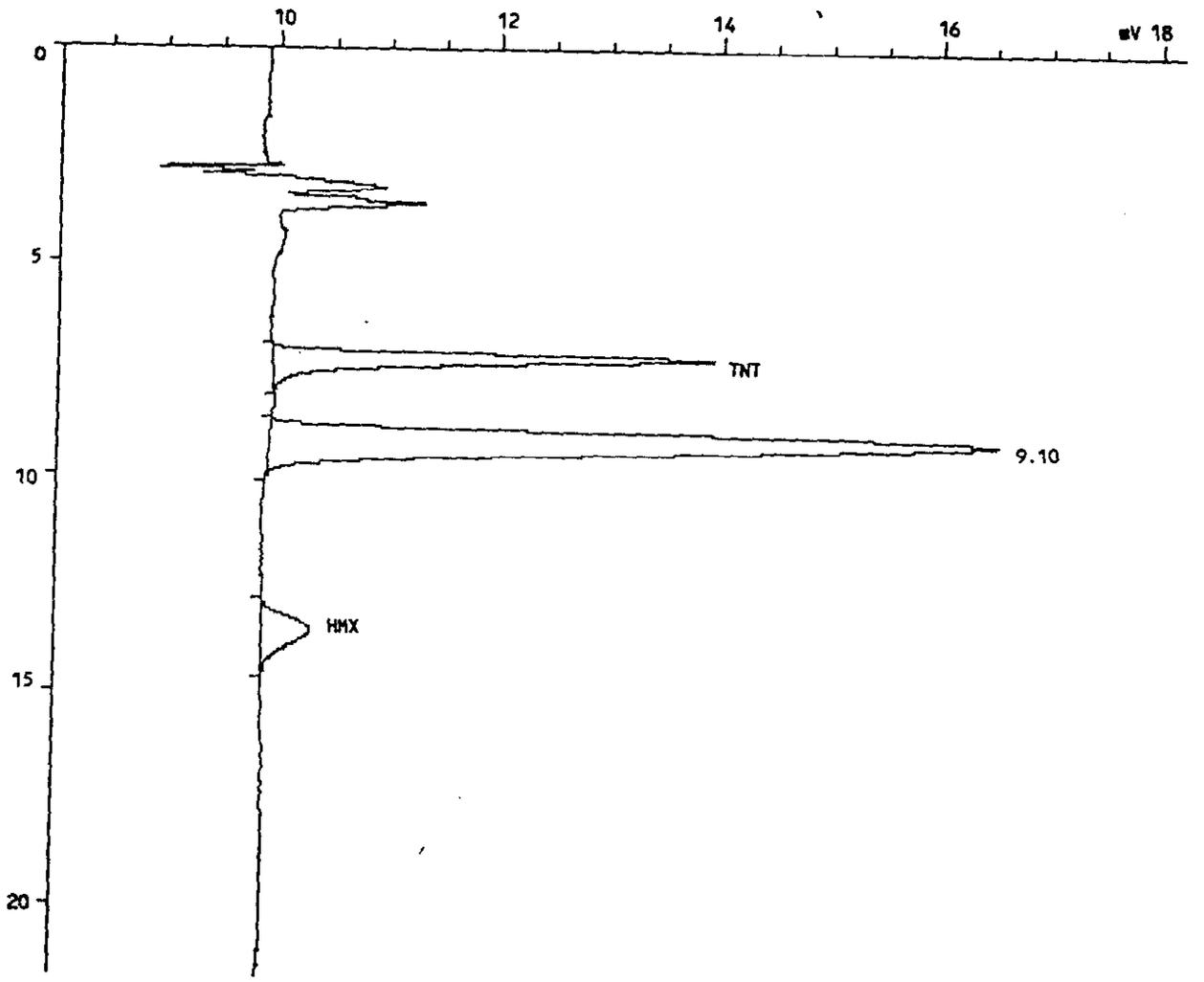
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.600	4088	42368	188303.906	HMX
2	8.571	23399	546132	1684553.500	RDX
3	17.712	38	568	1243.098	3,4DNT
4	18.357	7931	221162	290619.813	TNT
5	19.253	157	4952	9110.328	4ADNT
6	20.208	61	2352	2983.246	2ADNT
Total		35674	817535	2176813.750	
Residual		61	2454	3112.445	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,10,1

Sample name.....: BIO-S-001-00-07-3-R2 100X
Sample ID.....: 33673.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 23:01:22
Reported on 09-May-98 at 14:44:06



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,10,1

Acquired on 24-Apr-98 at 23:01:22
Modified on 09-May-82 at 14:41:12
Reported on 09-May-98 at 14:41:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-07-3-R2 100X
Sample ID.....: 33673.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

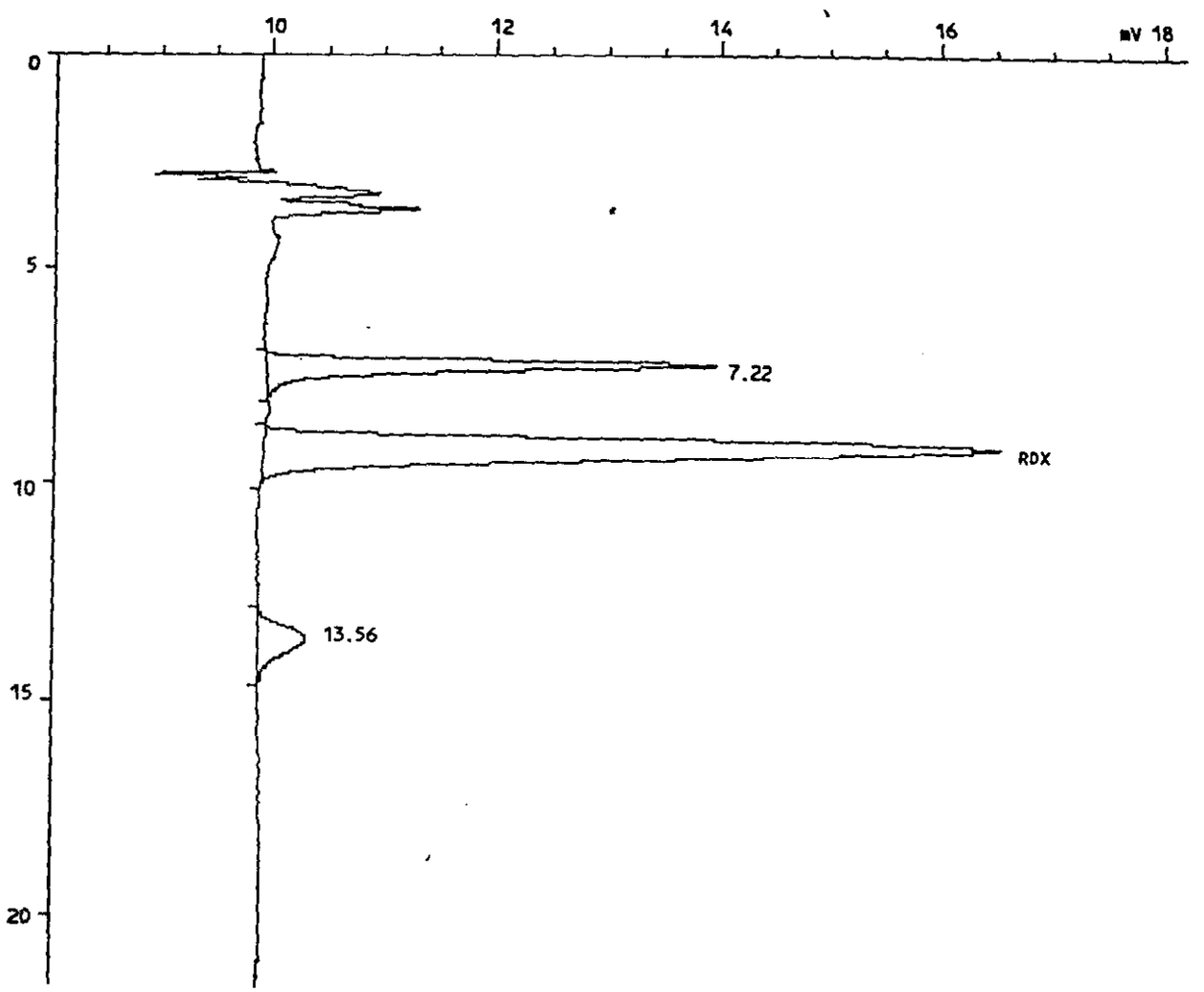
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.216	4022	71035	282782.906	TNT
3	13.557	441	19575	195164.797	HMX
Total		4463	90610	477947.688	
Residual		6607	210353	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,10,1

Sample name.....: BIO-S-001-00-07-3-R2 100X
Sample ID.....: 33673.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 23:01:22
Reported on 09-May-98 at 14:53:05



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,10,1

Acquired on 24-Apr-98 at 23:01:22
Modified on 09-May-82 at 14:48:30
Reported on 09-May-98 at 14:48:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-07-3-R2 100X
Sample ID.....: 33673.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.104	6607	210353	1585178.750	RDX
Total		6607	210353	1585178.750	
Residual		4463	90610	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-07-3-R2

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.06

Sample Amt: 2g % Moisture 2.42 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

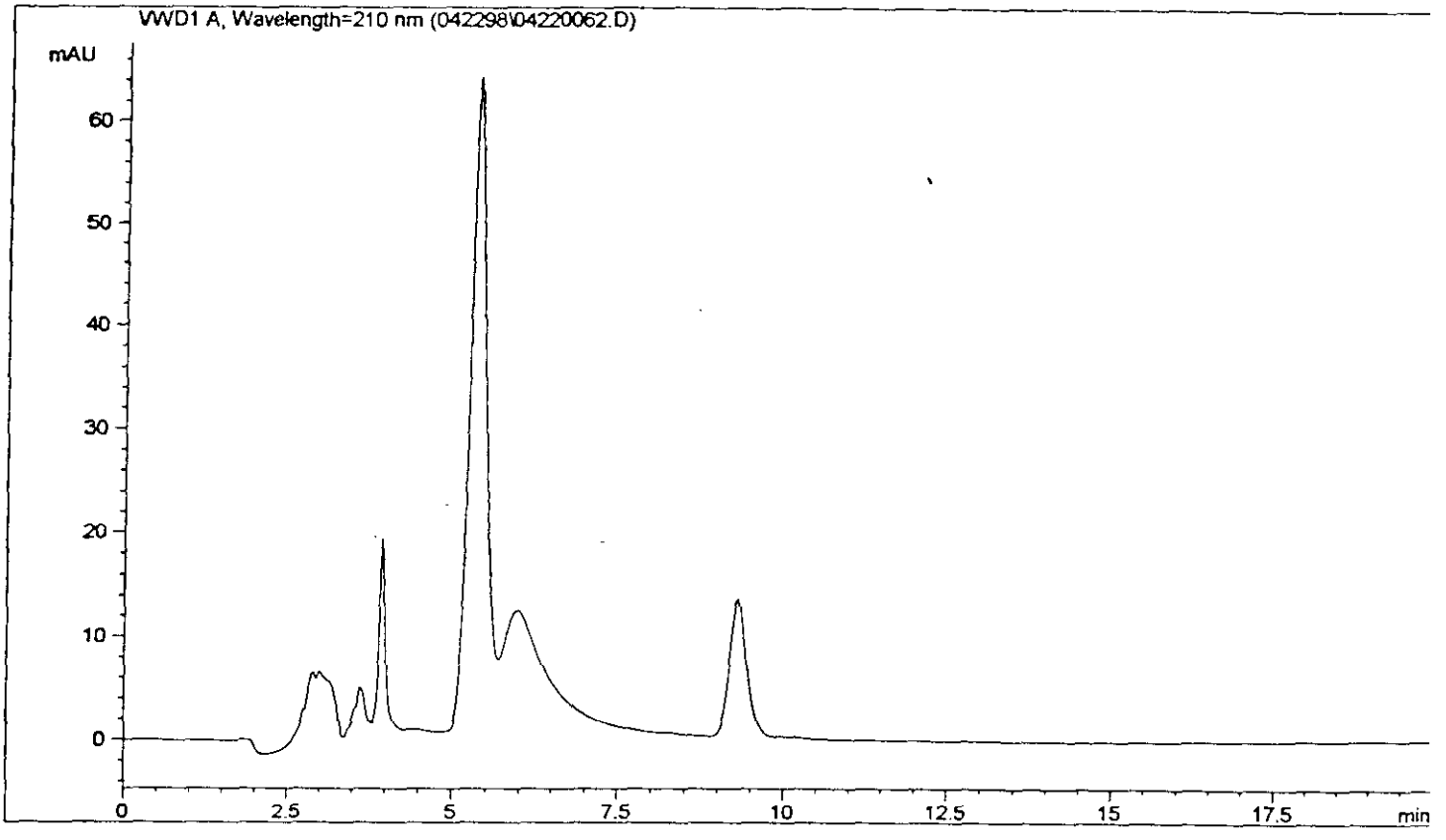
FORM I

65

Injection Date	: Fri, 24. Apr. 1998	Seq Line	: 62
Sample Name	: 33673.06	Vial No.	: 62
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-09-1-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.07

Sample Amt: 2g % Moisture 38.60 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	182000	
121-82-4	RDX	1490000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	135000	
1946-51-0	4ADNT	26400	
5572-78-2	2ADNT	8470	J
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

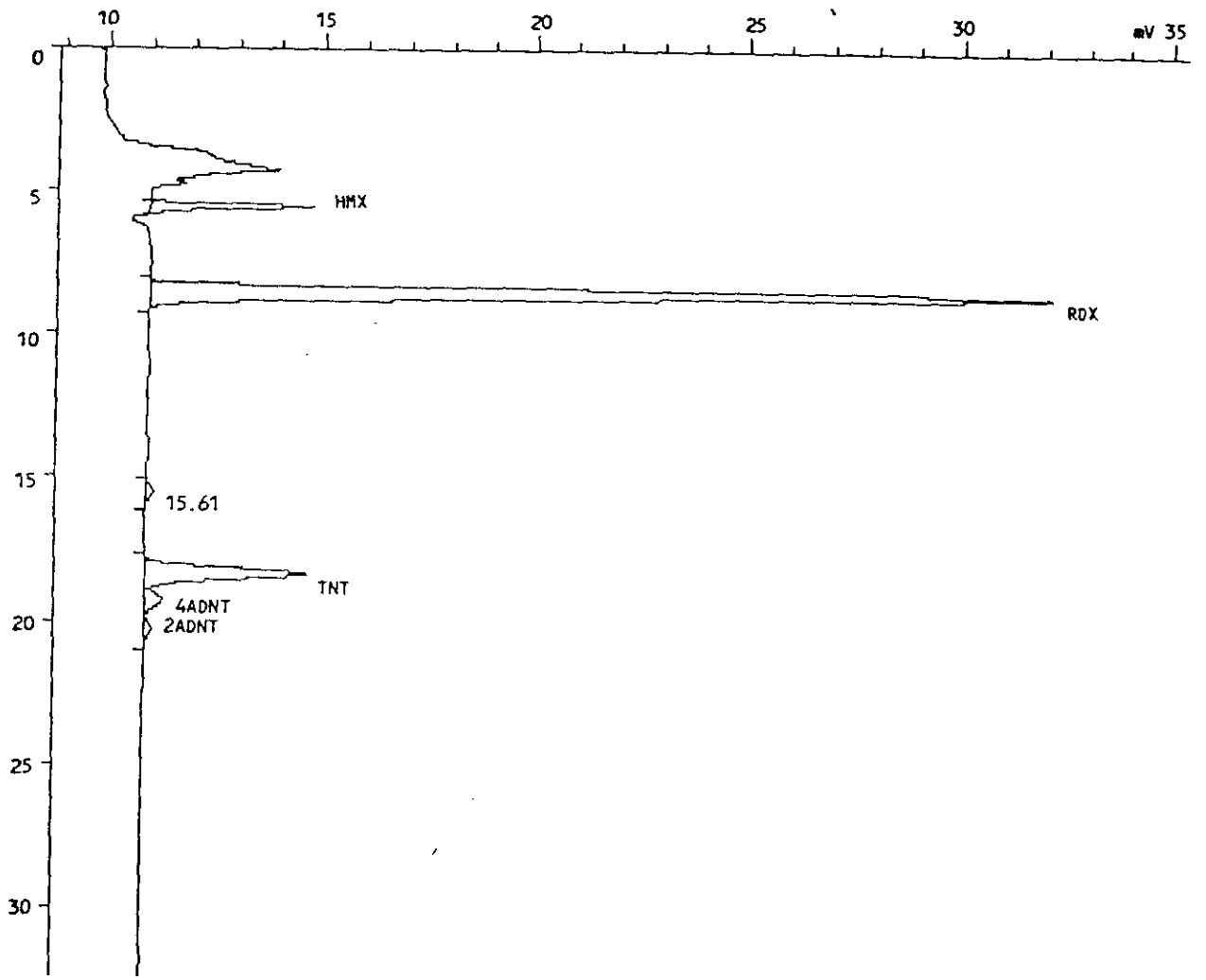
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,32,1

Sample name.....: BIO-S-001-00-09-1-R1 100X
Sample ID.....: 33673.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 16:59:31
Reported on 27-Apr-98 at 11:58:45



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,32,1

Acquired on 26-Apr-98 at 16:59:31
Modified on 27-Apr-82 at 11:40:34
Reported on 27-Apr-98 at 11:40:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-09-1-R1 100X
Sample ID.....: 33673.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

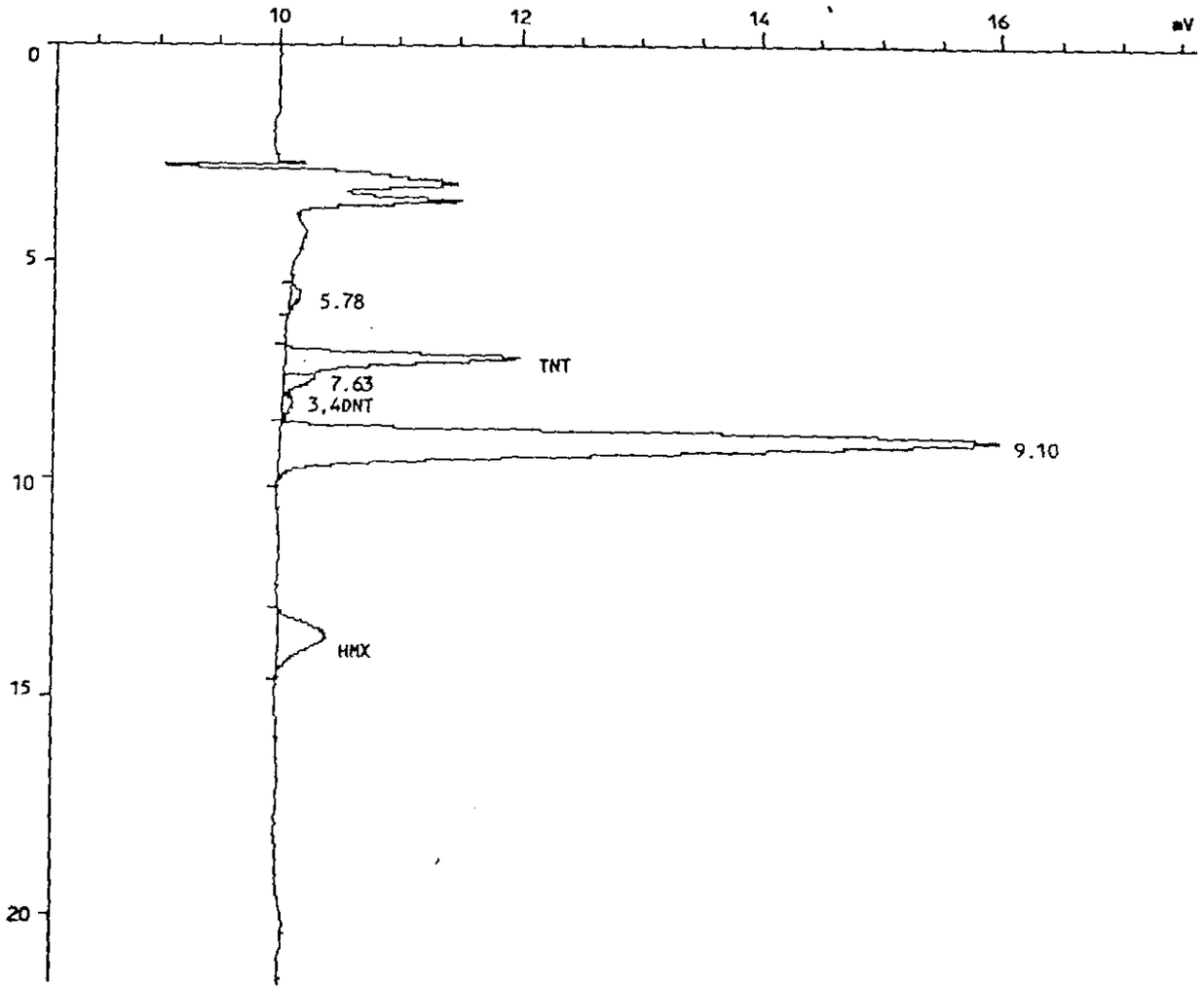
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.605	3790	41070	182532.906	HMX*
2	8.571	21197	484167	1493419.125	RDX*
4	18.363	3767	103059	135425.906	TNT*
5	19.280	407	14373	26439.914	4ADNT*
6	20.395	189	6675	8466.113	2ADNT* J
Total		29349	649343	1846283.875	
Residual		200	5644	17408.389	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,11,1

Sample name.....: BIO-S-001-00-09-1-R1 100X
Sample ID.....: 33673.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 23:44:46
Reported on 09-May-98 at 14:43:46



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,11,1

Acquired on 24-Apr-98 at 23:44:46
Modified on 09-May-82 at 14:41:26
Reported on 09-May-98 at 14:41:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-09-1-R1 100X
Sample ID.....: 33673.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

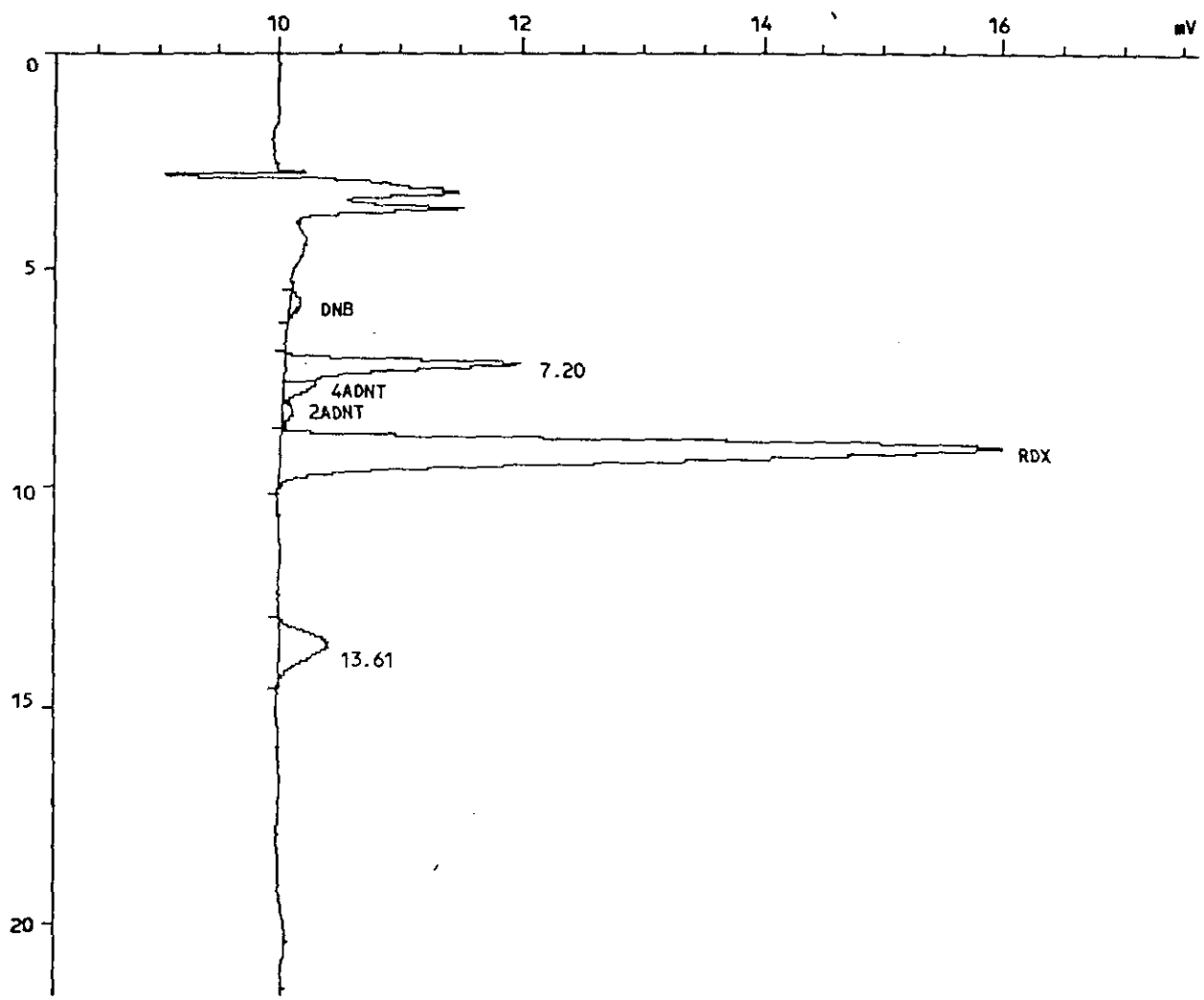
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.200	1959	33898	134942.328	TNT
4	8.240	93	2052	15454.943	3,4DNT
6	13.605	411	17379	173272.688	HMX
Total		2463	53329	323669.938	
Residual		6359	197485	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,11,1

Sample name.....: BIO-S-001-00-09-1-R1 100X
Sample ID.....: 33673.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 24-Apr-98 at 23:44:46
Reported on 09-May-98 at 14:51:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,11,1

Acquired on 24-Apr-98 at 23:44:46
Modified on 09-May-82 at 14:48:42
Reported on 09-May-98 at 14:48:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-09-1-R1 100X
Sample ID.....: 33673.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.781	87	1918	5379.711	DNB
3	7.632	275	4503	28374.865	4ADNT
4	8.240	93	2052	8125.164	2ADNT
5	9.104	5997	191063	1439812.875	RDX
Total		6452	199537	1481692.625	
Residual		2369	51277	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-09-1-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.07

Sample Amt: 2g % Moisture 38.60 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

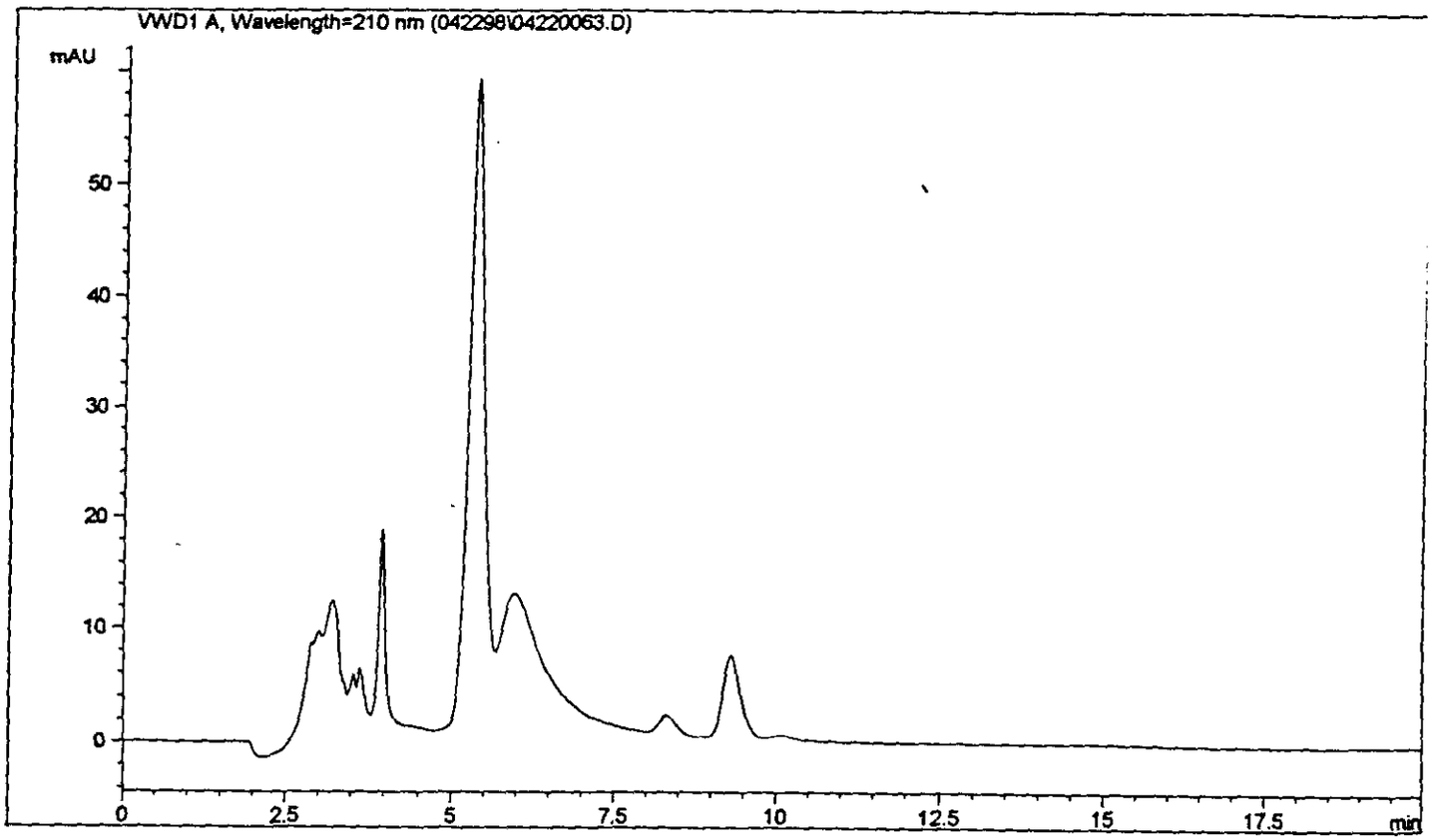
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	12500	U

FORM I

Injection Date	: Fri, 24. Apr. 1998	Seq Line	: 63
Sample Name	: 33673.07	Vial No.	: 63
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-09-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.08

Sample Amt: 2g % Moisture 8.88 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	195000	
121-82-4	RDX	1570000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	144000	
1946-51-0	4ADNT	30300	
35572-78-2	2ADNT	10600	J
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

URROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
,4-DNT

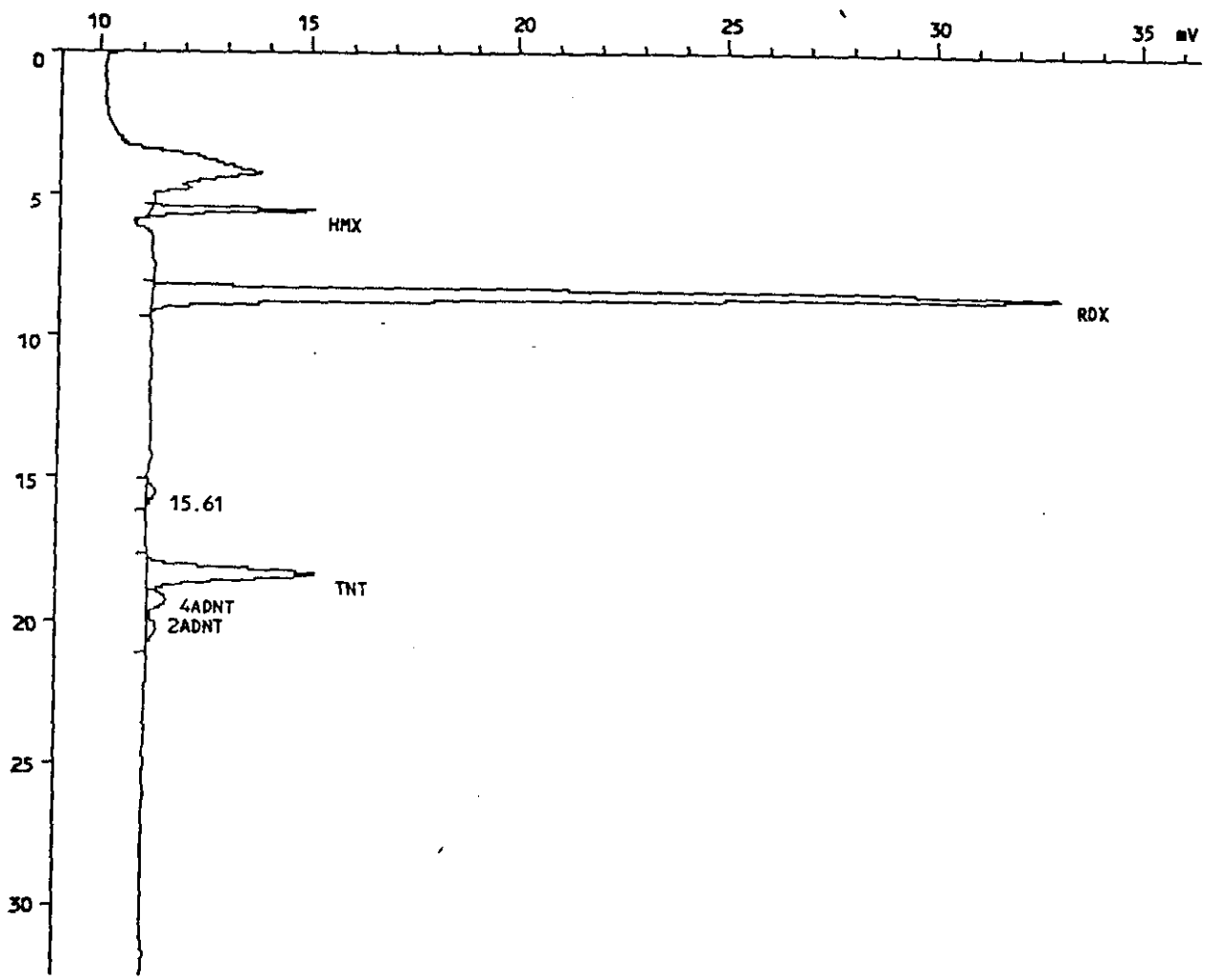
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,33,1

Sample name.....: BIO-S-001-00-09-1-R2 100X
Sample ID.....: 33673.08
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 17:44:08
Reported on 27-Apr-98 at 11:59:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,33,1

Acquired on 26-Apr-98 at 17:44:08
Modified on 27-Apr-82 at 11:40:18
Reported on 27-Apr-98 at 11:40:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-09-1-R2 100X
Sample ID.....: 33673.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

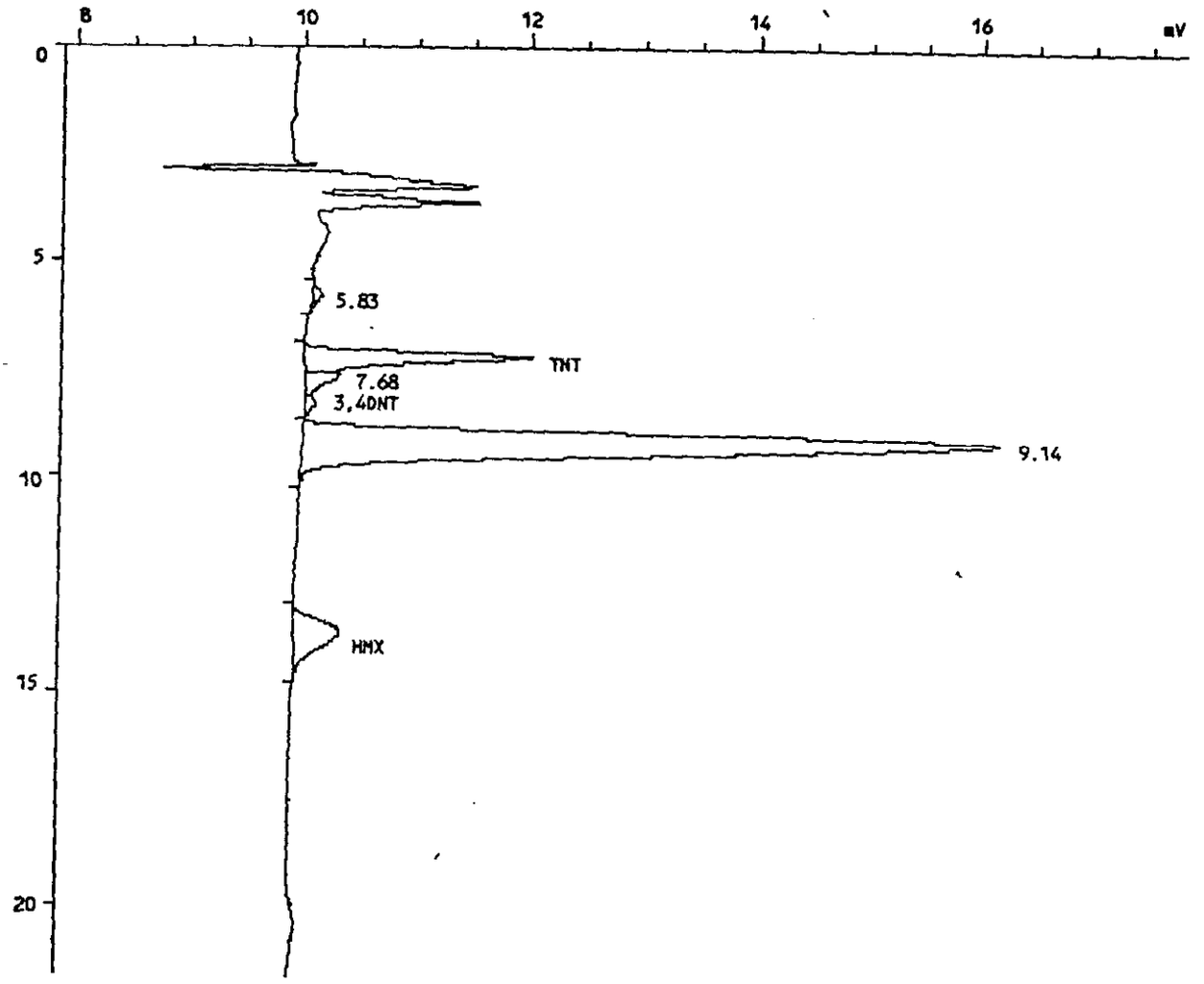
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	3962	43833	194814.891	HMX*
2	8.571	21828	510414	1574379.000	RDX*
4	18.325	3969	109723	144183.234	TNT*
5	19.253	464	16462	30283.025	4ADNT*
6	20.283	223	8332	10568.641	2ADNT*
Total		30447	688765	1954228.750	
Residual		214	6513	20089.215	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,12,1

Sample name.....: BIO-S-001-00-09-1-R2 100X
Sample ID.....: 33673.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 25-Apr-98 at 00:28:10
Reported on 09-May-98 at 14:43:26



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,12,1

Acquired on 25-Apr-98 at 00:28:10
Modified on 09-May-82 at 14:41:40
Reported on 09-May-98 at 14:41:41

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-09-1-R2 100X
Sample ID.....: 33673.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

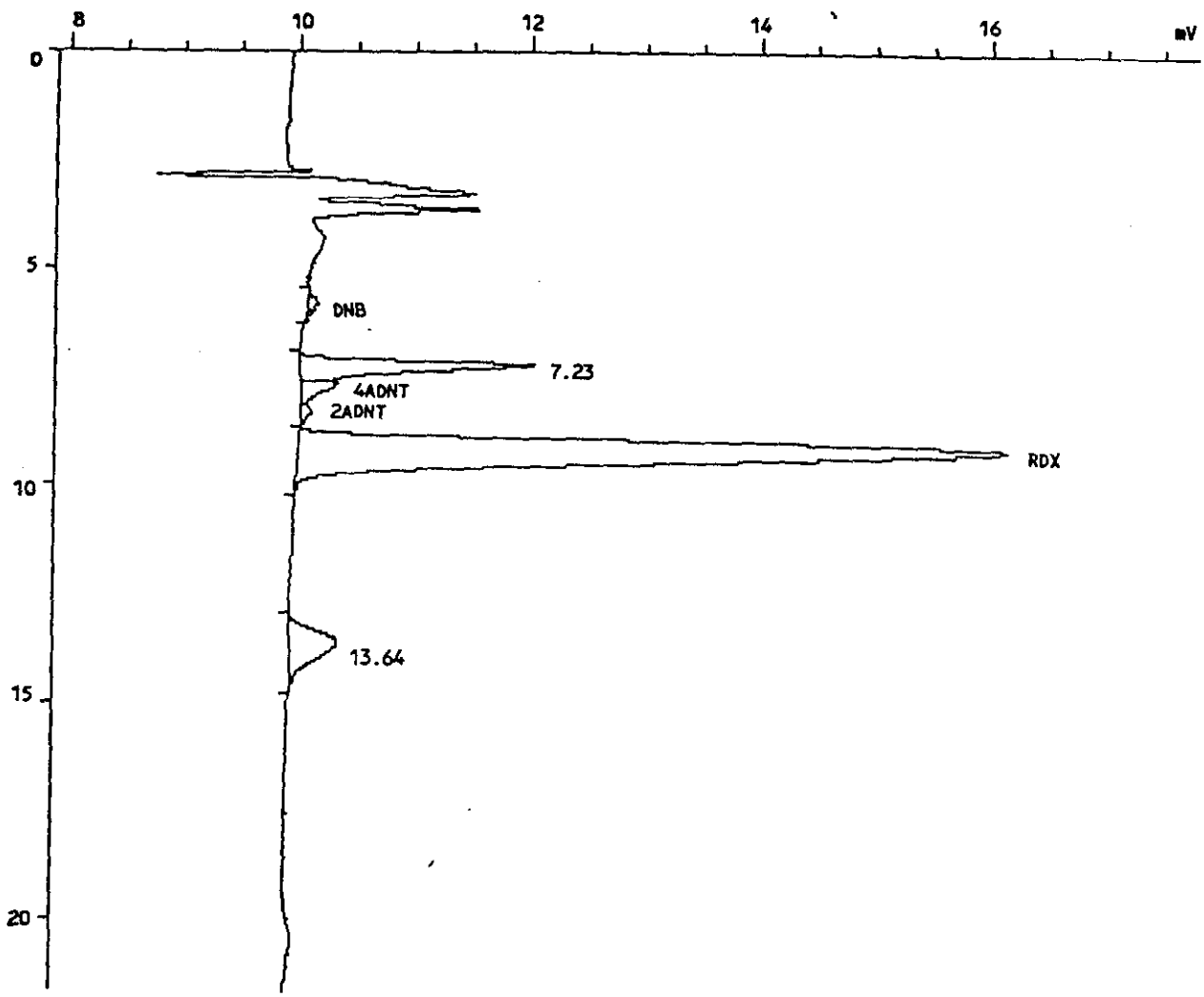
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.227	2025	34961	139176.422	TNT
4	8.315	97	1914	14414.236	3,4DNT
6	13.637	414	18152	180981.828	HMX
Total		2536	55028	334572.500	
Residual		6565	202636	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,12,1

Sample name.....: BIO-S-001-00-09-1-R2 100X
Sample ID.....: 33673.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 25-Apr-98 at 00:28:10
Reported on 09-May-98 at 14:50:58



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,12,1

Acquired on 25-Apr-98 at 00:28:10
Modified on 09-May-82 at 14:48:56
Reported on 09-May-98 at 14:48:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-09-1-R2 100X
Sample ID.....: 33673.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.829	94	2022	5670.246	DNB
3	7.680	307	5481	34537.672	4ADNT
4	8.315	97	1914	7578.030	2ADNT
5	9.136	6165	195133	1470479.625	RDX
Total		6663	204550	1518265.625	
Residual		2439	53114	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-09-1-R2

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.08

Sample Amt: 2g % Moisture 8.88 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

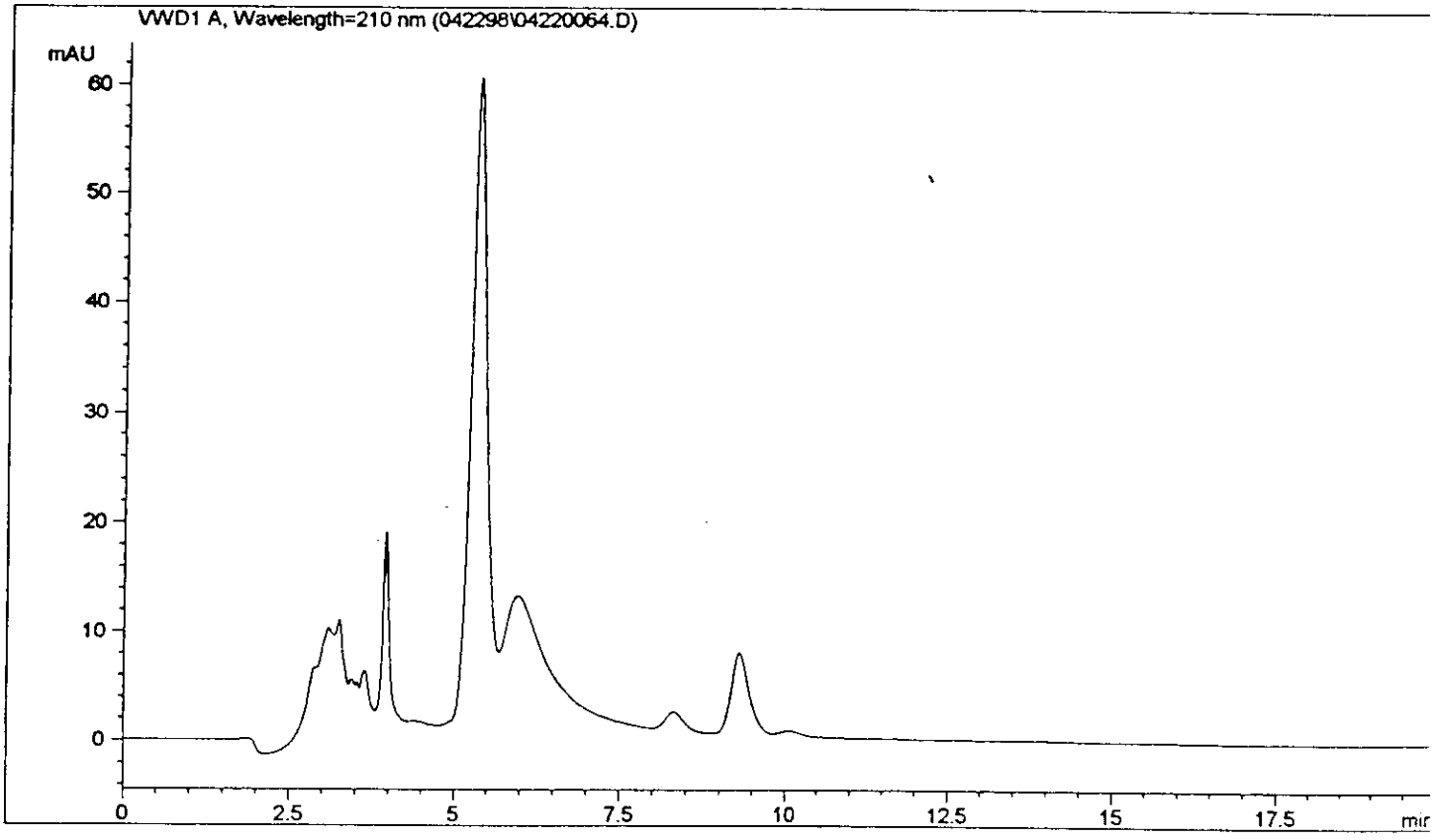
FORM I

Injection Date : Fri, 24. Apr. 1998
Sample Name : 33673.08
Acq Operator : SS

Seq Line : 64
Vial No. : 64
Inj. No. : 1
Inj. Vol. : 200

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

==========

*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-11-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.09

Sample Amt: 2g % Moisture 50.76 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	13400	JP
121-82-4	RDX	92400	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	1260	JP
946-51-0	4ADNT	12500	U
35572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

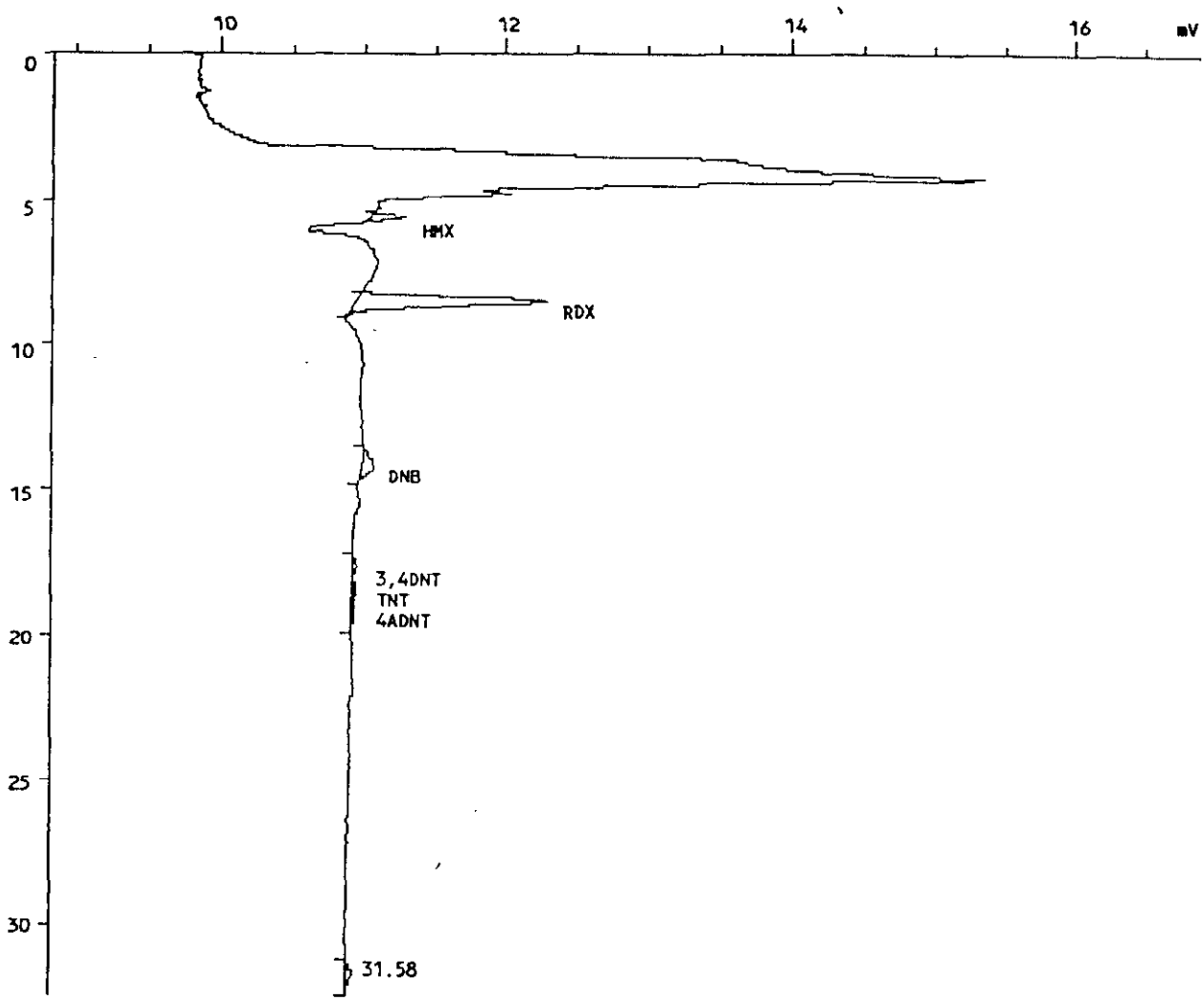
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,34,1

Sample name.....: BIO-S-001-00-11-2-R1 100X
Sample ID.....: 33673.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 18:28:46
Reported on 27-Apr-98 at 11:59:29



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,34,1

Acquired on 26-Apr-98 at 18:28:46
Modified on 27-Apr-82 at 11:40:02
Reported on 27-Apr-98 at 11:40:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-11-2-R1 100X
Sample ID.....: 33673.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

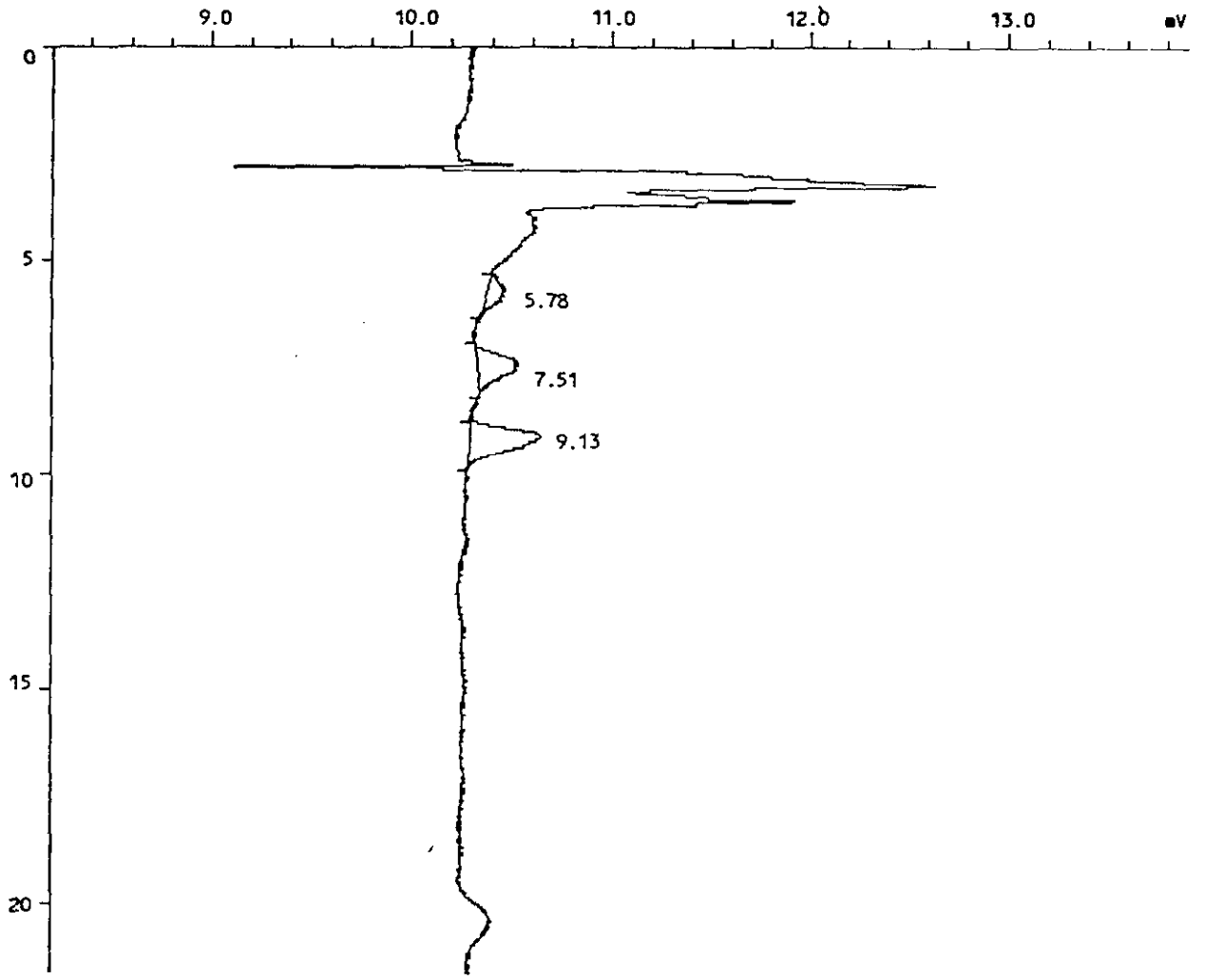
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	262	3019	13416.818	HMX
2	8.565	1362	29948	92374.625	RDX
3	14.315	102	3539	3388.717	DNB
4	17.749	38	1105	2418.350	3,4DNT
5	18.443	32	963	1265.531	TNT
6	19.355	26	842	1548.821	4ADNT
Total		1822	39416	114412.867	
Residual		41	1479	2721.282	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,13,1

Sample name.....: BIO-S-001-00-11-2-R1 100X
Sample ID.....: 33673.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 25-Apr-98 at 01:11:34
Reported on 09-May-98 at 14:43:03



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,13,1

Acquired on 25-Apr-98 at 01:11:34
Modified on 09-May-82 at 14:41:54
Reported on 09-May-98 at 14:41:55

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-11-2-R1 100X
Sample ID.....: 33673.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

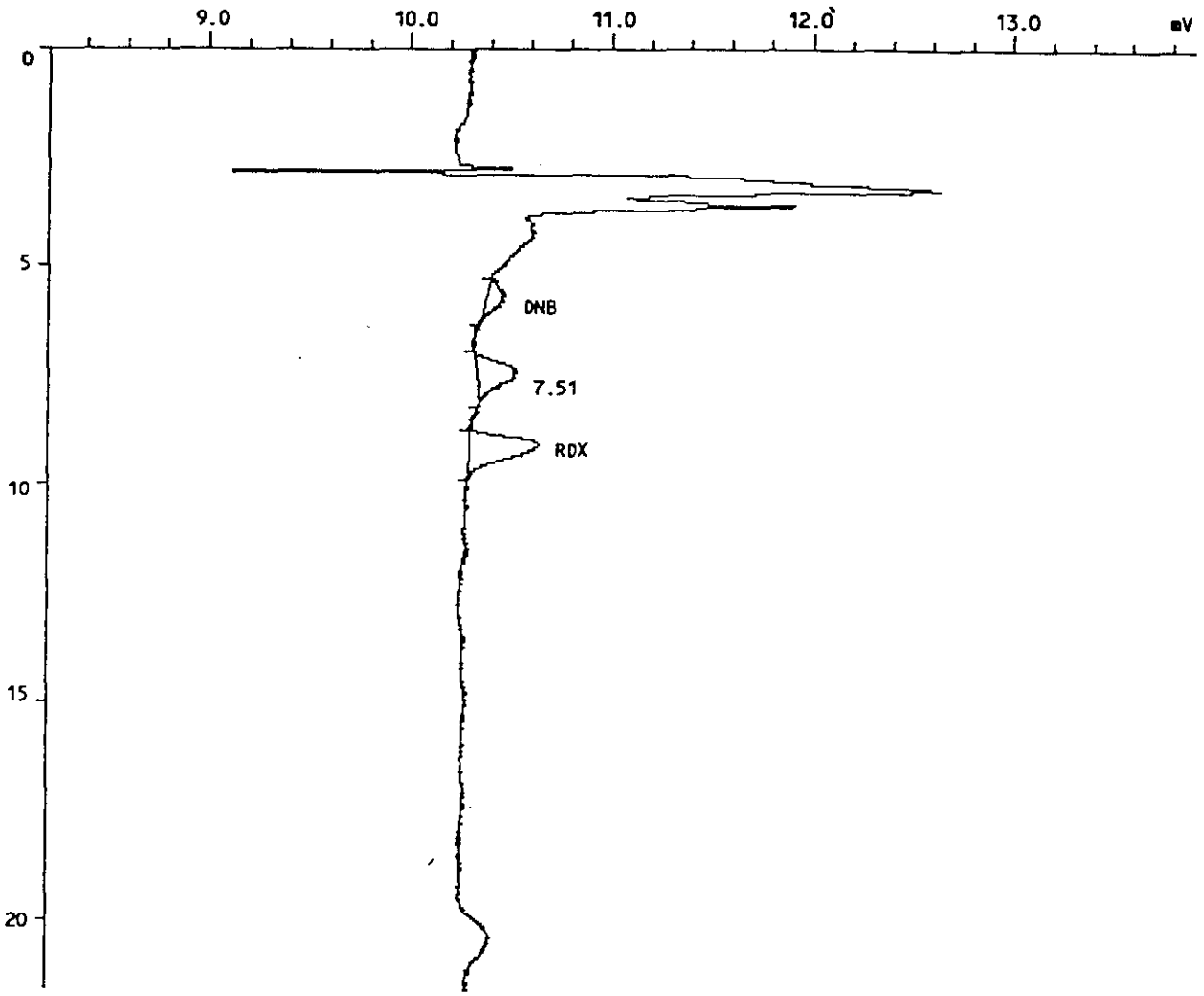
Peak RT mins	Hght uV	Area uVs	ug/Kg	Peak name
Total	0	0	0.000	
Residual	650	21595	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,13,1

Sample name.....: BIO-S-001-00-11-2-R1 100X
Sample ID.....: 33673.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 25-Apr-98 at 01:11:34
Reported on 09-May-98 at 14:50:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,13,1

Acquired on 25-Apr-98 at 01:11:34
Modified on 09-May-82 at 14:49:12
Reported on 09-May-98 at 14:49:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-11-2-R1 100X
Sample ID.....: 33673.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.781	87	2809	7876.264	DNB
3	9.131	363	11672	87960.172	RDX
Total		450	14481	95836.438	
Residual		201	7114	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-11-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.09

Sample Amt: 2g % Moisture 50.76 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

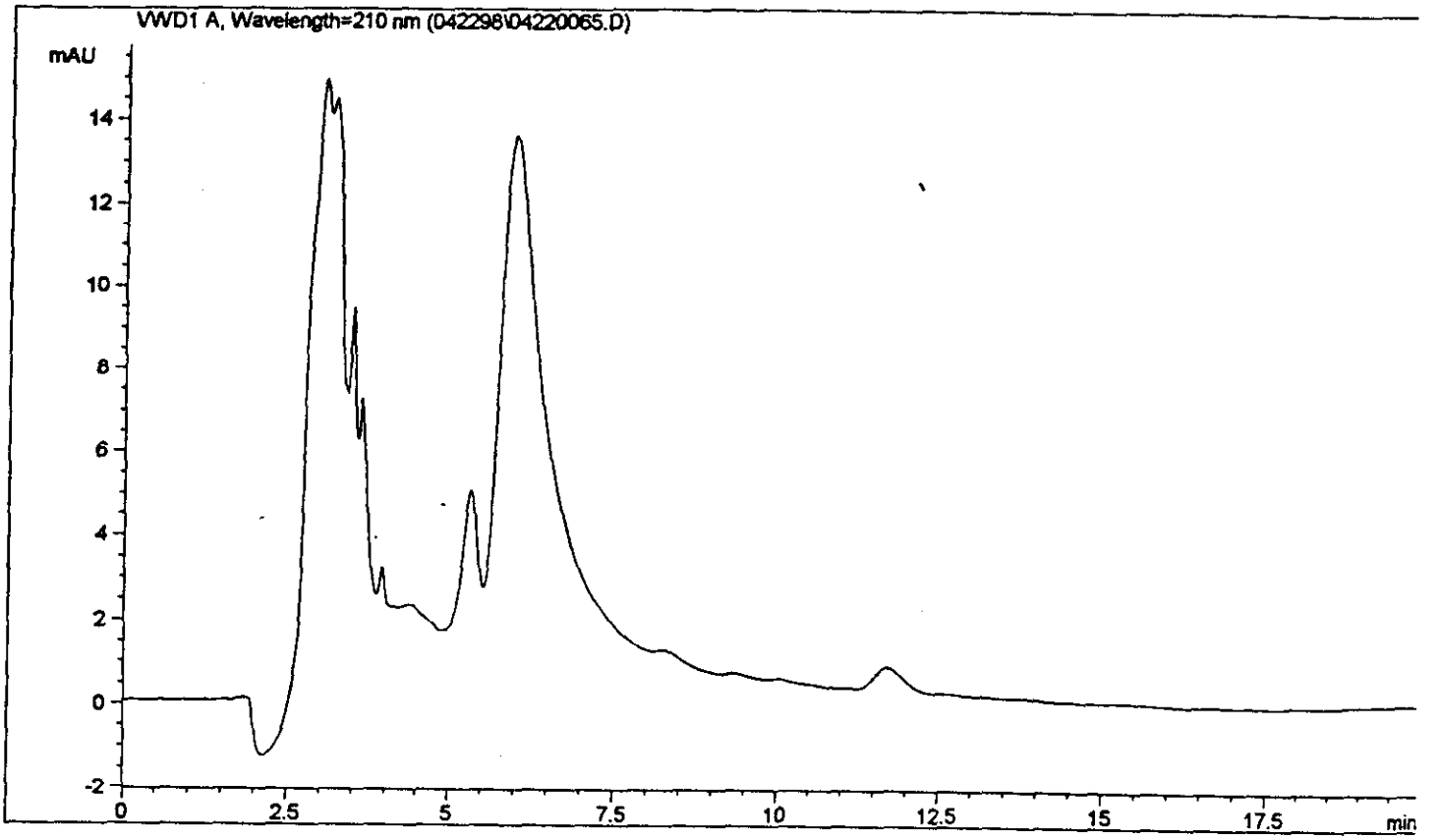
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

FORM I

Injection Date	: Fri, 24. Apr. 1998	Seq Line	: 65
Sample Name	: 33673.09	Vial No.	: 65
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-11-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.10

Sample Amt: 2g % Moisture 7.20 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: SONC Date Analyzed: 04/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	23100	JP
121-82-4	RDX	159000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	10200	JP
1946-51-0	4ADNT	12500	U
35572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

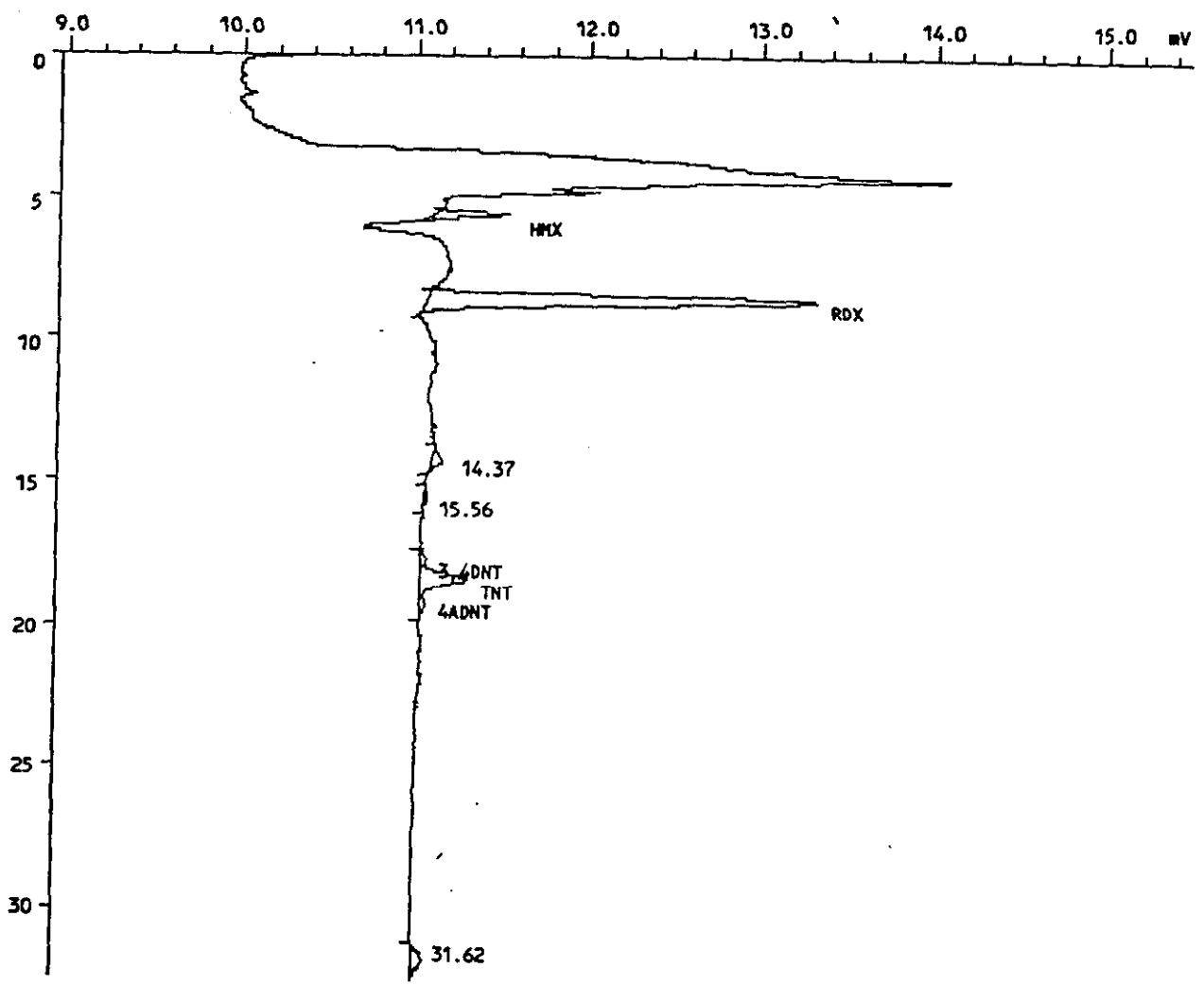
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0425,35,1

Sample name.....: BIO-S-001-00-11-2-R2 100X
Sample ID.....: 33673.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 26-Apr-98 at 19:13:24
Reported on 27-Apr-98 at 11:59:52



INJECTION REPORT

Injection F: <MC3> 2 2EX0425,35,1

Acquired on 26-Apr-98 at 19:13:24
Modified on 27-Apr-82 at 11:39:48
Reported on 27-Apr-98 at 11:39:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 37
Calibration file..: 2EX0425 Last modified on 27-Apr-82 at 10:32:06
Method file.....: EXPLOS Last modified on 27-Apr-82 at 11:39:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-11-2-R2 100X
Sample ID.....: 33673.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

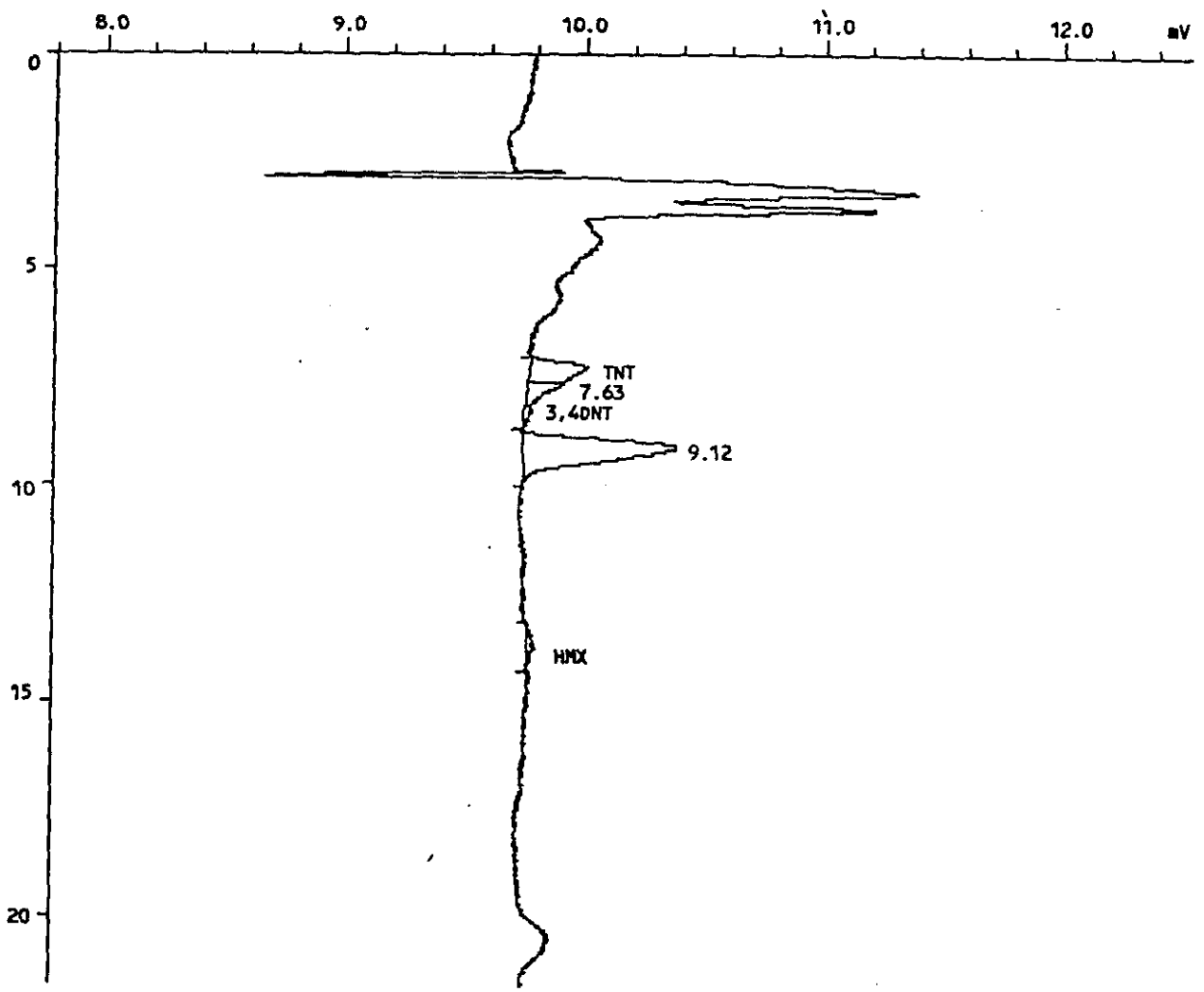
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	442	5190	23068.656	HMX
2	8.581	2265	51670	159377.875	RDX
5	17.637	35	752	1644.805	3,4DNT
6	18.384	271	7734	10162.917	TNT
7	19.136	35	1051	1932.647	4ADNT
Total		3048	66397	196186.906	
Residual		163	5490	13682.656	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,14,1

Sample name.....: BIO-S-001-00-11-2-R2 100X
Sample ID.....: 33673.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 25-Apr-98 at 01:54:58
Reported on 09-May-98 at 14:42:44



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,14,1

Acquired on 25-Apr-98 at 01:54:58
Modified on 09-May-82 at 14:42:06
Reported on 09-May-98 at 14:42:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422A Last modified on 09-May-82 at 14:03:28
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-11-2-R2 100X
Sample ID.....: 33673.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

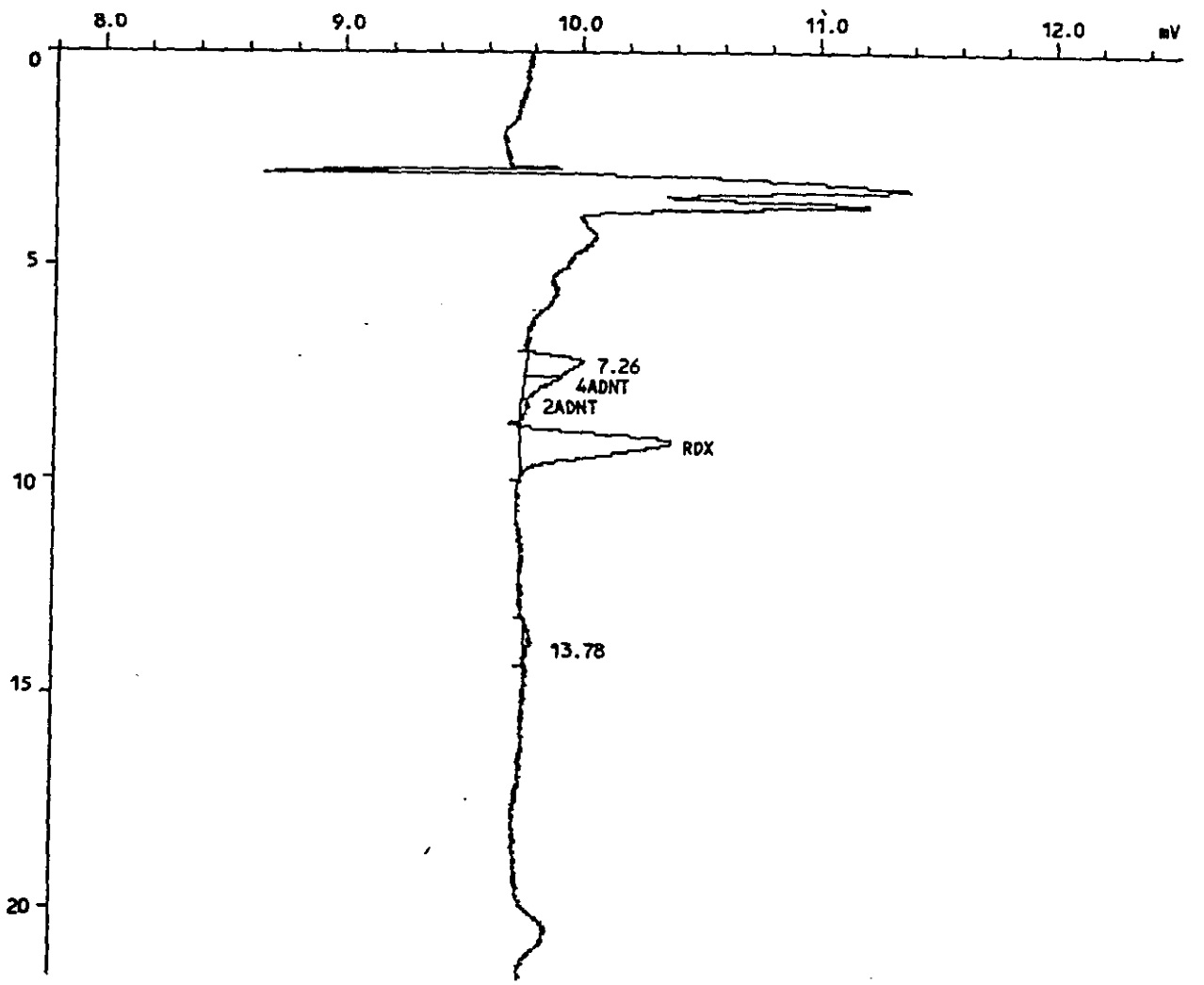
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.264	240	6130	24402.854	TNT
3	8.341	33	650	4891.953	3,4DNT
5	13.781	39	1145	11413.088	HMX
Total		312	7924	40707.895	
Residual		805	22938	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0422D,14,1

Sample name.....: BIO-S-001-00-11-2-R2 100X
Sample ID.....: 33673.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 25-Apr-98 at 01:54:58
Reported on 09-May-98 at 14:49:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0422D,14,1

Acquired on 25-Apr-98 at 01:54:58
Modified on 09-May-82 at 14:49:24
Reported on 09-May-98 at 14:49:25

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 16
Calibration file..: 3CN0422B Last modified on 09-May-82 at 14:01:06
Method file.....: LCCN Last modified on 09-May-82 at 14:39:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-S-001-00-11-2-R2 100X
Sample ID.....: 33673.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.632	160	2517	15857.248	4ADNT
3	8.341	33	650	2571.858	2ADNT
4	9.120	645	20421	153889.594	RDX
Total		838	23587	172318.703	
Residual		279	7275	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-11-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33673

Matrix: (soil/water) SOIL Lab Sample ID: 33673.10

Sample Amt: 2g % Moisture 7.20 Date Received: 04/21/98

Extraction Volume: 10ml Date Extracted: 04/21/98

Extraction Method: Date Analyzed: 04/23/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

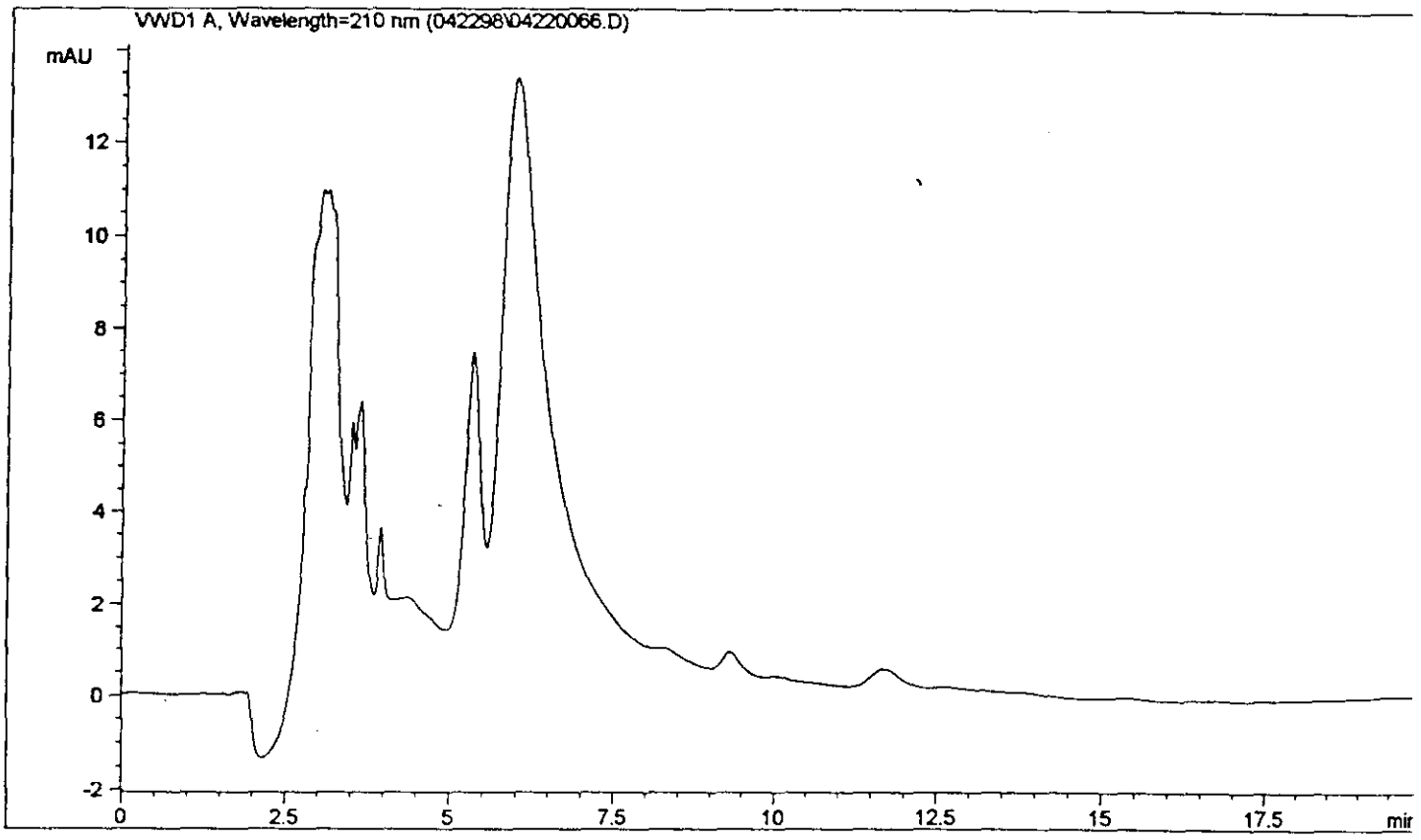
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	12500	U

FORM I

Injection Date	: Fri, 24. Apr. 1998	Seq Line	: 66
Sample Name	: 33673.10	Vial No.	:
Acq Operator	: SS	Inj. No.	:
		Inj. Vol.	: 200 µl

Acq. Method : 042298.M
Analysis Method : C:\HPCHEM\1\METHODS\042298.M
Last Changed : Mon, 27. Apr. 1998, 05:28:22 pm

PETN



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Customized Report: extstd.frp

==========

Sorted By Signal
Calib. Data Modified : Mon, 27. Apr. 1998,05:28:07 pm
Multiplier : 10.000000
Dilution : 100.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

==========

*** End of Report ***

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

B10-004

ct No.: 4-0009-0735

Project Name: NSWC Crane BioFacility

plers: (Signature)

pler: (Print) Peter J Chevalier

Split Samples

Analysis Required: 8330 explosives

mple ype	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Yes	No	8330 explosives	Remarks
Post	Window 001	4/15/98	1245	B10-S-001-00-03-1-R1		✓	✓	
			1245	B10-S-001-00-03-1-R2	✓			
			1300	B10-S-001-00-05-2-R1		✓		
			1300	B10-S-001-00-05-2-R2	✓			
			1317	B10-S-001-00-07-3-R1		✓		
			1317	B10-S-001-00-07-3-R2	✓			
			1331	B10-S-001-00-09-1-R1		✓		
			1331	B10-S-001-00-09-1-R2	✓			
			1340	B10-S-001-00-11-2-R1		✓		
			1340	B10-S-001-00-11-2-R2	✓			

Southwest Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
[signature]	4/20/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: [signature]	Date/Time 4/21/98 0930	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal #s 2144, 2145

5:

APPENDIX B
CALIBRATION SUMMARIES FOR LABORATORY ANALYSIS OF WINDROW S-001 DAY 0

TABLE OF CONTENTS

DESCRIPTION	PAGES
Calibration Summary for Analysis of Windrow S-001 Day 0	32 pages

CALIBRATION FACTOR DATA
FORM 9A-1

:XPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
:olumn ID : CARB-06

Inj 1

Injection File Name Level 1 : 2EX0425,4
Injection File Name Level 2 : 2EX0425,5
Injection File Name Level 3 : 2EX0425,6
Injection File Name Level 4 : 2EX0425,7
Injection File Name Level 5 : 2EX0425,8

Calibration Date : 04/25/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	11092	1094	279943	1102	773217	1172	1084079	1095	1532105	1161
RDX	6318	1497	168041	1591	468863	1699	663588	1611	938786	1707
TNB	9855	3263	253778	3357	715594	3632	999988	3378	1440435	3656
DNB	8116	5010	205227	5055	570971	5407	810017	5114	1171218	5525
TETRYL	7200	1935	164869	1773	521983	2157	698312	1918	996251	2058
NB	13334	4041	341244	4141	946831	4424	1363835	4236	1947410	4529
3,4-DNT	10616	2090	282866	2231	793577	2405	1123750	2266	1607165	2435
TNT	9375	3472	250667	3708	706960	4017	995700	3772	1427692	4056
4ADNT	5602	2374	158337	2675	444434	2886	631534	2722	903028	2932
2ADNT	8286	3511	228566	3861	644311	4184	911313	3928	1302209	4228
T	8669	2234	229878	2365	637650	2510	902241	2374	1275317	2520
T	11634	4930	306247	5173	860814	5590	1215420	5239	1746606	5671
2NT	7087	2097	208476	2464	579271	2633	821011	2488	1164630	2647
NT	7304	2161	201943	2387	562477	2557	794884	2409	1129565	2567
T	9285	2884	222841	2772	616945	2938	884566	2817	1252449	2996

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
olumn ID : CARB-06

Inj 1
Injection File Name Level 1 : 2EX0425,4
Injection File Name Level 2 : 2EX0425,5
Injection File Name Level 3 : 2EX0425,6
Injection File Name Level 4 : 2EX0425,7
Injection File Name Level 5 : 2EX0425,8

Calibration Date : 04/25/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1125	3.39	0.99898	1142	0.000
RDX	1621	5.32	0.99909	1675	0.000
TNB	3457	5.09	0.99835	3567	0.000
DNB	5222	4.39	0.99852	5381	0.000
TETRYL	1968	7.43	0.99757	2027	0.000
NB	4274	4.70	0.99888	4422	0.000
3,4-DNT	2285	6.12	0.99866	2378	0.000
⁻NT	3805	6.29	0.99862	3962	0.000
DNT	2718	8.11	0.99860	2860	0.000
⁄ADNT	3942	7.32	0.99858	4128	0.000
26DNT	2401	4.93	0.99904	2473	0.000
24DNT	5320	5.77	0.99839	5525	0.000
2NT	2466	9.01	0.99898	2595	0.000
4NT	2416	6.82	0.99891	2516	0.000
3NT	2881	3.13	0.99904	2932	0.000

CALIBRATION FACTOR DATA
FORM 9C

itial Calibration Date: 04/25/1998
ontinuing Calibration #: 1
ontinuing Cal Date : 04/26/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-06
Injection File Name : 2EX0425,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	752731	1141	1125	1.41	1142	0.12
RDX	456386	1654	1621	2.01	1675	1.31
TNB	682586	3465	3457	0.22	3567	2.86
DNB	562634	5328	5222	2.03	5381	0.99
TETRYL	425721	1759	1968	10.63	2027	13.22
NB	929433	4343	4274	1.61	4422	1.79
3,4-DNT	778913	2360	2285	3.29	2378	0.73
TNT	687046	3904	3805	2.59	3962	1.46
4ADNT	441548	2867	2718	5.50	2860	0.26
2ADNT	633215	4112	3942	4.30	4128	0.38
26DNT	626043	2465	2401	2.66	2473	0.35
24DNT	847739	5505	5320	3.47	5525	0.36
T	554584	2521	2466	2.23	2595	2.86
T	539267	2451	2416	1.45	2516	2.58
3NT	597537	2845	2881	1.24	2932	2.94

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 04/25/1998
ontinuing Calibration #: 2
ontinuing Cal Date : 04/26/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-06
Injection File Name : 2EX0425,28
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	756929	1147	1125	1.97	1142	0.43
RDX	463252	1678	1621	3.55	1675	0.18
TNB	705876	3583	3457	3.64	3567	0.46
DNB	573539	5431	5222	4.01	5381	0.92
TETRYL	482890	1995	1968	1.37	2027	1.56
NB	916161	4281	4274	0.16	4422	3.19
3,4-DNT	785979	2382	2285	4.22	2378	0.17
TNT	699262	3973	3805	4.42	3962	0.29
4ADNT	441757	2869	2718	5.55	2860	0.31
2ADNT	638405	4145	3942	5.15	4128	0.43
26DNT	630103	2481	2401	3.33	2473	0.30
24DNT	853478	5542	5320	4.17	5525	0.31
2NT	549069	2496	2466	1.22	2595	3.83
4NT	536502	2439	2416	0.93	2516	3.08
NT	588905	2804	2881	2.67	2932	4.34

CALIBRATION FACTOR DATA
FORM 9C

ıitial Calibration Date: 04/25/1998
ɔntinuing Calibration #: 3
ɔntinuing Cal Date : 04/26/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-06
Injection File Name : 2EX0425,36
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	752940	1141	1125	1.44	1142	0.09
RDX	443078	1605	1621	0.96	1675	4.19
TNB	677646	3440	3457	0.51	3567	3.56
DNB	548643	5195	5222	0.51	5381	3.46
TETRYL	443805	1834	1968	6.83	2027	9.53
NB	891059	4164	4274	2.58	4422	5.84
3,4-DNT	755764	2290	2285	0.22	2378	3.68
TNT	669676	3805	3805	0.00	3962	3.95
4ADNT	427571	2776	2718	2.16	2860	2.91
2ADNT	612104	3975	3942	0.82	4128	3.71
26DNT	610494	2404	2401	0.11	2473	2.82
²4DNT	812304	5275	5320	0.86	5525	4.53
T	535908	2436	2466	1.21	2595	6.13
⁴NT	522955	2377	2416	1.62	2516	5.53
³NT	577811	2751	2881	4.50	2932	6.14

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.njection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

XPLOSIVE CALIBRATION - METHOD SW846-8330

nstrument ID : IN12
Column ID : CARB-06
Calibration Date : 04/25/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.63	5.62	5.61	5.61	5.60
RDX	8.62	8.59	8.56	8.58	8.56
TNB	11.58	11.57	11.54	11.56	11.54
DNB	14.20	14.19	14.15	14.18	14.16
TETRYL	15.31	15.32	15.28	15.32	15.30
NB	16.09	16.12	16.08	16.11	16.09
3,4-DNT	17.71	17.71	17.66	17.70	17.69
TNT	18.35	18.37	18.33	18.37	18.35
4ADNT	19.32	19.31	19.25	19.31	19.29
2ADNT	20.33	20.34	20.28	20.34	20.33
26DNT	21.62	21.58	21.52	21.57	21.56
24DNT	22.27	22.29	22.23	22.28	22.26
2NT	26.20	26.23	26.18	26.22	26.21
4NT	27.97	28.04	27.98	28.03	28.02
3NT	30.22	30.23	30.18	30.22	30.21

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
HMX	5.61	5.61	5.61
RDX	8.56	8.56	8.58
TNB	11.54	11.54	11.55
DNB	14.14	14.16	14.17
TETRYL	15.26	15.29	15.30
NB	16.06	16.08	16.10
3,4-DNT	17.65	17.66	17.68
TNT	18.31	18.33	18.35
4ADNT	19.24	19.27	19.29
2ADNT	20.27	20.30	20.32
26DNT	21.50	21.53	21.55
24DNT	22.21	22.24	22.26
2NT	26.14	26.17	26.20
4NT	27.95	27.97	28.00
3NT	30.14	30.17	30.20

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
	5.61	0.010	0.030	5.58 - 5.64
RDX	8.58	0.021	0.062	8.51 - 8.64
TNB	11.55	0.016	0.049	11.50 - 11.60
DNB	14.17	0.020	0.061	14.11 - 14.23
TETRYL	15.30	0.020	0.059	15.24 - 15.36
NB	16.09	0.017	0.052	16.04 - 16.14
3,4-DNT	[illegible]	[illegible]	[illegible]	[illegible]

page 2

4ADNT	19.28	0.030	0.090	19.19 - 19.37
2ADNT	20.31	0.028	0.084	20.23 - 20.40
26DNT	21.55	0.036	0.109	21.44 - 21.66
24DNT	22.25	0.028	0.084	22.17 - 22.34
2NT	26.19	0.030	0.090	26.10 - 26.28
4NT	27.99	0.031	0.094	27.90 - 28.09
NT	30.20	0.032	0.095	30.10 - 30.29

CALIBRATION FACTOR DATA
FORM 9A-1

XPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
olumn ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0422,4
Injection File Name Level 2 : 3CN0422,5
Injection File Name Level 3 : 3CN0422,6
Injection File Name Level 4 : 3CN0422,7
Injection File Name Level 5 : 3CN0422,8

Calibration Date : 04/22/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	11305	2458	57110	2483	146079	2541	291399	2534	583396	2537
26DNT	8350	1670	41987	1679	108906	1742	216116	1729	434113	1736
TNT	10934	2377	56881	2473	147632	2568	294536	2561	593574	2581
3,4DNT	8193	1170	43601	1246	115706	1402	230009	1394	470302	1425
TETRYL	14065	1563	70200	1560	167123	1486	337619	1501	687292	1527
HMX	5984	855	35603	1017	91534	1046	183078	1046	368281	1052

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0422,9
Injection File Name Level 2 : 3CN0422,10
Injection File Name Level 3 : 3CN0422,11
Injection File Name Level 4 : 3CN0422,12
Injection File Name Level 5 : 3CN0422,13

Calibration Date : 04/22/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	9575	1915	48449	1938	124239	1988	247645	1981	502207	2009
DNB	13468	3367	69735	3487	182416	3648	362619	3626	740695	3703
24DNT	15690	3138	75972	3039	200662	3211	396899	3175	806903	3228
4ADNT	14614	1588	70675	1536	187434	1630	365722	1590	731612	1590
2ADNT	24550	2455	121838	2437	322208	2578	637439	2550	1306155	2612
RDX	7084	1417	31167	1247	82566	1321	163588	1309	335752	1343

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
olumn ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0422,4
Injection File Name Level 2 : 3CN0422,5
Injection File Name Level 3 : 3CN0422,6
Injection File Name Level 4 : 3CN0422,7
Injection File Name Level 5 : 3CN0422,8

Calibration Date : 04/22/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2510	1.50	1.00000	2536	0.000
26DNT	1711	1.99	0.99999	1735	0.000
TNT	2512	3.45	0.99999	2576	0.000
3,4DNT	1328	8.50	0.99992	1417	0.000
TETRYL	1527	2.27	0.99993	1521	0.000
X	1003	8.38	1.00000	1050	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
olumn ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0422,9
Injection File Name Level 2 : 3CN0422,10
Injection File Name Level 3 : 3CN0422,11
Injection File Name Level 4 : 3CN0422,12
Injection File Name Level 5 : 3CN0422,13

Calibration Date : 04/22/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	1966	1.96	0.99998	2002	0.000
DNB	3566	3.84	0.99995	3685	0.000
24DNT	3158	2.37	0.99996	3216	0.000
4ADNT	1587	2.09	0.99996	1592	0.000
2ADNT	2526	3.05	0.99993	2598	0.000
RDX	1327	4.64	0.99990	1335	0.000

CALIBRATION FACTOR DATA
FORM 9C

itial Calibration Date: 04/22/1998
ntinuing Calibration #: 4
ntinuing Cal Date : 04/24/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0422C,27
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	152849	2658	2510	5.89	2536	4.83
26DNT	116021	1856	1711	8.46	1735	7.00
TNT	157474	2739	2512	9.03	2576	6.33
3,4DNT	121919	1478	1328	11.32	1417	4.30
TETRYL	145613	1294	1527	15.25	1521	14.88
HMX	99648	1139	1003	13.51	1050	8.41

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 04/22/1998
ntinuing Calibration #: 4
ntinuing Cal Date : 04/24/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0422C,28
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	127137	2034	1966	3.46	2002	1.60
DNB	188688	3774	3566	5.82	3685	2.41
24DNT	210841	3373	3158	6.82	3216	4.91
4ADNT	202215	1758	1587	10.80	1592	10.46
2ADNT	334971	2680	2526	6.07	2598	3.16
RDX	86947	1391	1327	4.81	1335	4.21

CALIBRATION FACTOR DATA
FORM 9C

itial Calibration Date: 04/22/1998
ontinuing Calibration #: 5
ontinuing Cal Date : 04/24/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0422D,7
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	147452	2564	2510	2.15	2536	1.13
26DNT	112629	1802	1711	5.29	1735	3.87
TNT	153405	2668	2512	6.21	2576	3.58
3,4DNT	118905	1441	1328	8.57	1417	1.72
TETRYL	143423	1275	1527	16.52	1521	16.16
HMX	96128	1099	1003	9.50	1050	4.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 04/22/1998
ontinuing Calibration #: 5
ntinuing Cal Date : 04/24/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0422D,8
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	124771	1996	1966	1.54	2002	0.29
DNB	185435	3709	3566	3.99	3685	0.65
24DNT	206408	3303	3158	4.57	3216	2.70
4ADNT	195239	1698	1587	6.97	1592	6.65
2ADNT	328060	2624	2526	3.89	2598	1.03
RDX	85335	1365	1327	2.87	1335	2.28

CALIBRATION FACTOR DATA
FORM 9C

itial Calibration Date: 04/22/1998
ontinuing Calibration #: 6
ntinuing Cal Date : 04/25/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0422D,15
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	141036	2453	2510	2.29	2536	3.27
26DNT	113626	1818	1711	6.23	1735	4.79
TNT	154402	2685	2512	6.90	2576	4.26
3,4DNT	119188	1445	1328	8.82	1417	1.96
TETRYL	117313	1043	1527	31.72	1521	31.43
HMX	94857	1084	1003	8.05	1050	3.20

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 04/22/1998
ontinuing Calibration #: 6
ntinuing Cal Date : 04/25/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0422D,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	123967	1983	1966	0.88	2002	0.93
DNB	188689	3774	3566	5.82	3685	2.41
24DNT	209236	3348	3158	6.01	3216	4.11
4ADNT	195737	1702	1587	7.25	1592	6.92
2ADNT	330085	2641	2526	4.53	2598	1.65
RDX	86610	1386	1327	4.41	1335	3.80

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.njection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

njection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 04/22/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.98	5.99	6.00	5.98	5.96
26DNT	6.62	6.64	6.64	6.63	6.60
TNT	7.20	7.20	7.21	7.20	7.17
3,4DNT	8.28	8.33	8.33	8.32	8.28
TETRYL	11.48	11.54	11.54	11.53	11.48
HMX	13.73	13.72	13.74	13.74	13.66

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
TNB	6.00	6.01	6.03	6.02	6.00
26DNT	6.65	6.67	6.69	6.69	6.66
TNT	7.22	7.23	7.26	7.25	7.21
4DNT	8.34	8.37	8.41	8.40	8.34
TETRYL	11.55	11.58	11.62	11.60	11.52
HMX	13.75	13.76	13.79	13.74	13.60

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.00	0.022	0.066	5.94 - 6.07
26DNT	6.66	0.041	0.122	6.54 - 6.78
TNT	7.22	0.034	0.102	7.12 - 7.33
3,4DNT	8.36	0.061	0.182	8.17 - 8.54
TETRYL	11.57	0.074	0.223	11.34 - 11.79
HMX	13.73	0.069	0.206	13.53 - 13.94

A STD

CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 04/22/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.98	5.99	6.00	5.98	5.96
26DNT	6.62	6.64	6.64	6.63	6.60
TNT	7.20	7.20	7.21	7.20	7.17
3,4DNT	8.28	8.33	8.33	8.32	8.28
TETRYL	11.48	11.54	11.54	11.53	11.48
HMX	13.73	13.72	13.74	13.74	13.66

COMPONENT NAME	RT Cont CA6	RT Cont CA7
TNB	6.01	6.04
26DNT	6.69	6.75
TNT	7.24	7.30
3,4DNT	8.39	8.50
TETRYL	11.58	11.76
HMX	13.70	13.89

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.00	0.022	0.066	5.94 - 6.07
26DNT	6.66	0.041	0.122	6.54 - 6.78
TNT	7.22	0.034	0.102	7.12 - 7.33
3,4DNT	8.36	0.061	0.182	8.17 - 8.54
TETRYL	11.57	0.074	0.223	11.34 - 11.79
HMX	13.73	0.069	0.206	13.53 - 13.94

CALIBRATION FACTOR DATA
FORM 9E

.XPLOSIVE CALIBRATION - METHOD SW846-8330

.nstrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 04/22/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.27	5.29	5.28	5.27	5.26
DNB	5.88	5.88	5.87	5.87	5.86
24DNT	6.91	6.91	6.90	6.90	6.89
4ADNT	7.69	7.69	7.69	7.68	7.67
2ADNT	8.25	8.26	8.25	8.25	8.23
RDX	9.13	9.15	9.14	9.13	9.11

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
NB	5.31	5.31	5.32	5.31	5.29
DNB	5.89	5.91	5.91	5.90	5.88
24DNT	6.93	6.96	6.96	6.94	6.92
DNT	7.73	7.75	7.77	7.74	7.71
2ADNT	8.29	8.32	8.33	8.31	8.26
DX	9.18	9.20	9.20	9.19	9.12

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.30	0.029	0.088	5.21 - 5.39
DNB	5.89	0.028	0.083	5.81 - 5.98
24DNT	6.94	0.043	0.129	6.81 - 7.06
4ADNT	7.73	0.059	0.176	7.55 - 7.91
2ADNT	8.29	0.062	0.185	8.11 - 8.48
RDX	9.17	0.057	0.170	9.00 - 9.34

JCN0422
B STD

CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 04/22/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.27	5.29	5.28	5.27	5.26
DNB	5.88	5.88	5.87	5.87	5.86
24DNT	6.91	6.91	6.90	6.90	6.89
4ADNT	7.69	7.69	7.69	7.68	7.67
2ADNT	8.25	8.26	8.25	8.25	8.23
RDX	9.13	9.15	9.14	9.13	9.11

COMPONENT NAME	RT Cont CA6	RT Cont CA7
NB	5.32	5.37
DNB	5.90	5.96
24DNT	6.96	7.05
4ADNT	7.77	7.88
2ADNT	8.33	8.45
RDX	9.19	9.32

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.30	0.029	0.088	5.21 - 5.39
DNB	5.89	0.028	0.083	5.81 - 5.98
24DNT	6.94	0.043	0.129	6.81 - 7.06
4ADNT	7.73	0.059	0.176	7.55 - 7.91
2ADNT	8.29	0.062	0.185	8.11 - 8.48
RDX	9.17	0.057	0.170	9.00 - 9.34

CALIBRATION FACTOR DATA
FORM 9A-1

XPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
olumn ID :

Inj 1

Injection File Name Level 1 : 042298,4
Injection File Name Level 2 : 042298,5
Injection File Name Level 3 : 042298,6
Injection File Name Level 4 : 042298,7
Injection File Name Level 5 : 042298,8

Calibration Date : 04/22/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.01835	3.32E0	49.872	3.21E0	107.747	2.97E0	411.573	3.11E0	821.239	3.12E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	042298,4
Injection File Name Level 2 :	042298,5
Injection File Name Level 3 :	042298,6
Injection File Name Level 4 :	042298,7
Injection File Name Level 5 :	042298,8

Calibration Date : 04/22/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.15E0	4.16	0.99997	3.11E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

ıtial Calibration Date: 04/22/98
Continuing Calibration #: 4
ıtinuing Cal Date : 04/23/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 042298,47
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	104.756	3.05E0	3.15E0	2.89	3.11E0	1.91

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 04/22/98
Continuing Calibration #: 5
Continuing Cal Date : 04/23/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 042298,58
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.6283	3.24E0	3.15E0	3.14	3.11E0	4.18

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 04/22/98
Continuing Calibration #: 6
Continuing Cal Date : 04/23/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 042298,67
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	100.31	3.19E0	3.15E0	1.41	3.11E0	2.44

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

njection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

nstrument ID : LC4
Column ID :
Calibration Date : 04/22/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.58	12.62	12.60	12.63	12.64

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	12.65	12.67	12.50	12.56	12.74

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.63	0.076	0.227	12.40 - 12.86

CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : LC4
olumn ID :
Calibration Date : 04/22/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.58	12.62	12.60	12.63	12.64

COMPONENT NAME	RT Cont CA6
PETN	12.76

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.63	0.076	0.227	12.40 - 12.86

APPENDIX C
RAW DATA OF WINDROW S-005 DAY 0
FOR WILEY MILL/RIFFLE SPLITTER

TABLE OF CONTENTS

DESCRIPTION	PAGES
Raw Data of Windrow S-001 Day 5	159 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-03-1-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.01

Sample Amt: 2g % Moisture 37.12 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2920	
121-82-4	RDX	36000	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
946-51-0	4ADNT	250	U
5572-78-2	2ADNT	250	U
06-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

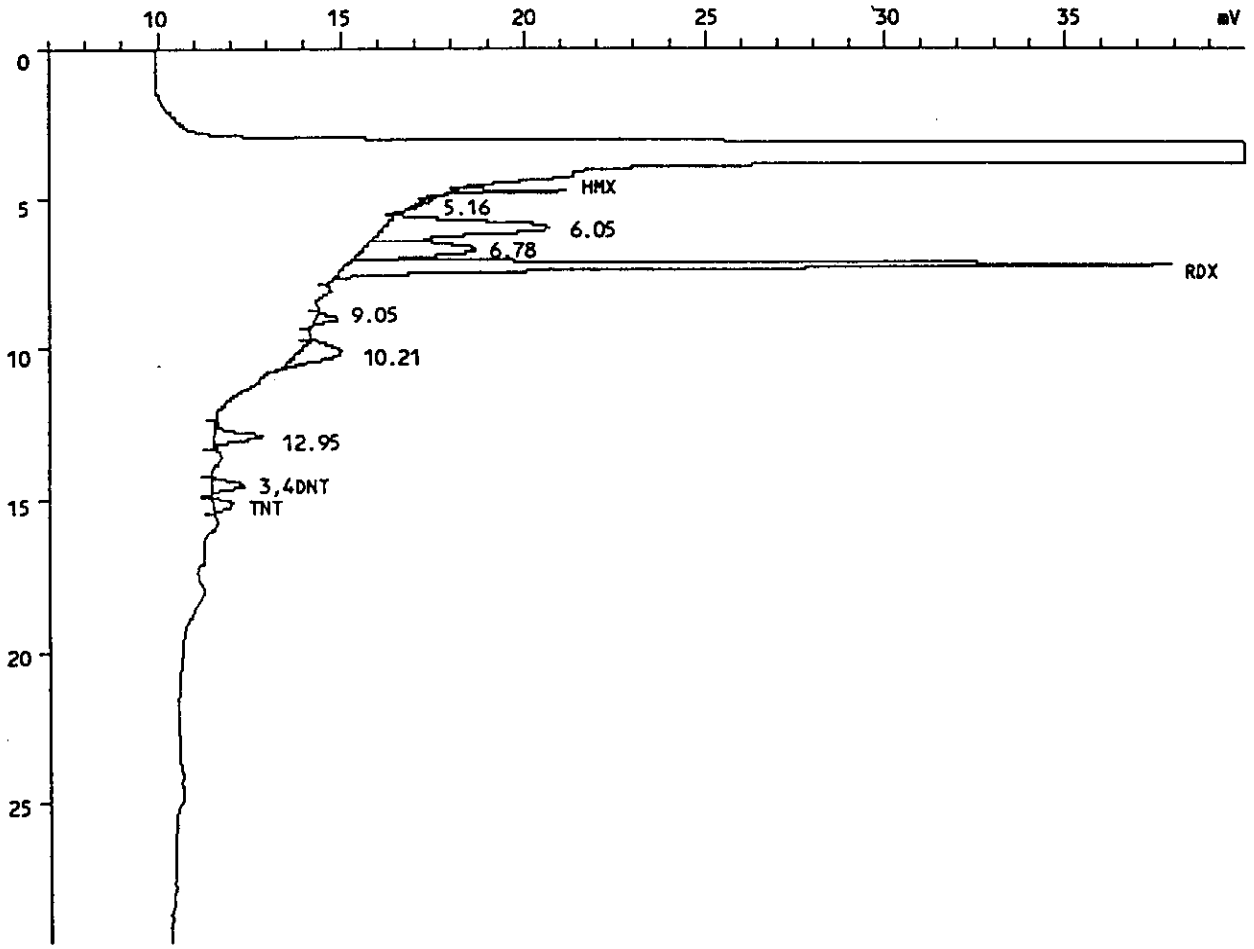
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,20,1

Sample name.....: BIO-5-005-00-03-1-R1
Sample ID.....: 34353.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 01:34:01
Reported on 18-Jun-98 at 07:48:18



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,20,1

Acquired on 17-Jun-98 at 01:34:01
Modified on 18-Jun-82 at 07:47:16
Reported on 02-Jul-98 at 11:34:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 19-Jun-82 at 17:15:18
Method file.....: EXPLOS Last modified on 02-Jul-82 at 10:26:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R1
Sample ID.....: 34353.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

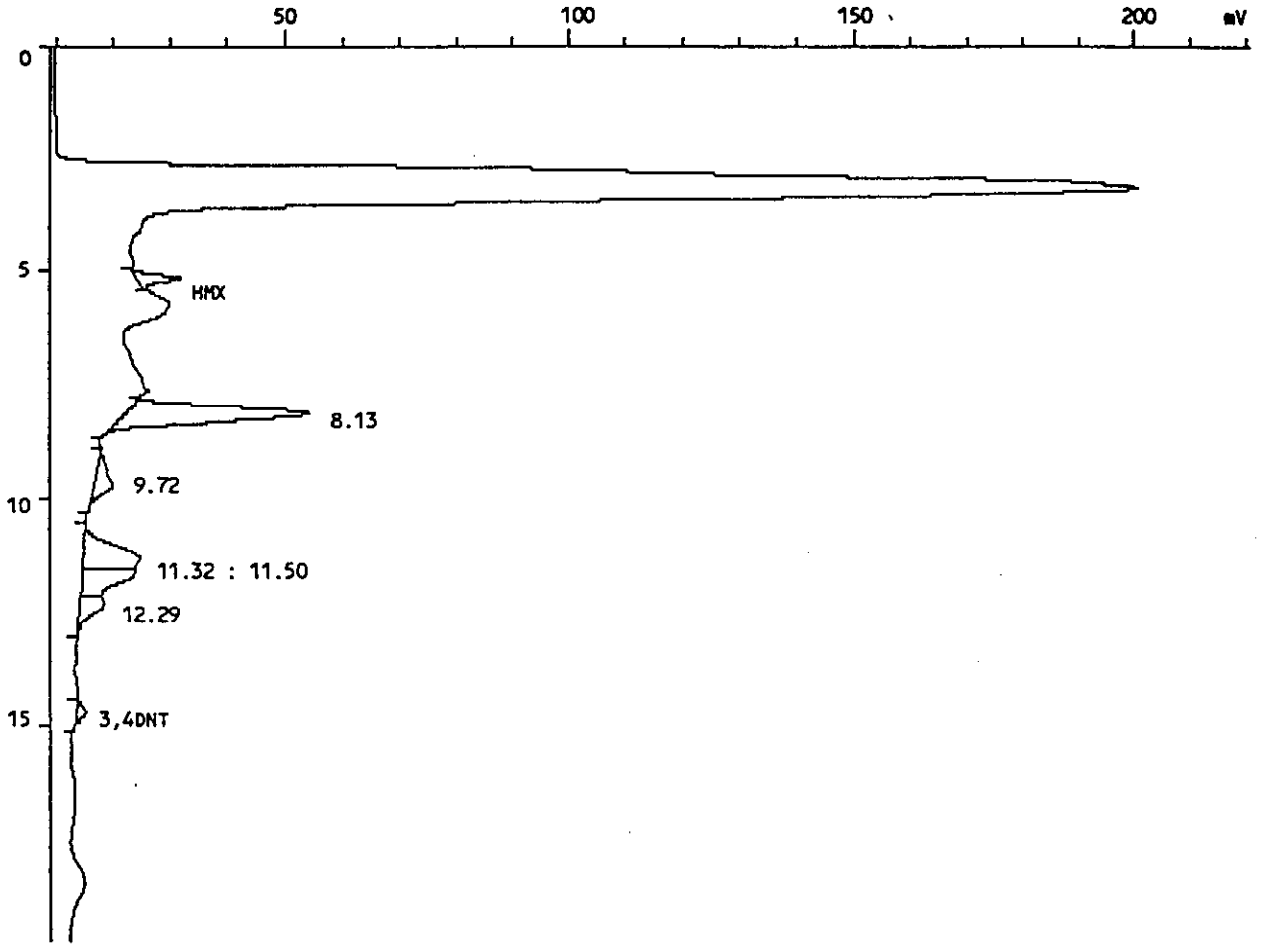
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	3220	21744	2922.630	HMX *
5	7.296	22913	347344	35956.898	RDX * E
9	14.539	911	16247	1320.871	3,4DNT 66%
10	15.173	566	10835	460.685	TNT
Total		27610	396170	40661.082	
Residual		11421	317683	40250.891	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,5,1

Sample name.....: BIO-5-005-00-03-1-R1
Sample ID.....: 34353.01
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 21:54:54
Reported on 02-Jul-98 at 16:00:46



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,5,1

Acquired on 01-Jul-98 at 21:54:54
Modified on 02-Jul-82 at 15:54:16
Reported on 02-Jul-98 at 15:54:17

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R1
Sample ID.....: 34353.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

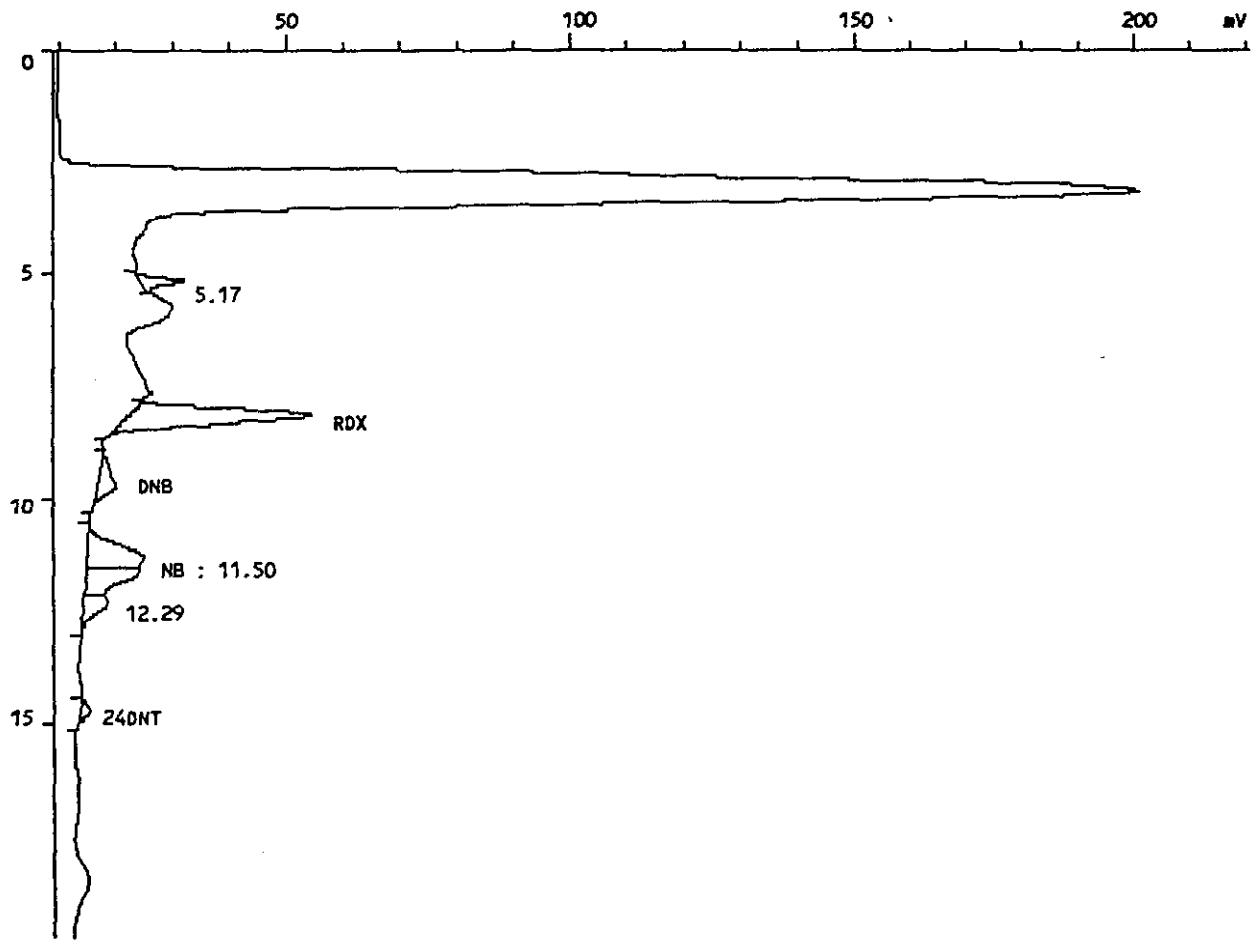
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.173	7245	71656	2659.823	HMX
7	14.725	1614	33917	1602.894	3,4DNT
Total		8859	105573	4262.717	
Residual		59586	1512329	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,5,1

Sample name.....: BIO-5-005-00-03-1-R1
Sample ID.....: 34353.01
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 21:54:54
Reported on 02-Jul-98 at 11:00:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,5,1

Acquired on 01-Jul-98 at 21:54:54
Modified on 02-Jul-82 at 10:54:00
Reported on 02-Jul-98 at 10:54:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R1
Sample ID.....: 34353.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.133	32502	722930	28733.293	RDX
3	9.723	3308	116760	1689.721	DNB
4	11.317	10078	299900	7765.415	NB
7	14.725	1614	33917	558.033	24DNT
Total		47503	1173507	38746.461	
Residual		20942	444395	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-03-1-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.01DL

Sample Amt: 2g % Moisture 37.12 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	4040	DJ
121-82-4	RDX	41000	D
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

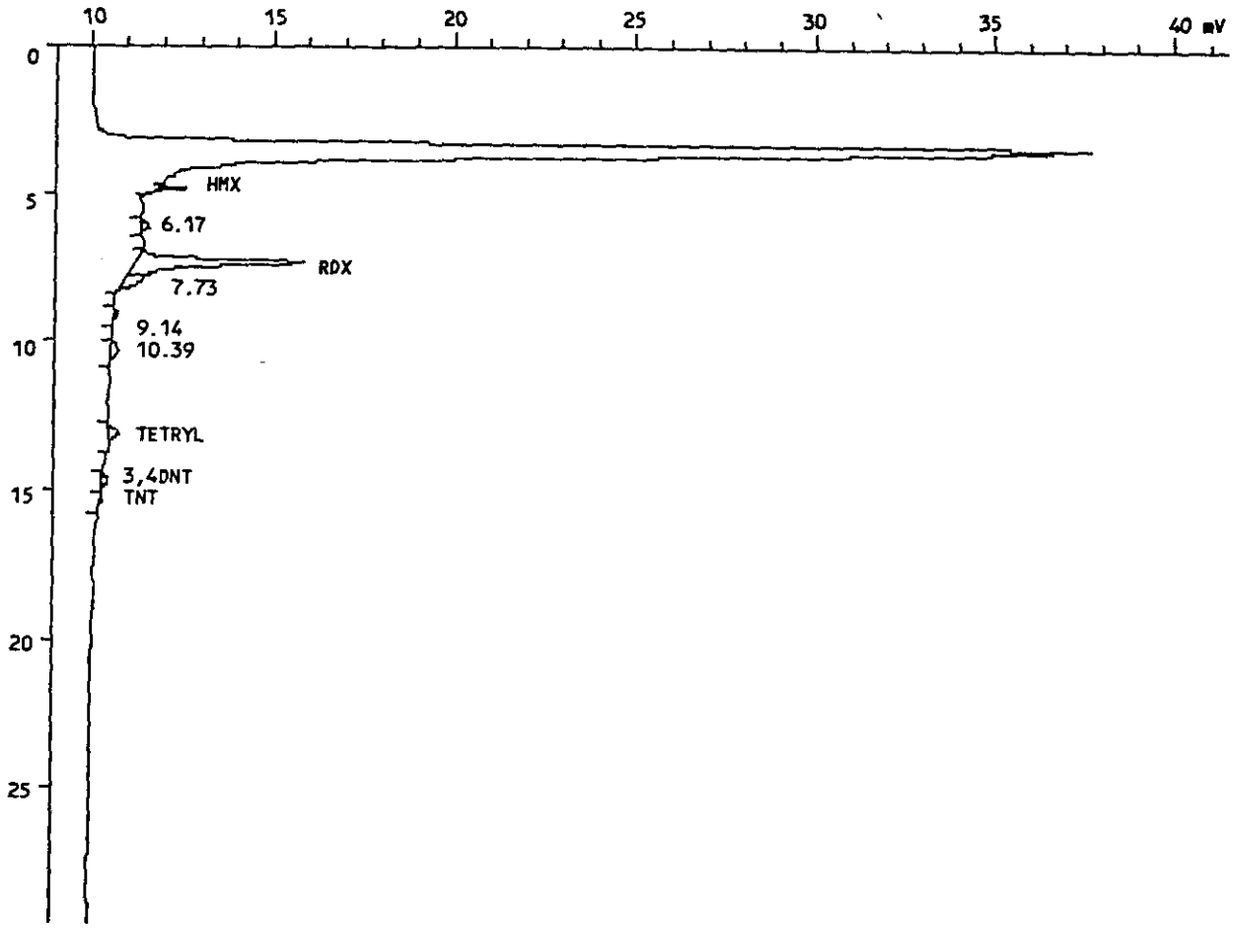
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,8,1

Sample name.....: BIO-5-005-00-03-1-R1 5X
Sample ID.....: 34353.01DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 05:34:10
Reported on 27-Jun-98 at 14:10:16



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,8,1

Acquired on 20-Jun-98 at 05:34:10
Modified on 27-Jun-82 at 14:07:20
Reported on 02-Jul-98 at 11:37:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 29-Jun-82 at 16:36:50
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R1 5X
Sample ID.....: 34353.01DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

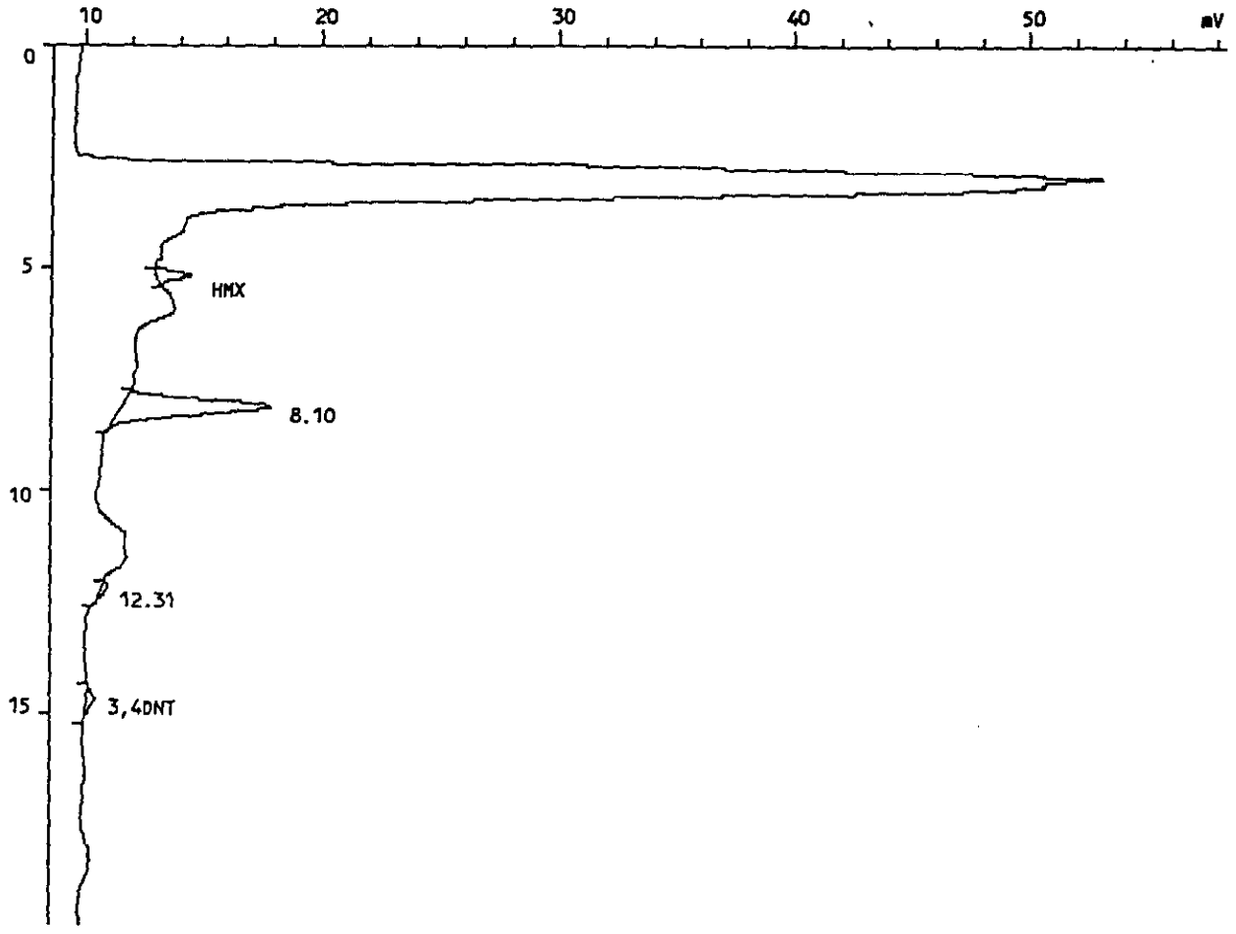
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.848	805	6241	4041.887	HMX*D
3	7.360	4650	80799	40973.066	RDX*D
7	13.109	281	5666	2413.036	TETRYL
8	14.747	199	3549	1459.480	3,4DNT 73%
9	15.355	102	2124	459.444	TNT
Total		6036	98379	49346.914	
Residual		1177	25677	13496.807	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,6,1

Sample name.....: BIO-5-005-00-03-1-R1 5X
Sample ID.....: 34353.01DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 22:31:55
Reported on 02-Jul-98 at 16:01:34



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,6,1

Acquired on 01-Jul-98 at 22:31:55
Modified on 02-Jul-82 at 15:54:30
Reported on 02-Jul-98 at 15:54:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R1 5X
Sample ID.....: 34353.01DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

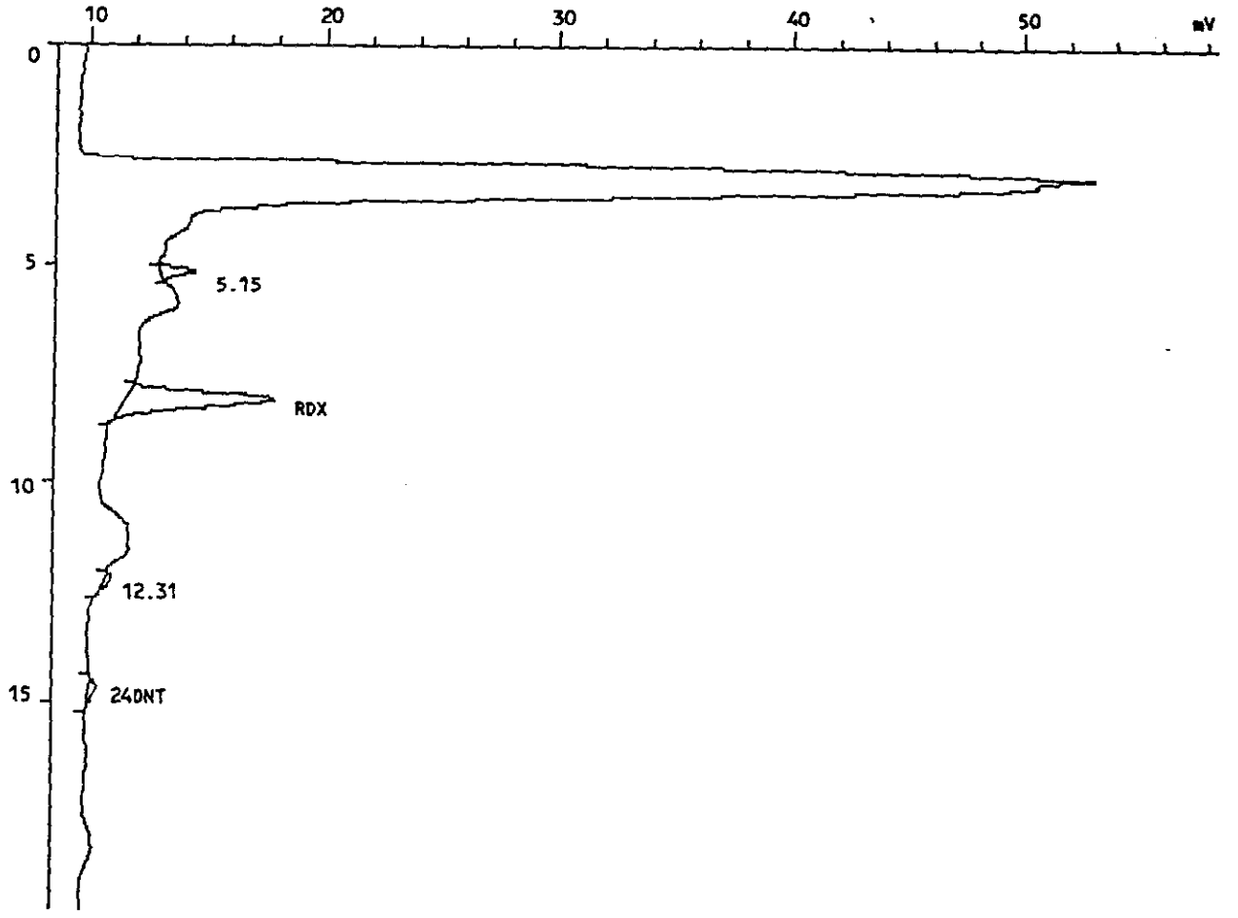
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.152	1474	16133	2994.290	HMX
4	14.677	378	9452	2233.420	3,4DNT
Total		1851	25585	5227.709	
Residual		6603	153410	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,6,1

Sample name.....: BIO-5-005-00-03-1-R1 5X
Sample ID.....: 34353.01DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 22:31:55
Reported on 02-Jul-98 at 11:01:00



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,6,1

Acquired on 01-Jul-98 at 22:31:55
Modified on 02-Jul-82 at 10:54:16
Reported on 02-Jul-98 at 10:54:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R1 5X
Sample ID.....: 34353.01DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.096	6266	146378	29089.377	RDX
4	14.677	378	9452	777.545	24DNT
Total		6644	155830	29866.922	
Residual		1810	23165	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-03-1-R1

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.01

Sample Amt: 2g % Moisture 37.12 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

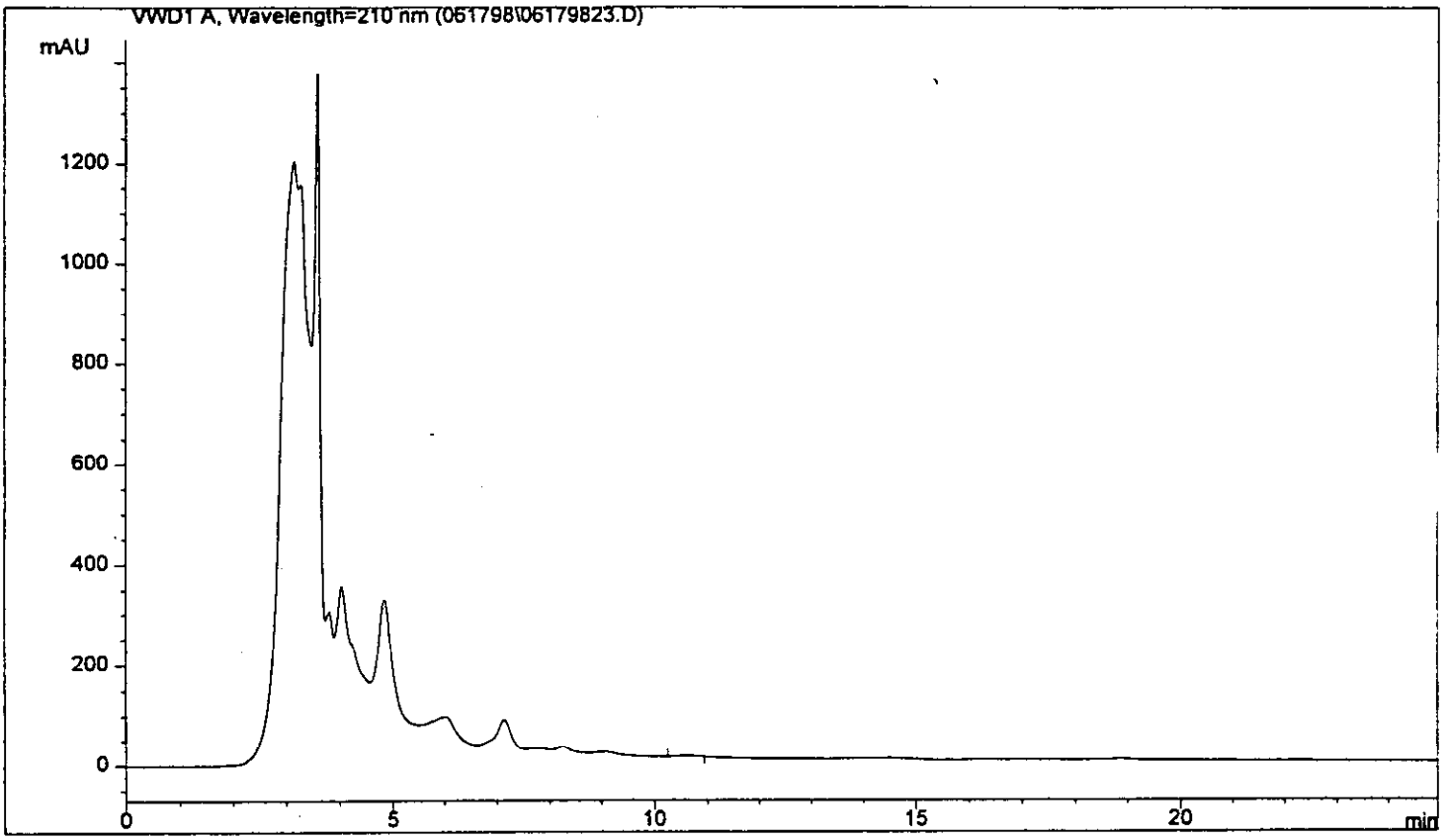
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 2
Sample Name	: 34353.01	Vial No.	: 23
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
10.625	BBA	68.65144	0.00000	0.00000	
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-03-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.02

Sample Amt: 2g % Moisture 4.84 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	13000	
121-82-4	RDX	93400	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	4080	P
46-51-0	4ADNT	250	U
5572-78-2	2ADNT	250	U
06-20-2	26DNT	260	U
121-14-2	24DNT	873	
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

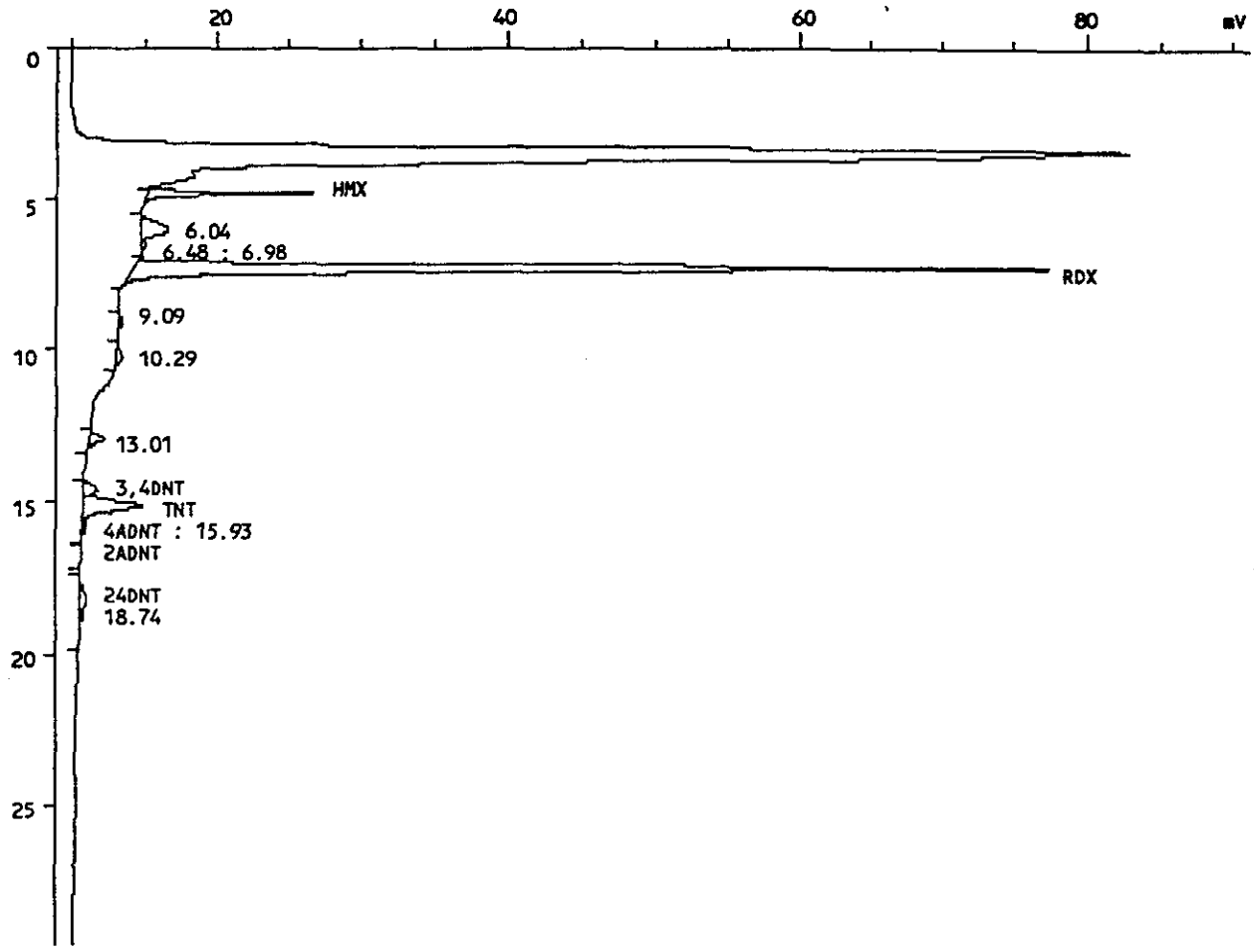
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,21,1

Sample name.....: BIO-5-005-00-03-1-R2
Sample ID.....: 34353.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 02:18:43
Reported on 17-Jun-98 at 17:21:27



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,21,1

Acquired on 17-Jun-98 at 02:18:43
Modified on 17-Jun-82 at 17:05:46
Reported on 02-Jul-98 at 16:23:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 19-Jun-82 at 17:15:18
Method file.....: EXPLOS Last modified on 02-Jul-82 at 10:26:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R2
Sample ID.....: 34353.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

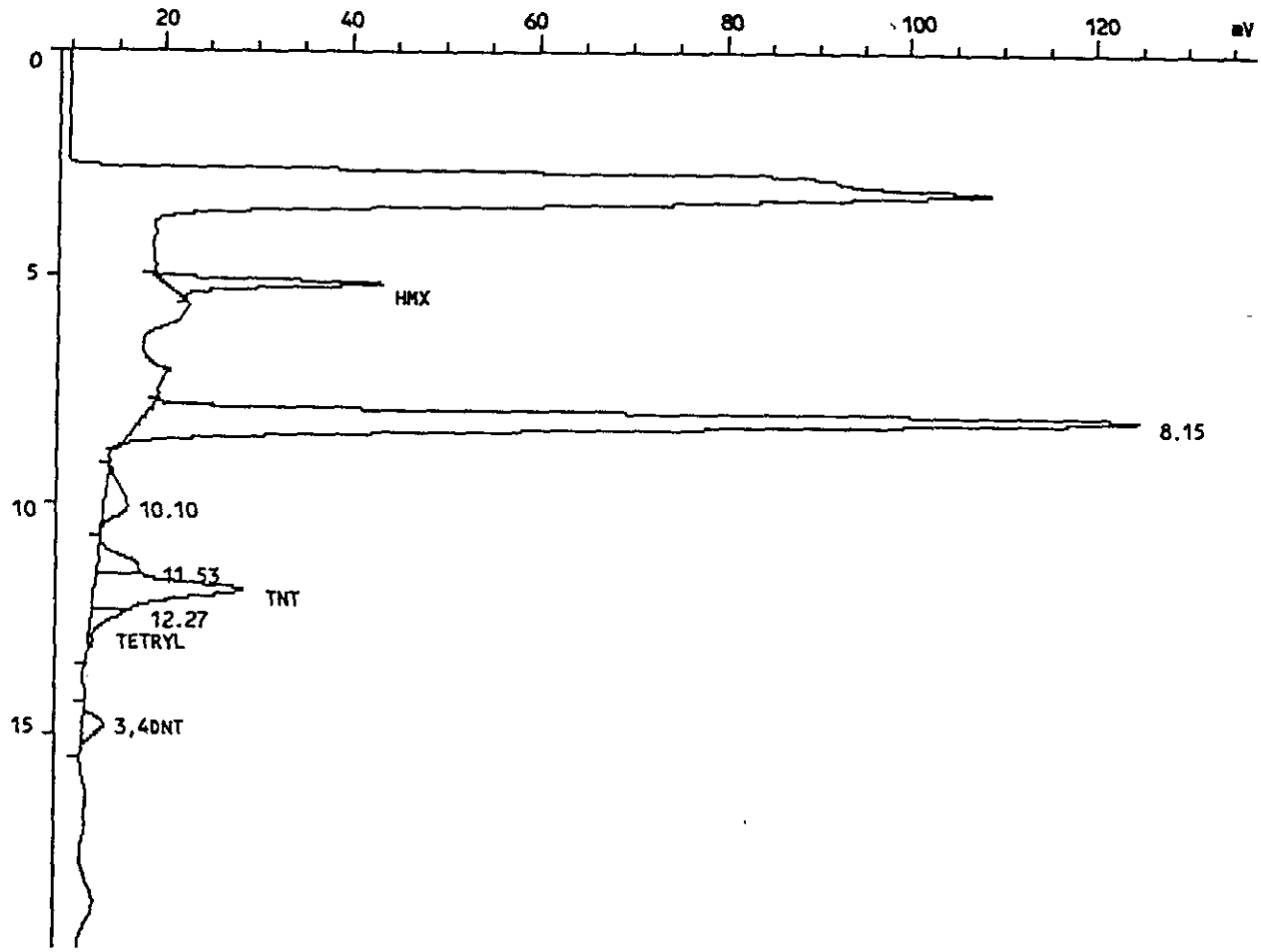
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	11646	96981	13035.122	HMX*
5	7.317	63230	902437	93419.938	RDX *E
9	14.624	986	18609	1512.947	3,4DNT 76%
10	15.163	4141	96027	4082.785	TNT *P
11	15.856	281	2881	192.550	4ADNT
13	16.848	155	3566	179.755	2ADNT
14	18.267	476	20683	872.692	24DNT *
Total		80915	1141184	113295.797	
Residual		4772	111481	12923.997	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,7,1

Sample name.....: BIO-5-005-00-03-1-R2
Sample ID.....: 34353.02
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 23:08:55
Reported on 02-Jul-98 at 16:07:01



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,7,1

Acquired on 01-Jul-98 at 23:08:55
Modified on 02-Jul-82 at 15:54:44
Reported on 02-Jul-98 at 16:06:21

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R2
Sample ID.....: 34353.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

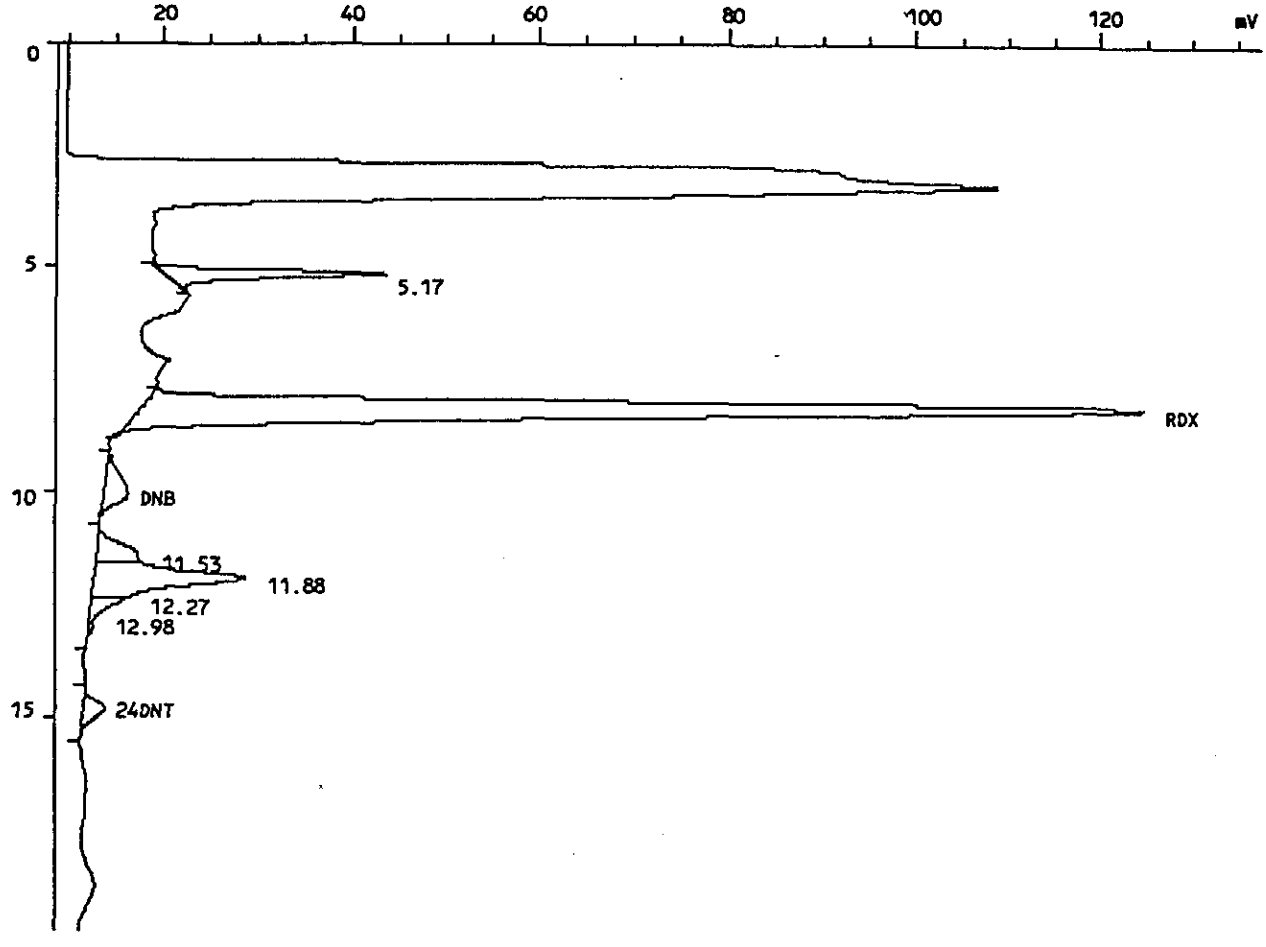
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.173	23136	260130	9655.896	HMX
6	11.877	16084	430874	8652.086	TNT
8	12.981	647	10671	292.833	TETRYL
9	14.843	2294	63413	2996.836	3,4DNT
Total		42161	765088	21597.650	
Residual		118701	2795418	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,7,1

Sample name.....: BIO-5-005-00-03-1-R2
Sample ID.....: 34353.02
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 23:08:55
Reported on 02-Jul-98 at 11:01:32



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,7,1

Acquired on 01-Jul-98 at 23:08:55
Modified on 02-Jul-82 at 10:54:32
Reported on 02-Jul-98 at 10:54:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R2
Sample ID.....: 34353.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.149	107086	2496228	99214.156	RDX
4	10.101	2567	112301	1625.195	DNB
9	14.843	2294	63413	1043.321	24DNT
Total		111946	2671942	101882.672	
Residual		48916	888563	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-03-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.02DL

Sample Amt: 2g % Moisture 4.84 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	12300	DJ
121-82-4	RDX	99100	D
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	U
98-95-3	NB	2600	U
118-96-7	TNT	3850	D
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
606-20-2	26DNT	2600	U
121-14-2	24DNT	492	DJP
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

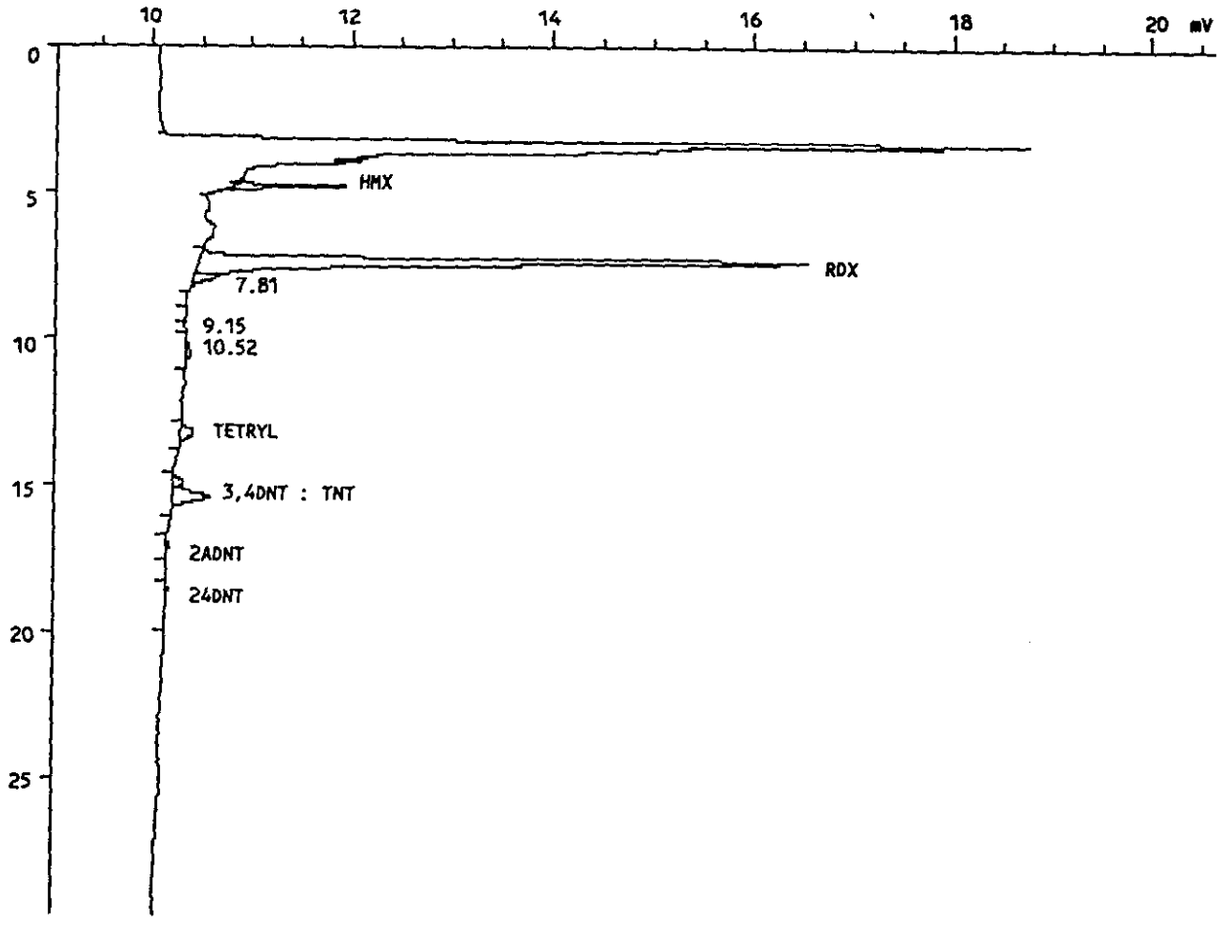
SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

LONG PLOT

Injection F: <MC3> 5 5EX0619A,9,1

Sample name.....: BIO-5-005-00-03-1-R2 10X
Sample ID.....: 34353.02DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 06:18:55
Reported on 27-Jun-98 at 14:14:16



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,9,1

Acquired on 20-Jun-98 at 06:18:55
Modified on 27-Jun-82 at 14:07:36
Reported on 02-Jul-98 at 16:17:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 29-Jun-82 at 16:36:50
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R2 10X
Sample ID.....: 34353.02DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

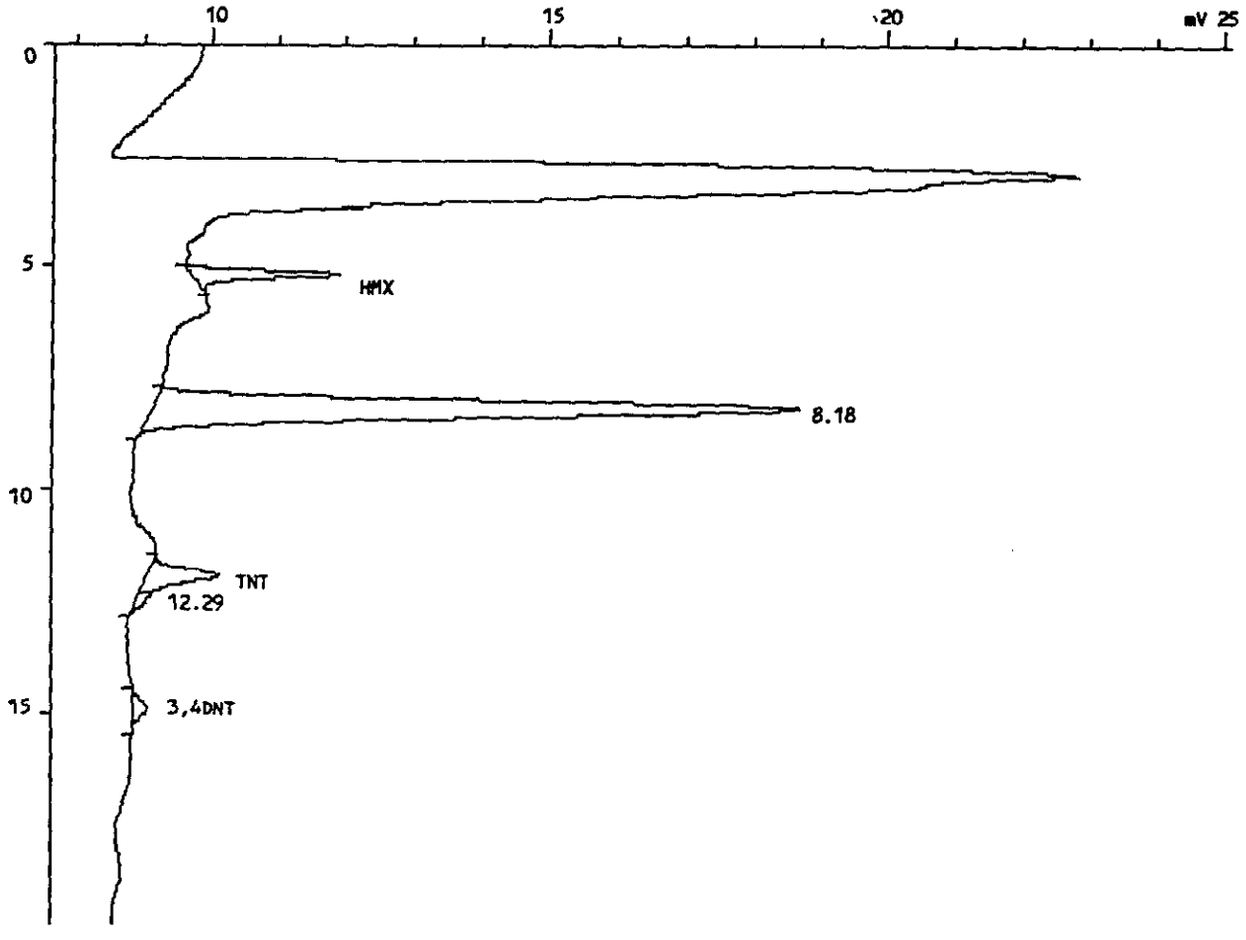
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	1184	9495	12298.614	HMX*D
2	7.371	6099	97743	99130.625	RDX*D
6	13.237	136	3030	2581.167	TETRYL
7	14.933	98	1752	1440.769	3,4DNT 72%
8	15.435	384	8908	3852.980	TNT *D
9	17.088	22	604	306.700	2ADNT
10	18.603	25	1173	492.475	24DNT *DP
Total		7948	122704	120103.328	
Residual		384	6871	6968.063	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,8,1

Sample name.....: BIO-5-005-00-03-1-R2 10X
Sample ID.....: 34353.02DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 23:45:56
Reported on 02-Jul-98 at 16:02:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,8,1

Acquired on 01-Jul-98 at 23:45:56
Modified on 02-Jul-82 at 15:55:00
Reported on 02-Jul-98 at 15:55:02

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R2 10X
Sample ID.....: 34353.02DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

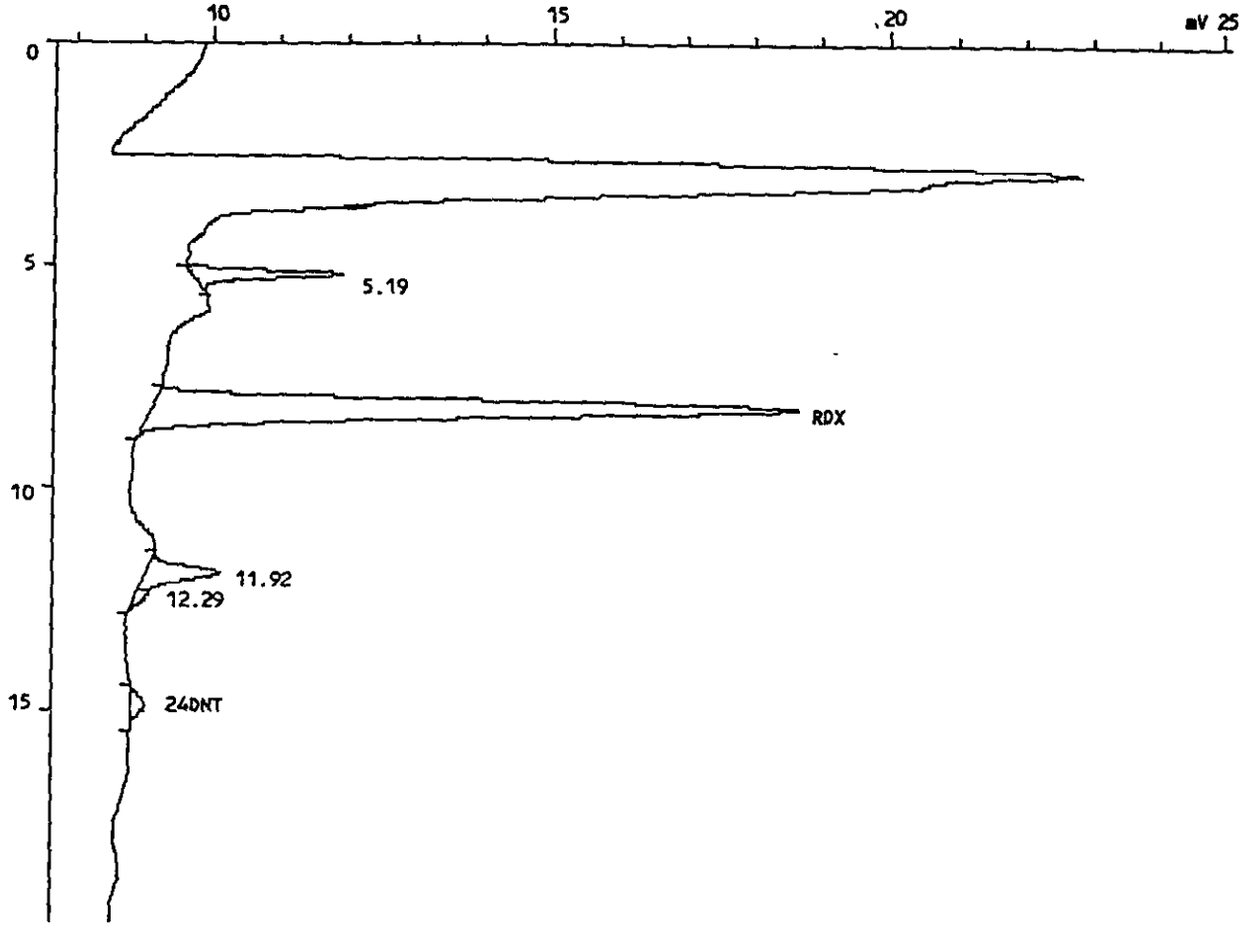
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.195	2218	26131	9699.811	HMX
3	11.920	1091	24784	4976.711	TNT
5	14.848	224	6546	3093.747	3,4DNT
Total		3533	57462	17770.270	
Residual		9808	246899	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,8,1

Sample name.....: BIO-5-005-00-03-1-R2 10X
Sample ID.....: 34353.02DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 01-Jul-98 at 23:45:56
Reported on 02-Jul-98 at 11:02:29



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,8,1

Acquired on 01-Jul-98 at 23:45:56
Modified on 02-Jul-82 at 10:54:46
Reported on 02-Jul-98 at 10:54:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-03-1-R2 10X
Sample ID.....: 34353.02DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.181	9597	243305	96703.133	RDX
5	14.848	224	6546	1077.060	24DNT
Total		9821	249851	97780.195	
Residual		3520	54510	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-03-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.02

Sample Amt: 2g % Moisture 4.84 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

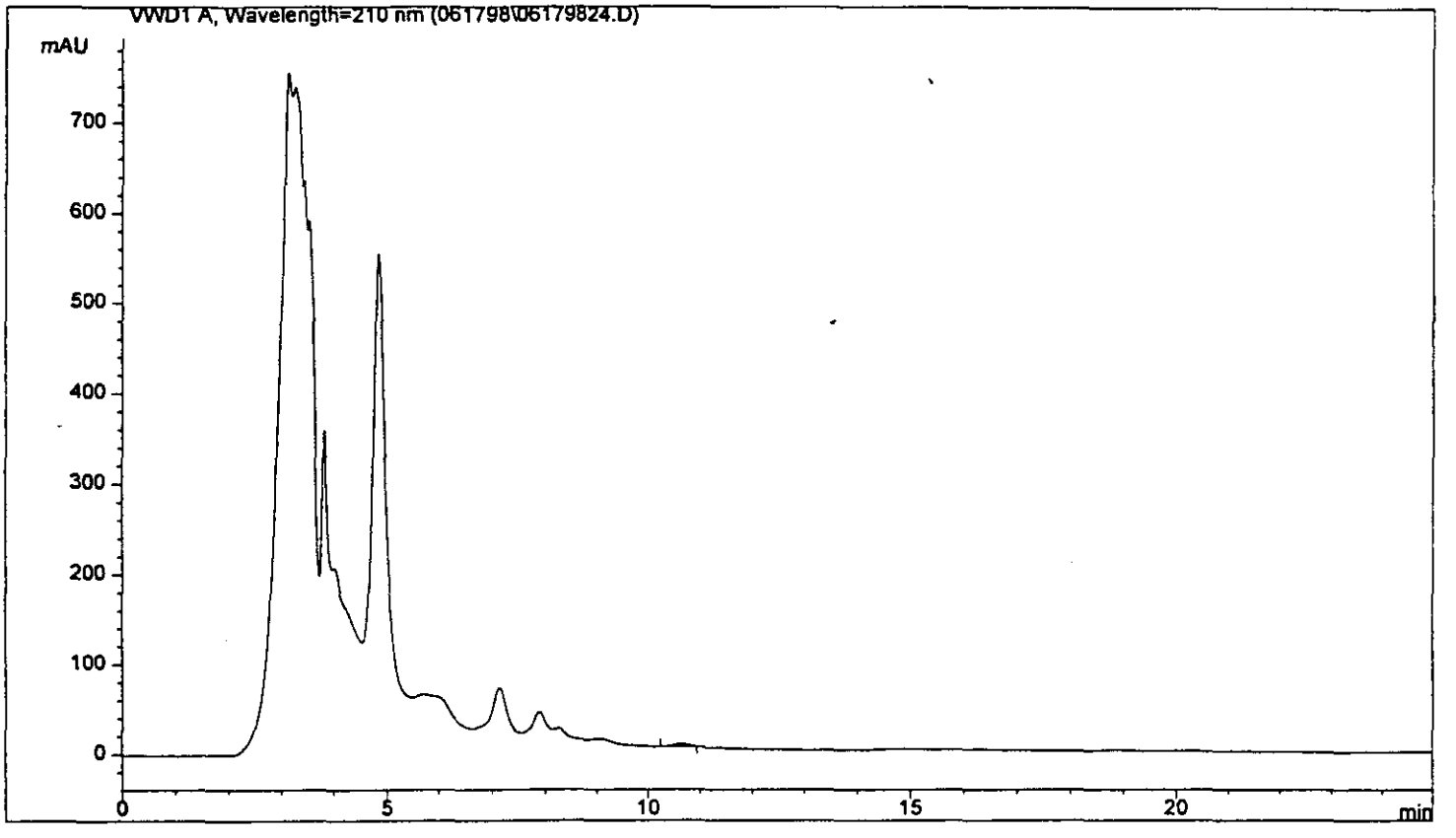
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	:
Sample Name	: 34353.02	Vial No.	: 24
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
10.632	BBA	78.53334	0.00000	0.00000	
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-05-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.03

Sample Amt: 2g % Moisture 26.86 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	14800	
121-82-4	RDX	96500	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	1570	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

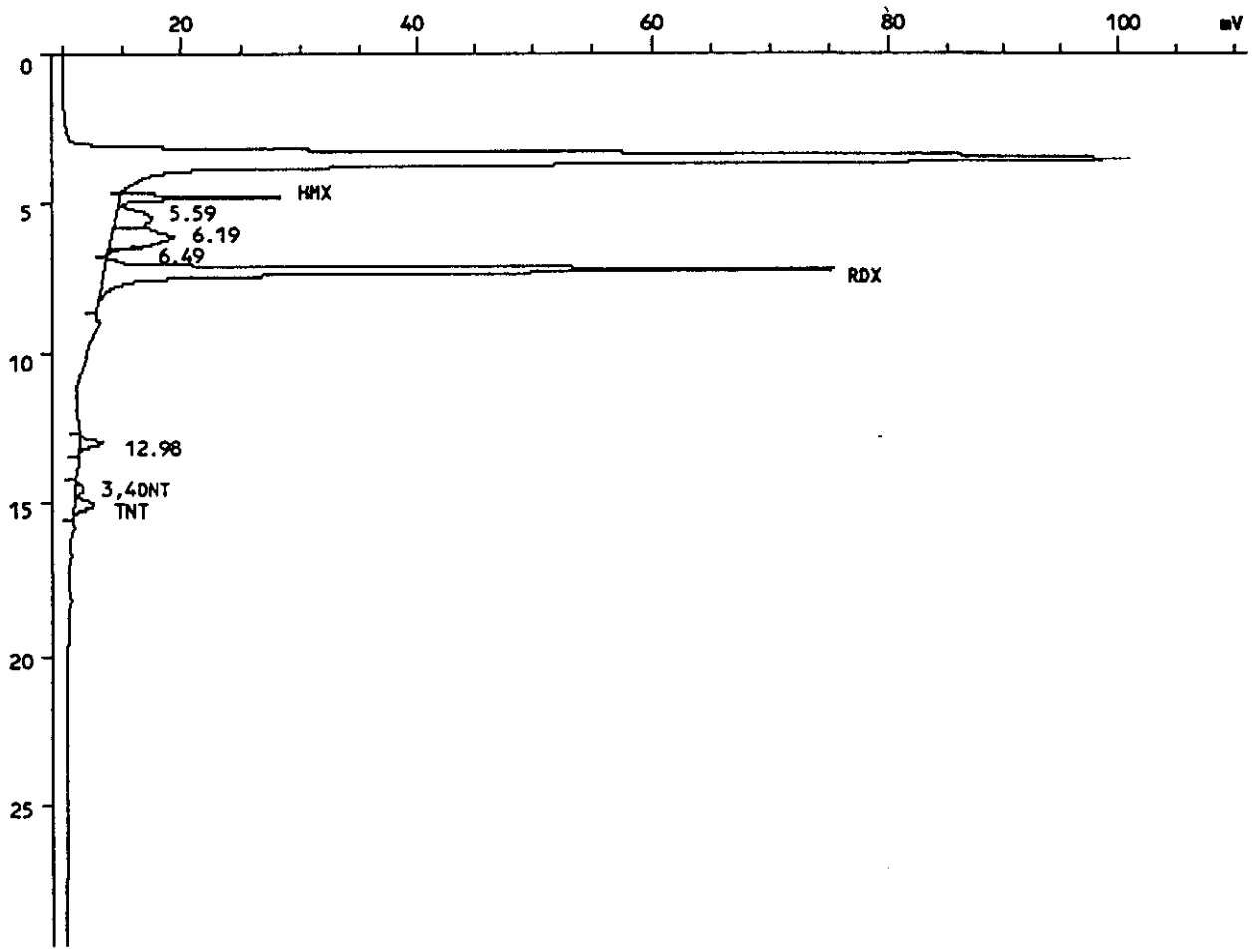
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,22,1

Sample name.....: BIO-5-005-00-05-2-R1
Sample ID.....: 34353.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 03:03:26
Reported on 17-Jun-98 at 17:21:50



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,22,1

Acquired on 17-Jun-98 at 03:03:26
Modified on 17-Jun-82 at 17:06:04
Reported on 02-Jul-98 at 16:30:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 19-Jun-82 at 17:15:18
Method file.....: EXPLOS Last modified on 02-Jul-82 at 10:26:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R1
Sample ID.....: 34353.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

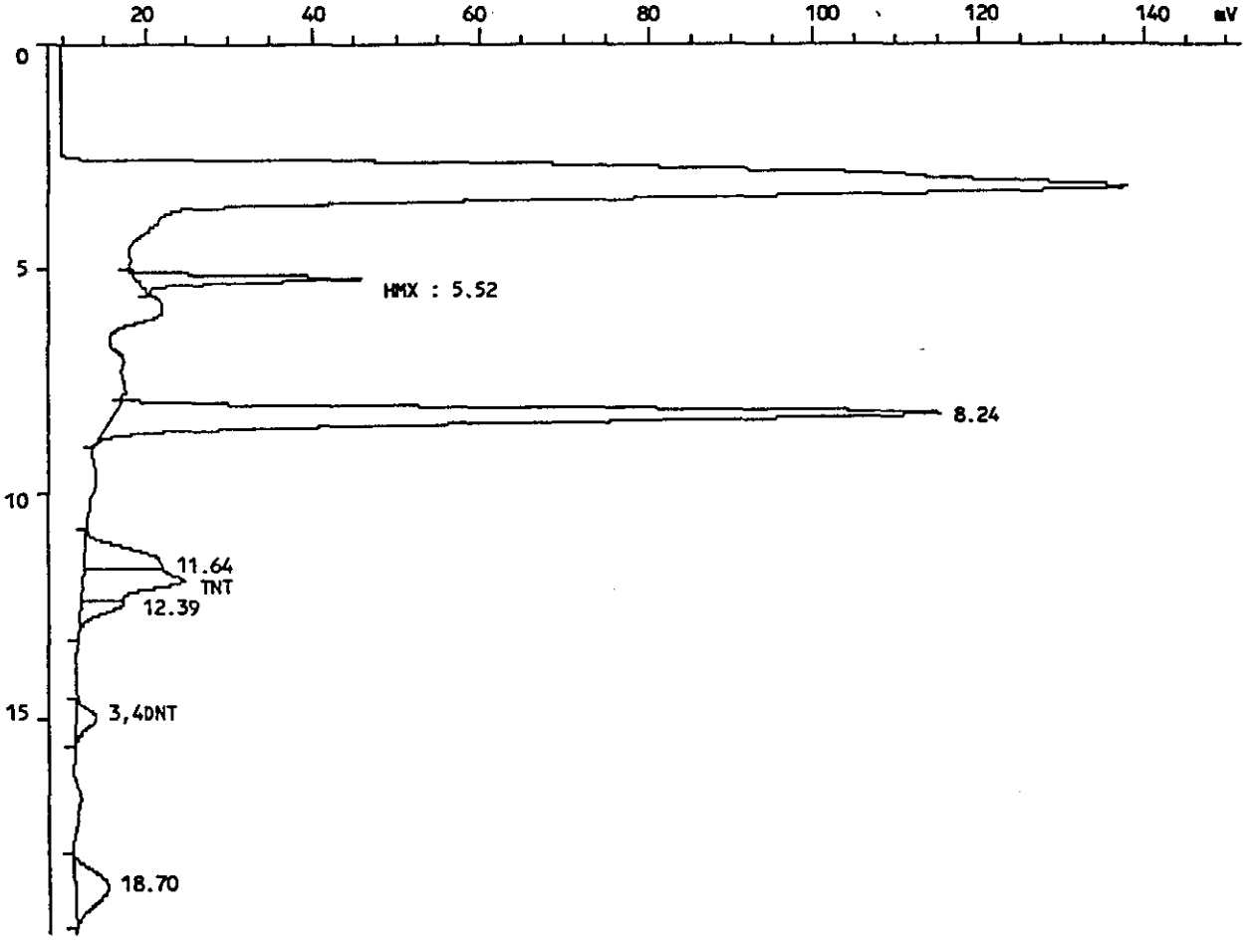
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.848	13586	109746	14750.740	HMX *
5	7.307	62067	932275	96508.836	RDX * E
7	14.565	847	15525	1262.211	3,4DNT 63%
8	15.104	1758	37009	1573.531	TNT * P
Total		78259	1094556	114095.320	
Residual		13419	315213	41232.918	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,9,1

Sample name.....: BIO-5-005-00-05-2-R1
Sample ID.....: 34353.03
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 00:22:56
Reported on 02-Jul-98 at 16:02:58



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,9,1

Acquired on 02-Jul-98 at 00:22:56
Modified on 02-Jul-82 at 15:55:16
Reported on 02-Jul-98 at 15:55:17

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R1
Sample ID.....: 34353.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

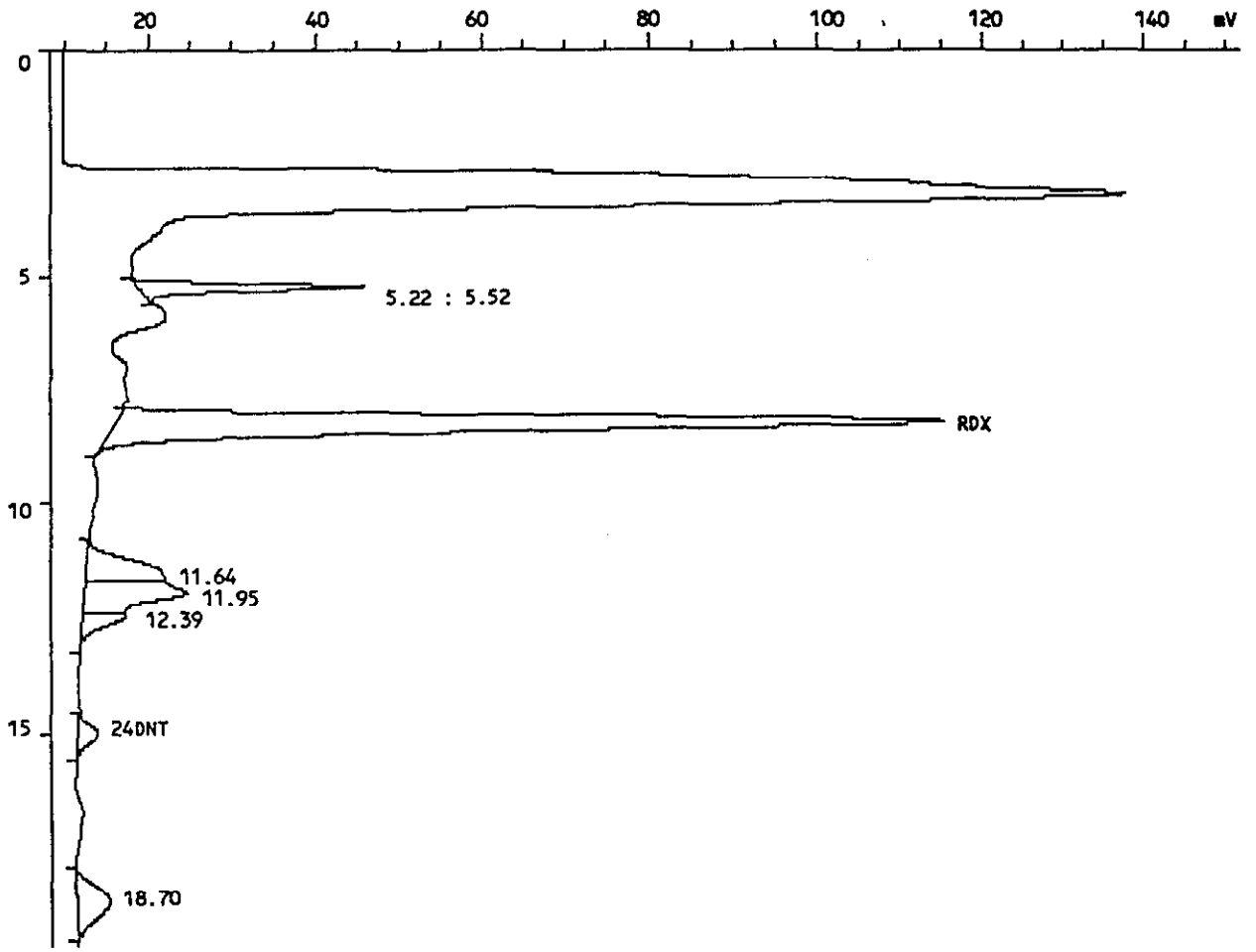
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.216	27055	291210	10809.580	HMX
6	11.947	12282	381988	7670.438	TNT
8	14.997	2466	66023	3120.186	3,4DNT
Total		41803	739221	21600.205	
Residual		117880	2794510	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,9,1

Sample name.....: BIO-5-005-00-05-2-R1
Sample ID.....: 34353.03
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 00:22:56
Reported on 02-Jul-98 at 11:02:52



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,9,1

Acquired on 02-Jul-98 at 00:22:56
Modified on 02-Jul-82 at 10:55:02
Reported on 02-Jul-98 at 10:55:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R1
Sample ID.....: 34353.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	8.240	99196	2230351	88646.711	RDX
8	14.997	2466	66023	1086.264	24DNT
Total		101663	2296375	89732.977	
Residual		58020	1237357	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-05-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.03DL

Sample Amt: 2g % Moisture 26.86 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	14800	DJ
121-82-4	RDX	97000	D
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	U
98-95-3	NB	2600	U
118-96-7	TNT	1520	DJP
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
606-20-2	26DNT	2600	U
121-14-2	24DNT	2500	U
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

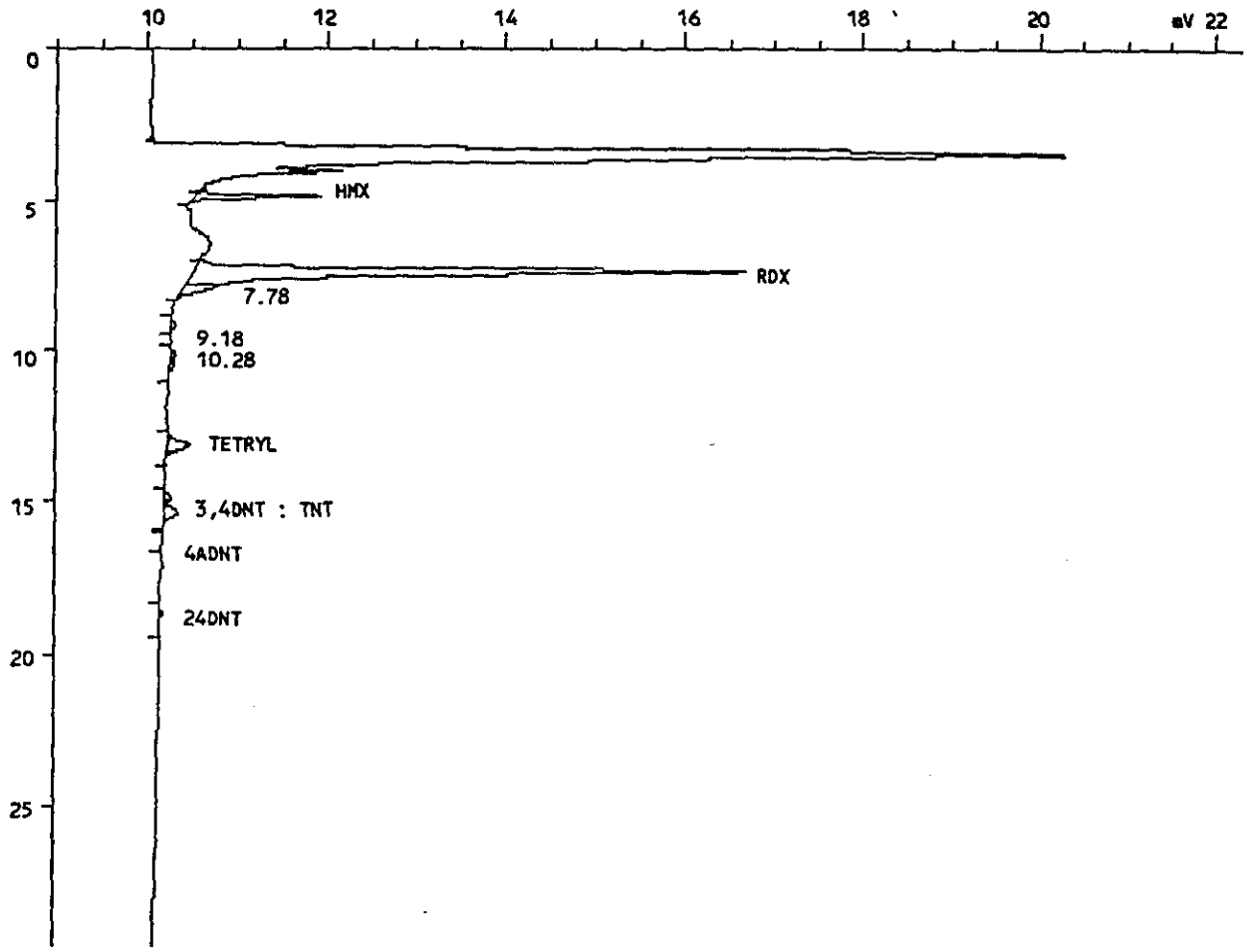
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,10,1

Sample name.....: BIO-5-005-00-05-2-R1 10X
Sample ID.....: 34353.03DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 07:03:40
Reported on 27-Jun-98 at 14:14:44



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,10,1

Acquired on 20-Jun-98 at 07:03:40
Modified on 27-Jun-82 at 14:07:56
Reported on 02-Jul-98 at 16:31:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 29-Jun-82 at 16:36:50
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R1 10X
Sample ID.....: 34353.03DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

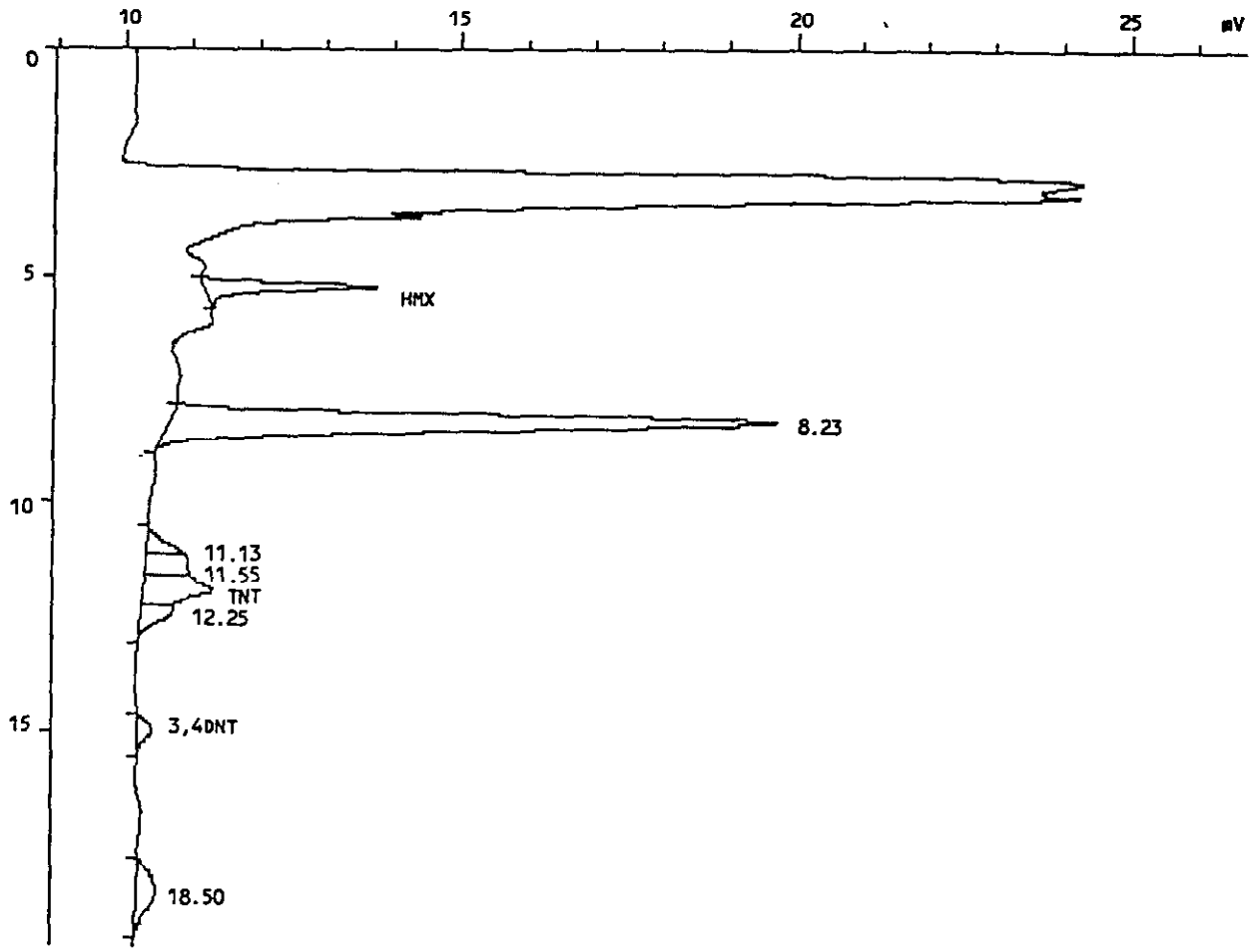
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.864	1407	11455	14837.661	HMX * D
2	7.387	6161	95604	96961.391	RDX * D
6	13.211	254	5258	4478.902	TETRYL
7	14.917	85	1656	1362.049	3,4DNT 68% D
8	15.413	167	3505	1516.044	TNT * DP
9	16.197	26	488	324.591	4ADNT
10	18.613	25	827	347.000	24DNT
Total		8124	118793	119827.641	
Residual		534	9399	9532.301	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,12,1

Sample name.....: BIO-5-005-00-05-2-R1 10X
Sample ID.....: 34353.03DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 02:13:58
Reported on 02-Jul-98 at 16:03:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,12,1

Acquired on 02-Jul-98 at 02:13:58
Modified on 02-Jul-82 at 15:55:32
Reported on 02-Jul-98 at 15:55:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R1 10X
Sample ID.....: 34353.03DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

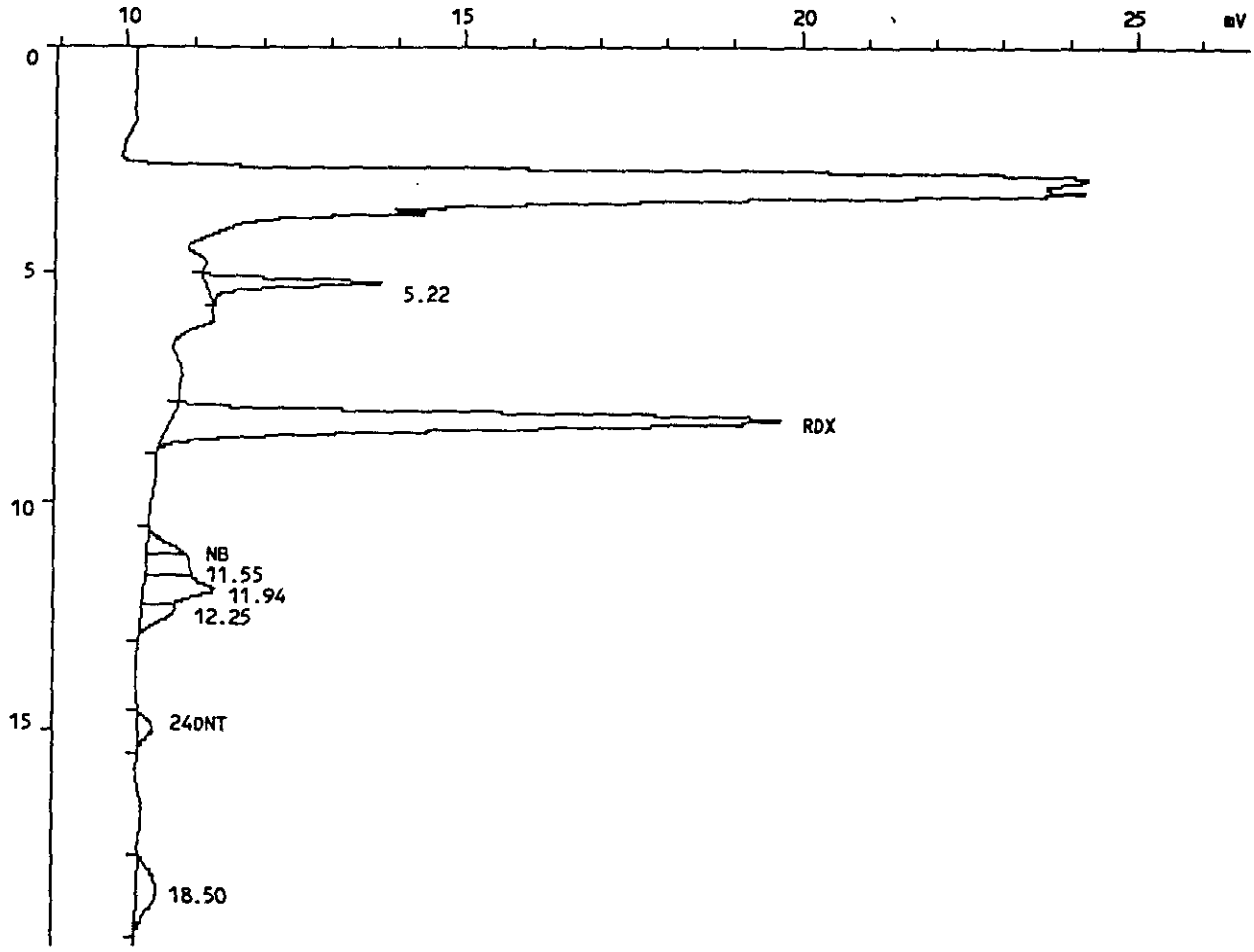
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.216	2567	30196	11208.634	HMX
6	11.941	1047	32831	6592.633	TNT
8	14.976	225	6131	2897.465	3,4DNT
Total		3839	69158	20698.730	
Residual		11113	278956	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,12,1

Sample name.....: BIO-5-005-00-05-2-R1 10X
Sample ID.....: 34353.03DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 02:13:58
Reported on 02-Jul-98 at 11:03:26



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,12,1

Acquired on 02-Jul-98 at 02:13:58
Modified on 02-Jul-82 at 10:55:16
Reported on 02-Jul-98 at 10:55:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R1 10X
Sample ID.....: 34353.03DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.229	9043	223842	88967.438	RDX
4	11.131	589	8788	2275.432	NB
8	14.976	225	6131	1008.726	24DNT
Total		9857	238761	92251.594	
Residual		5094	109353	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-05-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.03

Sample Amt: 2g % Moisture 26.86 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

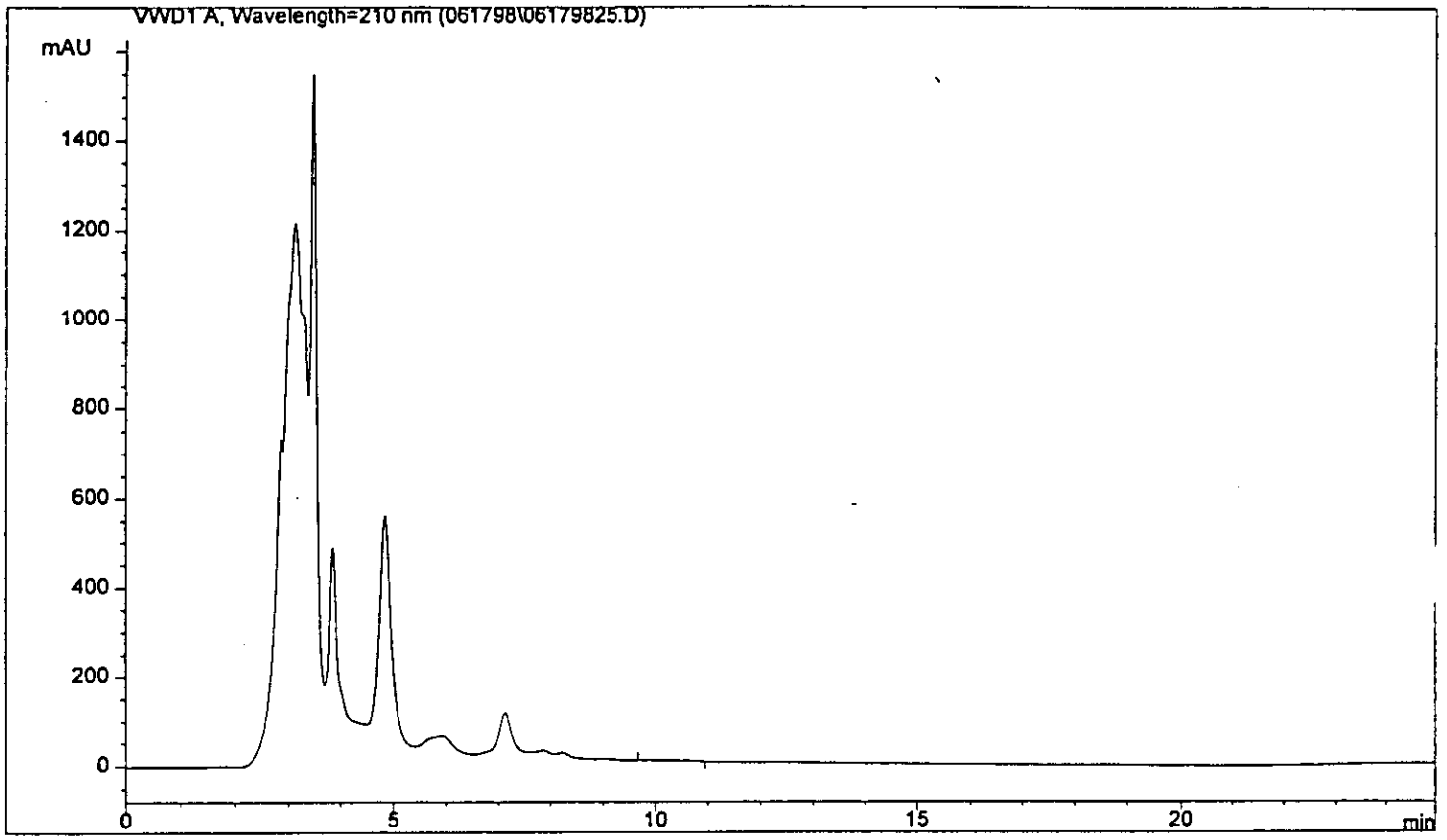
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN	250		U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 25
Sample Name	: 34353.03	Vial No.	: 25
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
10.079	BBA	93.20280	0.00000	0.00000	
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

58

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-05-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.04

Sample Amt: 2g % Moisture 3.87 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	19900	
121-82-4	RDX	133000	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	2670	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

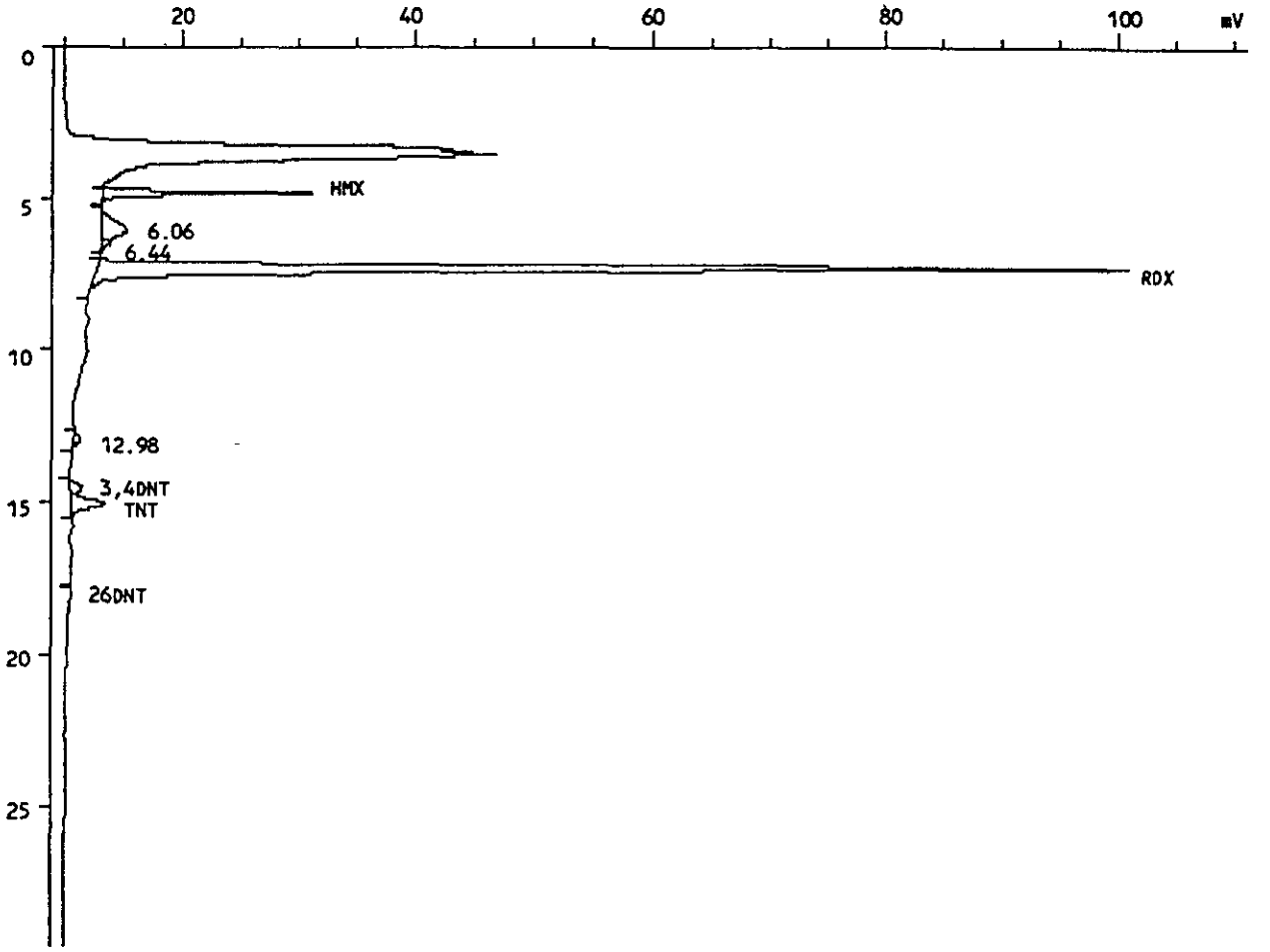
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,23,1

Sample name.....: BIO-5-005-00-05-2-R2
Sample ID.....: 34353.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 03:48:08
Reported on 17-Jun-98 at 17:22:11



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,23,1

Acquired on 17-Jun-98 at 03:48:08
Modified on 17-Jun-82 at 17:07:06
Reported on 17-Jun-98 at 17:07:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 17-Jun-82 at 17:05:18
Method file.....: EXPLOS Last modified on 17-Jun-82 at 16:53:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R2
Sample ID.....: 34353.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

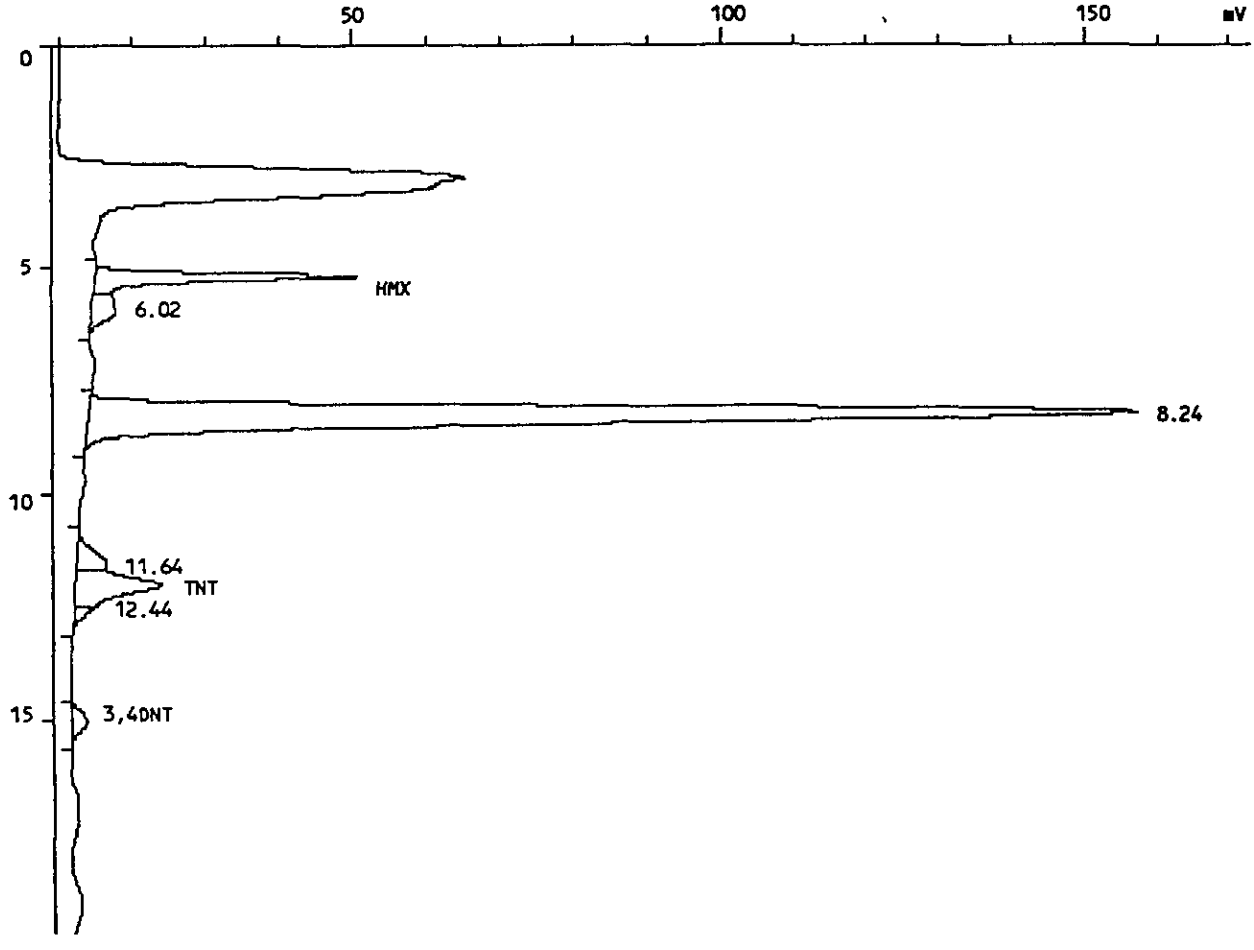
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.843	17827	147793	19864.664	HMX *
4	7.301	88218	1286650	133193.609	RDX E
6	14.571	1042	20282	1648.921	3,4DNT 82%
7	15.104	2886	62795	2669.847	TNT * P
8	17.733	165	196	13.968	26DNT
Total		110138	1517716	157391.016	
Residual		3716	98456	12806.693	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,13,1

Sample name.....: BIO-5-005-00-05-2-R2
Sample ID.....: 34353.04
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 02:50:59
Reported on 02-Jul-98 at 16:04:02



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,13,1

Acquired on 02-Jul-98 at 02:50:59
Modified on 02-Jul-82 at 15:55:48
Reported on 02-Jul-98 at 15:55:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R2
Sample ID.....: 34353.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

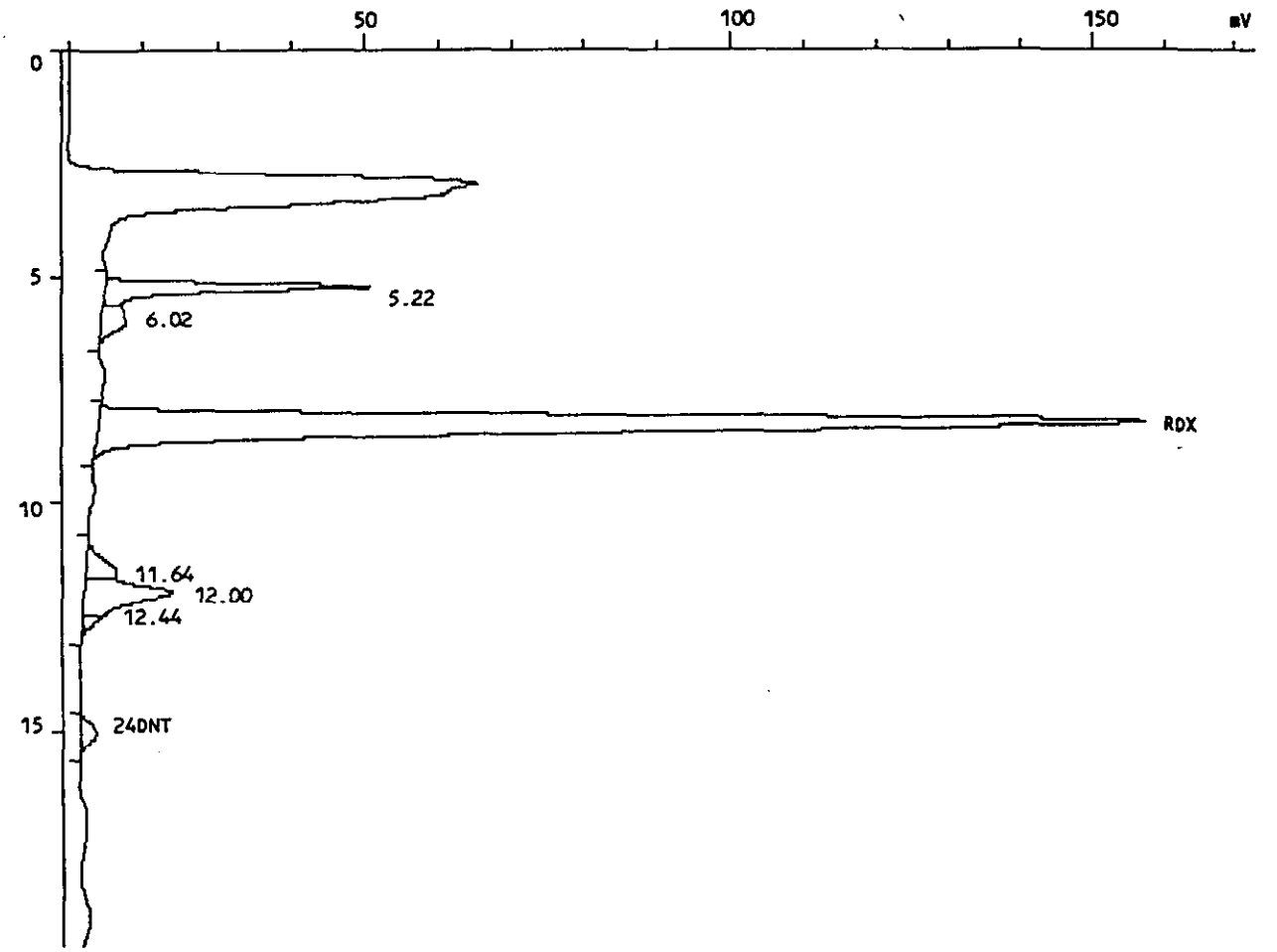
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.216	36153	467831	17365.662	HMX
5	12.000	11830	343429	6896.161	TNT
7	15.013	2046	56830	2685.728	3,4DNT
Total		50030	868090	26947.553	
Residual		153823	3840789	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,13,1

Sample name.....: BIO-5-005-00-05-2-R2
Sample ID.....: 34353.04
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 02:50:59
Reported on 02-Jul-98 at 11:03:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,13,1

Acquired on 02-Jul-98 at 02:50:59
Modified on 02-Jul-82 at 10:55:32
Reported on 02-Jul-98 at 10:55:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R2
Sample ID.....: 34353.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.240	143318	3562546	141595.625	RDX
7	15.013	2046	56830	935.012	24DNT
Total		145365	3619376	142530.641	
Residual		58488	1089503	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-05-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.04DL

Sample Amt: 2g % Moisture 3.87 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	19600	DJ
121-82-4	RDX	138000	D
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	U
98-95-3	NB	2600	U
118-96-7	TNT	2760	DP
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
06-20-2	26DNT	2600	U
121-14-2	24DNT	2500	U
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

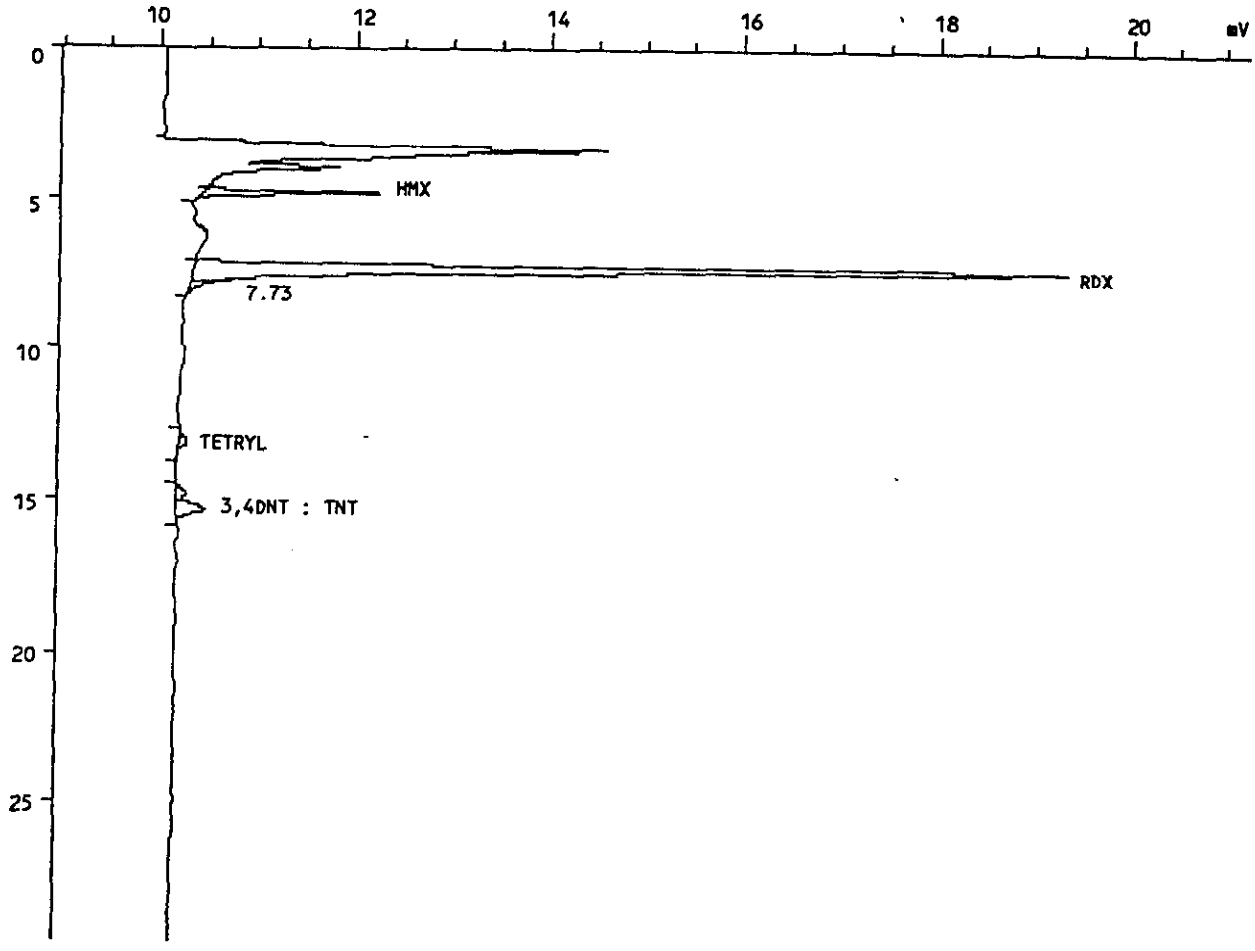
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,11,1

Sample name.....: BIO-5-005-00-05-2-R2 10X
Sample ID.....: 34353.04DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 07:48:25
Reported on 27-Jun-98 at 14:15:03



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,11,1

Acquired on 20-Jun-98 at 07:48:25
Modified on 27-Jun-82 at 14:08:14
Reported on 27-Jun-98 at 14:08:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:06:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R2 10X
Sample ID.....: 34353.04DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

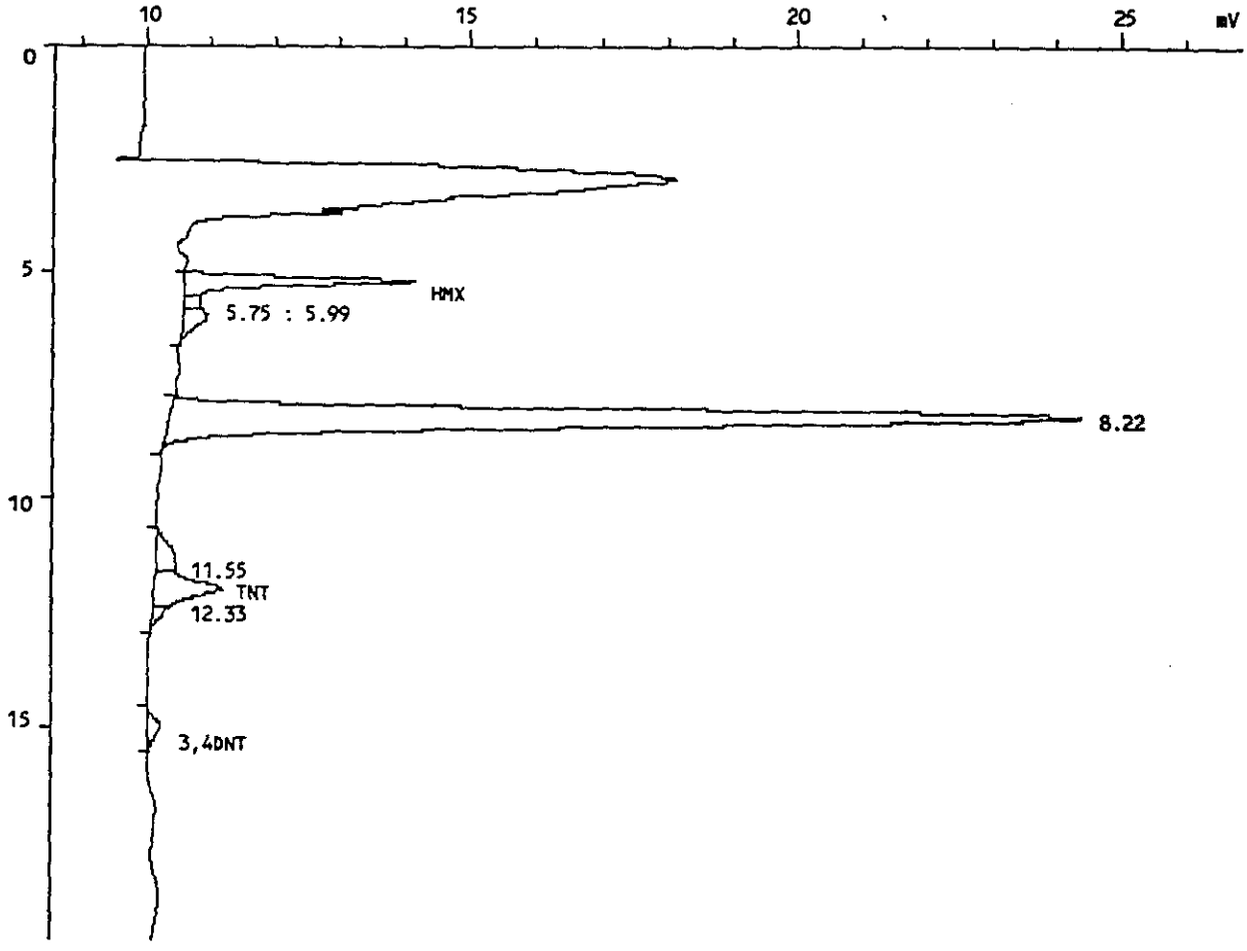
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.859	1835	15150	19624.445	HMX *1D
2	7.365	8982	135896	137825.625	RDX *1D
4	13.152	96	1962	1670.898	TETRYL
5	14.853	102	2043	1679.804	3,4DNT <4%
6	15.360	287	6376	2757.678	TNT *DP
Total		11301	161426	163558.422	
Residual		413	4169	4227.941	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,14,1

Sample name.....: BIO-5-005-00-05-2-R2 10X
Sample ID.....: 34353.04DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 03:27:59
Reported on 02-Jul-98 at 16:04:26



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,14,1

Acquired on 02-Jul-98 at 03:27:59
Modified on 02-Jul-82 at 15:56:02
Reported on 02-Jul-98 at 15:56:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R2 10X
Sample ID.....: 34353.04DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

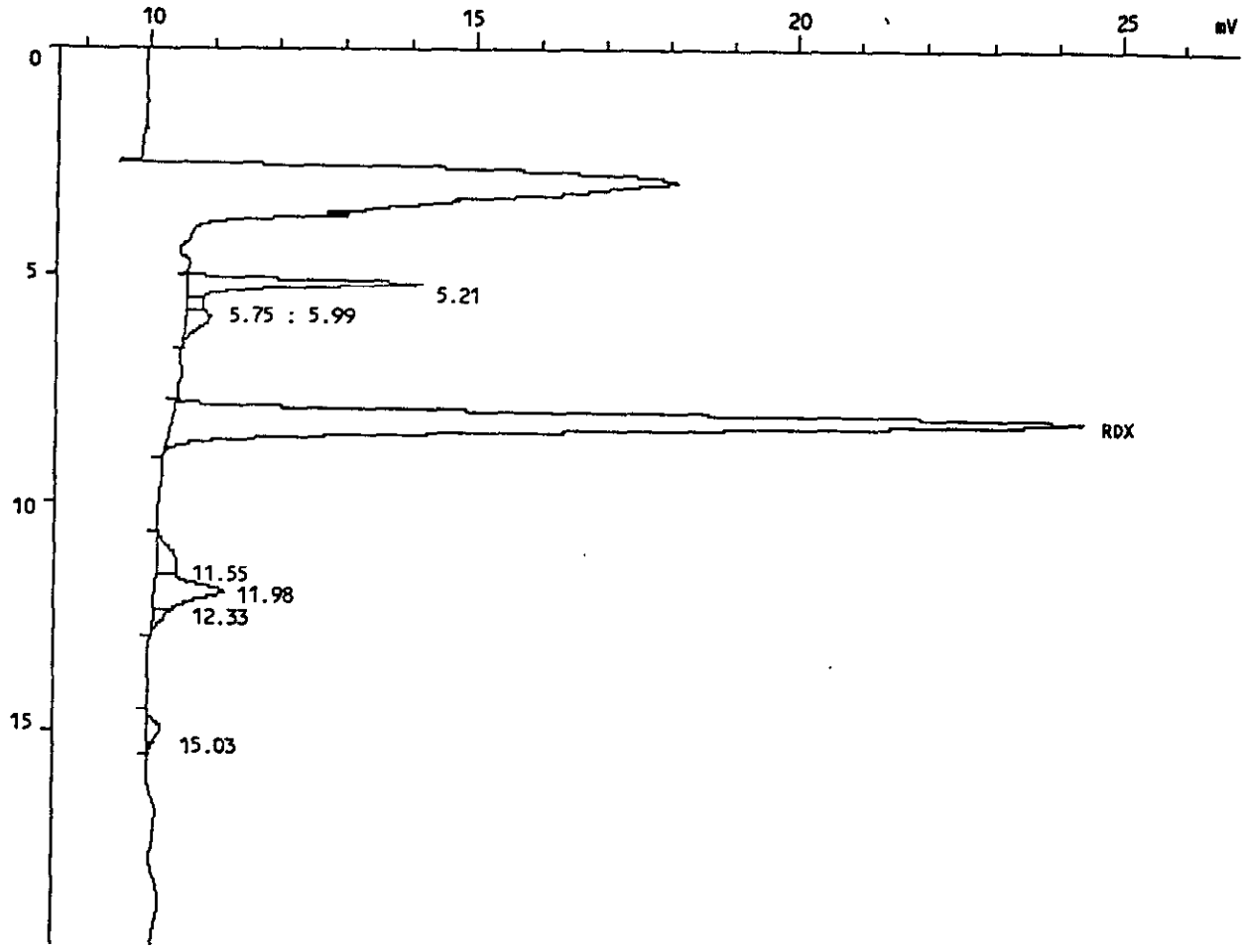
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.211	3581	45545	16905.918	HMX
6	11.984	1079	29090	5841.297	TNT
8	15.029	198	5132	2425.519	3,4DNT
Total		4858	79767	25172.734	
Residual		15327	386333	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,14,1

Sample name.....: BIO-5-005-00-05-2-R2 10X
Sample ID.....: 34353.04DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 03:27:59
Reported on 02-Jul-98 at 11:04:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,14,1

Acquired on 02-Jul-98 at 03:27:59
Modified on 02-Jul-82 at 10:55:46
Reported on 02-Jul-98 at 10:55:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-05-2-R2 10X
Sample ID.....: 34353.04DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	8.219	14059	357595	142128.281	RDX
Total		14059	357595	142128.281	
Residual		6126	108505	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-05-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.04

Sample Amt: 2g % Moisture 3.87 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

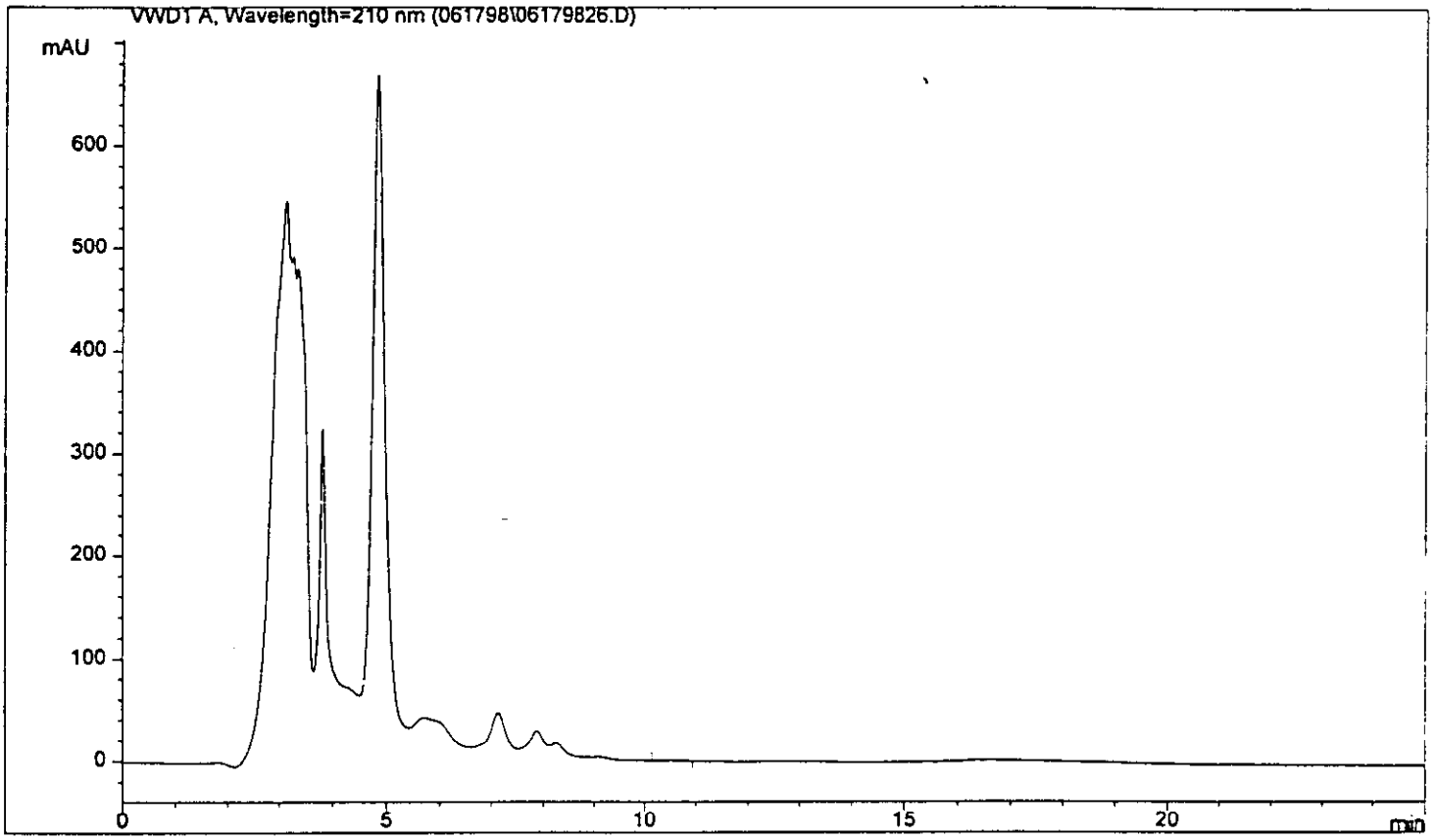
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 26
Sample Name	: 34353.04	Vial No.	: 26
Acq Operator	: SS	Inj. No.	:
		Inj. Vol.	: 200

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
10.606	PBA	5.09511	0.00000	0.00000	
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-07-3-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.05

Sample Amt: 2g % Moisture 30.79 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	18300	
121-82-4	RDX	130000	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	1420	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

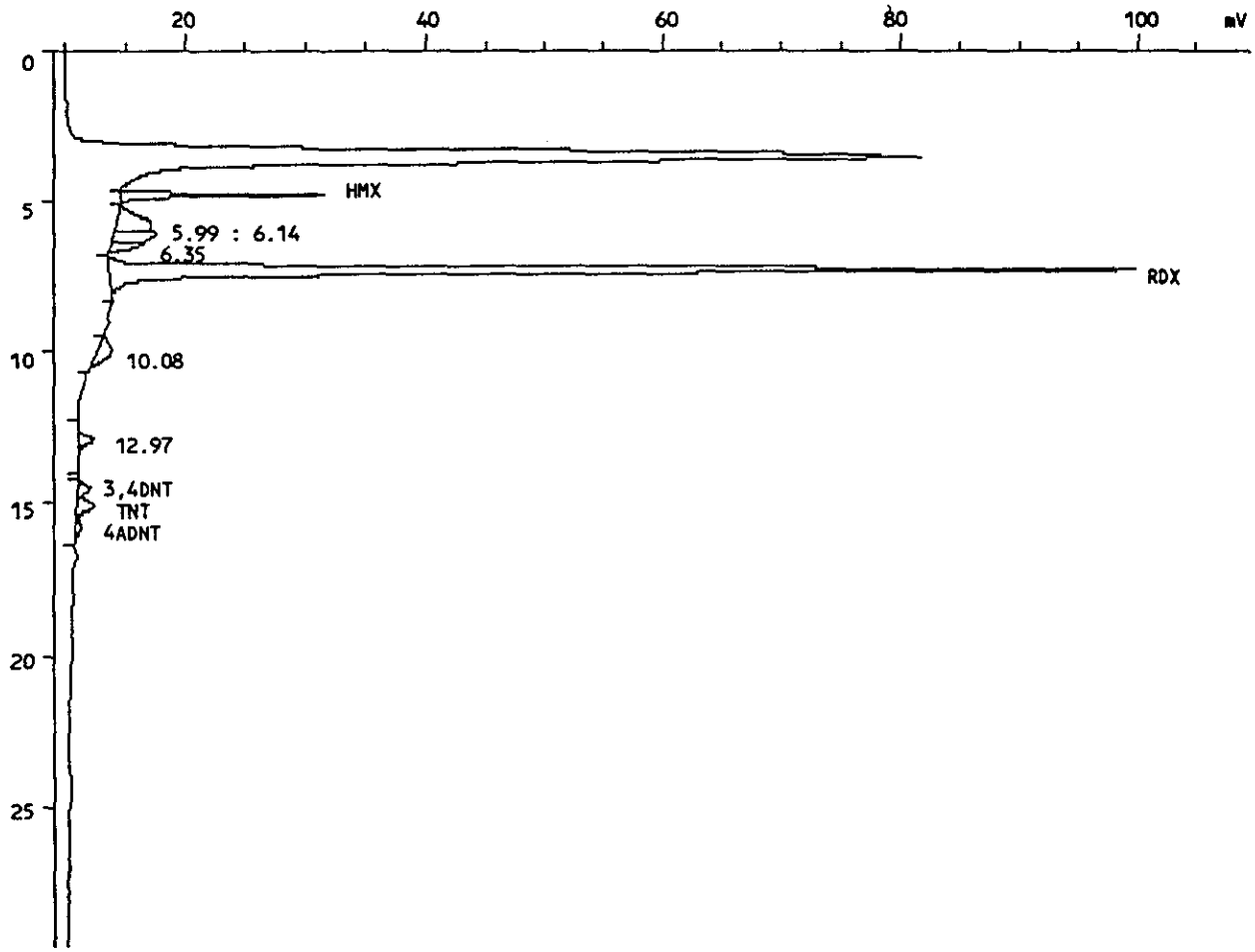
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,24,1

Sample name.....: BIO-5-005-00-07-3-R1
Sample ID.....: 34353.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 04:32:51
Reported on 17-Jun-98 at 17:22:29



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,24,1

Acquired on 17-Jun-98 at 04:32:51
Modified on 17-Jun-82 at 17:07:22
Reported on 02-Jul-98 at 16:36:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 19-Jun-82 at 17:15:18
Method file.....: EXPLOS Last modified on 02-Jul-82 at 10:26:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R1
Sample ID.....: 34353.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

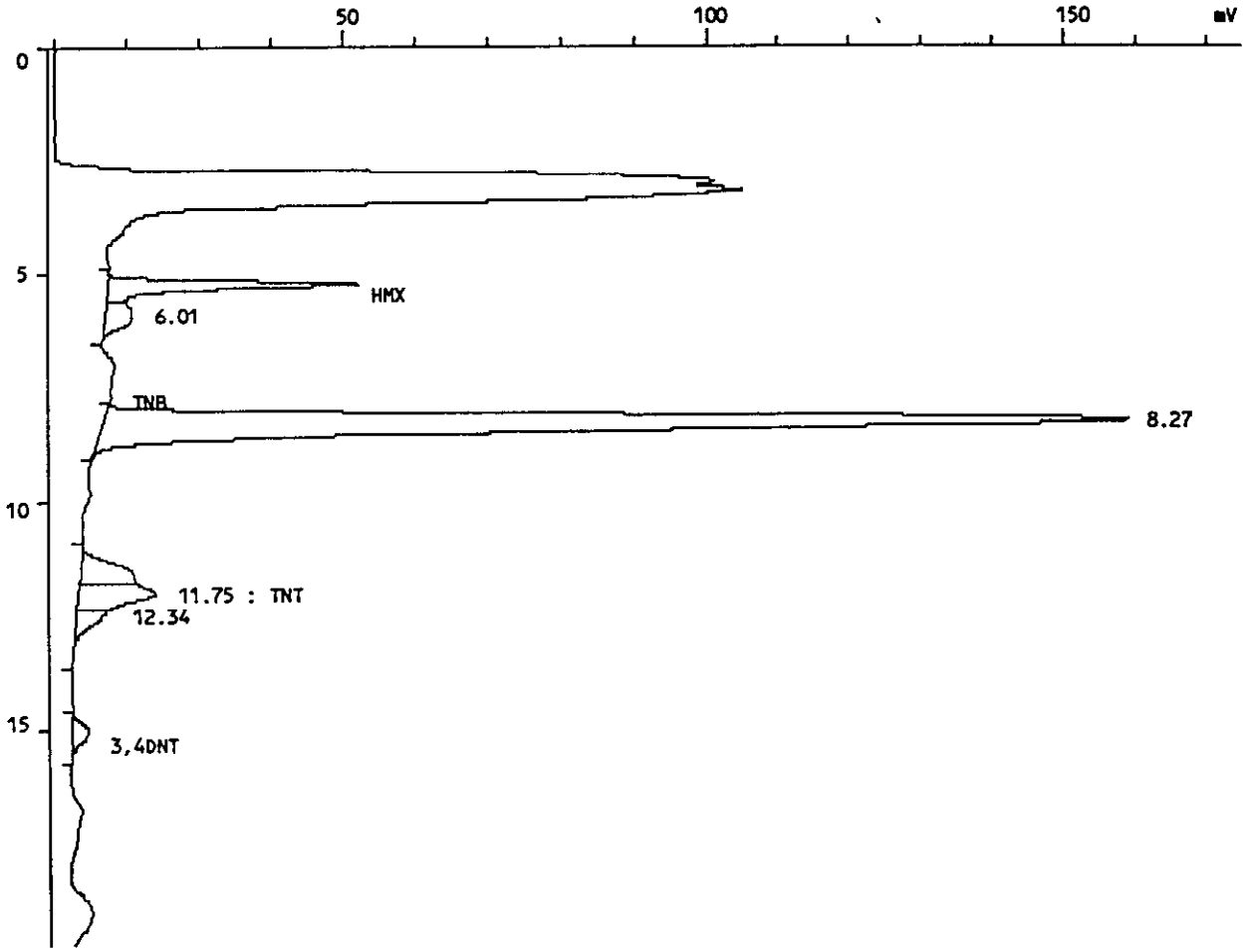
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.837	16899	136376	18330.064	HMX *
5	7.301	86264	1251190	129522.773	RDX * E
8	14.555	1028	20512	1667.639	3,4DNT 83%
9	15.115	1462	33430	1421.329	TNT * P
10	15.856	626	15017	1003.823	4ADNT
Total		106279	1456525	151945.641	
Residual		12061	288315	36330.656	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,15,1

Sample name.....: BIO-5-005-00-07-3-R1
Sample ID.....: 34353.05
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 04:04:59
Reported on 02-Jul-98 at 16:04:48



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,15,1

Acquired on 02-Jul-98 at 04:04:59
Modified on 02-Jul-82 at 15:56:18
Reported on 02-Jul-98 at 15:56:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R1
Sample ID.....: 34353.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

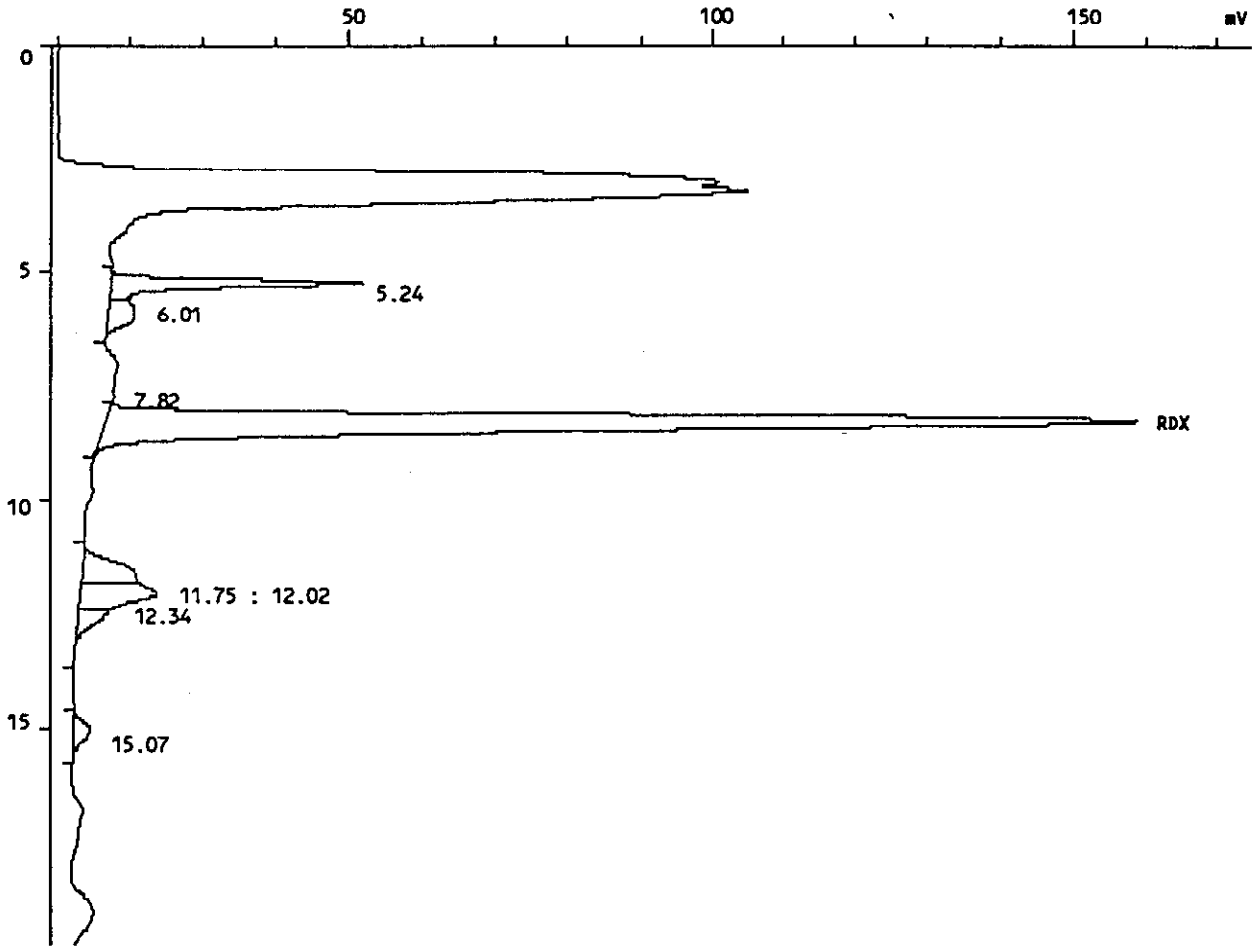
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.237	34801	423881	15734.263	HMX
3	7.819	111	288	4.989	TNB
6	12.016	10728	295903	5941.829	TNT
8	15.072	2342	65081	3075.644	3,4DNT
Total		47983	785152	24756.725	
Residual		158895	3796456	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,15,1

Sample name.....: BIO-5-005-00-07-3-R1
Sample ID.....: 34353.05
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 04:04:59
Reported on 02-Jul-98 at 11:04:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,15,1

Acquired on 02-Jul-98 at 04:04:59
Modified on 02-Jul-82 at 10:56:00
Reported on 02-Jul-98 at 10:56:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R1
Sample ID.....: 34353.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	8.272	142450	3336682	132618.500	RDX
Total		142450	3336682	132618.500	
Residual		64428	1244927	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-07-3-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.05DL

Sample Amt: 2g % Moisture 30.79 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	18200	DJ
121-82-4	RDX	132000	D
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	U
98-95-3	NB	2600	U
118-96-7	TNT	2500	U
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
06-20-2	26DNT	2600	U
121-14-2	24DNT	2500	U
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

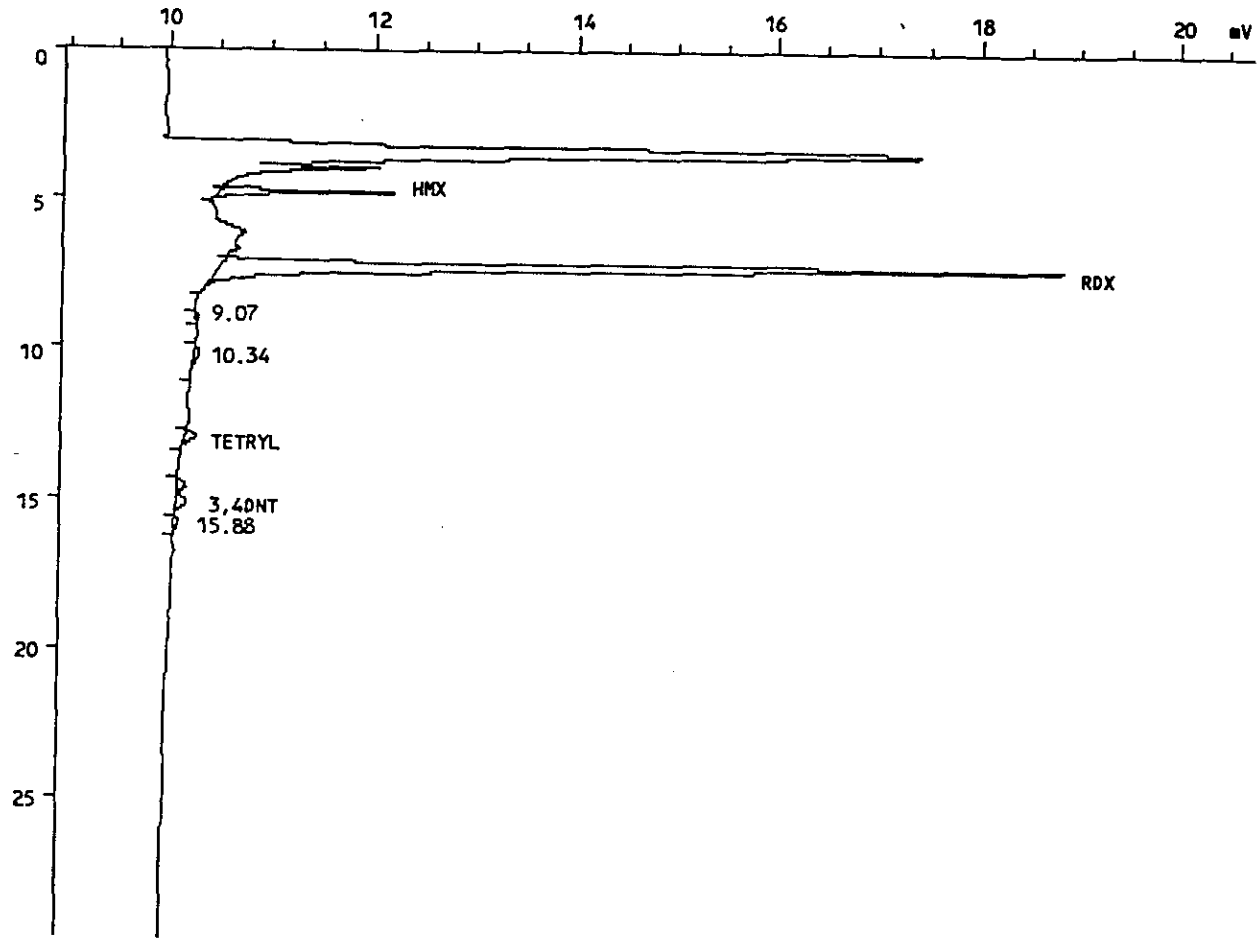
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,13,1

Sample name.....: BIO-5-005-00-07-3-R1 10X
Sample ID.....: 34353.05DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 09:17:57
Reported on 27-Jun-98 at 14:15:24



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,13,1

Acquired on 20-Jun-98 at 09:17:57
Modified on 27-Jun-82 at 14:08:32
Reported on 27-Jun-98 at 14:08:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:06:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R1 10X
Sample ID.....: 34353.05DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

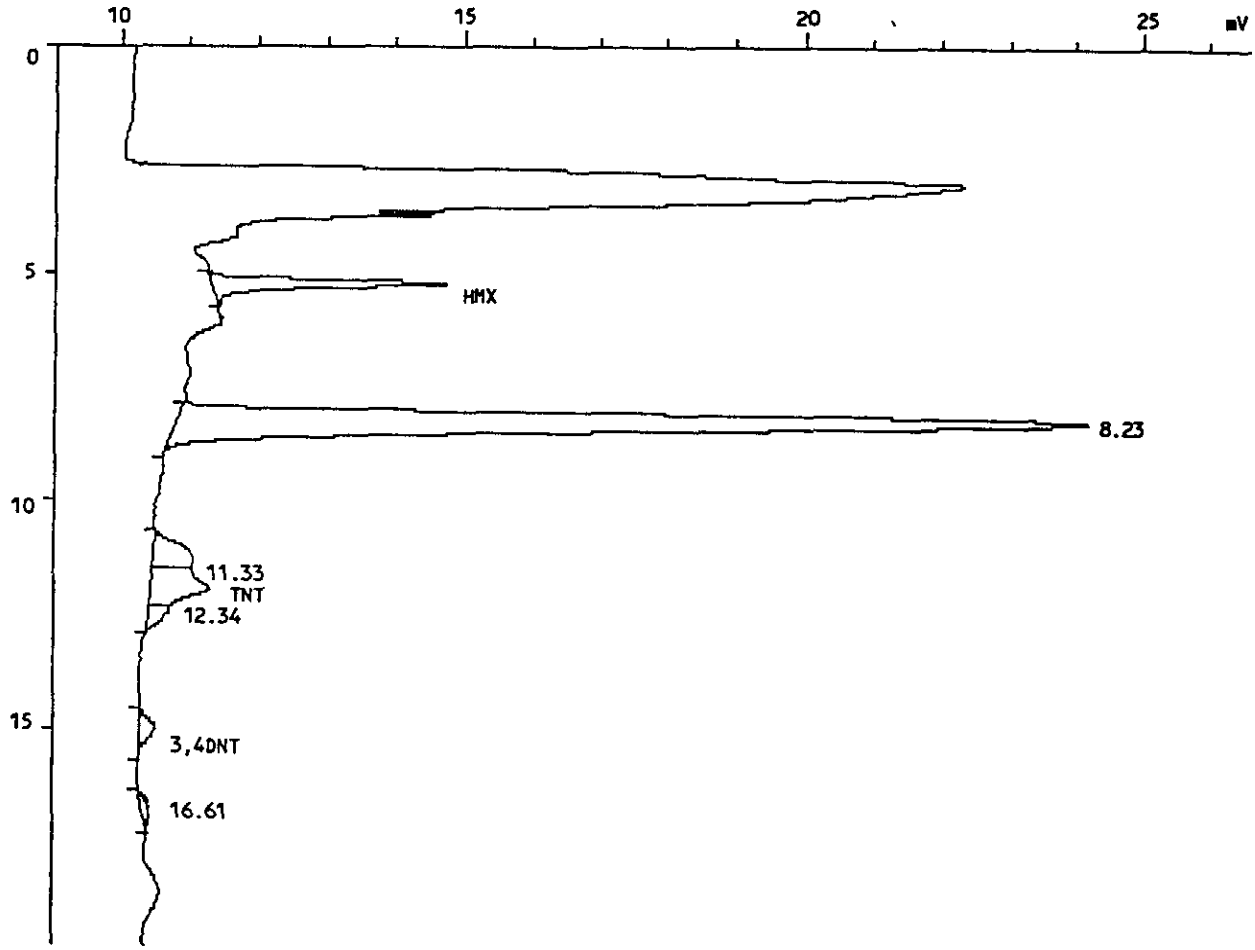
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.848	1699	14041	18188.127	HMX * D
2	7.307	8356	130500	132352.797	RDX * D
5	13.019	113	2002	1705.332	TETRYL
6	15.168	120	3984	3276.274	3,4DNT * D
Total		10287	150527	155522.531	
Residual		125	2425	2305.969	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,16,1

Sample name.....: BIO-5-005-00-07-3-R1 10X
Sample ID.....: 34353.05DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 04:42:00
Reported on 02-Jul-98 at 16:05:10



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,16,1

Acquired on 02-Jul-98 at 04:42:00
Modified on 02-Jul-82 at 15:56:34
Reported on 02-Jul-98 at 15:56:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R1 10X
Sample ID.....: 34353.05DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

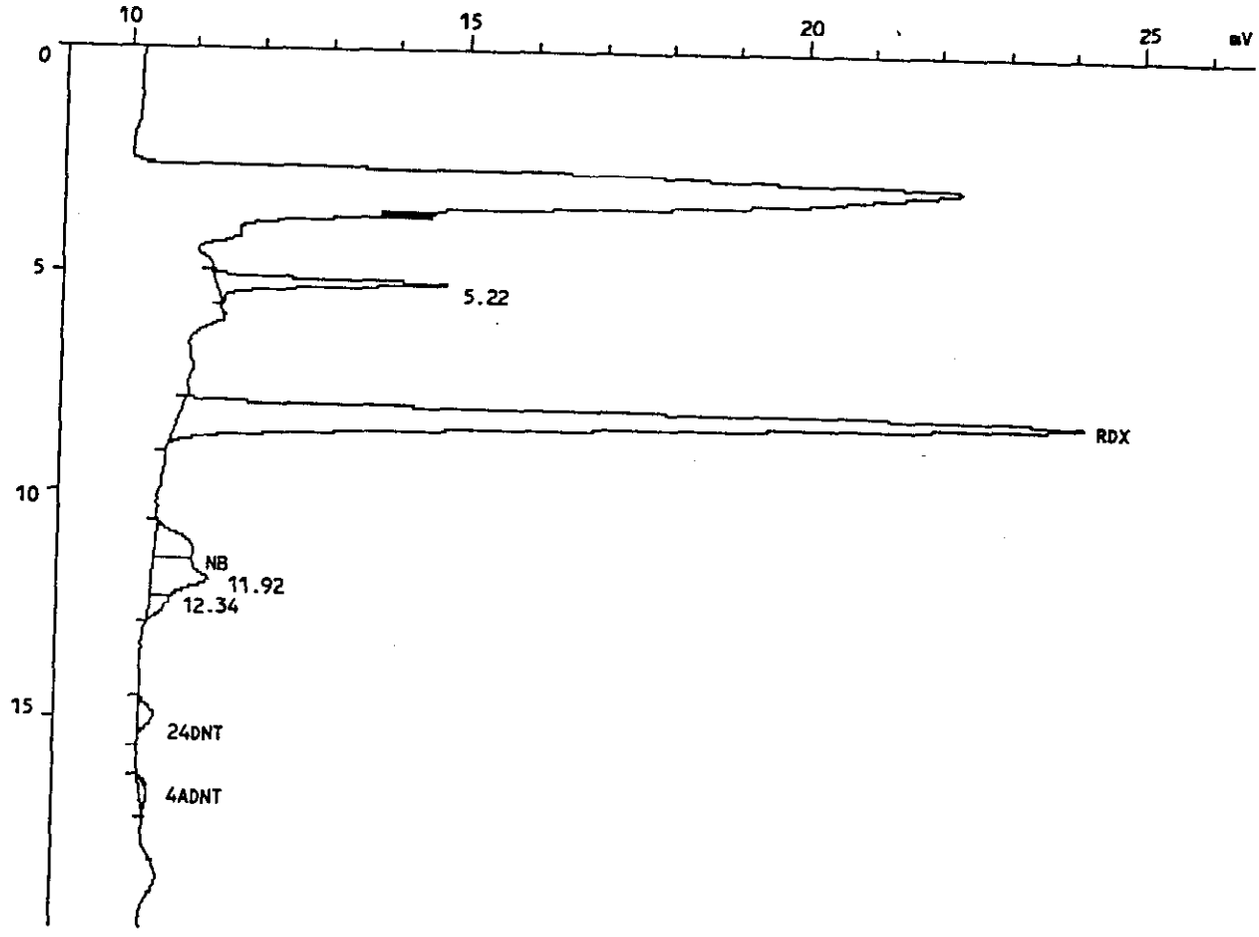
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.216	3413	41837	15529.604	HMX
4	11.920	862	32463	6518.585	TNT
6	15.024	221	6291	2973.130	3,4DNT
Total		4496	80590	25021.318	
Residual		14374	364578	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,16,1

Sample name.....: BIO-5-005-00-07-3-R1 10X
Sample ID.....: 34353.05DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 04:42:00
Reported on 02-Jul-98 at 11:05:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,16,1

Acquired on 02-Jul-98 at 04:42:00
Modified on 02-Jul-82 at 10:56:14
Reported on 02-Jul-98 at 10:56:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R1 10X
Sample ID.....: 34353.05DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.229	13367	336639	133799.234	RDX
3	11.333	609	18855	4882.173	NB
6	15.024	221	6291	1035.068	24DNT
7	16.613	96	2622	1077.991	4ADNT
Total		14293	364407	140794.453	
Residual		4577	80762	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-07-3-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.05

Sample Amt: 2g % Moisture 30.79 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

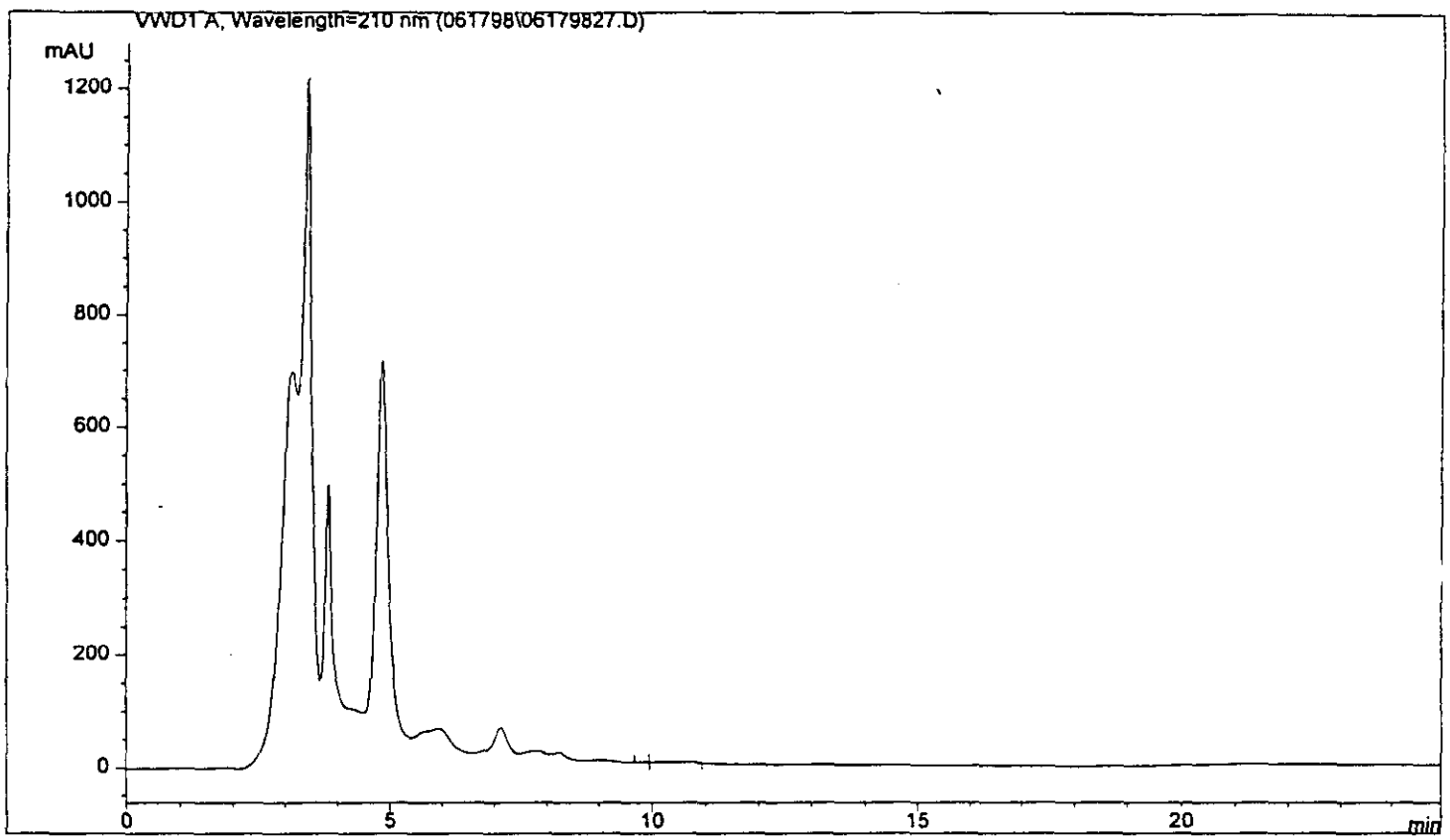
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 27
Sample Name	: 34353.05	Vial No.	: 27
Acq Operator	: SS	Inj. No.	: -
		Inj. Vol.	: 200 µ

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
9.793	BV	3.11471	0.00000	0.00000	
0.000		0.00000	0.00000	0.00000	PETN
10.581	VBA	45.53693	0.00000	0.00000	
Totals:				0.00000	

90

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-07-3-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.06

Sample Amt: 2g % Moisture 4.54 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	25700	
121-82-4	RDX	172000	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	3430	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

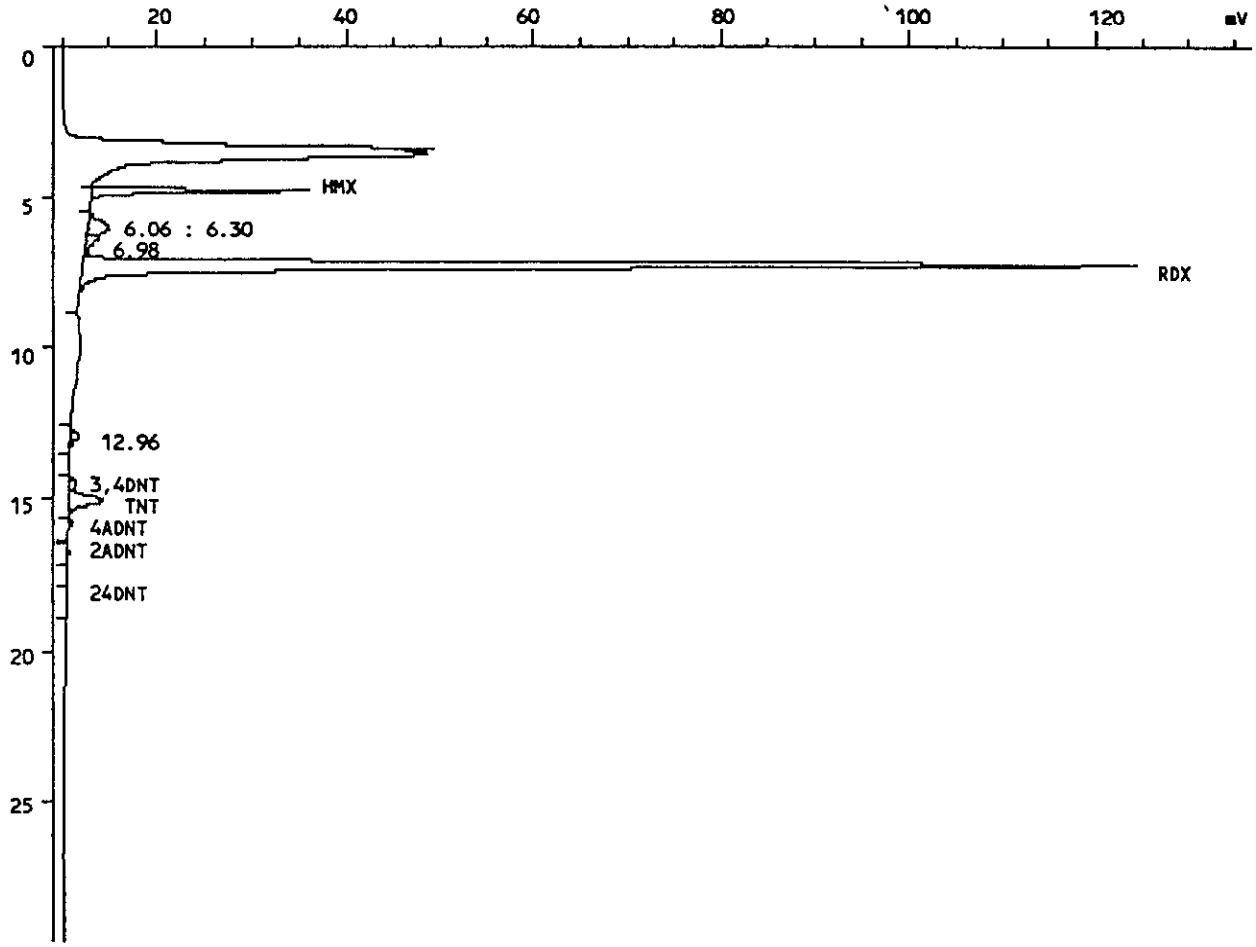
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,25,1

Sample name.....: BIO-5-005-00-07-3-R2
Sample ID.....: 34353.06
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 05:17:34
Reported on 17-Jun-98 at 17:22:53



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,25,1

Acquired on 17-Jun-98 at 05:17:34
Modified on 17-Jun-82 at 17:07:38
Reported on 02-Jul-98 at 16:41:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 19-Jun-82 at 17:15:18
Method file.....: EXPLOS Last modified on 02-Jul-82 at 10:26:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R2
Sample ID.....: 34353.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

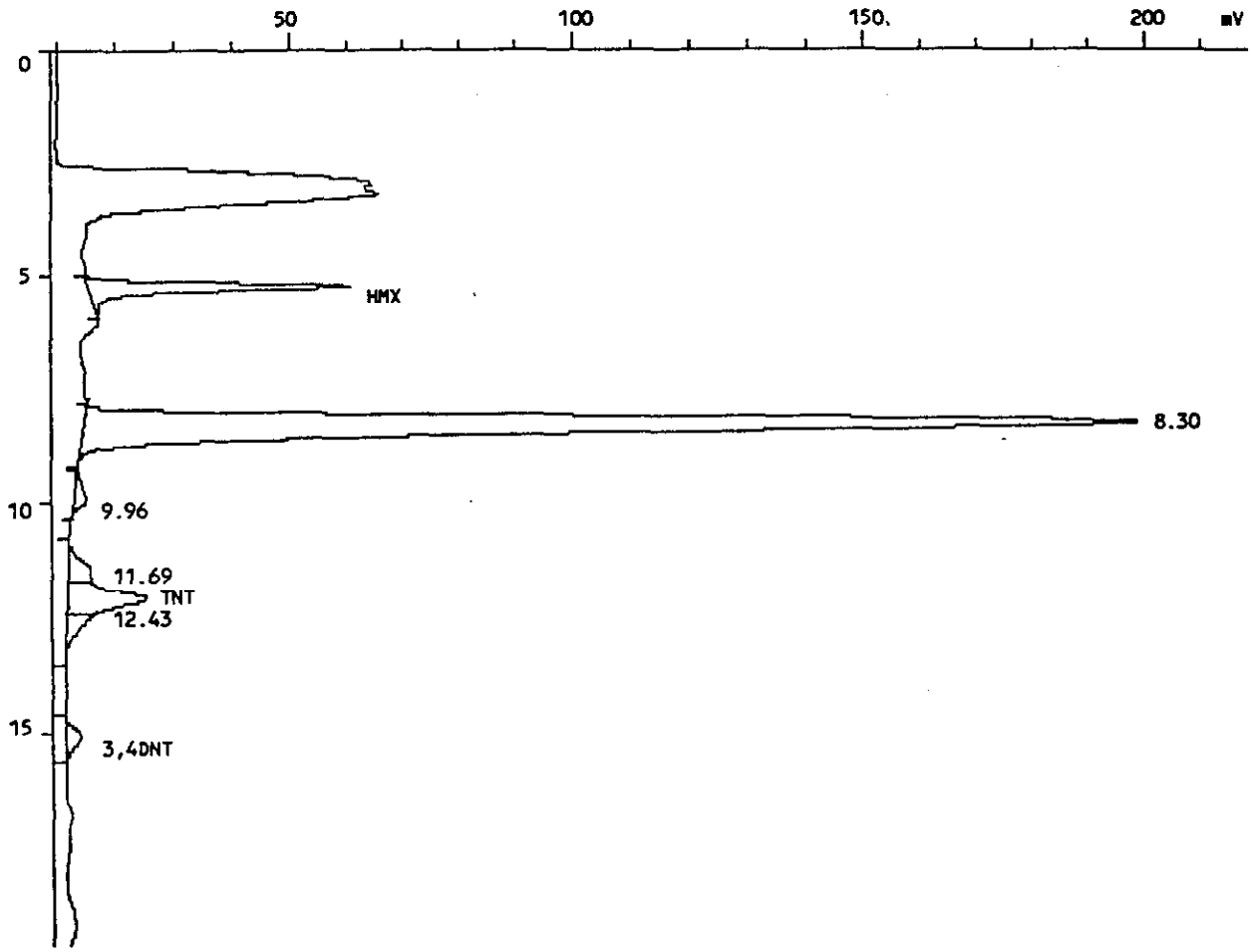
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.821	22844	191469	25735.129	HMX *
5	7.285	112253	1660513	171895.766	RDX *E
7	14.549	914	17079	1388.564	3,4DNT 69%
8	15.088	3744	80778	3434.434	TNT *P
9	15.845	284	4978	332.785	4ADNT
10	16.720	280	6754	340.408	2ADNT
11	18.213	284	6145	259.295	24DNT
Total		140603	1967717	203386.375	
Residual		5525	122065	15742.745	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,17,1

Sample name.....: BIO-5-005-00-07-3-R2
Sample ID.....: 34353.06
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 05:19:00
Reported on 02-Jul-98 at 16:05:30



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,17,1

Acquired on 02-Jul-98 at 05:19:00
Modified on 02-Jul-82 at 15:56:50
Reported on 02-Jul-98 at 15:56:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R2
Sample ID.....: 34353.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

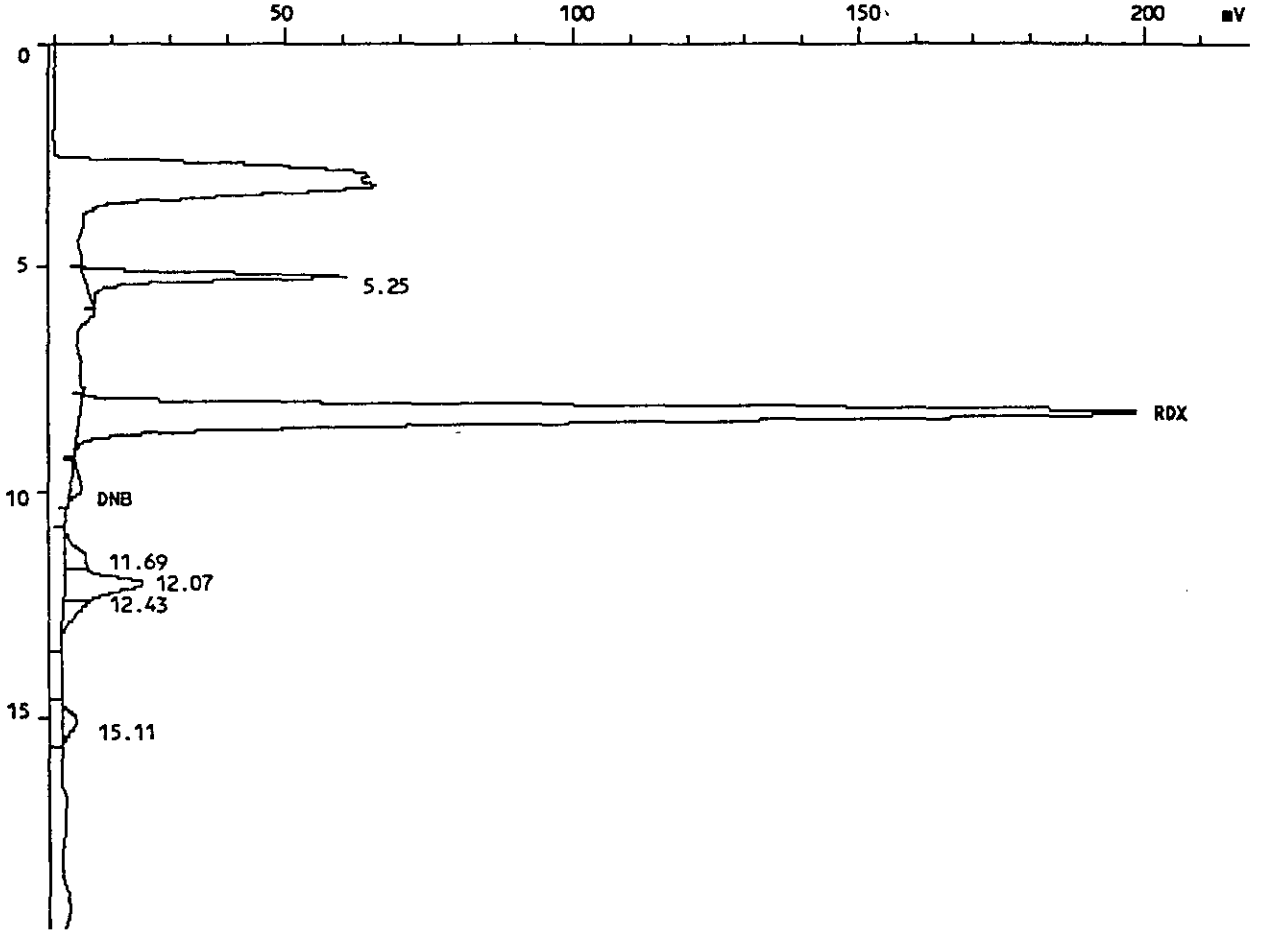
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.248	45500	570871	21190.461	HMX
5	12.075	13944	379884	7628.193	TNT
7	15.109	2627	73610	3478.723	3,4DNT
Total		62070	1024365	32297.377	
Residual		194991	4832737	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,17,1

Sample name.....: BIO-5-005-00-07-3-R2
Sample ID.....: 34353.06
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 05:19:00
Reported on 02-Jul-98 at 11:06:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,17,1

Acquired on 02-Jul-98 at 05:19:00
Modified on 02-Jul-82 at 10:56:32
Reported on 02-Jul-98 at 10:56:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R2
Sample ID.....: 34353.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.299	184153	4556982	181120.094	RDX
3	9.957	2018	61535	890.524	DNB
Total		186171	4618517	182010.625	
Residual		70890	1238585	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-07-3-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.06DL

Sample Amt: 2g % Moisture 4.54 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	25400	D
121-82-4	RDX	176000	D
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	U
98-95-3	NB	2600	U
118-96-7	TNT	3360	DP
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
606-20-2	26DNT	2600	U
121-14-2	24DNT	2500	U
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

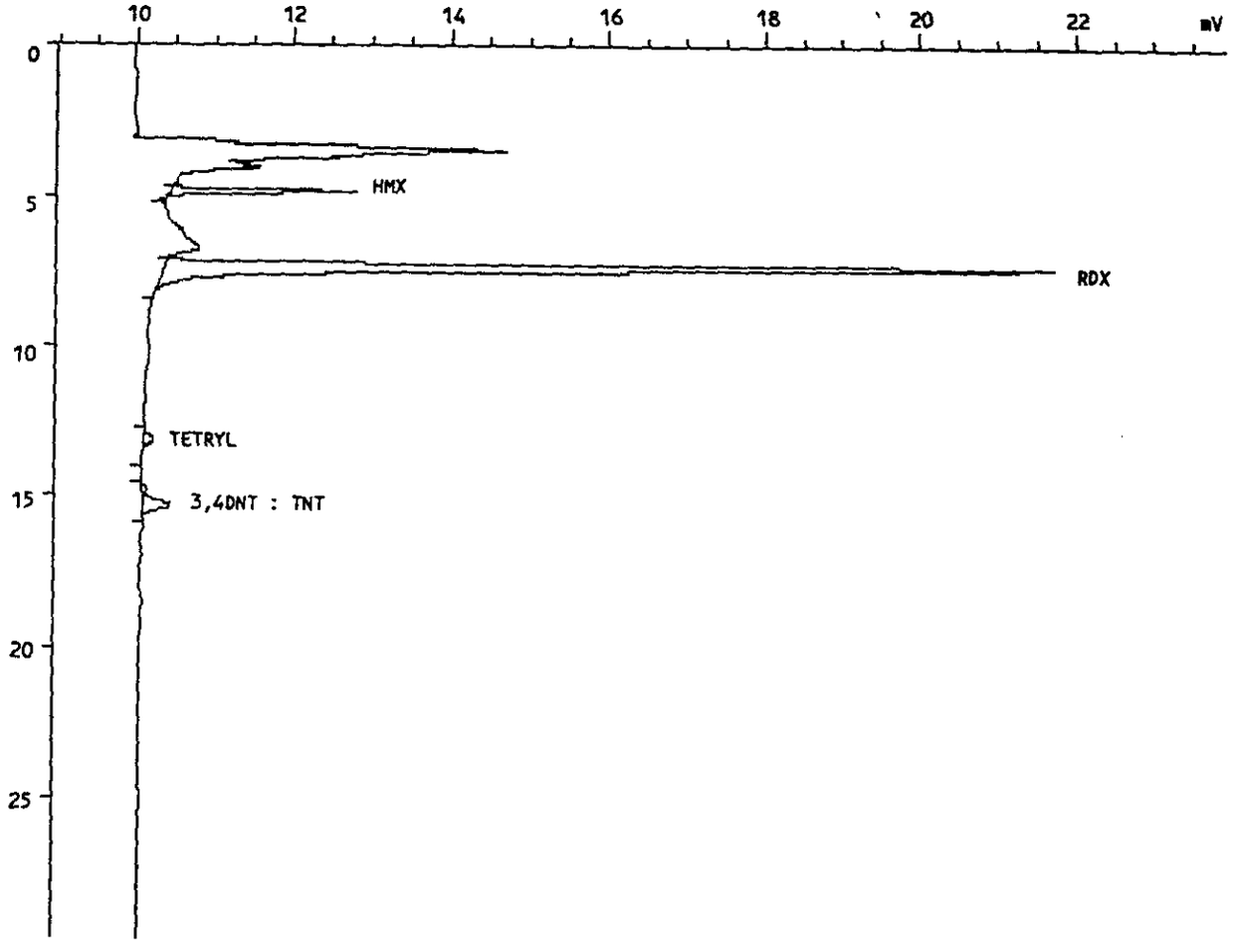
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,17,1

Sample name.....: BIO-5-005-00-07-3-R2 10X
Sample ID.....: 34353.06DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 16:37:38
Reported on 27-Jun-98 at 14:15:48



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,17,1

Acquired on 20-Jun-98 at 16:37:38
Modified on 27-Jun-82 at 14:08:50
Reported on 27-Jun-98 at 14:08:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:06:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R2 10X
Sample ID.....: 34353.06DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

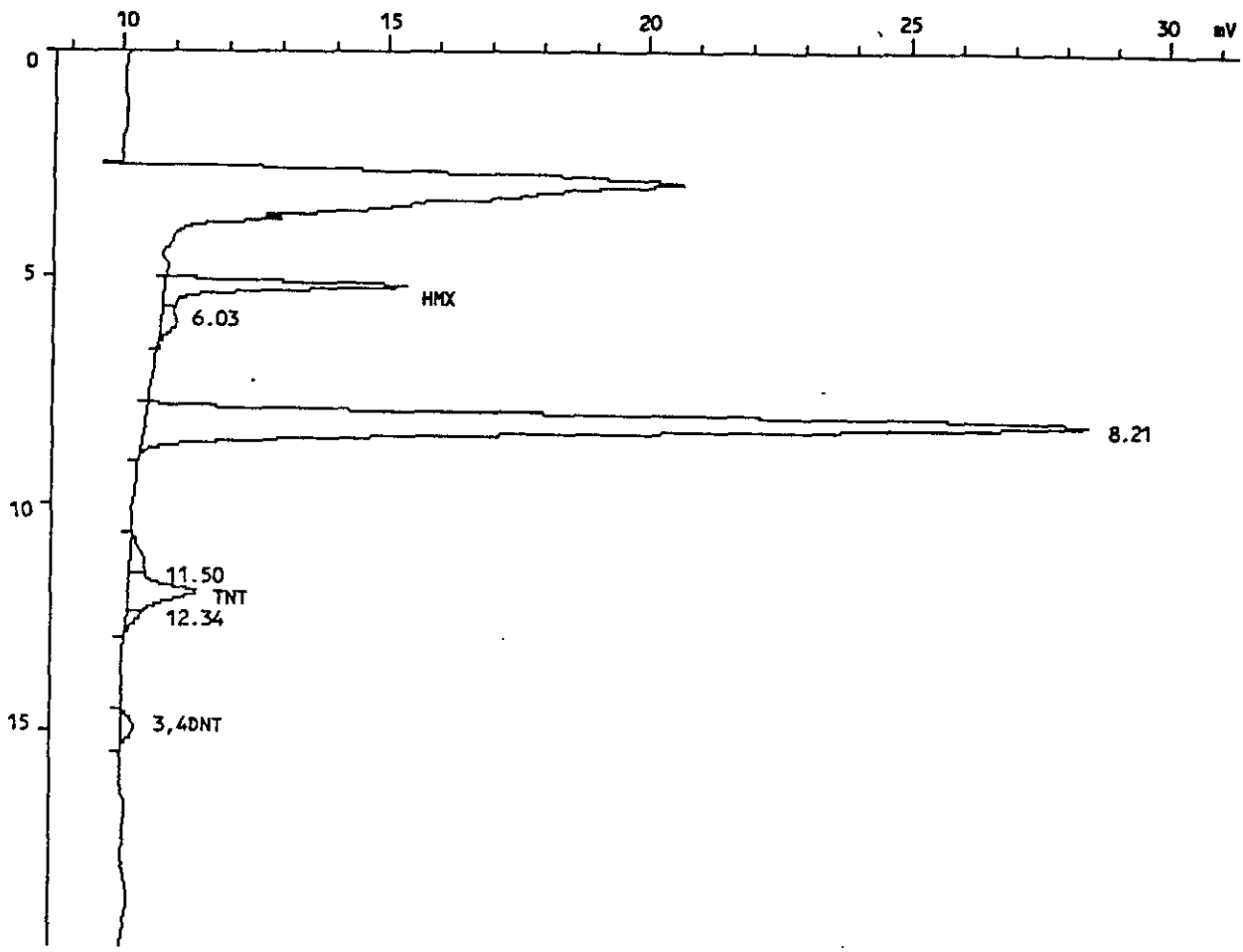
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.880	2390	19617	25410.758	HMX *D
2	7.376	11393	173498	175961.000	RDX *D
3	13.189	132	2902	2471.881	TETRYL
4	14.848	82	1259	1035.049	3,4DNT 52%
5	15.360	360	7768	3359.662	TNT *DP
Total		14357	205043	208238.328	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,18,1

Sample name.....: BIO-5-005-00-07-3-R2 10X
Sample ID.....: 34353.06DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 05:56:01
Reported on 02-Jul-98 at 16:05:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,18,1

Acquired on 02-Jul-98 at 05:56:01
Modified on 02-Jul-82 at 15:57:06
Reported on 02-Jul-98 at 15:57:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R2 10X
Sample ID.....: 34353.06DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

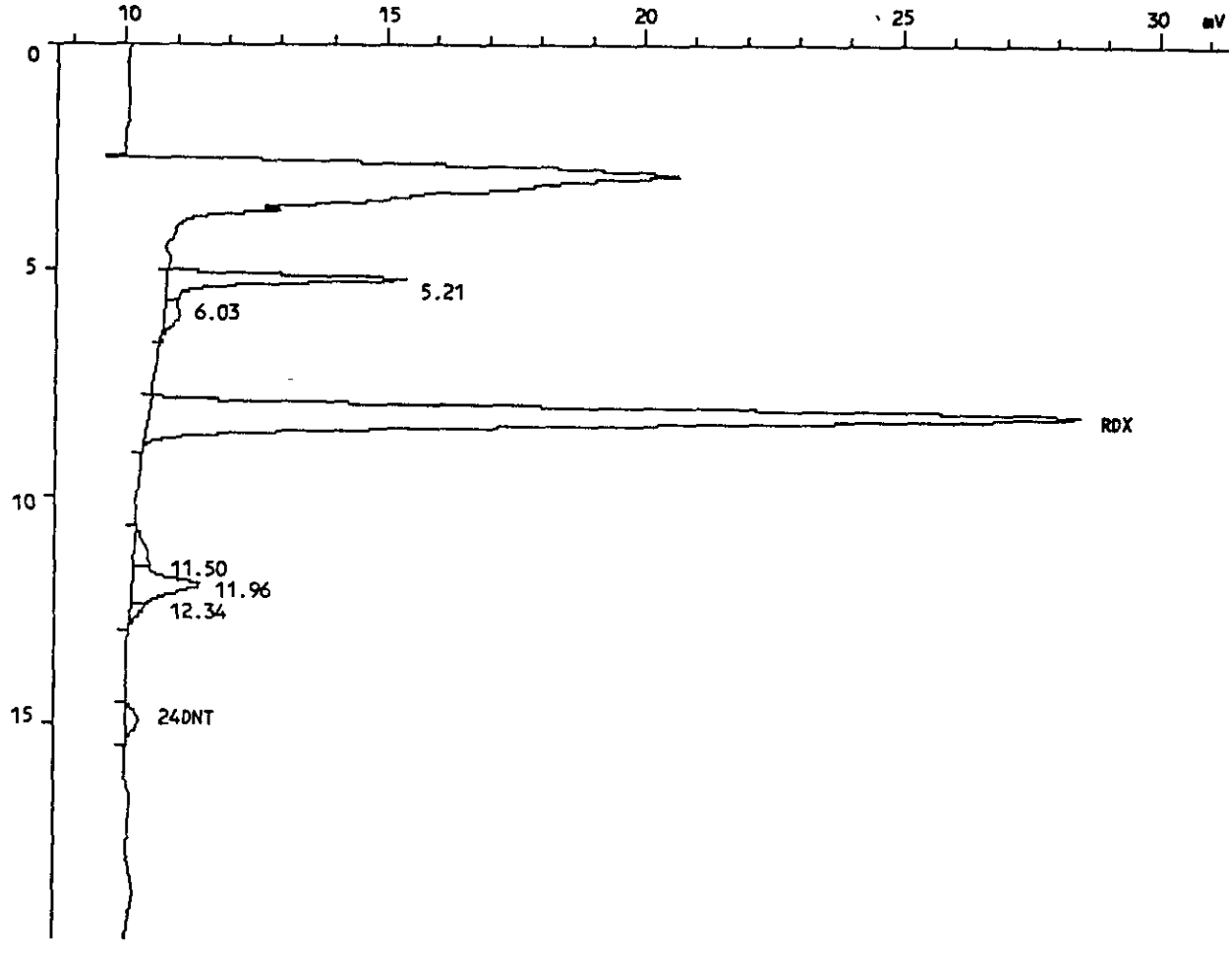
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.205	4565	59965	22258.760	HMX
5	11.963	1283	34959	7019.822	TNT
7	14.939	252	6739	3184.577	3,4DNT
Total		6100	101662	32463.158	
Residual		18937	485374	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702B,18,1

Sample name.....: BIO-5-005-00-07-3-R2 10X
Sample ID.....: 34353.06DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 05:56:01
Reported on 02-Jul-98 at 11:06:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0702B,18,1

Acquired on 02-Jul-98 at 05:56:01
Modified on 02-Jul-82 at 10:56:46
Reported on 02-Jul-98 at 10:56:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 20
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-07-3-R2 10X
Sample ID.....: 34353.06DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 20.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.208	17999	460798	183146.906	RDX
7	14.939	252	6739	1108.681	24DNT
Total		18252	467536	184255.594	
Residual		6786	119501	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-07-3-R2

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.06

Sample Amt: 2g % Moisture 4.54 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

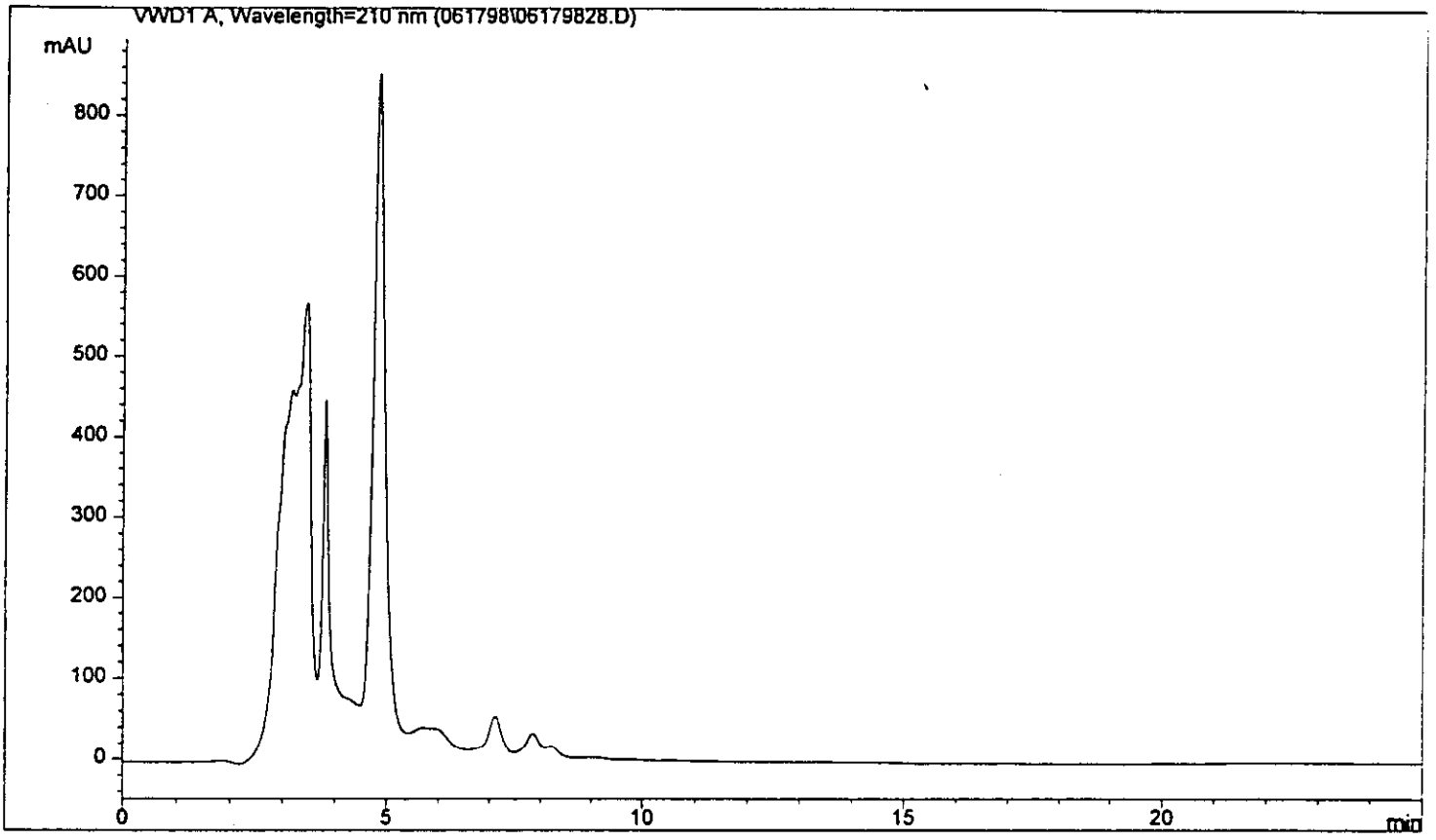
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 28
Sample Name	: 34353.06	Vial No.	:
Acq Operator	: SS	Inj. No.	:
		Inj. Vol.	: 200 µl

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-09
-1-R1

› Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.07

Sample Amt: 2g % Moisture 24.79 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	30600	
121-82-4	RDX	220000	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	1300	P
946-51-0	4ADNT	250	U
5572-78-2	2ADNT	250	U
06-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

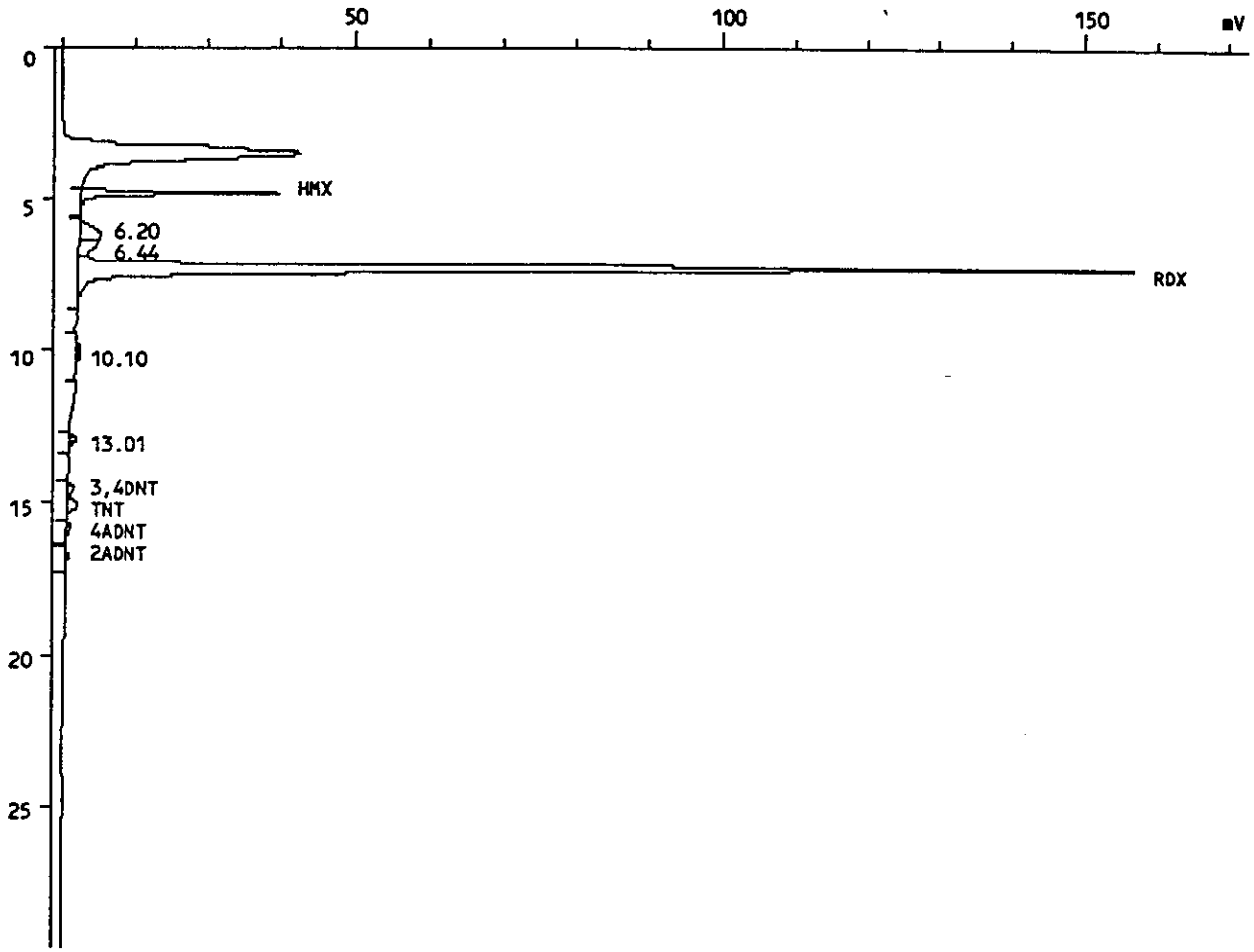
SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

LONG PLOT

Injection F: <MC3> 5 5EX0613D,28,1

Sample name.....: BIO-5-005-00-09-1-R1
Sample ID.....: 34353.07
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 07:31:46
Reported on 17-Jun-98 at 17:23:47



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,28,1

Acquired on 17-Jun-98 at 07:31:46
Modified on 17-Jun-82 at 17:07:54
Reported on 02-Jul-98 at 16:45:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 19-Jun-82 at 17:15:18
Method file.....: EXPLOS Last modified on 02-Jul-82 at 10:26:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R1
Sample ID.....: 34353.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

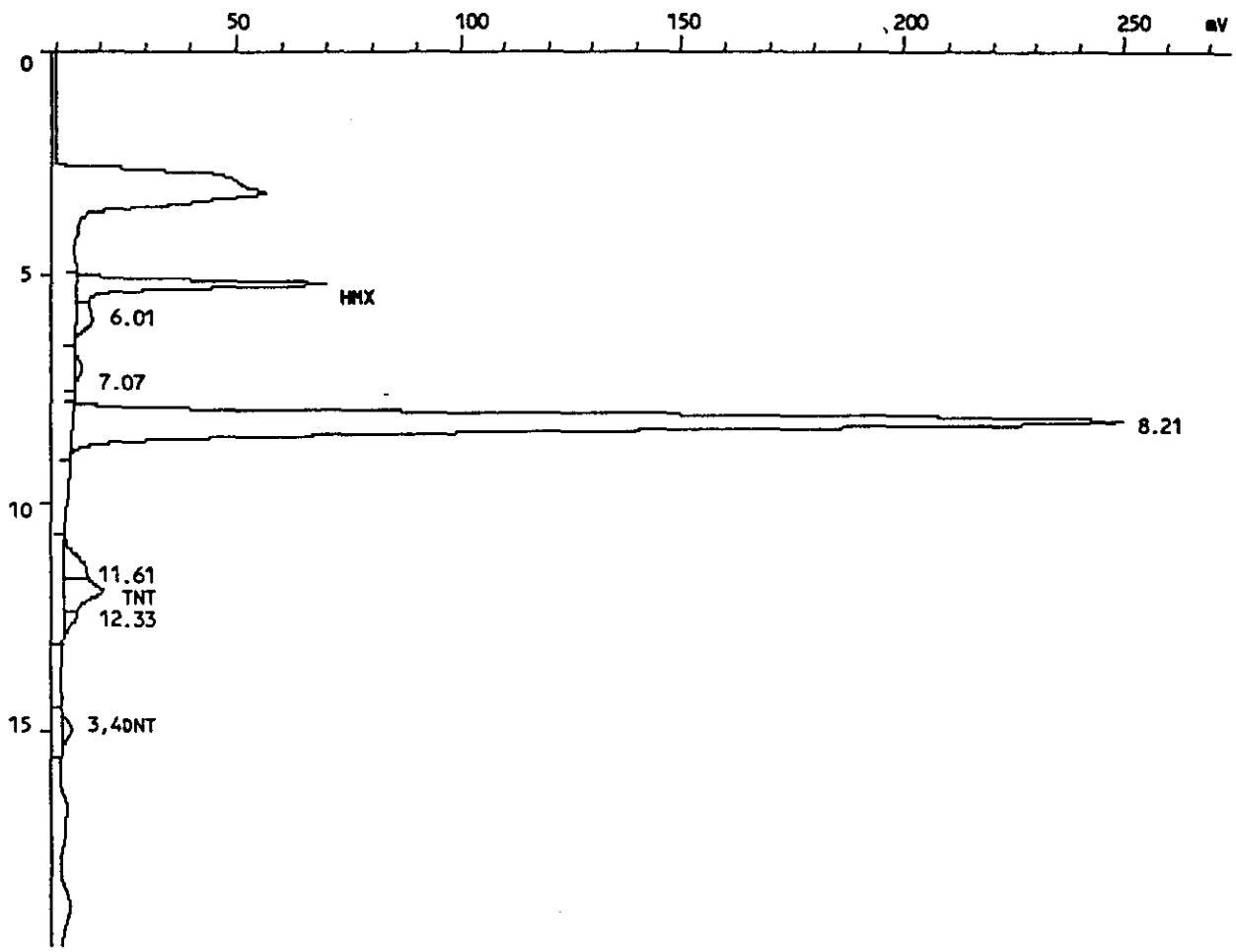
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	26969	227710	30606.135	HMX *
4	7.317	144607	2126884	220174.344	RDX * E
7	14.608	863	15544	1263.739	3,4DNT 63%
8	15.152	1486	30523	1297.745	TNT * P
9	15.872	612	14052	939.310	4ADNT
10	16.779	345	7723	389.269	2ADNT
Total		174881	2422436	254670.547	
Residual		7378	188514	23991.201	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,1,1

Sample name.....: BIO-5-005-00-09-1-R1
Sample ID.....: 34353.07
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 07:47:03
Reported on 02-Jul-98 at 16:12:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,1,1

Acquired on 02-Jul-98 at 07:47:03
Modified on 02-Jul-82 at 16:11:58
Reported on 02-Jul-98 at 16:12:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R1
Sample ID.....: 34353.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

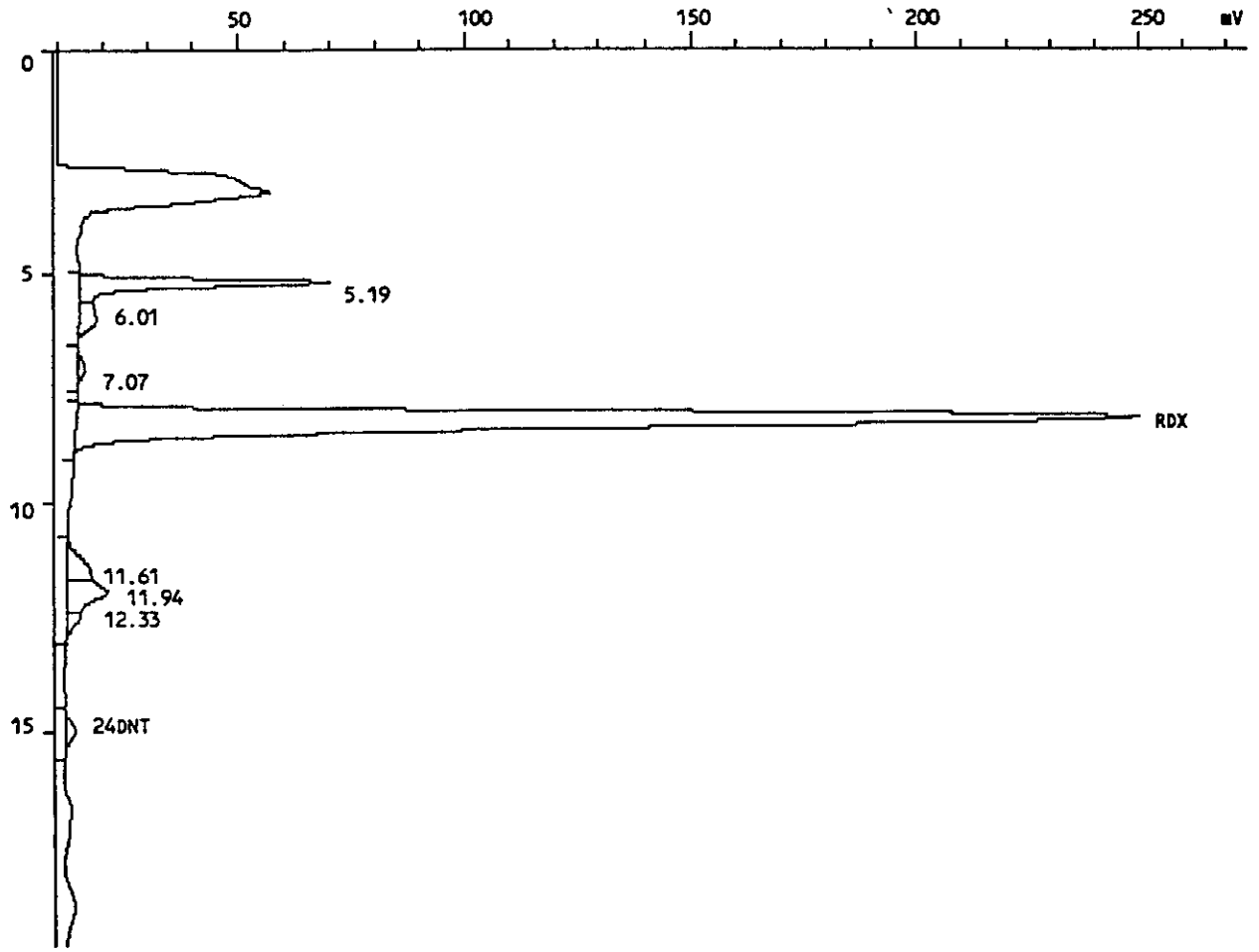
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.195	55055	692525	25706.195	HMX
6	11.936	8999	273841	5498.816	TNT
8	14.960	2229	62692	2962.751	3,4DNT
Total		66283	1029058	34167.762	
Residual		250016	6052976	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,1,1

Sample name.....: BIO-5-005-00-09-1-R1
Sample ID.....: 34353.07
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 07:47:03
Reported on 02-Jul-98 at 11:30:48



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,1,1

Acquired on 02-Jul-98 at 07:47:03
Modified on 02-Jul-82 at 11:25:02
Reported on 02-Jul-98 at 11:25:01

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R1
Sample ID.....: 34353.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	8.208	235818	5667284	225249.766	RDX
8	14.960	2229	62692	1031.455	24DNT
Total		238047	5729976	226281.219	
Residual		78252	1352058	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-09-1-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.07DL

Sample Amt: 2g % Moisture 24.79 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	30800	DJ
121-82-4	RDX	213000	D
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	197	DJP
1946-51-0	4ADNT	12500	U
35572-78-2	2ADNT	12500	U
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

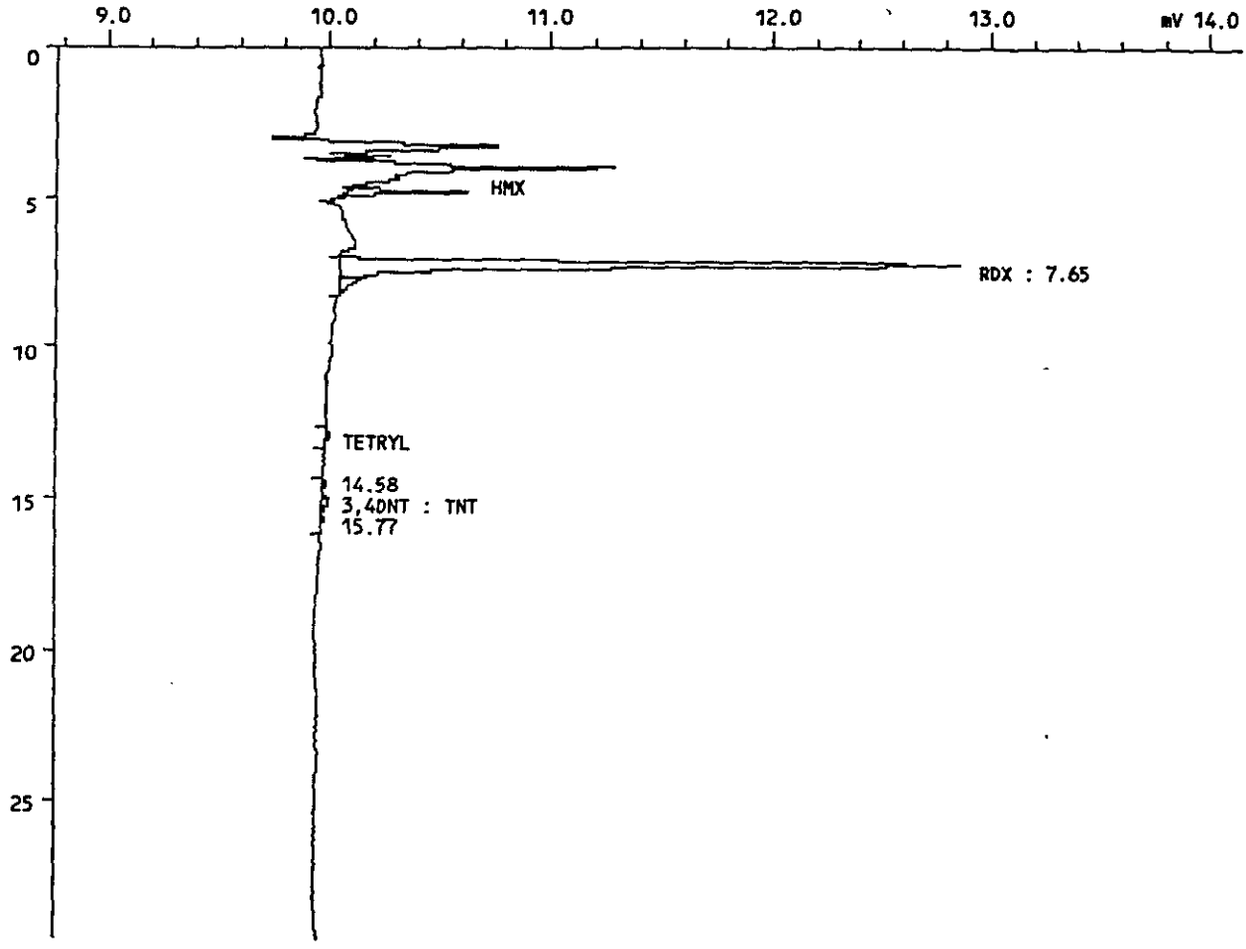
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,19,1

Sample name.....: BIO-5-005-00-09-1-R1 50X
Sample ID.....: 34353.07DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 18:07:00
Reported on 27-Jun-98 at 14:16:09



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,19,1

Acquired on 20-Jun-98 at 18:07:00
Modified on 27-Jun-82 at 14:09:08
Reported on 27-Jun-98 at 14:09:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:06:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R1 50X
Sample ID.....: 34353.07DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

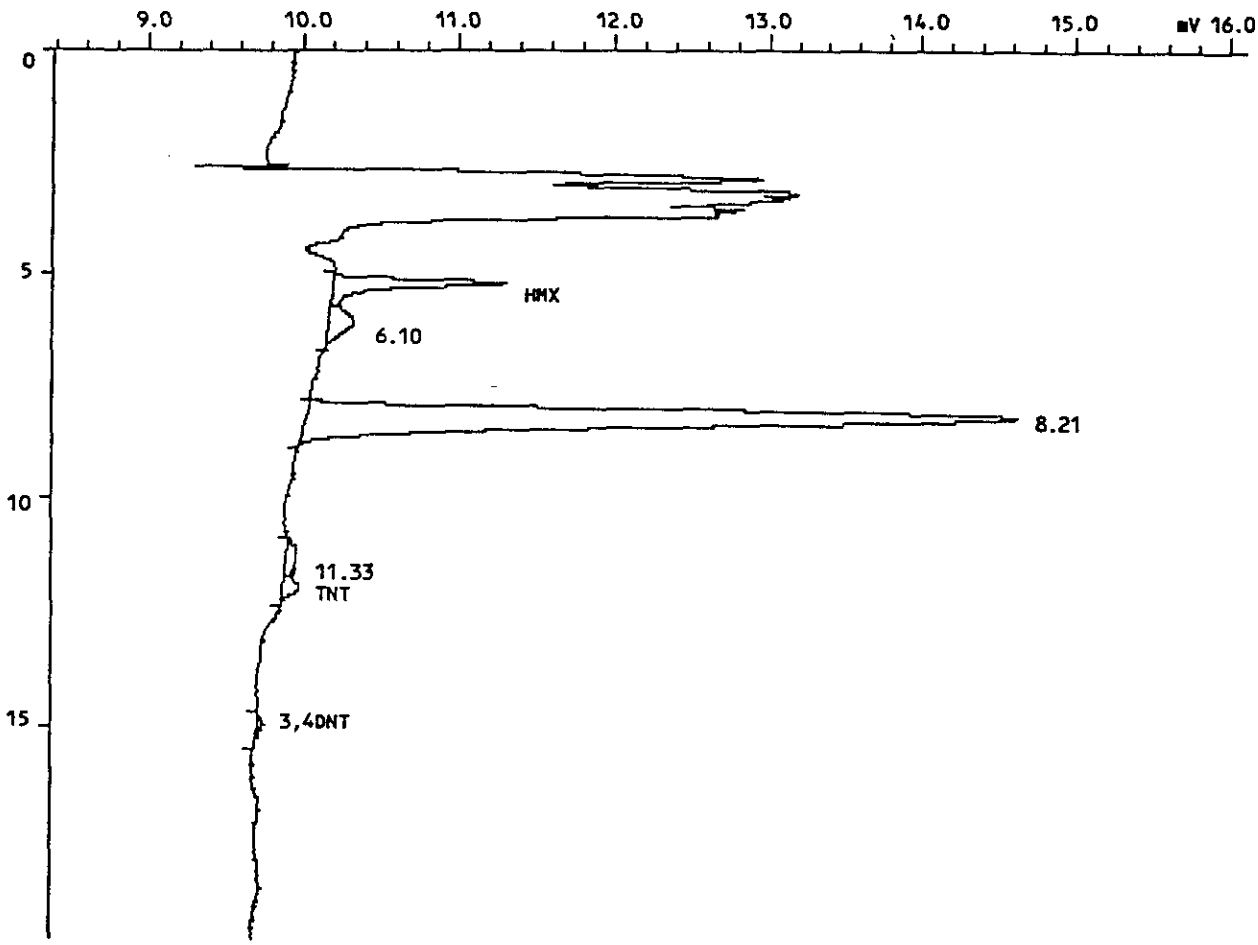
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.837	564	4753	30784.320	HMX *D
2	7.269	2812	42044	213205.156	RDX *D
4	12.928	19	338	1438.094	TETRYL
6	15.120	34	688	2829.075	3,4DNT *D
7	15.392	15	91	196.960	TNT *DJP
Total		3443	47914	248453.594	
Residual		157	2830	13027.752	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,2,1

Sample name.....: BIO-5-005-00-09-1-R1 50X
Sample ID.....: 34353.07DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 08:24:03
Reported on 02-Jul-98 at 16:13:02



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,2,1

Acquired on 02-Jul-98 at 08:24:03
Modified on 02-Jul-82 at 16:12:36
Reported on 02-Jul-98 at 16:12:42

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R1 50X
Sample ID.....: 34353.07DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

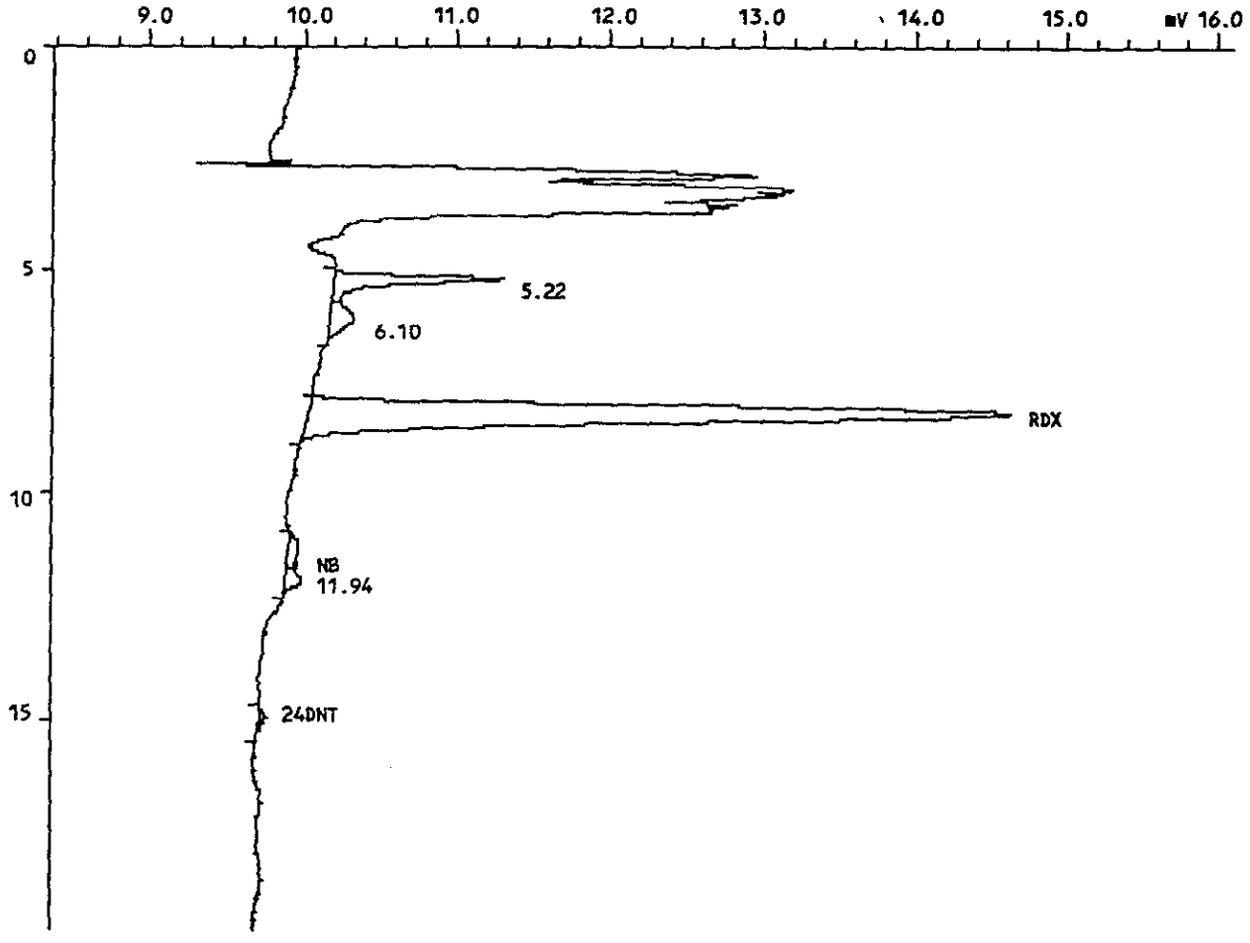
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.216	1111	14567	27035.383	HMX
5	11.936	106	2377	2386.213	TNT
6	14.965	53	866	2045.849	3,4DNT
Total		1270	17809	31467.443	
Residual		4864	122191	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,2,1

Sample name.....: BIO-5-005-00-09-1-R1 50X
Sample ID.....: 34353.07DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 08:24:03
Reported on 02-Jul-98 at 11:30:26



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,2,1

Acquired on 02-Jul-98 at 08:24:03
Modified on 02-Jul-82 at 11:25:16
Reported on 02-Jul-98 at 11:25:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R1 50X
Sample ID.....: 34353.07DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 100.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.213	4617	114597	227737.422	RDX
4	11.328	75	2360	3055.495	NB
6	14.965	53	866	712.243	24DNT
Total		4745	117823	231505.172	
Residual		1389	22177	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-09-1-R1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.07

Sample Amt: 2g % Moisture 24.79 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

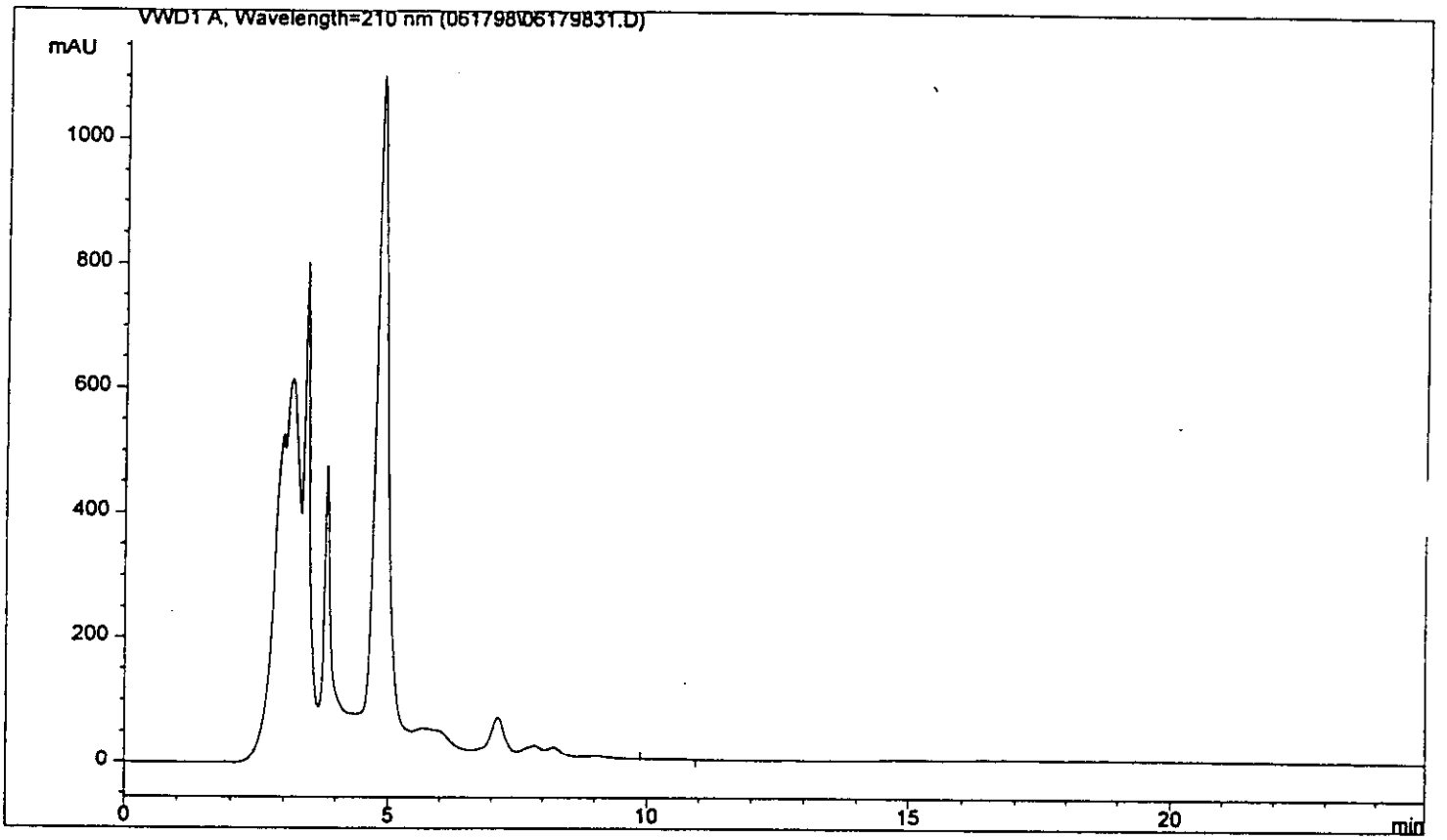
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 3
Sample Name	: 34353.07	Vial No.	: 3
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
10.575	PBA	33.42495	0.00000	0.00000	
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-09
-1-R2

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.08

Sample Amt: 2g % Moisture 3.24 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	47400	
121-82-4	RDX	317000	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	4110	
946-51-0	4ADNT	250	U
5572-78-2	2ADNT	250	U
06-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

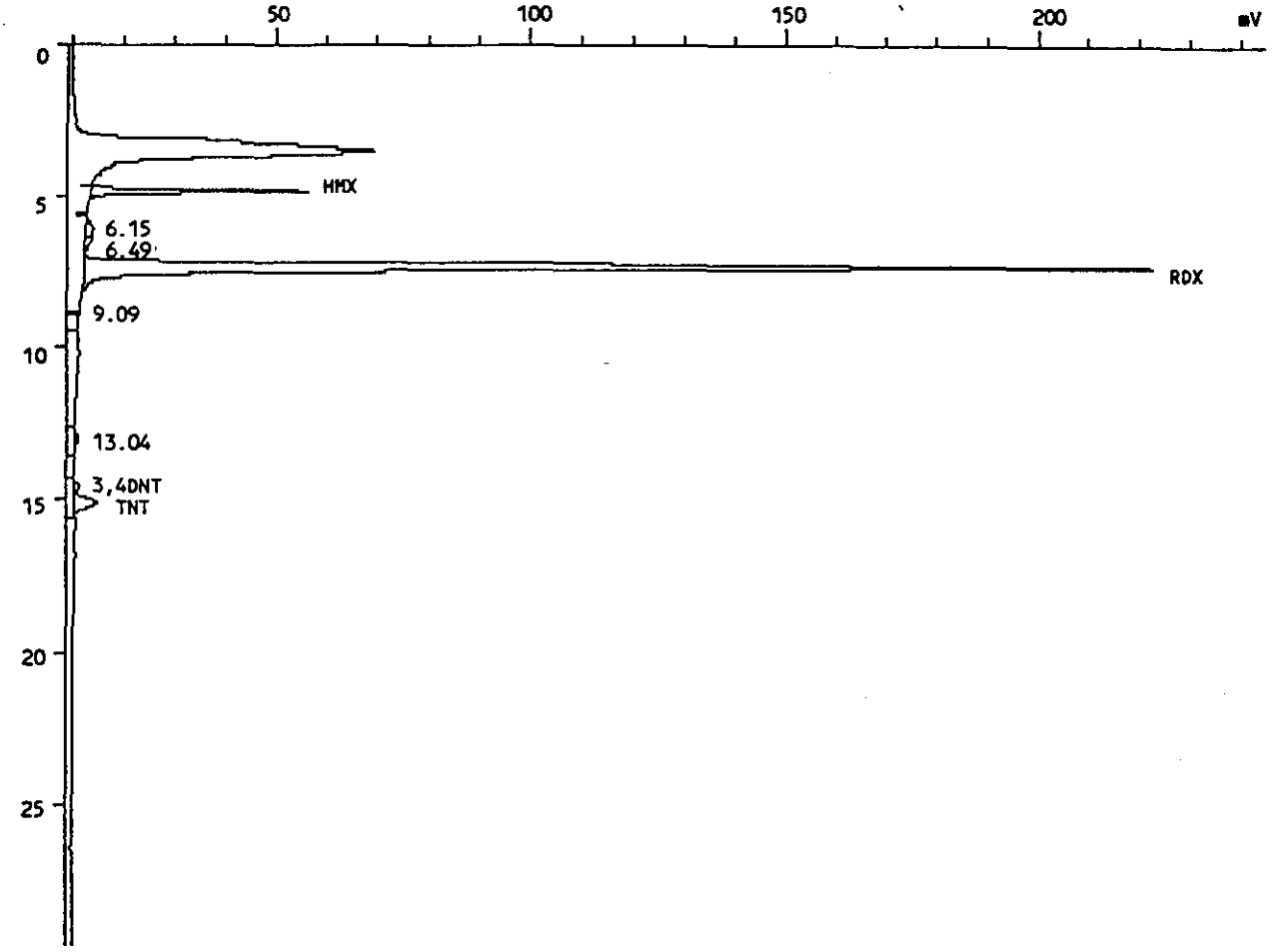
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,29,1

Sample name.....: BIO-5-005-00-09-1-R2
Sample ID.....: 34353.08
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 08:16:30
Reported on 17-Jun-98 at 17:24:28



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,29,1

Acquired on 17-Jun-98 at 08:16:30
Modified on 17-Jun-82 at 17:08:12
Reported on 17-Jun-98 at 17:08:10

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 17-Jun-82 at 17:05:18
Method file.....: EXPLOS Last modified on 17-Jun-82 at 16:53:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R2
Sample ID.....: 34353.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

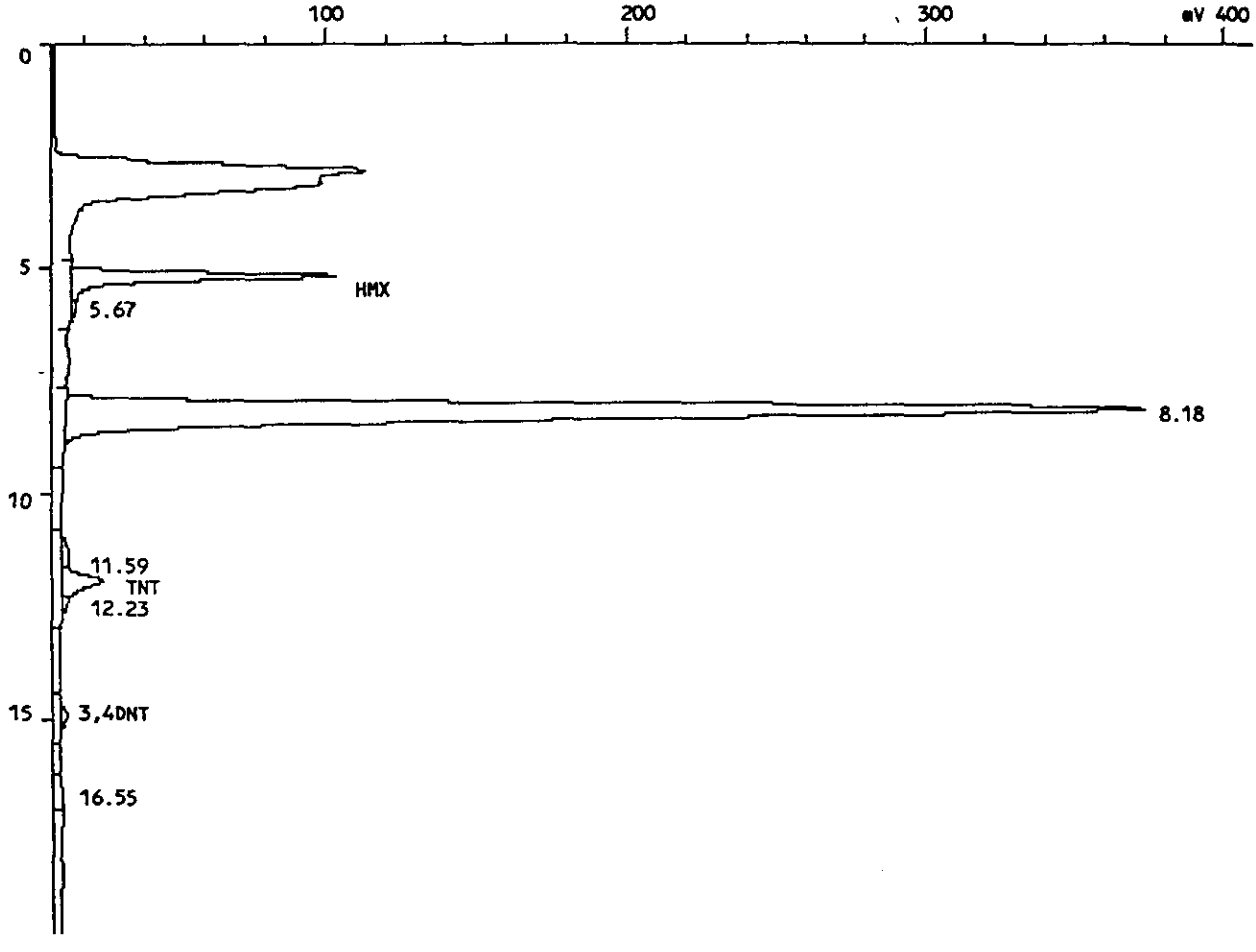
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.864	42460	353043	47451.949	HMX *
4	7.328	210494	3060519	316823.875	RDX E
7	14.629	955	17362	1411.505	3,4DNT 71%
8	15.168	4462	96589	4106.664	TNT *
Total		258371	3527512	369793.969	
Residual		3998	92659	11965.636	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,3,1

Sample name.....: BIO-5-005-00-09-1-R2
Sample ID.....: 34353.08
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 09:01:04
Reported on 02-Jul-98 at 16:11:05



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,3,1

Acquired on 02-Jul-98 at 09:01:04
Modified on 02-Jul-82 at 16:09:20
Reported on 02-Jul-98 at 16:09:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R2
Sample ID.....: 34353.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

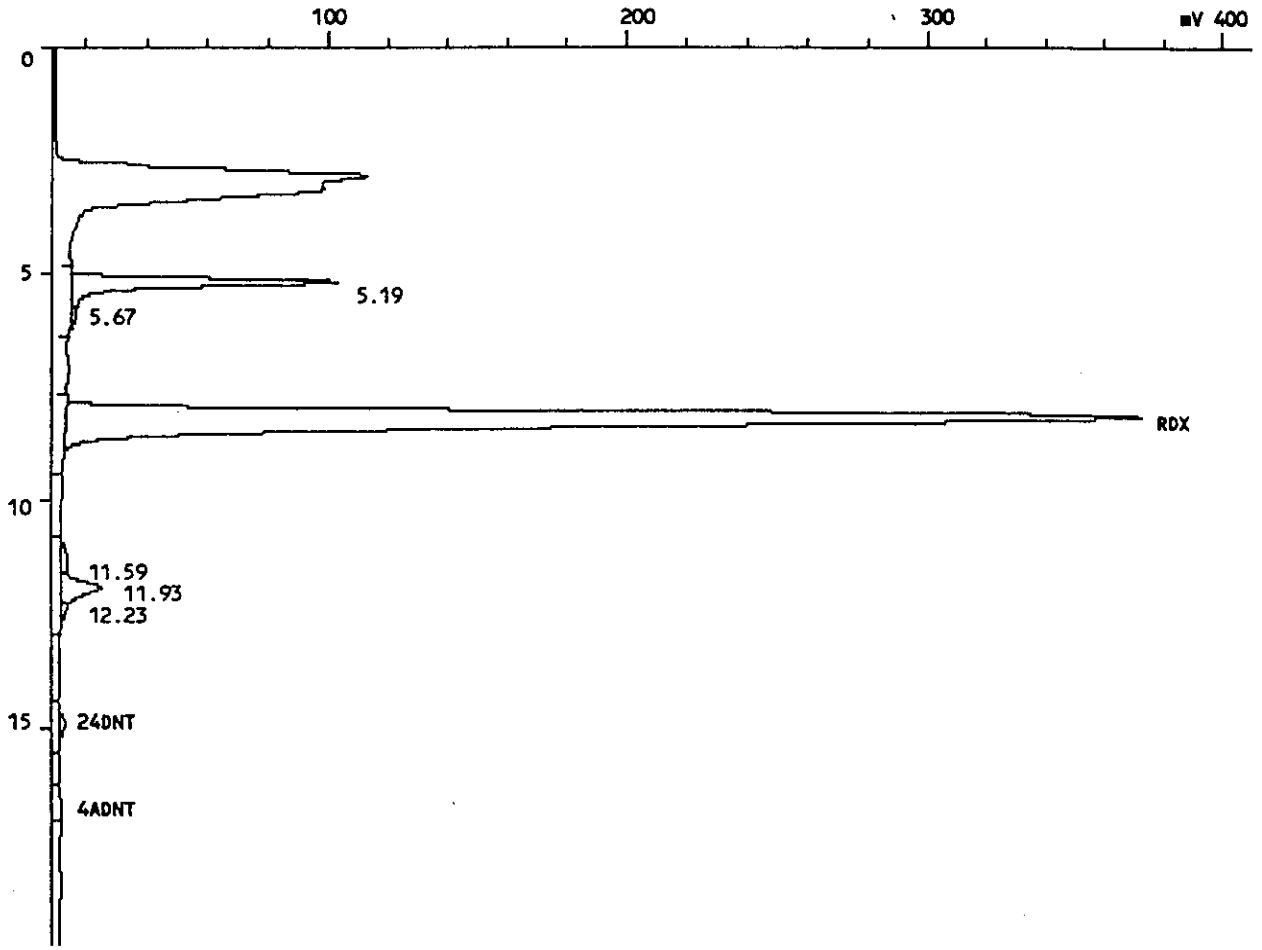
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.189	88261	1083573	40221.711	HMX
5	11.925	13510	294466	5912.971	TNT
7	14.896	2306	62311	2944.776	3,4DNT
Total		104077	1440350	49079.457	
Residual		367974	8554695	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,3,1

Sample name.....: BIO-5-005-00-09-1-R2
Sample ID.....: 34353.08
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 09:01:04
Reported on 02-Jul-98 at 11:28:15



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,3,1

Acquired on 02-Jul-98 at 09:01:04
Modified on 02-Jul-82 at 11:25:32
Reported on 02-Jul-98 at 11:25:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R2
Sample ID.....: 34353.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.176	359206	8352342	331969.063	RDX
7	14.896	2306	62311	1025.197	24DNT
8	16.555	695	16711	687.134	4ADNT
Total		362207	8431364	333681.375	
Residual		109844	1563681	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-09
-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.08DL

Sample Amt: 2g % Moisture 3.24 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 200.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	50300	DJ
121-82-4	RDX	305000	D
99-35-4	TNB	25000	U
99-65-0	DNB	25000	U
479-45-8	TETRYL	65000	U
98-95-3	NB	26000	U
118-96-7	TNT	25000	U
1946-51-0	4ADNT	25000	U
35572-78-2	2ADNT	25000	U
606-20-2	26DNT	26000	U
121-14-2	24DNT	25000	U
88-72-2	2NT	25000	U
99-99-0	4NT	25000	U
99-08-1	3NT	25000	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

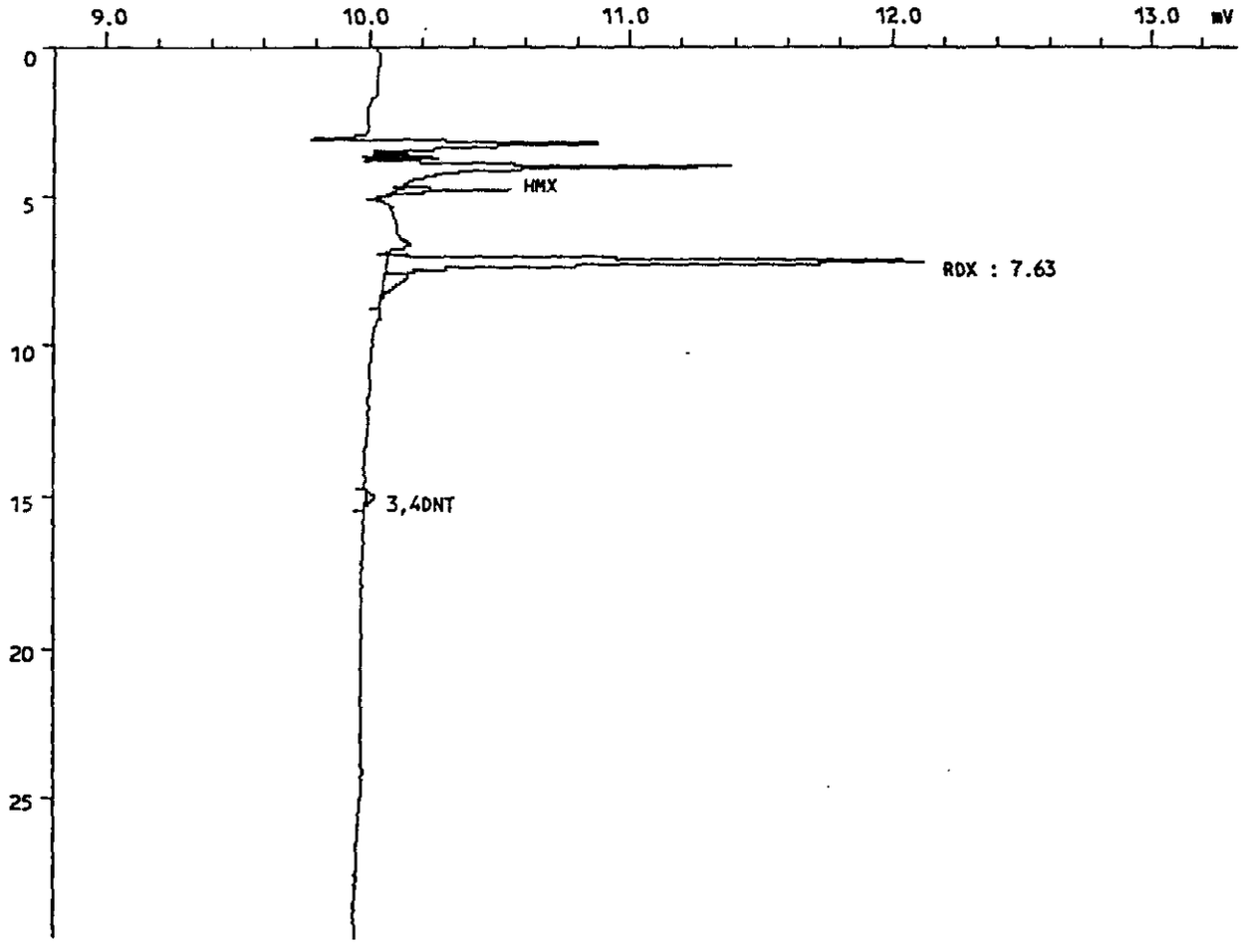
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619B,1,1

Sample name.....: BIO-5-005-00-09-1-R2 100X
Sample ID.....: 34353.08DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 19:52:07
Reported on 27-Jun-98 at 14:34:26



INJECTION REPORT

Injection F: <MC3> 5 5EX0619B,1,1

Acquired on 20-Jun-98 at 19:52:07
Modified on 27-Jun-82 at 14:18:36
Reported on 27-Jun-98 at 14:18:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 5
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:09:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R2 100X
Sample ID.....: 34353.08DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 200.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

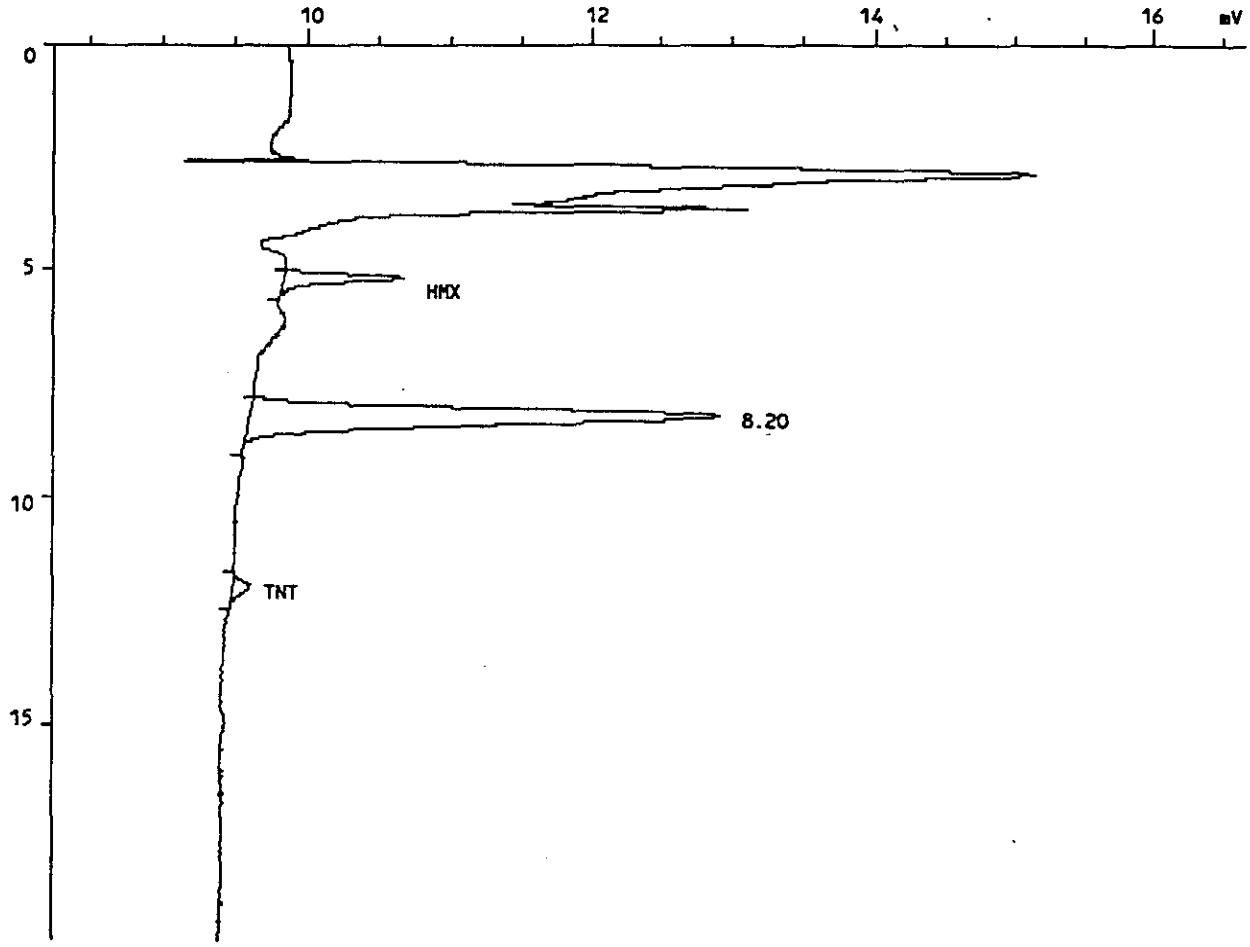
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.837	451	3884	50315.148	HMX *D
2	7.253	2062	30043	304691.313	RDX *D
4	15.008	38	665	5472.383	3,4DNT D
Total		2551	34592	360478.844	
Residual		93	2418	24519.799	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,4,1

Sample name.....: BIO-5-005-00-09-1-R2 100X
Sample ID.....: 34353.08DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 09:38:07
Reported on 02-Jul-98 at 16:13:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,4,1

Acquired on 02-Jul-98 at 09:38:07
Modified on 02-Jul-82 at 16:09:04
Reported on 02-Jul-98 at 16:09:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R2 100X
Sample ID.....: 34353.08DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 200.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

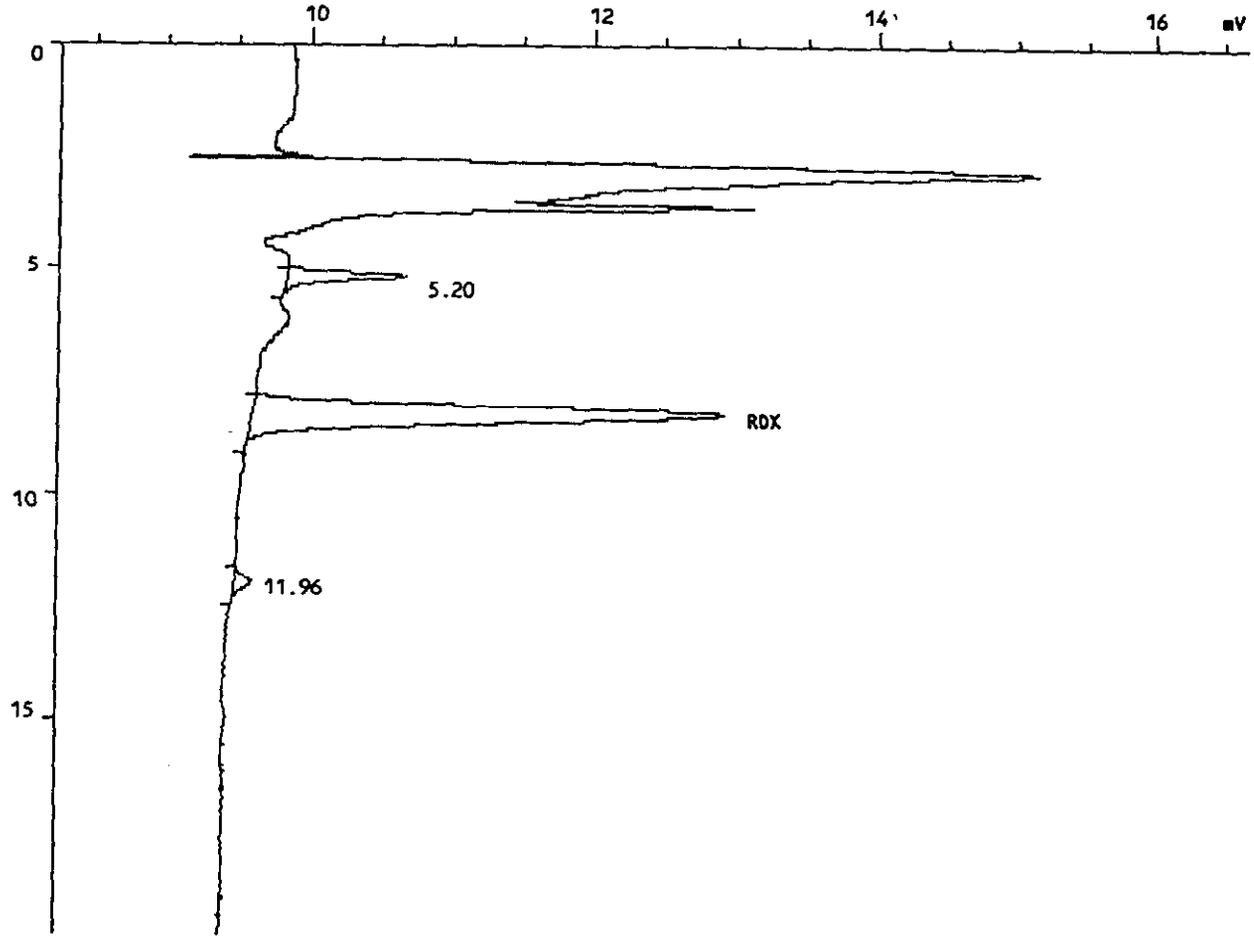
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.200	840	10378	38522.594	HMX
3	11.957	115	2255	4528.323	TNT
Total		955	12633	43050.918	
Residual		3323	83670	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,4,1

Sample name.....: BIO-5-005-00-09-1-R2 100X
Sample ID.....: 34353.08DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 09:38:07
Reported on 02-Jul-98 at 11:27:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,4,1

Acquired on 02-Jul-98 at 09:38:07
Modified on 02-Jul-82 at 11:25:48
Reported on 02-Jul-98 at 11:25:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-09-1-R2 100X
Sample ID.....: 34353.08DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 200.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.203	3323	83670	332551.656	RDX
Total		3323	83670	332551.656	
Residual		955	12633	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-09-1-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.08

Sample Amt: 2g % Moisture 3.24 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

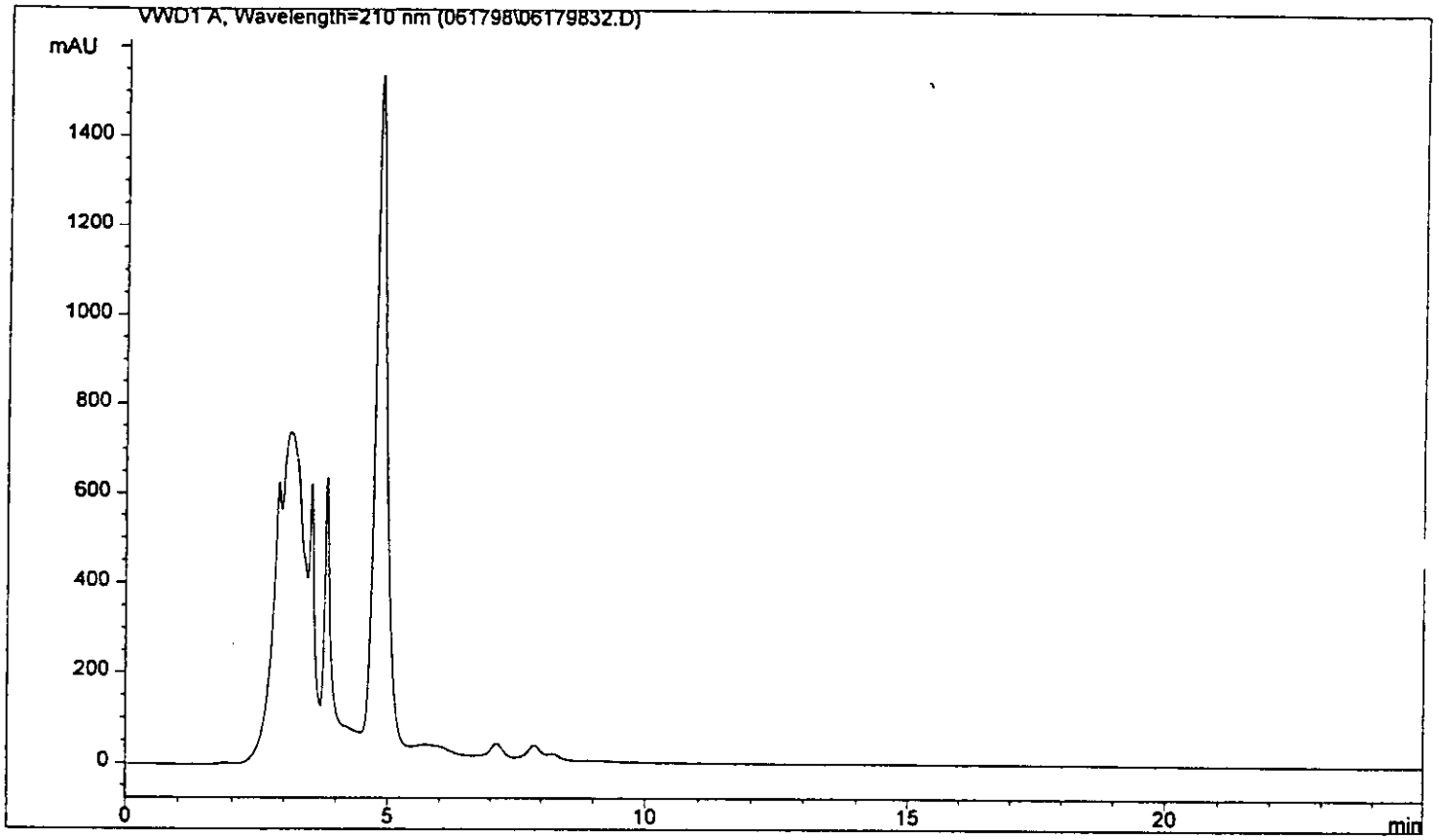
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 32
Sample Name	: 34353.08	Vial No.	: 32
Acq Operator	: SS	Inj. No.	:
		Inj. Vol.	: 200 µL

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-11-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.09

Sample Amt: 2g % Moisture 7.30 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	15600	
121-82-4	RDX	93200	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	331	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

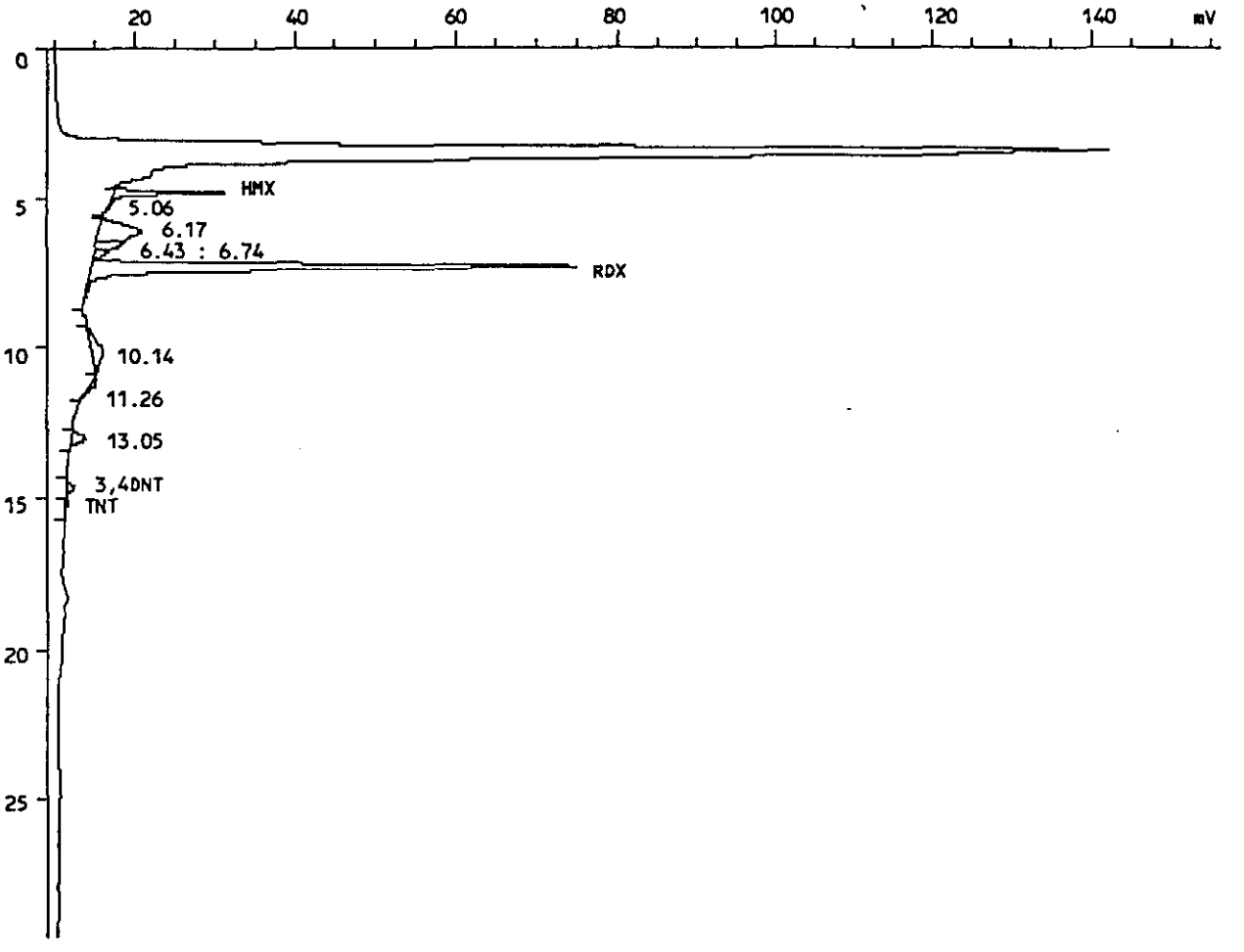
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,30,1

Sample name.....: BIO-5-005-00-11-2-R1
Sample ID.....: 34353.09
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 09:01:15
Reported on 17-Jun-98 at 17:24:51



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,30,1

Acquired on 17-Jun-98 at 09:01:15
Modified on 17-Jun-82 at 17:08:26
Reported on 17-Jun-98 at 17:08:25

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 17-Jun-82 at 17:05:18
Method file.....: EXPLOS Last modified on 17-Jun-82 at 16:53:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R1
Sample ID.....: 34353.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

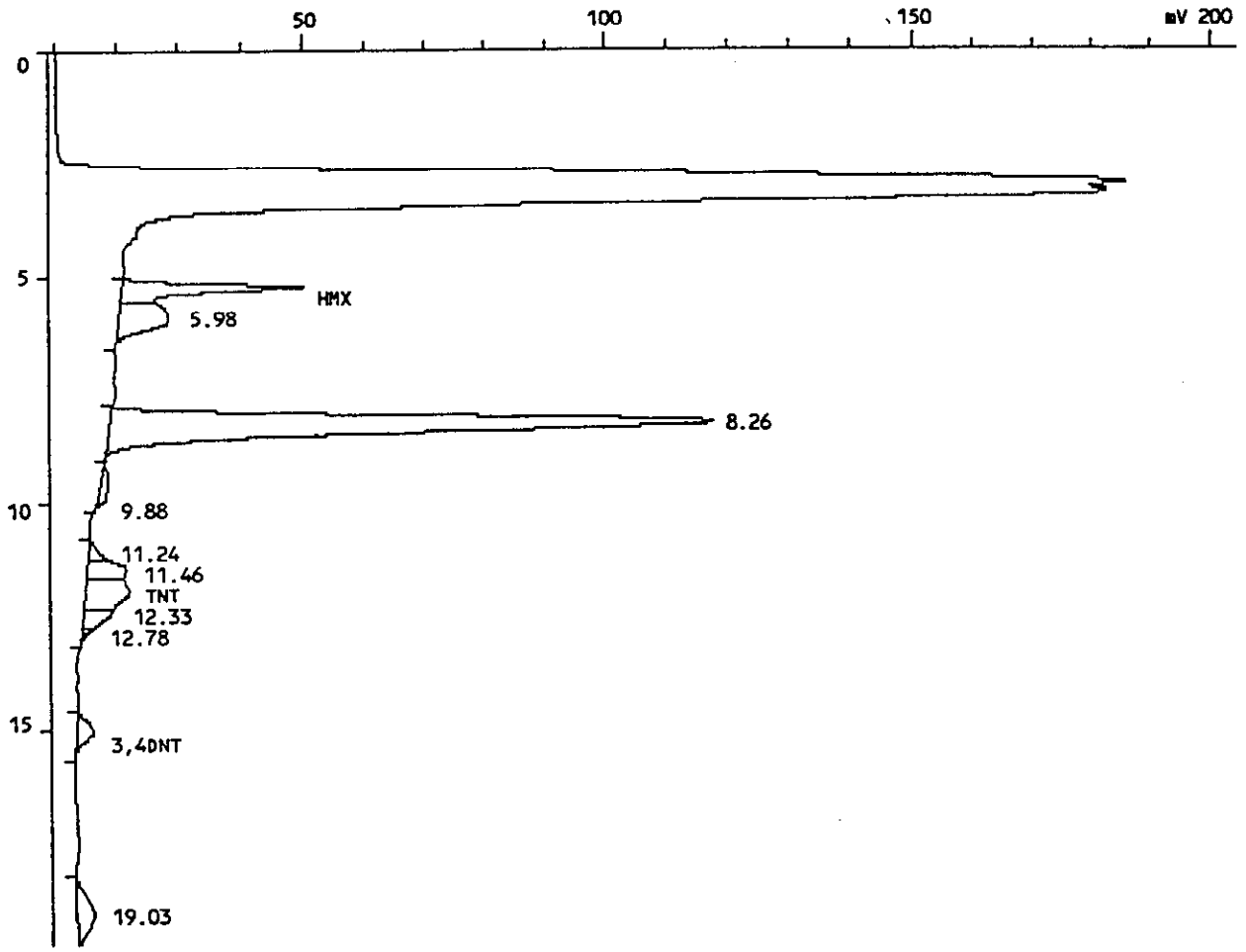
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name	
1	4.853	14152	115901	15578.109	HMX	*
6	7.333	60591	900656	93235.578	RDX	E
10	14.645	982	17910	1456.075	3,4DNT	73%
11	15.205	445	7786	331.053	TNT	*P
Total		76170	1042253	110600.820		
Residual		16504	377874	47099.398		

LONG PLOT

Injection F: <MC3> 3 3CN0702C,5,1

Sample name.....: BIO-5-005-00-11-2-R1
Sample ID.....: 34353.09
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 10:15:12
Reported on 02-Jul-98 at 16:13:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,5,1

Acquired on 02-Jul-98 at 10:15:12
Modified on 02-Jul-82 at 16:08:50
Reported on 02-Jul-98 at 16:08:50

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R1
Sample ID.....: 34353.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

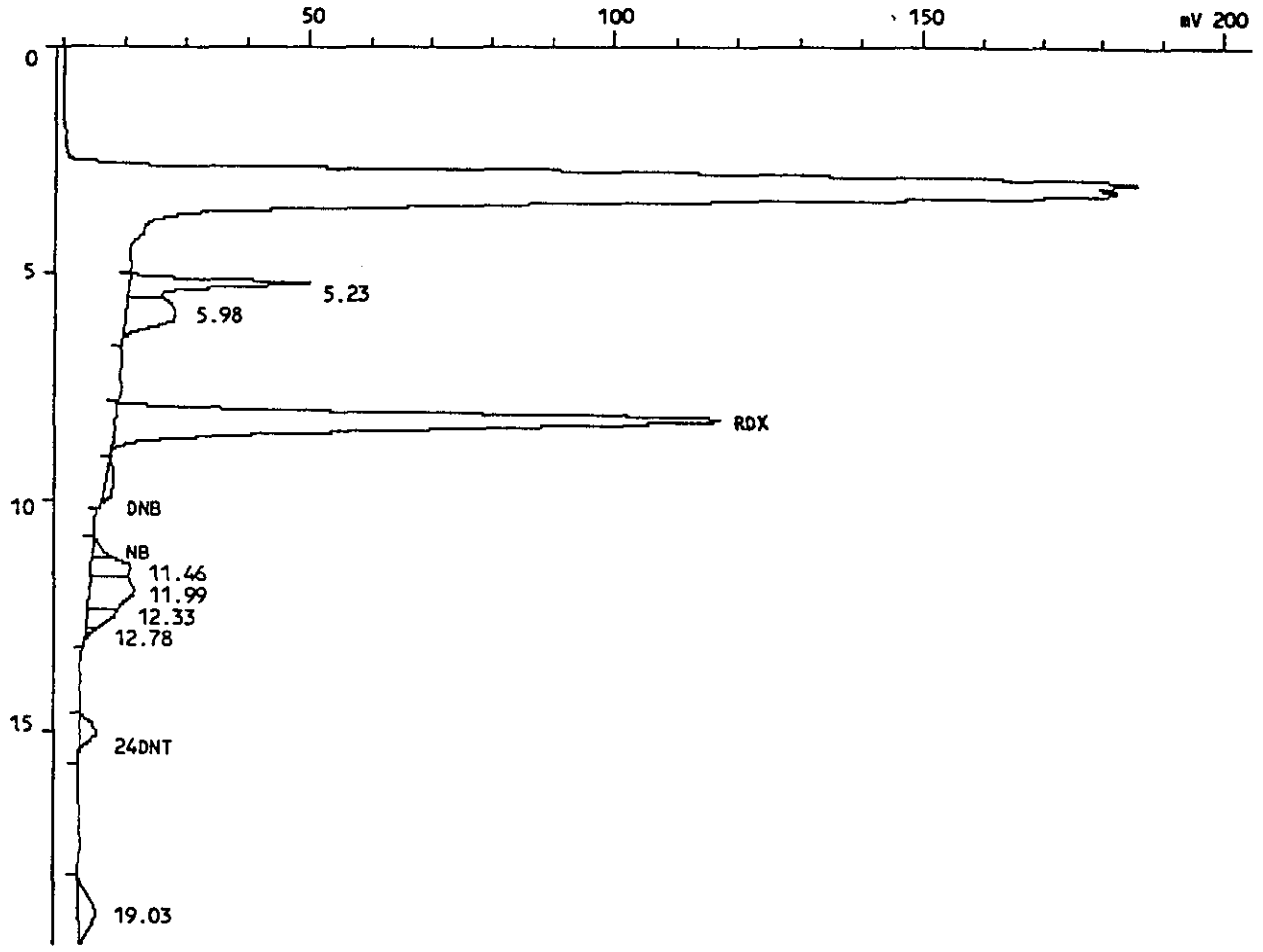
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.227	29204	379221	14076.503	HMX
7	11.989	7314	259039	5201.595	TNT
10	15.024	2682	74711	3530.764	3,4DNT
Total		39200	712971	22808.861	
Residual		127581	3244387	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,5,1

Sample name.....: BIO-5-005-00-11-2-R1
Sample ID.....: 34353.09
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 10:15:12
Reported on 02-Jul-98 at 11:27:08



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,5,1

Acquired on 02-Jul-98 at 10:15:12
Modified on 02-Jul-82 at 11:26:02
Reported on 02-Jul-98 at 11:26:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R1
Sample ID.....: 34353.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.256	98926	2418076	96107.953	RDX
4	9.877	1478	63318	916.328	DNB
5	11.237	3018	34734	899.386	NB
10	15.024	2682	74711	1229.203	24DNT
Total		106104	2590840	99152.867	
Residual		60678	1366519	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-11-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.09DL

Sample Amt: 2g % Moisture 7.30 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	13300	D
121-82-4	RDX	96700	D
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

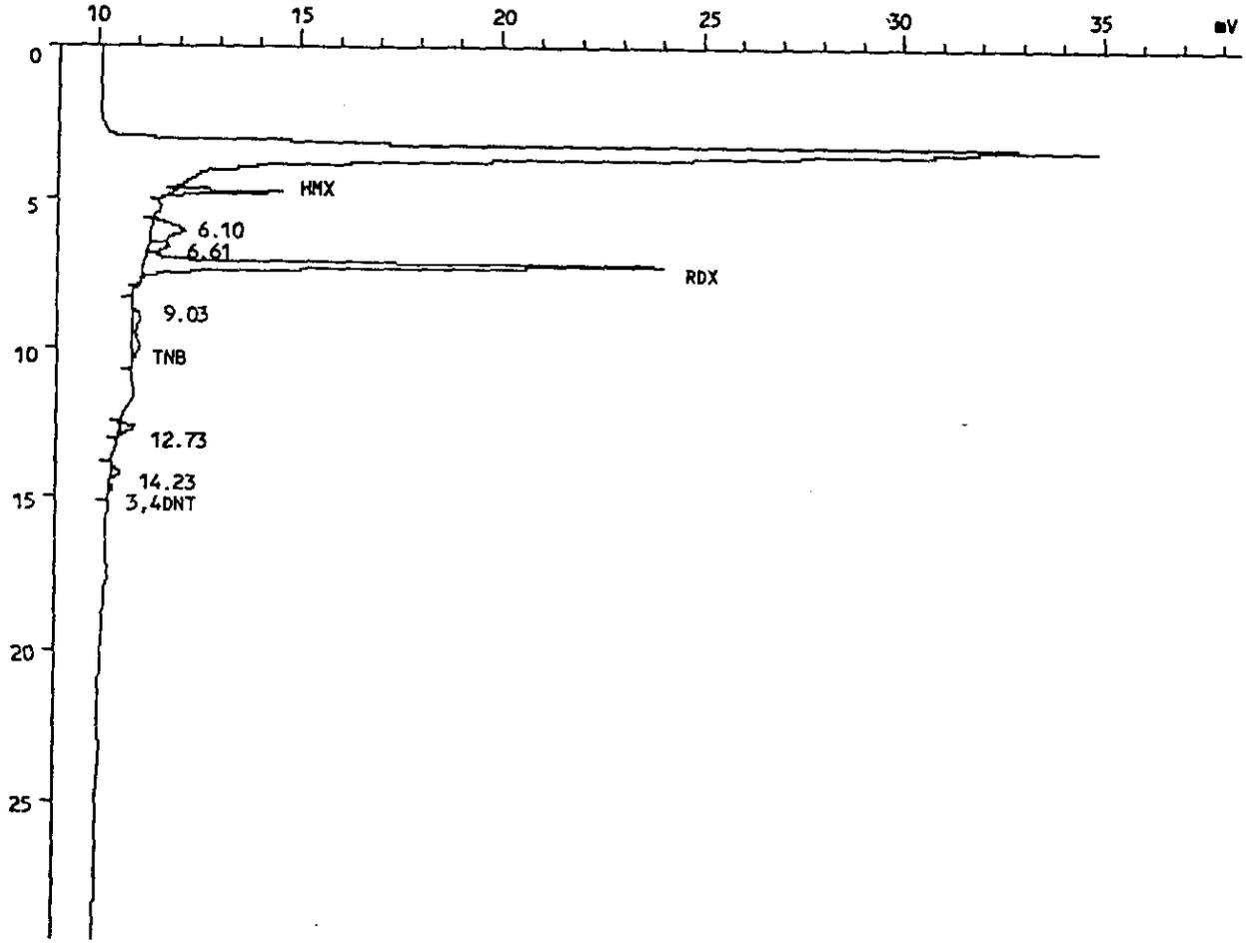
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619B,2,1

Sample name.....: BIO-5-005-00-11-2-R1 5X
Sample ID.....: 34353.09DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 20:36:47
Reported on 27-Jun-98 at 14:34:01



INJECTION REPORT

Injection F: <MC3> 5 5EX0619B,2,1

Acquired on 20-Jun-98 at 20:36:47
Modified on 27-Jun-82 at 14:18:52
Reported on 27-Jun-98 at 14:18:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 5
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:09:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R1 5X
Sample ID.....: 34353.09DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

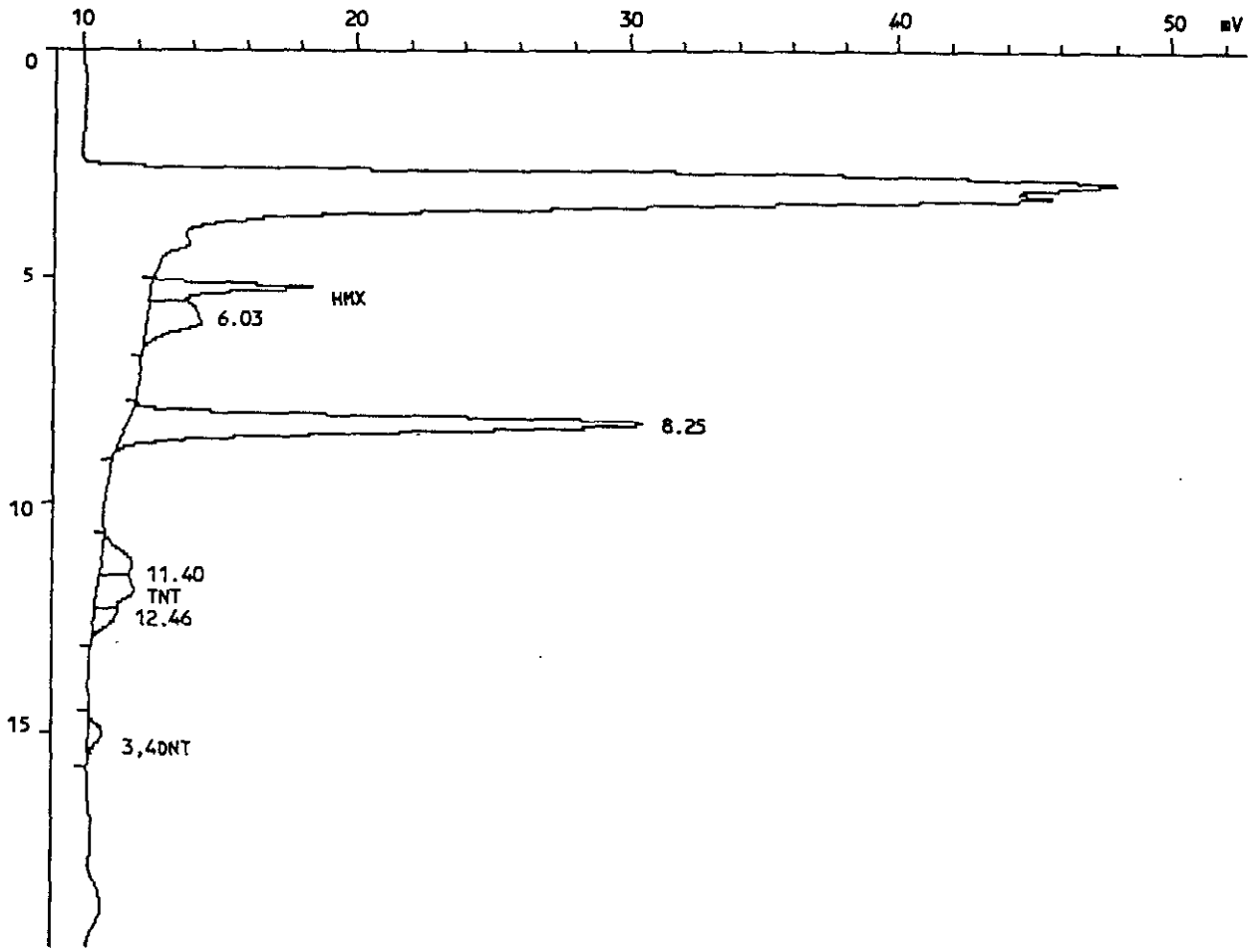
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.827	2769	20589	13334.906	HMX *D
4	7.243	12888	190694	96700.820	RDX *D
6	9.963	228	8628	2176.666	TNB
9	14.805	87	1464	602.128	3,4DNT D
Total		15971	221376	112814.516	
Residual		2189	52721	28604.084	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,6,1

Sample name.....: BIO-5-005-00-11-2-R1 5X
Sample ID.....: 34353.09DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 10:52:14
Reported on 02-Jul-98 at 16:14:04



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,6,1

Acquired on 02-Jul-98 at 10:52:14
Modified on 02-Jul-82 at 16:08:34
Reported on 02-Jul-98 at 16:08:34

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R1 5X
Sample ID.....: 34353.09DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

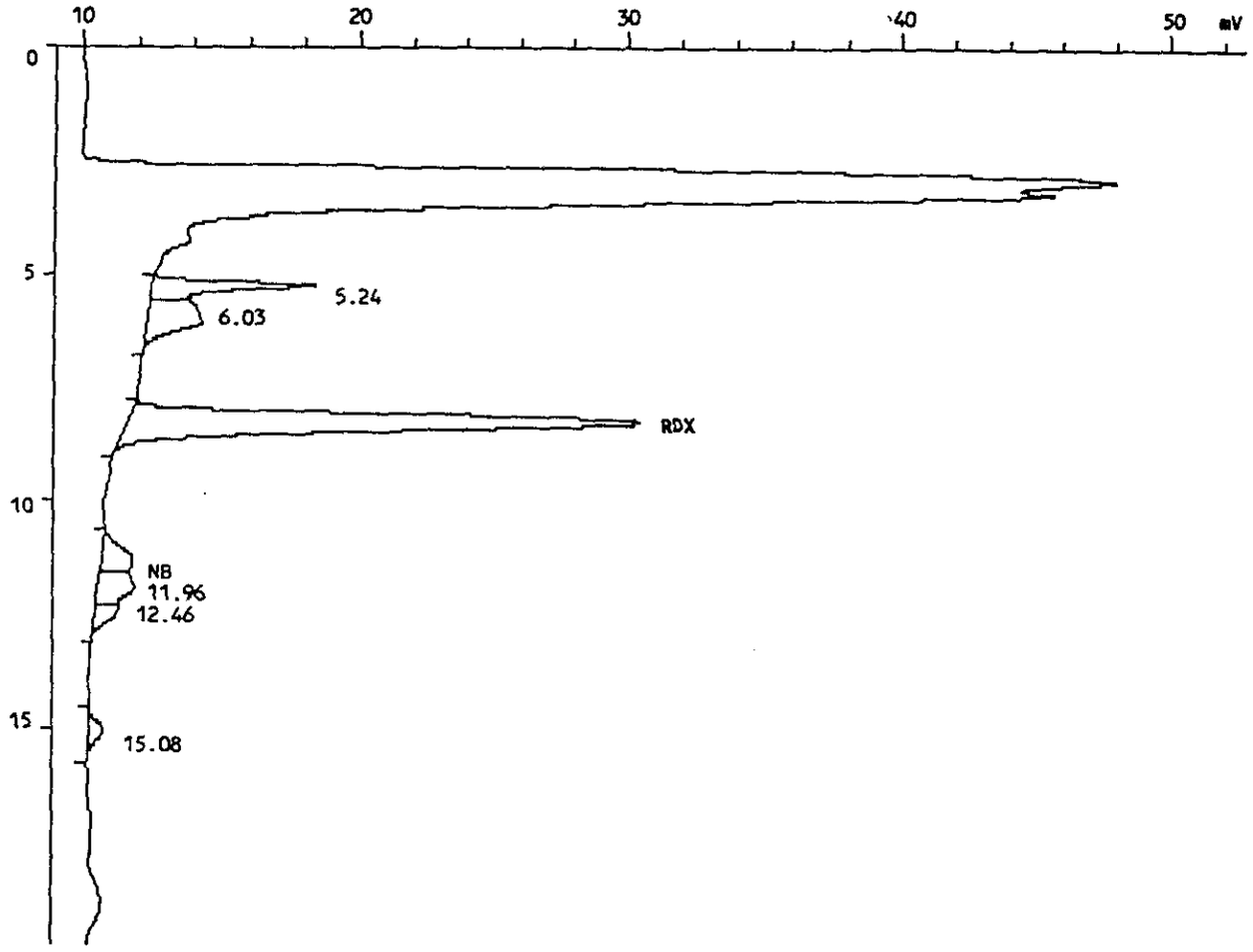
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.237	5948	80077	14862.147	HMX
5	11.963	1374	50209	5041.080	TNT
7	15.077	545	16220	3832.684	3,4DNT
Total		7867	146506	23735.910	
Residual		22948	621248	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,6,1

Sample name.....: BIO-5-005-00-11-2-R1 5X
Sample ID.....: 34353.09DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 10:52:14
Reported on 02-Jul-98 at 11:26:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,6,1

Acquired on 02-Jul-98 at 10:52:14
Modified on 02-Jul-82 at 11:26:18
Reported on 02-Jul-98 at 11:26:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R1 5X
Sample ID.....: 34353.09DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.251	18948	472835	93965.695	RDX
4	11.403	1147	40195	5203.935	NB
Total		20095	513031	99169.633	
Residual		10720	254724	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-11-2-R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.09

Sample Amt: 2g % Moisture 7.30 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

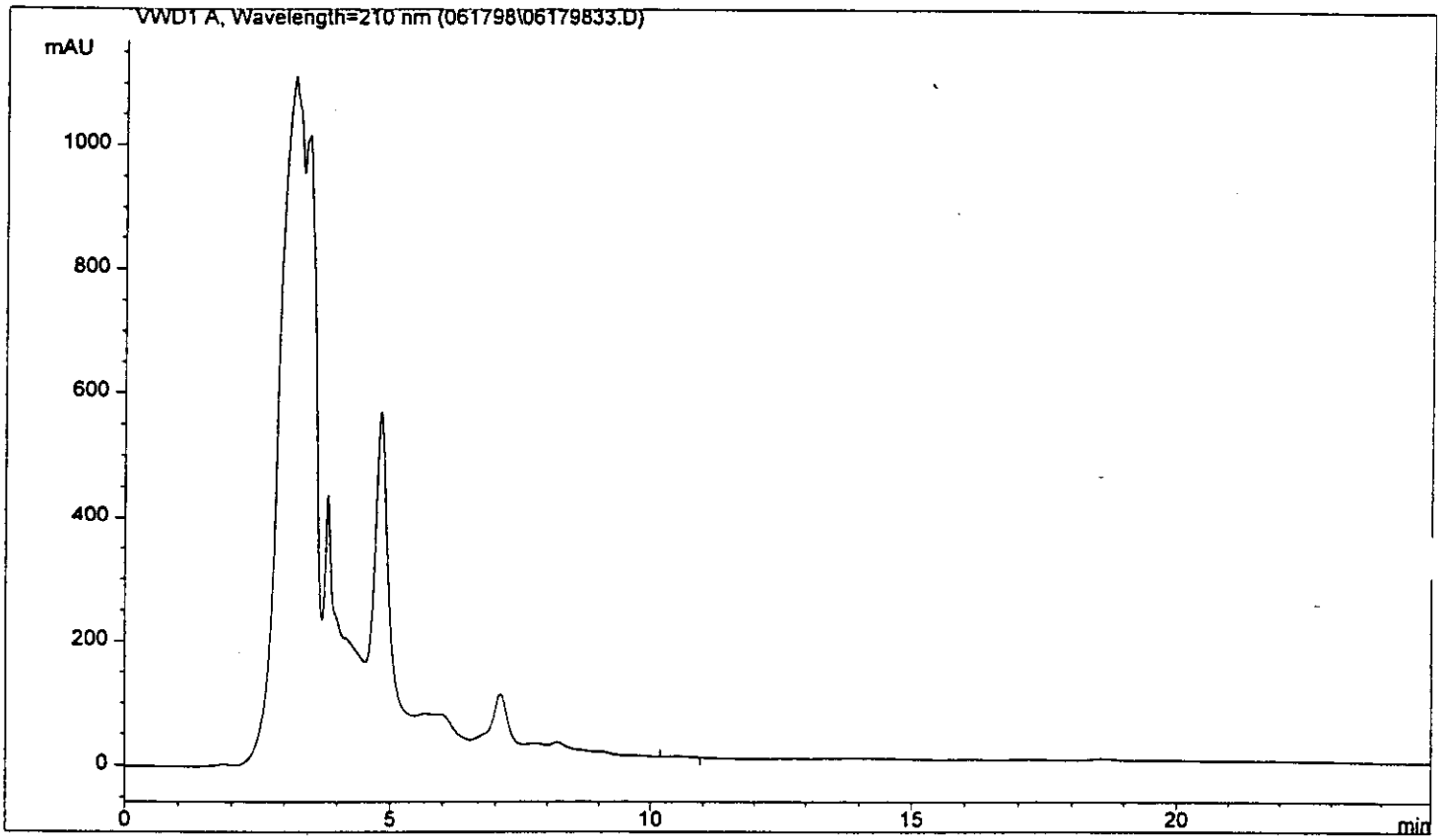
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Thu, 18. Jun. 1998	Seq Line	: 33
Sample Name	: 34353.09	Vial No.	: 33
Acq Operator	: SS	Inj. No.	:
		Inj. Vol.	: 200 µ

Acq. Method : 061798.M
Analysis Method : C:\HPCHEM\1\METHODS\061798.M
Last Changed : Wed, 24. Jun. 1998, 00:34:38 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Wed, 24. Jun. 1998,11:33:57 am
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
10.526	BBA	49.50637	0.00000	0.00000	
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-11-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.10

Sample Amt: 2g % Moisture 41.48 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/17/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	5890	
121-82-4	RDX	53600	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

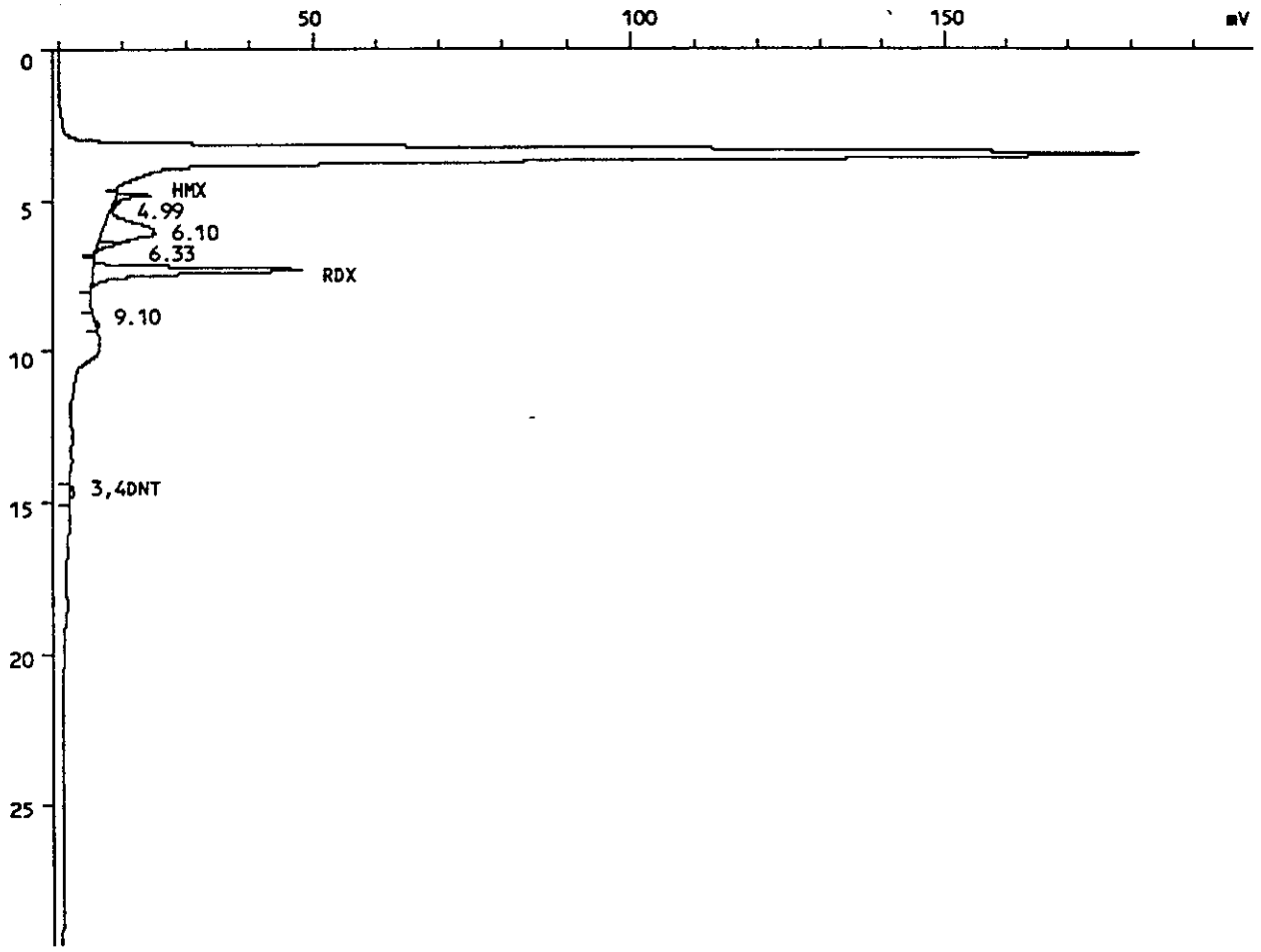
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0613D,31,1

Sample name.....: BIO-5-005-00-11-2-R2
Sample ID.....: 34353.10
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 17-Jun-98 at 09:46:00
Reported on 17-Jun-98 at 17:25:25



INJECTION REPORT

Injection F: <MC3> 5 5EX0613D,31,1

Acquired on 17-Jun-98 at 09:46:00
Modified on 17-Jun-82 at 17:08:42
Reported on 17-Jun-98 at 17:08:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 5EX0613 Last modified on 17-Jun-82 at 17:05:18
Method file.....: EXPLOS Last modified on 17-Jun-82 at 16:53:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R2
Sample ID.....: 34353.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

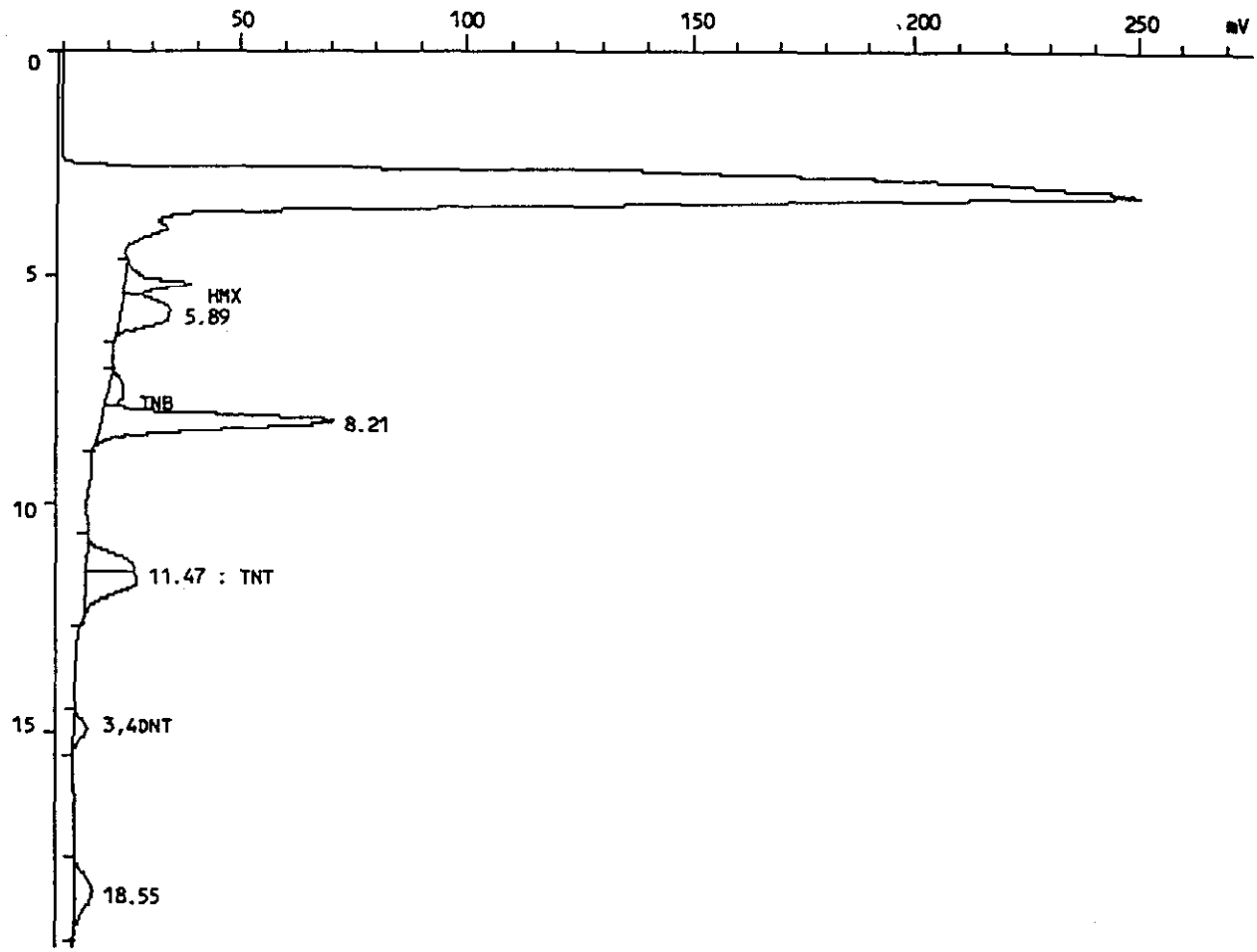
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name	
1	4.859	5482	43843	5892.863	HMX	*
5	7.349	33203	517832	53605.758	RDX	E
7	14.699	1030	19275	1567.099	3,4DNT	78%
Total		39716	580950	61065.719		
Residual		14829	364843	48821.559		

LONG PLOT

Injection F: <MC3> 3 3CN0702C,7,1

Sample name.....: BIO-5-005-00-11-2-R2
Sample ID.....: 34353.10
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 11:29:17
Reported on 02-Jul-98 at 16:14:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,7,1

Acquired on 02-Jul-98 at 11:29:17
Modified on 02-Jul-82 at 16:08:18
Reported on 02-Jul-98 at 16:08:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R2
Sample ID.....: 34353.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

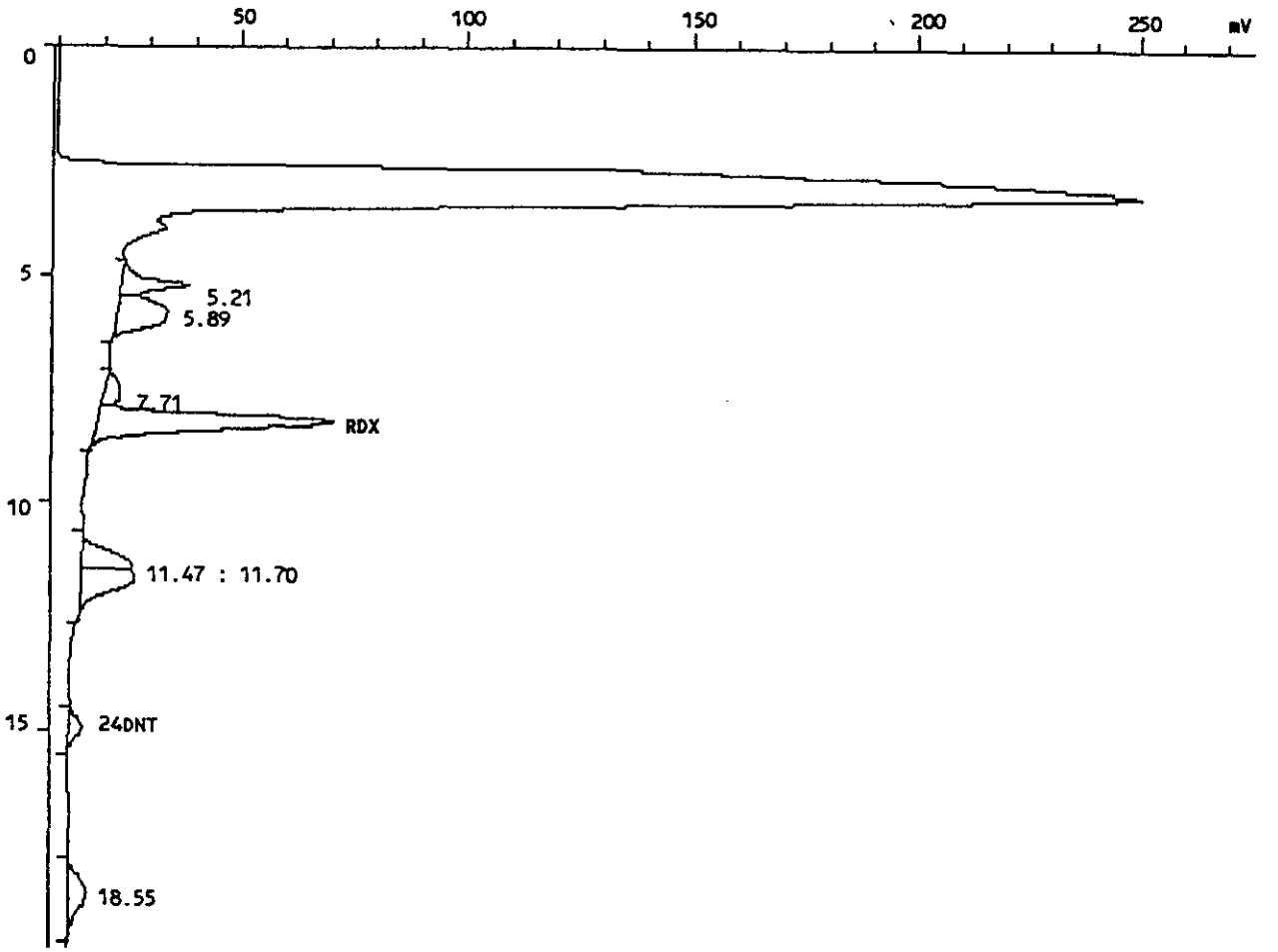
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.205	15059	238470	8851.897	HMX
3	7.712	3646	116791	2026.210	TNB
6	11.696	11576	396354	7958.906	TNT
7	14.949	2719	75135	3550.812	3,4DNT
Total		32999	826750	22387.824	
Residual		77960	2099216	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,7,1

Sample name.....: BIO-5-005-00-11-2-R2
Sample ID.....: 34353.10
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 11:29:17
Reported on 02-Jul-98 at 12:01:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,7,1

Acquired on 02-Jul-98 at 11:29:17
Modified on 02-Jul-82 at 12:01:18
Reported on 02-Jul-98 at 12:01:17

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R2
Sample ID.....: 34353.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	8.213	51714	1180357	46914.016	RDX
7	14.949	2719	75135	1236.182	24DNT
Total		54433	1255492	48150.199	
Residual		56526	1670473	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-11-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.10DL

Sample Amt: 2g % Moisture 41.48 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	4870	DJ
121-82-4	RDX	52900	D
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
06-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

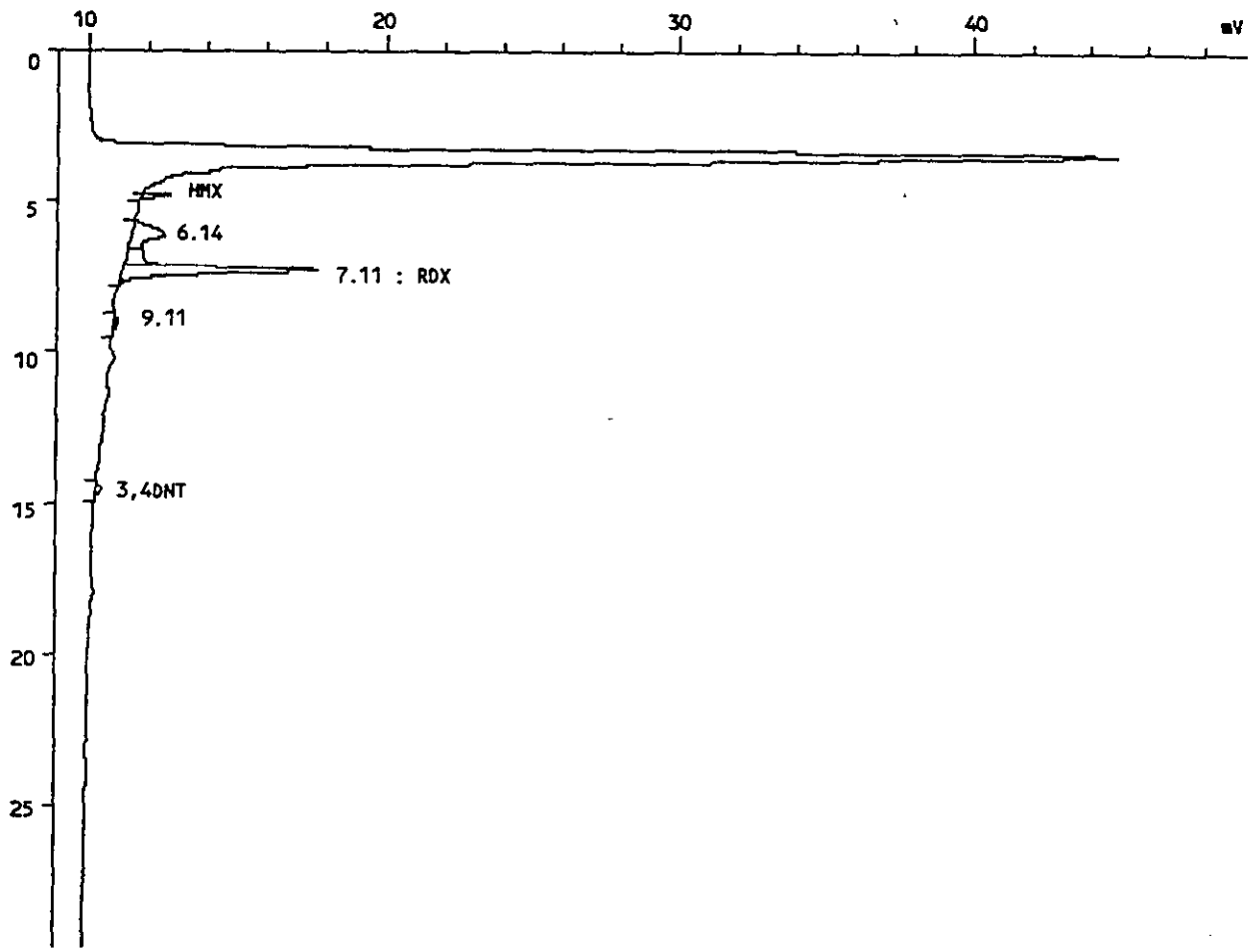
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619B,3,1

Sample name.....: BIO-5-005-00-11-2-R2 5X
Sample ID.....: 34353.10DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 21:21:27
Reported on 27-Jun-98 at 14:25:23



INJECTION REPORT

Injection F: <MC3> 5 5EX0619B,3,1

Acquired on 20-Jun-98 at 21:21:27
Modified on 27-Jun-82 at 14:19:10
Reported on 27-Jun-98 at 14:19:09

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 5
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS1 Last modified on 27-Jun-82 at 14:09:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R2 5X
Sample ID.....: 34353.10DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

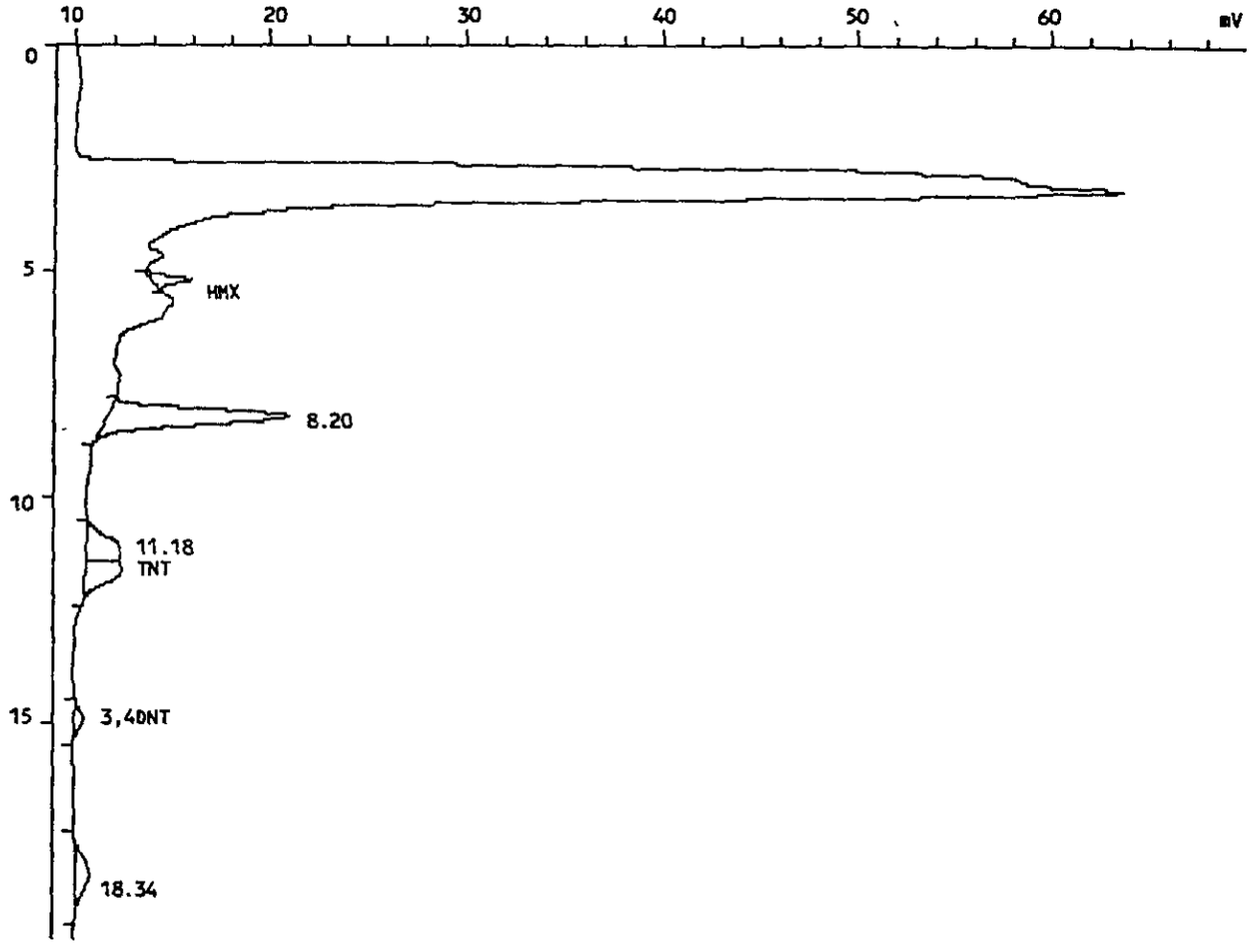
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.859	1006	7521	4871.412	HMX *D
4	7.344	6572	104366	52924.145	RDX *D
6	14.539	204	3544	1457.177	3,4DNT 73% D
Total		7783	115432	59252.730	
Residual		2148	55636	35478.383	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,8,1

Sample name.....: BIO-5-005-00-11-2-R2 5X
Sample ID.....: 34353.10DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 12:06:20
Reported on 02-Jul-98 at 16:14:45



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,8,1

Acquired on 02-Jul-98 at 12:06:20
Modified on 02-Jul-82 at 16:08:02
Reported on 02-Jul-98 at 16:08:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702A Last modified on 02-Jul-82 at 15:51:30
Method file.....: LCCN1 Last modified on 02-Jul-82 at 15:51:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R2 5X
Sample ID.....: 34353.10DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

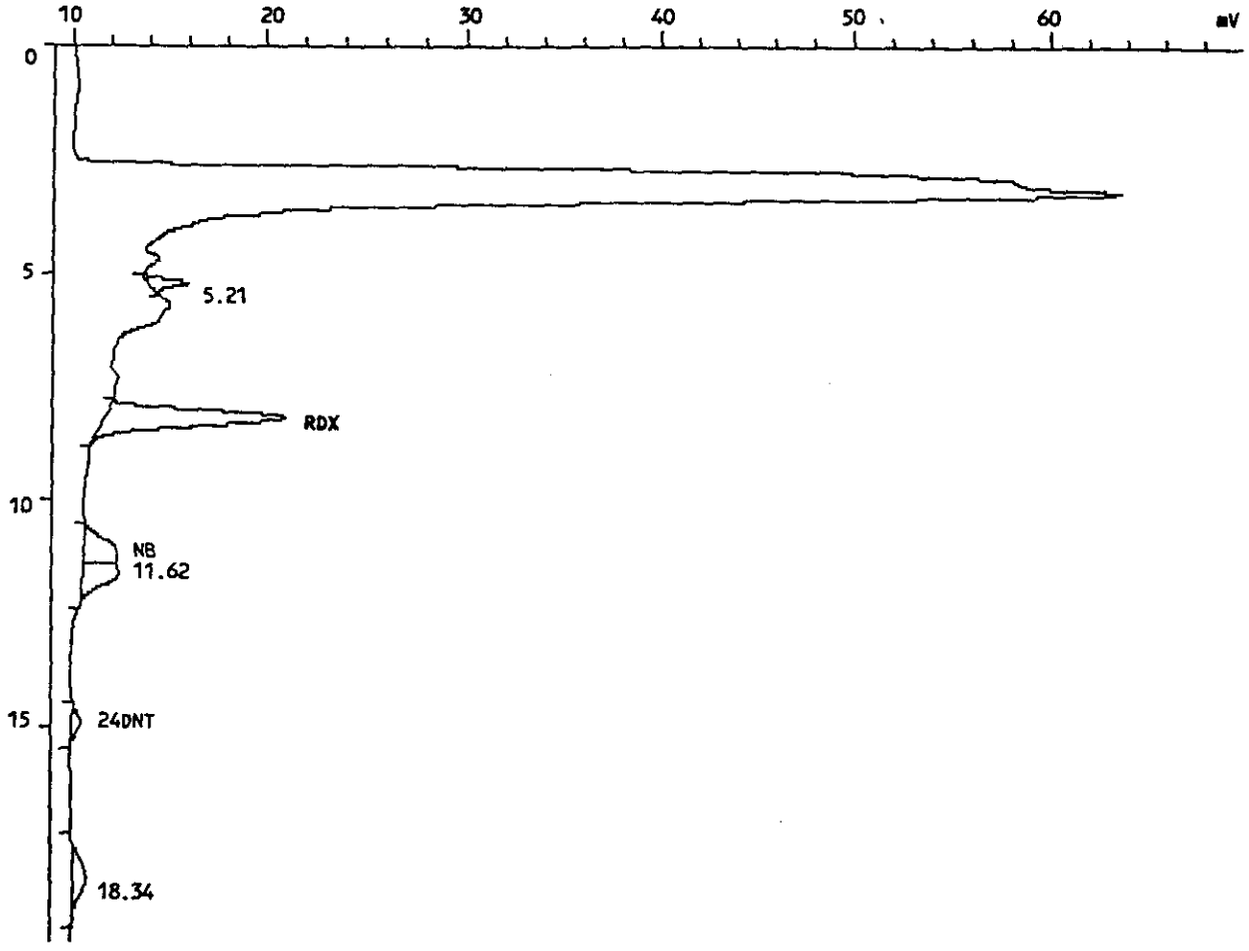
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.205	1895	19834	3681.079	HMX
4	11.621	1874	62482	6273.281	TNT
5	14.917	511	14635	3458.196	3,4DNT
Total		4280	96951	13412.555	
Residual		11888	326436	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0702C,8,1

Sample name.....: BIO-5-005-00-11-2-R2 5X
Sample ID.....: 34353.10DL
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 02-Jul-98 at 12:06:20
Reported on 02-Jul-98 at 12:34:00



INJECTION REPORT

Injection F: <MC3> 3 3CN0702C,8,1

Acquired on 02-Jul-98 at 12:06:20
Modified on 02-Jul-82 at 12:33:24
Reported on 02-Jul-98 at 12:33:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV
Number of samples.: 10
Calibration file..: 3CN0702B Last modified on 02-Jul-82 at 10:10:44
Method file.....: LCCN1 Last modified on 02-Jul-82 at 10:18:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-5-005-00-11-2-R2 5X
Sample ID.....: 34353.10DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.203	9328	222725	44261.699	RDX
3	11.184	1785	59707	7730.126	NB
5	14.917	511	14635	1203.939	24DNT
Total		11624	297067	53195.762	
Residual		4544	126319	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-5-005-00-11-2-R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34353

Matrix: (soil/water) SOIL Lab Sample ID: 34353.10

Sample Amt: 2g % Moisture 41.48 Date Received: 06/12/98

Extraction Volume: 10ml Date Extracted: 06/13/98

Extraction Method: SONC Date Analyzed: 06/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		250	U

FORM I

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

B10-030

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

Project No.: 1324-009-07-35

Project Name: NSWC Crane Bio Facility

Samplers: (Signature)

Sampler: (Print) Mike Maddox

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	6330 Expl.	Remarks
Comp	CS3 SL1	6/3/98	1555	B10-5-005-00-03-1-R1		✓	✓	
	CS3 SL1		1555	B10-5-005-00-03-1-R2				
	CS5 SL2		1543	B10-5-005-00-03-2-R1				
	CS5 SL2		1543	B10-5-005-00-03-2-R2				
	CS7 SL3		1540	B10-5-005-00-07-3-R1				
	CS7 SL3		1540	B10-5-005-00-07-3-R2				
	CS9 SL1		1510	B10-5-005-00-09-1-R1				
	CS9 SL1		1510	B10-5-005-00-09-1-R2				
	CS11 SL2		1518	B10-5-005-00-11-2-R1				
	CS11 SL2		1518	B10-5-005-00-11-2-R2				

Southwest Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
[signature]	11 Jun 98 1500				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: S. Hodesh	Date/Time 9/17/98 9:20	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal #'s (3508, 3509)

9.60

APPENDIX D
CALIBRATION SUMMARIES FOR LABORATORY ANALYSIS OF WINDROW S-005 DAY 0

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Calibration Summary for Analysis of Windrow S-005 Day 0 . . . . . 38 pages

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1
Injection File Name Level 1 : 5EX0613,3
Injection File Name Level 2 : 5EX0613,4
Injection File Name Level 3 : 5EX0613,5
Injection File Name Level 4 : 5EX0613,6
Injection File Name Level 5 : 5EX0613,7

Calibration Date : 06/14/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	3737	369	93654	369	246822	374	371477	375	494098	374
RDX	2120	502	50364	477	133164	482	196642	477	261609	476
TNB	2736	906	75285	996	201590	1023	297285	1004	389756	989
DNB	2377	1467	56951	1403	151276	1433	229269	1447	304951	1438
TETRYL	2603	700	57492	618	156880	648	225531	620	296668	613
NB	2984	904	77206	937	209001	977	316297	982	421121	979
3,4-DNT	2970	585	77425	611	205916	624	311997	629	414844	629
TNT	3102	1149	78506	1161	210126	1194	313373	1187	418710	1190
4ADNT	1706	723	43138	729	116910	759	177923	767	235218	764
2ADNT	2267	961	57723	975	155187	1008	234545	1011	310305	1007
26DNT	2714	699	67501	694	179058	705	269474	709	356842	705
24DNT	2612	1107	70287	1187	186502	1211	282058	1216	370963	1204
2NT	1645	487	46519	550	124553	566	187183	567	250421	569
T	1382	409	40429	478	111691	508	167455	507	223328	508
	1668	518	53815	669	145914	695	217518	693	290324	695

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
olumn ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0613,3
Injection File Name Level 2 : 5EX0613,4
Injection File Name Level 3 : 5EX0613,5
Injection File Name Level 4 : 5EX0613,6
Injection File Name Level 5 : 5EX0613,7

Calibration Date : 06/14/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	372	0.87	0.99999	374	0.000
RDX	483	2.31	0.99997	477	0.000
TNB	984	4.61	0.99982	999	0.000
DNB	1438	1.64	0.99997	1440	0.000
TETRYL	640	5.67	0.99957	620	0.000
NB	956	3.59	0.99996	979	0.000
3,4-DNT	615	3.04	0.99998	628	0.000
NT	1176	1.69	0.99998	1189	0.000
NT	748	2.78	0.99995	763	0.000
DNT	992	2.32	0.99998	1008	0.000
26DNT	703	0.82	0.99999	706	0.000
24DNT	1185	3.80	0.99997	1208	0.000
2NT	548	6.39	0.99998	568	0.000
4NT	482	8.88	0.99995	507	0.000
3NT	654	11.73	0.99998	694	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 7
Continuing Cal Date : 06/16/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0613D,6
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	248013	376	372	0.97	374	0.36
RDX	134016	486	483	0.54	477	1.77
TNB	201165	1021	984	3.80	999	2.25
DNB	153687	1455	1438	1.23	1440	1.09
TETRYL	148838	615	640	3.86	620	0.81
NB	203735	952	956	0.40	979	2.76
3,4-DNT	203539	617	615	0.23	628	1.74
TNT	206056	1171	1176	0.46	1189	1.52
4ADNT	114021	740	748	1.05	763	3.01
2ADNT	153346	996	992	0.34	1008	1.21
26DNT	178567	703	703	0.05	706	0.45
24DNT	184521	1198	1185	1.11	1208	0.85
2NT	125735	572	548	4.33	568	0.66
4NT	112942	513	482	6.53	507	1.26
NT	146260	696	654	6.51	694	0.42

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 8
Continuing Cal Date : 06/16/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0613D,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	248843	377	372	1.31	374	0.69
RDX	133471	484	483	0.13	477	1.36
TNB	201336	1022	984	3.89	999	2.33
DNB	155096	1469	1438	2.16	1440	2.02
TETRYL	151181	625	640	2.35	620	0.75
NB	210598	984	956	2.95	979	0.51
3,4-DNT	212321	643	615	4.56	628	2.50
TNT	212908	1210	1176	2.85	1189	1.76
4ADNT	118621	770	748	2.94	763	0.90
2ADNT	159051	1033	992	4.07	1008	2.46
26DNT	182164	717	703	2.07	706	1.56
24DNT	188008	1221	1185	3.02	1208	1.02
2NT	125412	570	548	4.06	568	0.40
4NT	112015	509	482	5.66	507	0.43
3NT	145386	692	654	5.88	694	0.18

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 9
Continuing Cal Date : 06/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0613D,26
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	246578	374	372	0.39	374	0.22
RDX	134036	486	483	0.56	477	1.79
TNB	197460	1002	984	1.89	999	0.36
DNB	154543	1463	1438	1.79	1440	1.65
TETRYL	144451	597	640	6.70	620	3.74
NB	211004	986	956	3.15	979	0.71
3,4-DNT	210208	637	615	3.52	628	1.47
TNT	211875	1204	1176	2.36	1189	1.26
4ADNT	118778	771	748	3.08	763	1.03
2ADNT	156852	1019	992	2.64	1008	1.05
26DNT	180821	712	703	1.32	706	0.81
24DNT	188659	1225	1185	3.38	1208	1.37
4NT	112462	511	482	6.08	507	0.83
3NT	146482	698	654	6.67	694	0.57

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 10
ntinuing Cal Date : 06/17/1998
ontinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0613D,32
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	247563	375	372	0.79	374	0.18
RDX	134321	487	483	0.77	477	2.00
TNB	194777	989	984	0.51	999	1.00
DNB	154513	1463	1438	1.77	1440	1.63
TETRYL	142809	590	640	7.76	620	4.83
3,4-DNT	208618	632	615	2.73	628	0.71
TNT	211097	1199	1176	1.98	1189	0.89
4ADNT	118693	771	748	3.00	763	0.96
2ADNT	155881	1012	992	2.00	1008	0.42
26DNT	179540	707	703	0.60	706	0.10
24DNT	187539	1218	1185	2.76	1208	0.77
2NT	123412	561	548	2.40	568	1.20
4NT	108834	495	482	2.66	507	2.42
3NT	143700	684	654	4.65	694	1.34

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CA6→CA11
Page 1

CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

'nstrument ID : IN13
›lumn ID : CARB-08
Calibration Date : 06/14/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.86	4.85	4.85	4.85	4.84
RDX	7.34	7.33	7.33	7.33	7.30
TNB	9.83	9.81	9.81	9.81	9.77
DNB	11.98	11.99	12.00	12.00	11.94
TETRYL	12.74	12.76	12.78	12.78	12.70
NB	13.60	13.55	13.58	13.58	13.52
3,4-DNT	14.82	14.73	14.78	14.78	14.69
TNT	15.28	15.26	15.30	15.30	15.22
4ADNT	16.09	16.00	16.05	16.05	15.96
2ADNT	16.93	16.91	16.96	16.97	16.88
26DNT	17.79	17.76	17.81	17.81	17.73
24DNT	18.47	18.42	18.48	18.48	18.40
2NT	21.53	21.41	21.51	21.51	21.44
4NT	23.02	22.90	22.98	22.98	22.91
3NT	24.85	24.67	24.74	24.73	24.67

COMPONENT NAME	RT Cont CA6	RT Cont CA7	RT Cont CA8	RT Cont CA9	RT Cont CA10
HMX	4.86	4.87	4.82	4.84	4.85
RDX	7.34	7.35	7.27	7.30	7.32
TNB	9.82	9.84	9.72	9.73	9.78
DNB	12.00	12.03	11.86	11.88	11.95
TETRYL	12.73	12.81	12.56	12.60	12.70
NB	13.58	13.63	13.42	13.43	13.51
3,4-DNT	14.75	14.83	14.55	14.57	14.68
TNT	15.25	15.34	15.07	15.10	15.21
4ADNT	15.99	16.10	15.79	15.84	15.96
2ADNT	16.89	17.01	16.69	16.75	16.87
26DNT	17.75	17.87	17.54	17.56	17.69
24DNT	18.41	18.54	18.20	18.22	18.36
2NT	21.46	21.62	21.21	21.38	21.37
4NT	22.93	23.10	22.66	22.65	22.86
3NT	24.67	24.87	24.39	24.38	24.60

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.85	0.014	0.042	4.80 - 4.89
RDX	7.32	0.023	0.068	7.25 - 7.38
'TNB	9.78	0.039	0.118	9.66 - 9.90
'IB	11.95	0.050	0.150	11.80 - 12.10
ETRYL	12.69	0.075	0.226	12.47 - 12.92
NB	13.52	0.066	0.198	13.33 - 13.72
3,4-DNT	14.69	0.090	0.271	14.42 - 14.96
TNT	15.21	0.082	0.245	14.97 - 15.45
4ADNT	15.95	0.094	0.281	15.67 - 16.23

CA6→CA1
page 2

2ADNT	16.86	0.091	0.274	16.58 - 17.13
26DNT	17.70	0.101	0.303	17.40 - 18.00
24DNT	18.37	0.102	0.307	18.06 - 18.67
2NT	21.40	0.120	0.359	21.04 - 21.76
4NT	22.86	0.135	0.406	22.45 - 23.26
3NT	24.61	0.154	0.461	24.15 - 25.07

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0619,4
Injection File Name Level 2 : 5EX0619,5
Injection File Name Level 3 : 5EX0619,6
Injection File Name Level 4 : 5EX0619,7
Injection File Name Level 5 : 5EX0619,8

Calibration Date : 06/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	4168	411	94214	371	250853	380	378160	382	506979	384
RDX	2116	501	51891	491	135192	490	202428	491	269767	490
TNB	2813	931	75591	1000	198039	1005	299112	1011	397829	1010
DNB	2186	1349	57286	1411	152221	1441	229096	1446	308155	1454
TETRYL	2172	584	54937	591	140993	583	212668	584	286804	593
NB	2881	873	77483	940	206092	963	309004	960	425941	991
3,4-DNT	2984	587	76326	602	200725	608	305123	615	415598	630
TNT	2912	1079	77516	1147	206012	1171	311038	1178	423681	1204
4ADNT	1646	697	43594	736	116934	759	177926	767	246719	801
2ADNT	2168	919	57418	970	153032	994	233130	1005	318226	1033
26DNT	2501	645	66955	689	177772	700	268806	707	362922	717
24DNT	2606	1104	69322	1171	185845	1207	284299	1225	384848	1250
2NT	1767	523	46517	550	124070	564	186000	564	248790	565
[illegible]	1648	488	40886	483	109588	498	164280	498	221831	
	2067	642	53857	670	142482	678	214130	682	288443	

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : CARB-08

Inj 1
Injection File Name Level 1 : 5EX0619,4
Injection File Name Level 2 : 5EX0619,5
Injection File Name Level 3 : 5EX0619,6
Injection File Name Level 4 : 5EX0619,7
Injection File Name Level 5 : 5EX0619,8

Calibration Date : 06/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	386	3.91	0.99997	383	0.000
RDX	493	0.98	1.00000	491	0.000
TNB	991	3.41	1.00000	1009	0.000
DNB	1420	3.02	0.99998	1449	0.000
TETRYL	587	0.77	0.99993	589	0.000
NB	945	4.68	0.99973	977	0.000
3,4-DNT	608	2.57	0.99979	622	0.000
TNT	1156	4.12	0.99984	1190	0.000
T	752	5.11	0.99938	784	0.000
T	984	4.38	0.99971	1018	0.000
26DNT	692	4.09	0.99991	711	0.000
24DNT	1191	4.75	0.99981	1235	0.000
2NT	553	3.27	0.99999	564	0.000
4NT	494	1.73	0.99994	501	0.000
3NT	672	2.76	0.99995	686	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/19/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/20/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0619A,14
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	250997	380	386	1.38	383	0.61
RDX	134904	489	493	0.83	491	0.38
TNB	198930	1010	991	1.86	1009	0.06
DNB	151835	1438	1420	1.23	1449	0.77
TETRYL	142437	589	587	0.30	589	0.02
NB	205695	961	945	1.68	977	1.59
3,4-DNT	200784	608	608	0.01	622	2.17
TNT	207230	1177	1156	1.90	1190	1.09
4ADNT	116411	756	752	0.49	784	3.60
2ADNT	153983	1000	984	1.61	1018	1.80
26DNT	177559	699	692	1.08	711	1.73
24DNT	186204	1209	1191	1.49	1235	2.10
2NT	121743	553	553	0.04	564	1.95
4NT	107659	489	494	0.98	501	2.33
[illegible]NT	143089	681	672	1.33	686	0.62

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/19/1998
Continuing Calibration #: 2
inuing Cal Date : 06/20/1998
.inuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0619B,4
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	249901	379	386	1.81	383	1.05
RDX	131782	477	493	3.13	491	2.69
TNB	197009	1000	991	0.88	1009	0.90
DNB	154331	1461	1420	2.90	1449	0.87
TETRYL	140895	582	587	0.78	589	1.10
NB	211750	989	945	4.67	977	1.31
3,4-DNT	207931	630	608	3.55	622	1.31
TNT	212765	1209	1156	4.62	1190	1.55
4ADNT	118820	772	752	2.57	784	1.61
2ADNT	157575	1023	984	3.98	1018	0.49
26DNT	179867	708	692	2.39	711	0.46
24DNT	189365	1230	1191	3.21	1235	0.44
2NT	124717	567	553	2.49	564	0.45
4NT	109837	499	494	1.03	501	0.35
[illegible]	144157	686	672	2.08	686	0.12

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

'ection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
umn ID : CARB-08
Calibration Date : 06/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.91	4.90	4.90	4.90	4.90
RDX	7.46	7.44	7.45	7.46	7.46
TNB	9.98	9.97	9.97	9.99	9.98
DNB	12.21	12.20	12.20	12.24	12.24
TETRYL	13.04	13.03	13.04	13.10	13.09
NB	13.85	13.82	13.82	13.87	13.87
3,4-DNT	15.13	15.09	15.09	15.17	15.17
TNT	15.59	15.59	15.58	15.65	15.64
4ADNT	16.42	16.37	16.38	16.46	16.46
2ADNT	17.25	17.28	17.30	17.39	17.38
26DNT	18.19	18.17	18.18	18.27	18.26
24DNT	18.84	18.83	18.84	18.94	18.92
2NT	21.96	21.97	21.99	22.12	22.09
4NT	23.49	23.48	23.50	23.64	23.61
3NT	25.35	25.27	25.31	25.46	25.44

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.91	4.86
RDX	7.45	7.36
TNB	9.97	9.83
DNB	12.20	12.04
TETRYL	13.01	12.78
NB	13.84	13.64
3,4-DNT	15.10	14.84
TNT	15.57	15.33
4ADNT	16.36	16.10
2ADNT	17.26	17.00
26DNT	18.17	17.87
24DNT	18.82	18.53
2NT	21.98	21.62
4NT	23.49	23.10
3NT	25.29	24.86

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.90	0.016	0.048	4.85 - 4.95
RDX	7.44	0.035	0.104	7.33 - 7.54
	9.96	0.054	0.163	9.79 - 10.12
	12.19	0.069	0.206	11.98 - 12.39
TETRYL	13.01	0.108	0.324	12.69 - 13.33
NB	13.82	0.079	0.238	13.58 - 14.05
3,4-DNT	15.08	0.114	0.341	14.74 - 15.42
TNT	15.57	0.107	0.320	15.25 - 15.89

4ADNT	16.36	0.125	0.375	15.99 - 16.74
2ADNT	17.27	0.129	0.387	16.88 - 17.65
26DNT	18.16	0.133	0.398	17.76 - 18.55
24DNT	18.82	0.134	0.403	18.42 - 19.22
2NT	21.96	0.164	0.492	21.47 - 22.45
4NT	23.48	0.175	0.525	22.95 - 24.00
[illegible]	25.28	0.197	0.592	24.69 - 25.87

pages

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
~ strument ID: LC4
umn ID :

Inj 1
Injection File Name Level 1 : 061798,3
Injection File Name Level 2 : 061798,5
Injection File Name Level 3 : 061798,6
Injection File Name Level 4 : 061798,7
Injection File Name Level 5 : 061798,8

Calibration Date : 06/17/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	7.71995	2.59E0	54.6393	2.93E0	109.02	2.94E0	444.013	2.88E0	888.519	2.88E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	061798,3
Injection File Name Level 2 :	061798,5
Injection File Name Level 3 :	061798,6
Injection File Name Level 4 :	061798,7
Injection File Name Level 5 :	061798,8

Calibration Date : 06/17/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	2.84E0	5.05	1.00000	2.88E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/17/98
Continuing Calibration #: 1
Continuing Cal Date : 06/18/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061798,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	103.298	3.10E0	2.84E0	8.94	2.88E0	7.48

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/17/98
Continuing Calibration #: 2
Continuing Cal Date : 06/18/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061798,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.165	2.93E0	2.84E0	3.08	2.88E0	1.70

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/17/98
Continuing Calibration #: 3
inuing Cal Date : 06/18/98
inuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061798,29
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.297	2.93E0	2.84E0	2.96	2.88E0	1.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/17/98
Continuing Calibration #: 4
Continuing Cal Date : 06/18/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061798,35
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	107.282	2.98E0	2.84E0	4.89	2.88E0	3.49

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

'ection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
umn ID :
Calibration Date : 06/17/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	10.21	10.25	10.24	10.22	10.25

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
PETN	10.29	10.28	10.31	10.24

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	10.25	0.033	0.099	10.15 - 10.35

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : MET-01

Inj 1
Injection File Name Level 1 : 3CN0702,2
Injection File Name Level 2 : 3CN0702,3
Injection File Name Level 3 : 3CN0702,4
Injection File Name Level 4 : 3CN0702,5
Injection File Name Level 5 : 3CN0702,6

Calibration Date : 07/01/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	23231	1659	176331	2519	192008	1097	444835	1271	949016	1356
TNB	25492	2771	129988	2826	333406	2899	681096	2961	1358115	2952
TNT	21551	2343	113097	2459	293531	2552	587936	2556	1168673	2541
TETRYL	31297	1739	163929	1821	407274	1810	843650	1875	1678425	1865
3,4DNT	2020	765	14523	1100	20852	632	73136	1108	139971	1060
26DNT	19347	1935	97546	1951	262685	2101	509947	2040	1012963	2026

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
'lumn ID : MET-01

Inj 1
Injection File Name Level 1 : 3CN0702,3
Injection File Name Level 2 : 3CN0702,4
Injection File Name Level 3 : 3CN0702,5
Injection File Name Level 4 : 3CN0702,6
Injection File Name Level 5 : 3CN0702,7

Calibration Date : 07/01/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
RDX	12405	1241	60719	1214	160249	1282	315970	1264	644283	1289
DNB	27966	3496	134969	3374	347256	3473	684236	3421	1404295	3511
NB	19240	1924	94030	1881	243975	1952	483789	1935	981375	1963
24DNT	30982	3098	148082	2962	379501	3036	753245	3013	1543935	3088
4ADNT	22982	1249	107043	1164	314838	1369	508587	1106	1095779	1191
2ADNT	52652	2633	271761	2718	661626	2647	1437707	2875	2924162	2924

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
`umn ID : MET-01

Inj 1
Injection File Name Level 1 : 3CN0702,2
Injection File Name Level 2 : 3CN0702,3
Injection File Name Level 3 : 3CN0702,4
Injection File Name Level 4 : 3CN0702,5
Injection File Name Level 5 : 3CN0702,6

Calibration Date : 07/01/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1580	35.61	0.99191	1347	0.000
TNB	2882	2.85	0.99998	2951	0.000
TNT	2490	3.68	0.99999	2543	0.000
TETRYL	1822	2.97	0.99996	1864	0.000
3,4DNT	933	23.58	0.99330	1058	0.000
26DNT	2011	3.40	0.99992	2032	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
'mn ID : MET-01

Inj 1
Injection File Name Level 1 : 3CN0702,3
Injection File Name Level 2 : 3CN0702,4
Injection File Name Level 3 : 3CN0702,5
Injection File Name Level 4 : 3CN0702,6
Injection File Name Level 5 : 3CN0702,7

Calibration Date : 07/01/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
RDX	1258	2.44	0.99995	1283	0.000
DNB	3455	1.63	0.99991	3491	0.000
NB	1931	1.65	0.99997	1956	0.000
24DNT	3039	1.84	0.99992	3071	0.000
4ADNT	1216	8.23	0.99796	1186	0.000
2ADNT	2759	4.83	0.99975	2902	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/01/98
C tinuing Calibration #: 1
tinuing Cal Date : 07/02/98
..tinuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0702B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	257715	1473	1580	6.82	1347	9.32
TNB	336908	2930	2882	1.66	2951	0.71
TNT	291442	2534	2490	1.77	2543	0.36
TETRYL	401954	1786	1822	1.95	1864	4.16
3,4DNT	31260	947	933	1.51	1058	10.46
26DNT	251947	2016	2011	0.25	2032	0.79

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/01/98
Continuing Calibration #: 1
tinuing Cal Date : 07/02/98
tinuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0702B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	158819	1271	1258	1.01	1283	0.98
DNB	348046	3480	3455	0.74	3491	0.31
NB	239160	1913	1931	0.91	1956	2.21
24DNT	380830	3047	3039	0.24	3071	0.78
4ADNT	282221	1227	1216	0.94	1186	3.50
2ADNT	712605	2850	2759	3.30	2902	1.76

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/01/98
Continuing Calibration #: 2
:inuing Cal Date : 07/02/98
:inuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0702B,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	217556	1243	1580	21.34	1347	7.72
TNB	338215	2941	2882	2.05	2951	0.33
TNT	293799	2555	2490	2.60	2543	0.44
TETRYL	400301	1779	1822	2.35	1864	4.55
3,4DNT	29238	886	933	5.05	1058	16.25
26DNT	258012	2064	2011	2.66	2032	1.60

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/01/98
Continuing Calibration #: 2
inuing Cal Date : 07/02/98
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0702B,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	162718	1302	1258	3.49	1283	1.45
DNB	357074	3571	3455	3.35	3491	2.27
NB	243579	1949	1931	0.92	1956	0.40
24DNT	393003	3144	3039	3.44	3071	2.39
4ADNT	318034	1383	1216	13.75	1186	16.64
2ADNT	702288	2809	2759	1.81	2902	3.18

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/01/1998
ıtinuing Calibration #: 3
tinuing Cal Date : 07/02/1998
..ıtinuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0702D,2
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	194180	1110	1580	29.79	1347	17.63
TNB	335483	2917	2882	1.23	2951	1.13
TNT	286428	2491	2490	0.02	2543	2.08
TETRYL	410907	1826	1822	0.23	1864	2.02
3,4DNT	29261	887	933	4.98	1058	16.19
26DNT	254036	2032	2011	1.08	2032	0.03

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/01/98
Continuing Calibration #: 3
tinuing Cal Date : 07/02/98
cinuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0702C,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	162071	1297	1258	3.08	1283	1.05
DNB	358688	3587	3455	3.82	3491	2.74
NB	246707	1974	1931	2.22	1956	0.88
24DNT	393114	3145	3039	3.47	3071	2.42
4ADNT	319508	1389	1216	14.28	1186	17.18
2ADNT	699903	2800	2759	1.46	2902	3.51

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	14.000	70.000	175.000	350.000	700.000
TNB	9.200	46.000	115.000	230.000	460.000
TNT	9.200	46.000	115.000	230.000	460.000
TETRYL	18.000	90.000	225.000	450.000	900.000
3,4DNT	2.640	13.200	33.000	66.000	132.000
26DNT	10.000	50.000	125.000	250.000	500.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
RDX	10.000	50.000	125.000	250.000	500.000
DNB	8.000	40.000	100.000	200.000	400.000
NB	10.000	50.000	125.000	250.000	500.000
24DNT	10.000	50.000	125.000	250.000	500.000
4ADNT	18.400	92.000	230.000	460.000	920.000
2ADNT	20.000	100.000	250.000	500.000	1000.000

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıstrument ID : IN10
olumn ID : MET-01
Calibration Date : 07/01/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.19	5.20	5.16	5.16	5.12
TNB	7.70	7.71	7.68	7.67	7.62
TNT	11.87	11.91	11.85	11.82	11.73
TETRYL	13.22	13.29	13.20	13.15	13.04
3,4DNT	14.81	14.93	14.71	14.74	14.60
26DNT	15.23	15.28	15.18	15.11	14.98

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
HMX	5.21	5.20	5.16
TNB	7.73	7.74	7.68
TNT	11.96	11.97	11.83
TETRYL	13.36	13.39	13.16
3,4DNT	14.99	15.01	14.73
DNT	15.37	15.39	15.12

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.18	0.031	0.094	5.08 - 5.27
TNB	7.69	0.040	0.119	7.57 - 7.81
TNT	11.87	0.079	0.238	11.63 - 12.11
TETRYL	13.22	0.117	0.350	12.87 - 13.57
3,4DNT	14.81	0.149	0.448	14.37 - 15.26
26DNT	15.21	0.140	0.420	14.79 - 15.63

B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

:trument ID : IN10
olumn ID : MET-01
Calibration Date : 07/01/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
RDX	8.22	8.19	8.17	8.13	8.16
DNB	10.01	10.00	9.97	9.92	9.97
NB	11.28	11.28	11.23	11.18	11.23
24DNT	14.85	14.88	14.81	14.74	14.81
4ADNT	16.61	16.61	16.70	16.54	16.62
2ADNT	17.17	17.16	17.07	16.97	17.02

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
RDX	8.23	8.26	8.24
DNB	10.03	10.08	10.05
NB	11.32	11.37	11.33
24DNT	14.92	15.00	14.94
4ADNT	16.74	16.78	16.70
2ADNT	17.29	17.37	17.28

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
RDX	8.20	0.044	0.133	8.07 - 8.33
DNB	10.00	0.051	0.152	9.85 - 10.15
NB	11.28	0.061	0.183	11.09 - 11.46
24DNT	14.87	0.086	0.257	14.61 - 15.13
4ADNT	16.66	0.081	0.242	16.42 - 16.90
2ADNT	17.16	0.141	0.422	16.74 - 17.59

APPENDIX E
RAW DATA OF WINDROW S-005 DAY FINAL
FOR WILEY MILL/RIFFLE SPLITTER

TABLE OF CONTENTS

DESCRIPTION	PAGES
Raw Data of Windrow S-005 Day Final	55 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515031R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.01

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
21-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

5th 07/02/98

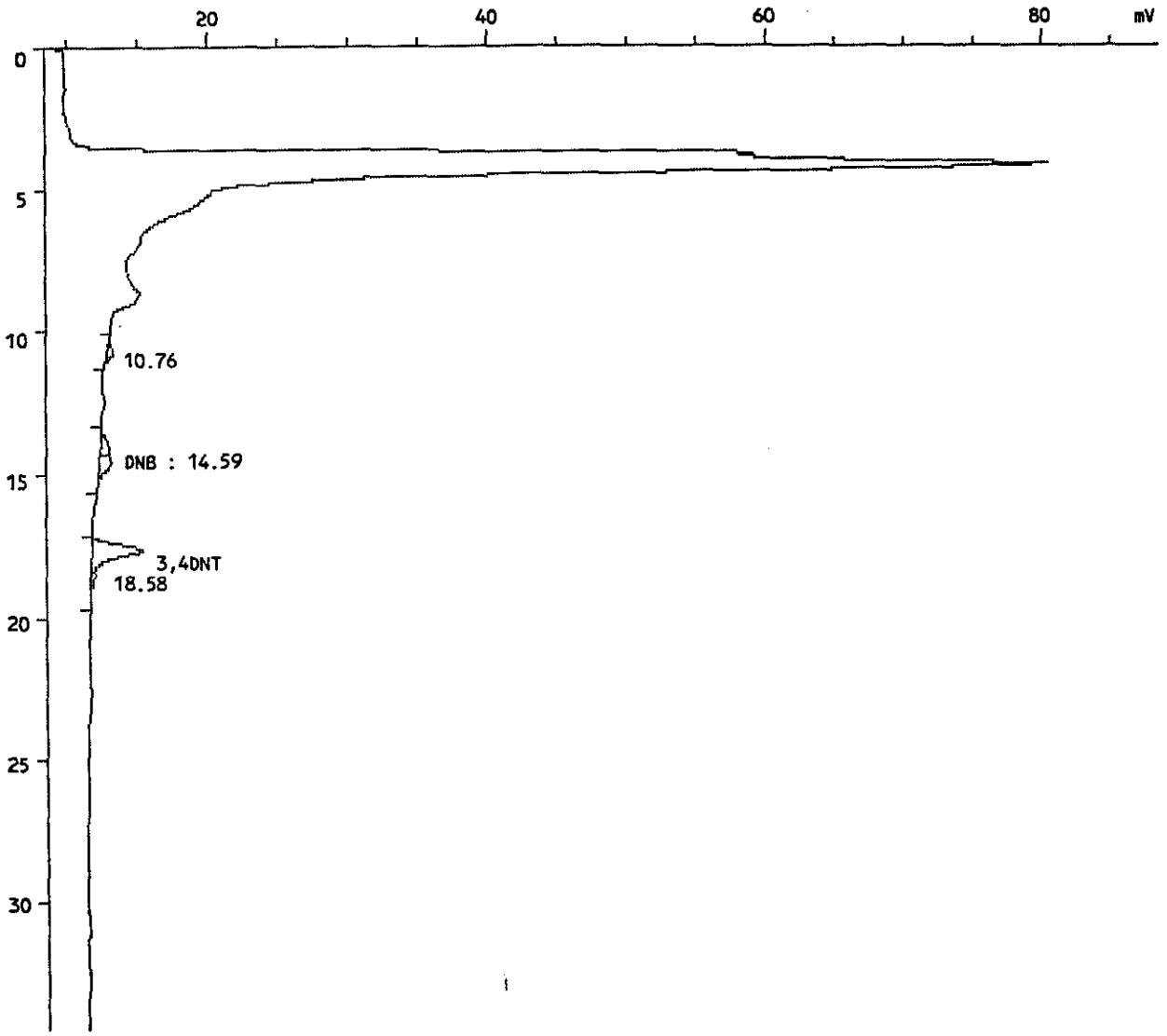
13A

LONG PLOT

Injection F: <MC3> 2 2EX0711A,5,1

Sample name.....: BIOS00515031R1
Sample ID.....: 34654.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 03:17:20
Reported on 13-Jul-98 at 10:11:22



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,5,1

Acquired on 12-Jul-98 at 03:17:20
Modified on 13-Jul-82 at 10:03:52
Reported on 13-Jul-98 at 10:03:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:01:12
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515031R1
Sample ID.....: 34654.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	14.277	741	23370	158.203	DNB
4	17.621	3684	115057	2114.244	3,4DNT 106
Total		4425	138427	2272.447	
Residual		1706	62744	531.984	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515031R1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.01

Sample Amt: 2g % Moisture 25.03 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

==========

Injection Date : 7/12/98 9:23:00 AM Seq. Line : 32
Sample Name : 34654.01 Vial : 32
Acq. Operator : SS Inj : 1
Inj Volume : 200 µl

Sequence File : F:\HPCHEM\LC4\SEQUENCE\071198.S
Acq. Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/11/98 5:56:44 PM by SS
Analysis Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/13/98 12:57:21 PM by SS
PETN SOIL

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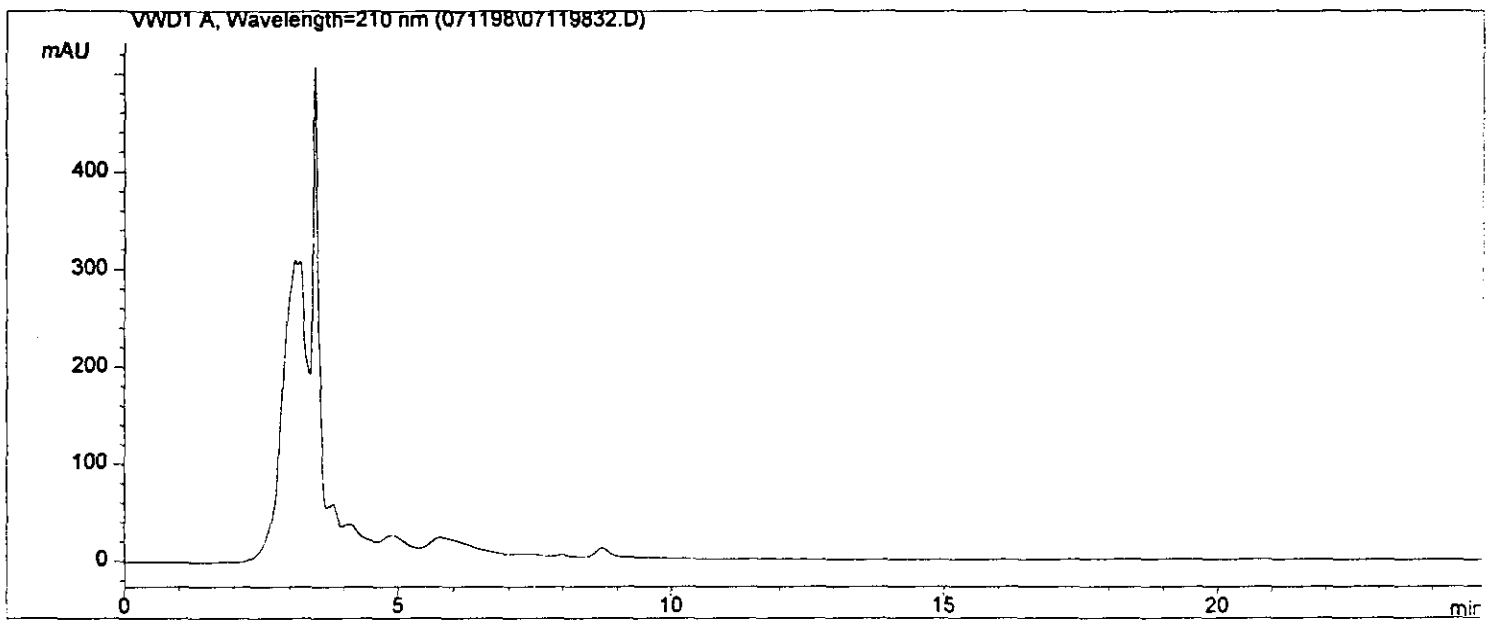

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 7/13/98 12:53:15 PM
Multiplier : 5.0000
Dilution : 2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515031R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.02

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

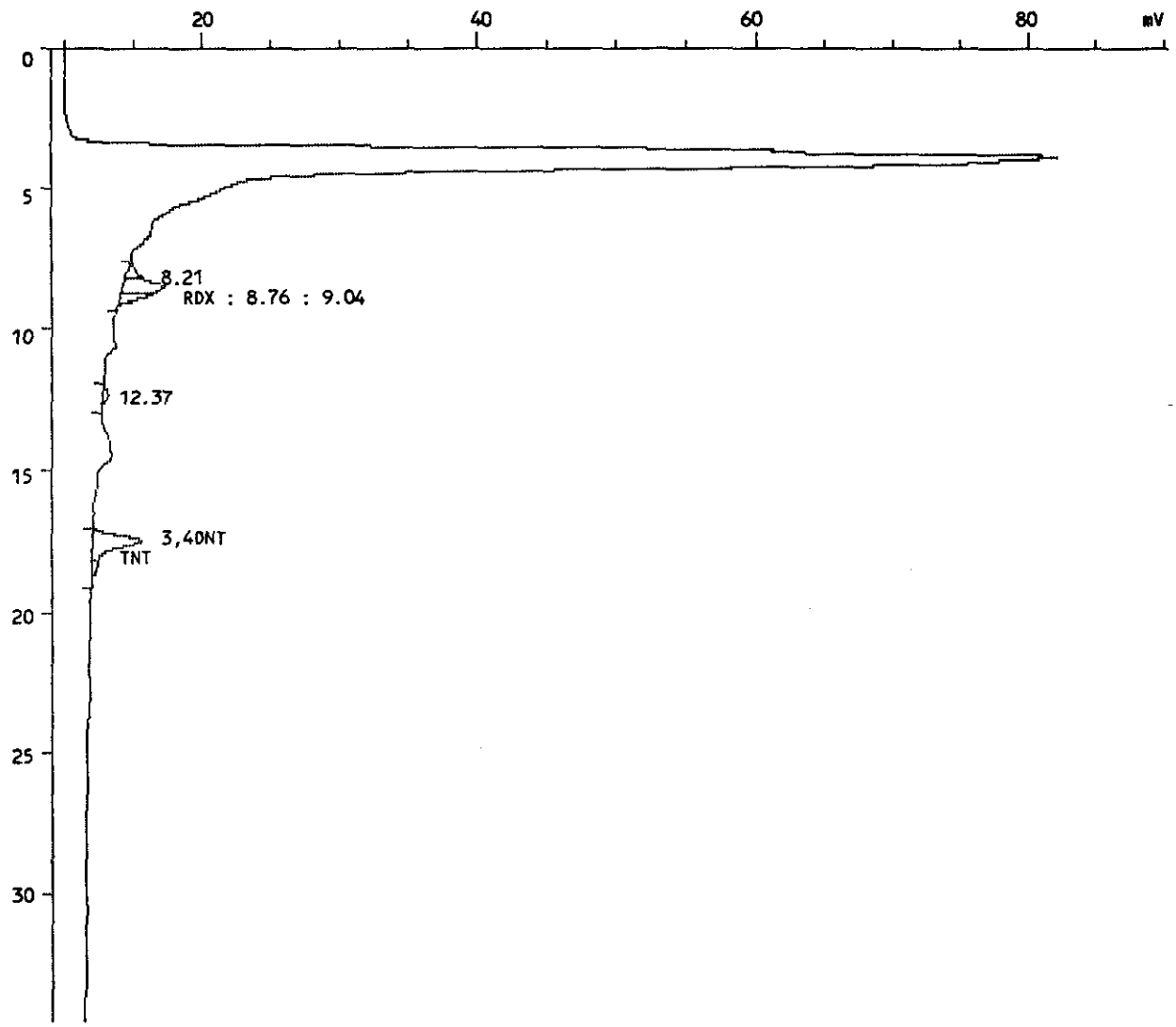
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,6,1

Sample name.....: BIOS00515031R2
Sample ID.....: 34654.02
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 04:01:58
Reported on 13-Jul-98 at 10:57:38



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,6,1

Acquired on 12-Jul-98 at 04:01:58
Modified on 28-Jul-82 at 11:48:30
Reported on 28-Jul-98 at 11:48:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 16:43:14
Method file.....: EXPLOS Last modified on 27-Jul-82 at 16:35:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515031R2
Sample ID.....: 34654.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

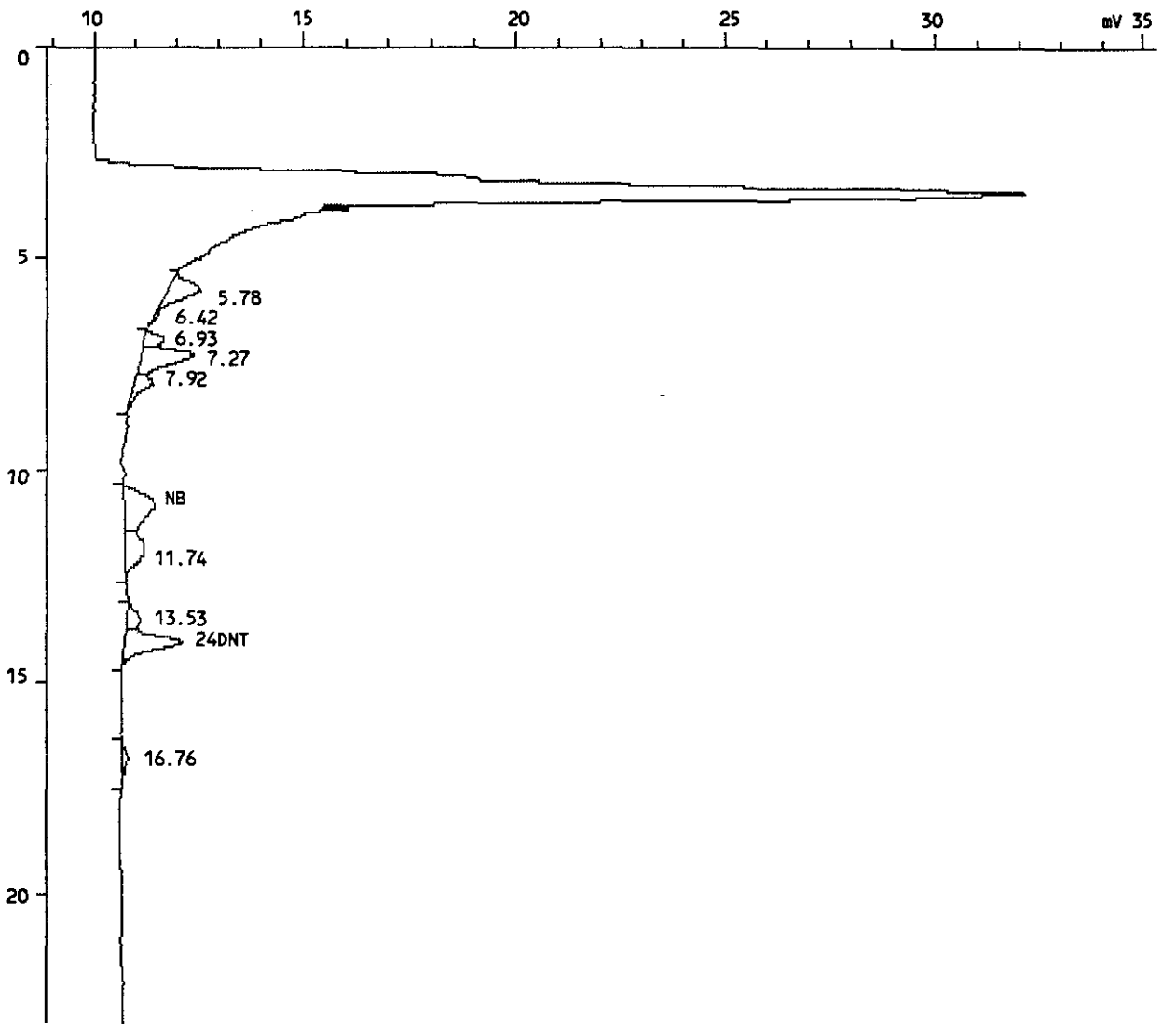
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.549	3105	77646	1993.990	RDX
6	17.509	3580	113612	2087.696	3,4DNT 10H
7	18.192	521	15335	151.413	TNT
Total		7206	206593	4233.099	
Residual		4893	68032	1747.087	

LONG PLOT

Injection F: <MC3> 3 3CN0727A,3,1

Sample name.....: BIOS00515031R2
Sample ID.....: 34654.02
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:100, UV

Acquired on 27-Jul-98 at 23:10:56
Reported on 28-Jul-98 at 11:41:44



INJECTION REPORT

Injection F: <MC3> 3 3CN0727A,3,1

Acquired on 27-Jul-98 at 23:10:56
Modified on 28-Jul-82 at 11:37:16
Reported on 28-Jul-98 at 11:38:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01,INJ:100, UV
Number of samples.: 7
Calibration file..: 3CN0727B Last modified on 28-Jul-82 at 11:36:56
Method file.....: LCCN Last modified on 28-Jul-82 at 11:37:50
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515031R2
Sample ID.....: 34654.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
6	10.779	747	31680	1593.570	NB
9	14.032	1420	33781	1002.401	24DNT
Total		2167	65461	2595.972	
Residual		4161	109017	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515031R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.02

Sample Amt: 2g % Moisture 4.73 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

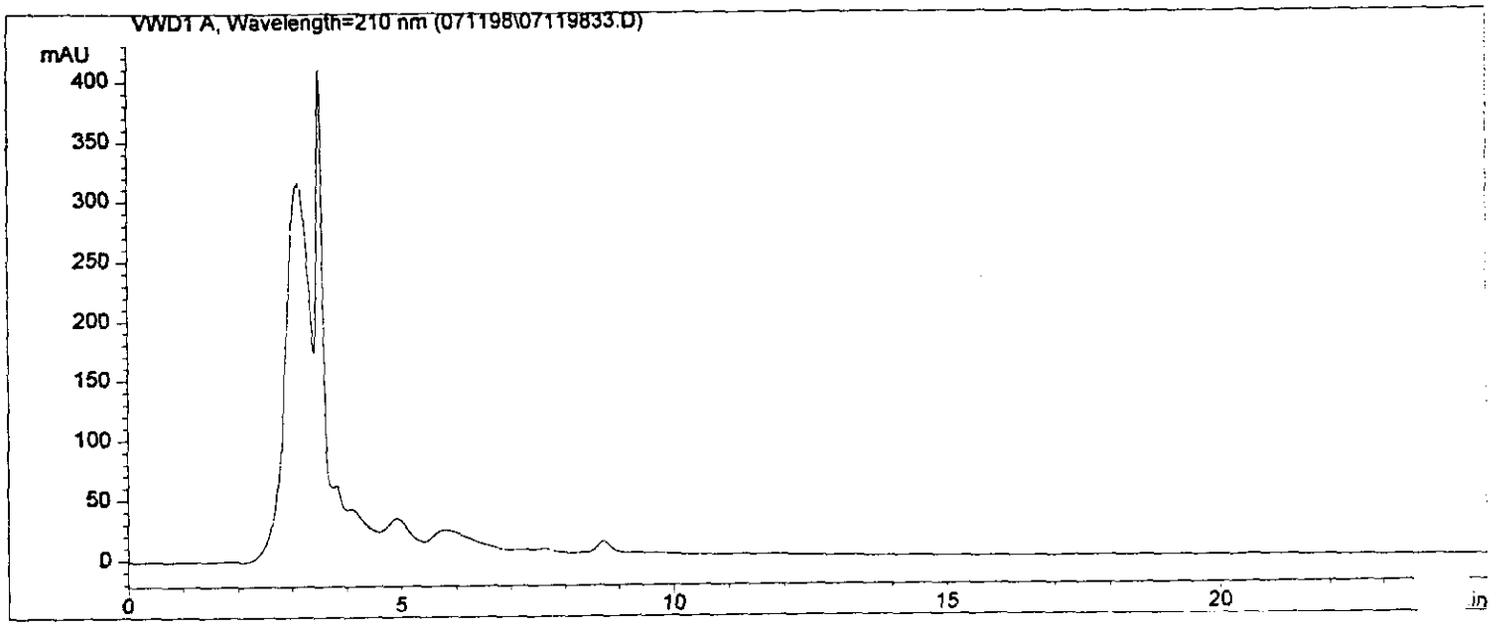
Data File F:\HPCHEM\LC4\DATA\071198\07119833.D Sample Name: 34654.02

==========

Injection Date : 7/12/98 9:51:09 AM Seq. Line : 33
Sample Name : 34654.02 Vial : 33
Acq. Operator : SS Inj : 1
Inj Volume : 200 µl

Sequence File : F:\HPCHEM\LC4\SEQUENCE\071198.S
Acq. Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/11/98 5:56:44 PM by SS
Analysis Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/13/98 12:57:21 PM by SS
PETN SOIL

==========



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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 7/13/98 12:53:15 PM
Multiplier : 5.0000
Dilution : 2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515052R1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.03

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

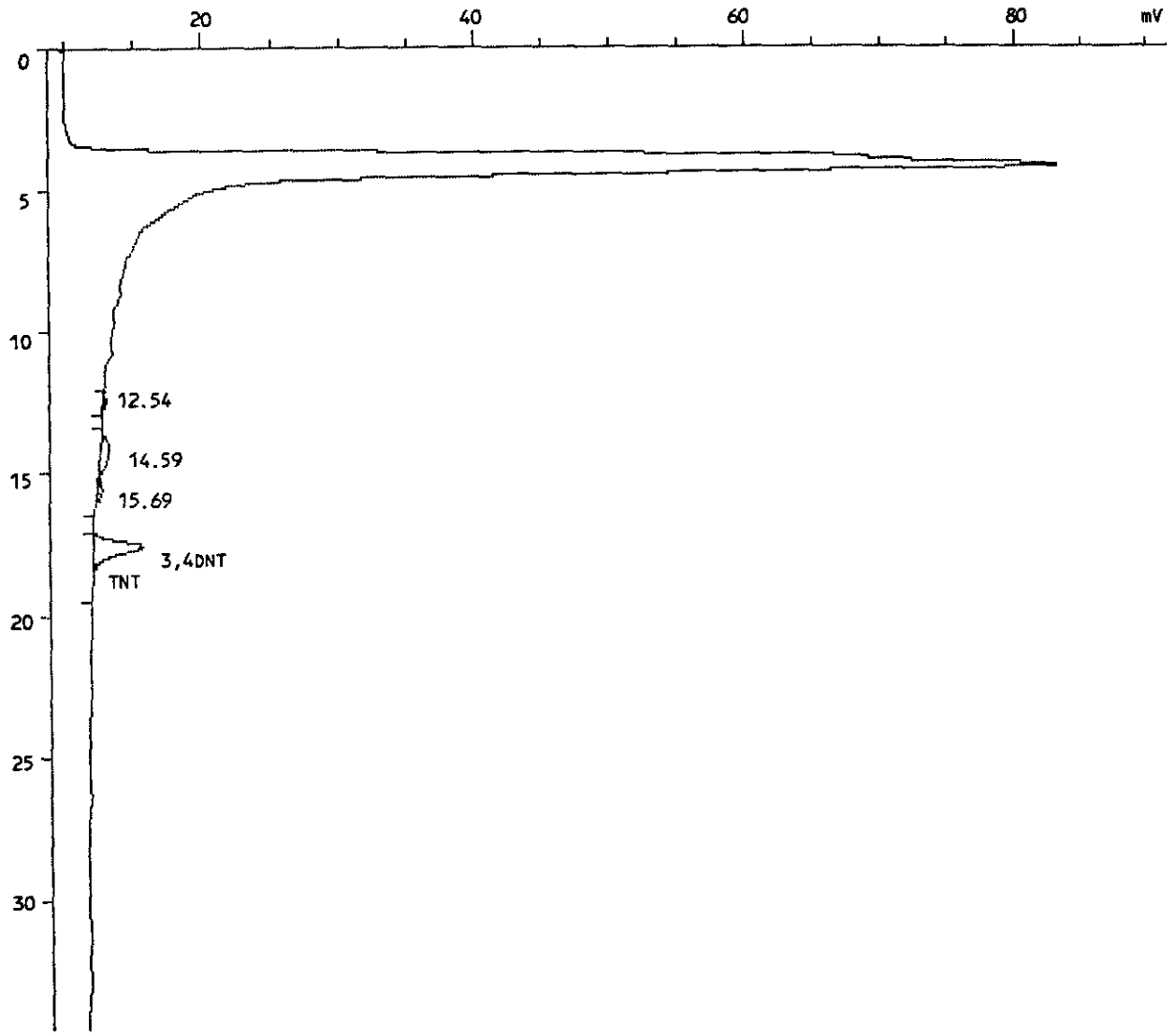
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,7,1

Sample name.....: BIOS00515052R1
Sample ID.....: 34654.03
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 04:46:36
Reported on 13-Jul-98 at 10:12:01



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,7,1

Acquired on 12-Jul-98 at 04:46:36
Modified on 13-Jul-82 at 10:04:18
Reported on 13-Jul-98 at 10:04:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:04:06
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515052R1
Sample ID.....: 34654.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	17.648	3659	115053	2114.164	3,4DNT 106
5	18.373	230	7251	71.595	TNT
Total		3889	122304	2185.759	
Residual		1273	70369	694.801	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515052R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.03

Sample Amt: 2g % Moisture 25.13 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		250	U

FORM I

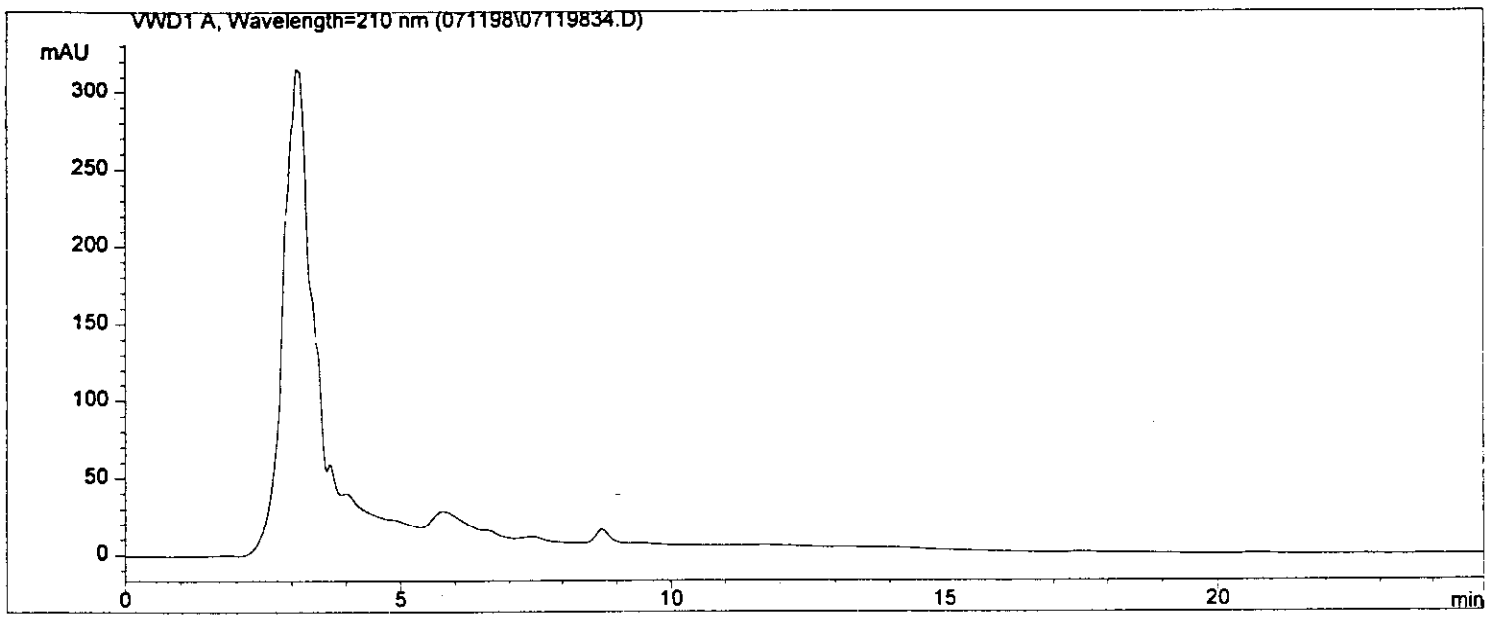
Data File F:\HPCHEM\LC4\DATA\071198\07119834.D Sample Name: 34654.03

==========

Injection Date : 7/12/98 10:19:21 AM Seq. Line : 34
Sample Name : 34654.03 Vial : 34
Acq. Operator : SS Inj : 1
Inj Volume : 200 µl

Sequence File : F:\HPCHEM\LC4\SEQUENCE\071198.S
Acq. Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/11/98 5:56:44 PM by SS
Analysis Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/13/98 12:57:21 PM by SS
PETN SOIL

==========



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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 7/13/98 12:53:15 PM
Multiplier : 5.0000
Dilution : 2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515052R2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.04

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

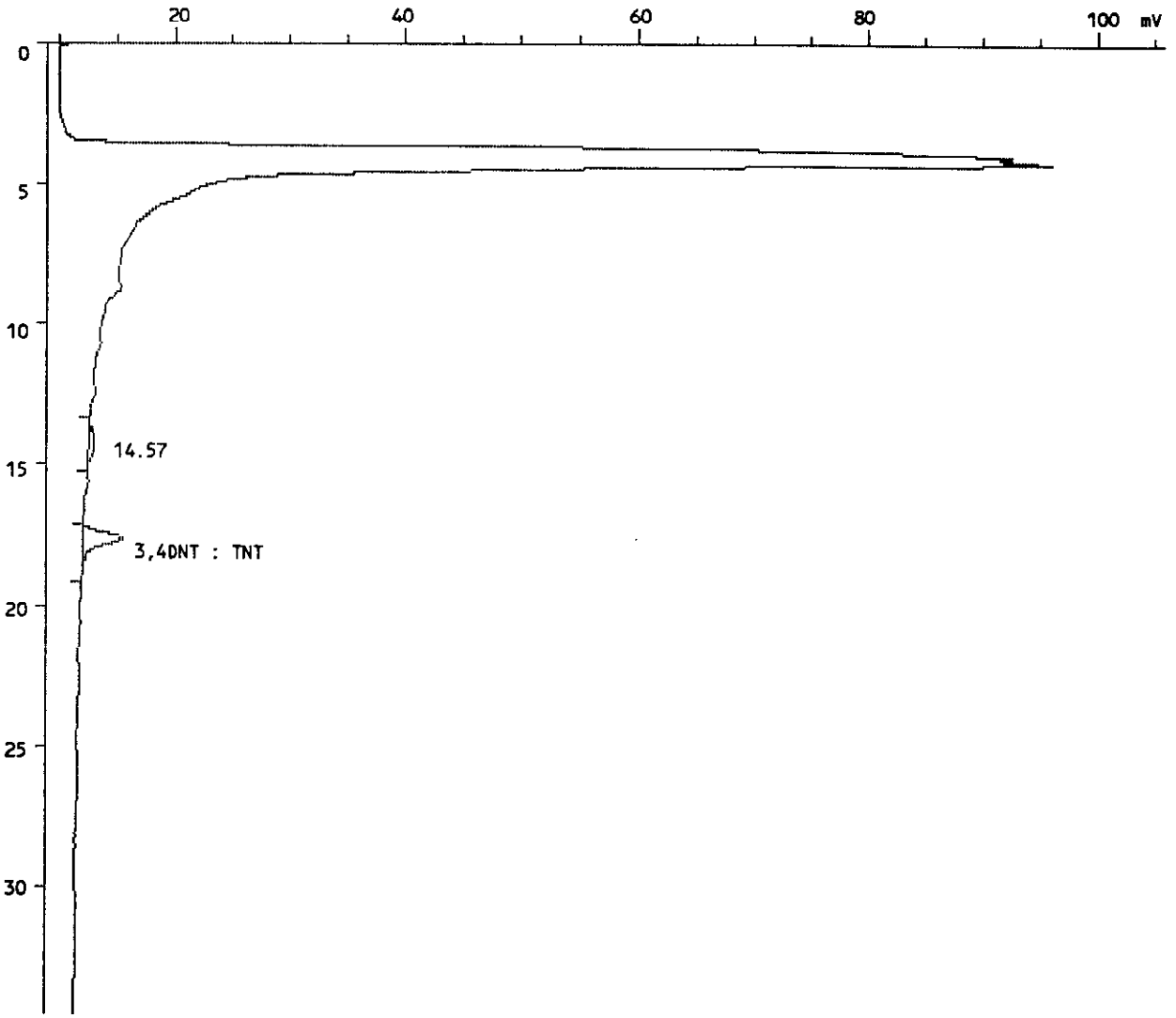
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,8,1

Sample name.....: BIOS00515052R2
Sample ID.....: 34654.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 05:31:14
Reported on 13-Jul-98 at 10:12:21



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,8,1

Acquired on 12-Jul-98 at 05:31:14
Modified on 13-Jul-82 at 10:04:34
Reported on 13-Jul-98 at 10:04:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:04:06
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515052R2
Sample ID.....: 34654.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	17.664	3444	108691	1997.265	3,4DNT IOO
3	18.267	357	8003	79.014	TNT
Total		3801	116694	2076.280	
Residual		453	30779	303.900	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515052R2

ıb Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.04

Sample Amt: 2g % Moisture 4.45 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

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Injection Date : 7/12/98 10:47:30 AM
Sample Name : 34654.04
Acq. Operator : SS

Seq. Line : 35
Vial : 35
Inj : 1
Inj Volume : 200 µl

Sequence File : F:\HPCHEM\LC4\SEQUENCE\071198.S
Acq. Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/11/98 5:56:44 PM by SS
Analysis Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/13/98 12:57:21 PM by SS
PETN SOIL

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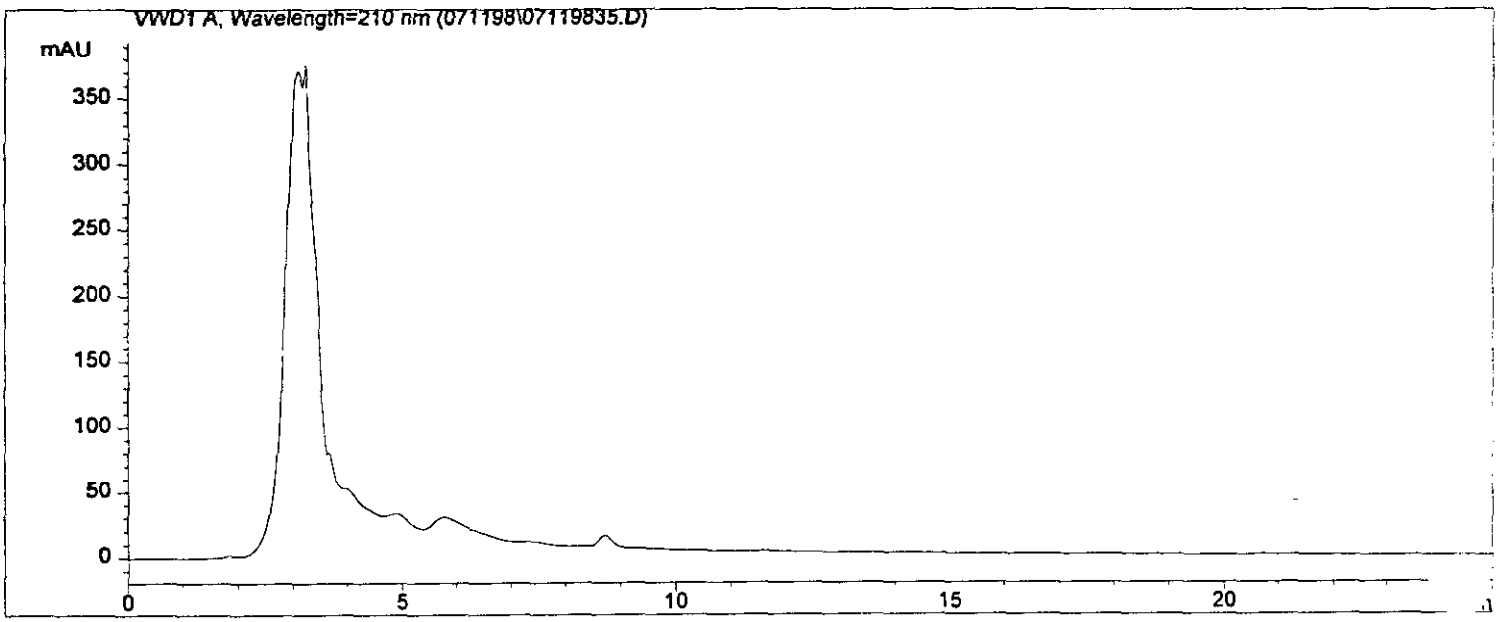

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 7/13/98 12:53:15 PM
Multiplier : 5.0000
Dilution : 2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

34

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515073R1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.05

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

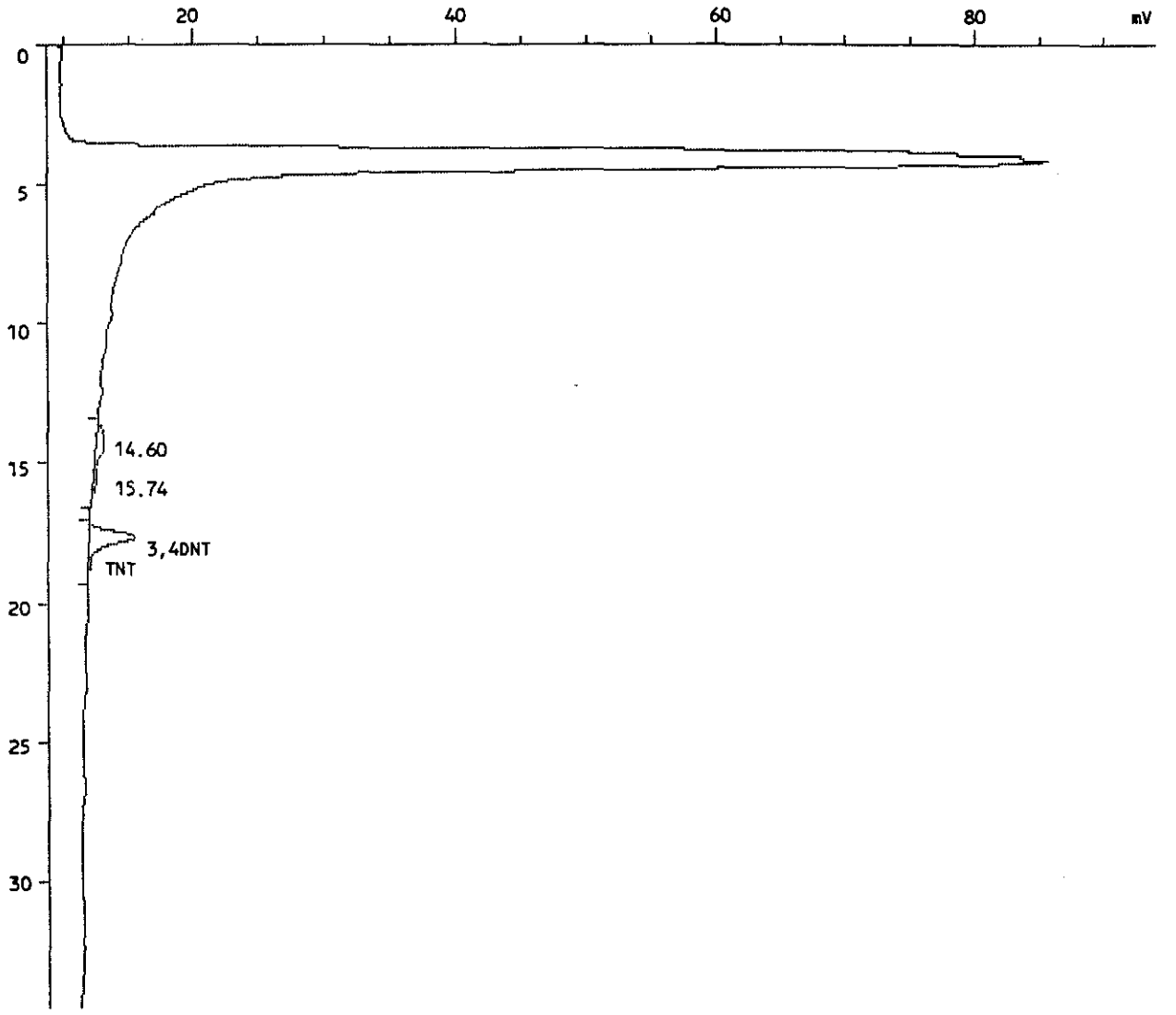
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,9,1

Sample name.....: BIOS00515073R1
Sample ID.....: 34654.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 06:15:53
Reported on 13-Jul-98 at 10:12:39



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,9,1

Acquired on 12-Jul-98 at 06:15:53
Modified on 13-Jul-82 at 10:04:46
Reported on 13-Jul-98 at 10:04:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:04:06
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515073R1
Sample ID.....: 34654.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	17.669	3615	115809	2128.060	3,4DNT 106
4	18.309	310	8340	82.348	TNT
Total		3925	124149	2210.408	
Residual		1021	65992	651.575	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515073R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.05

Sample Amt: 2g % Moisture 22.97 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

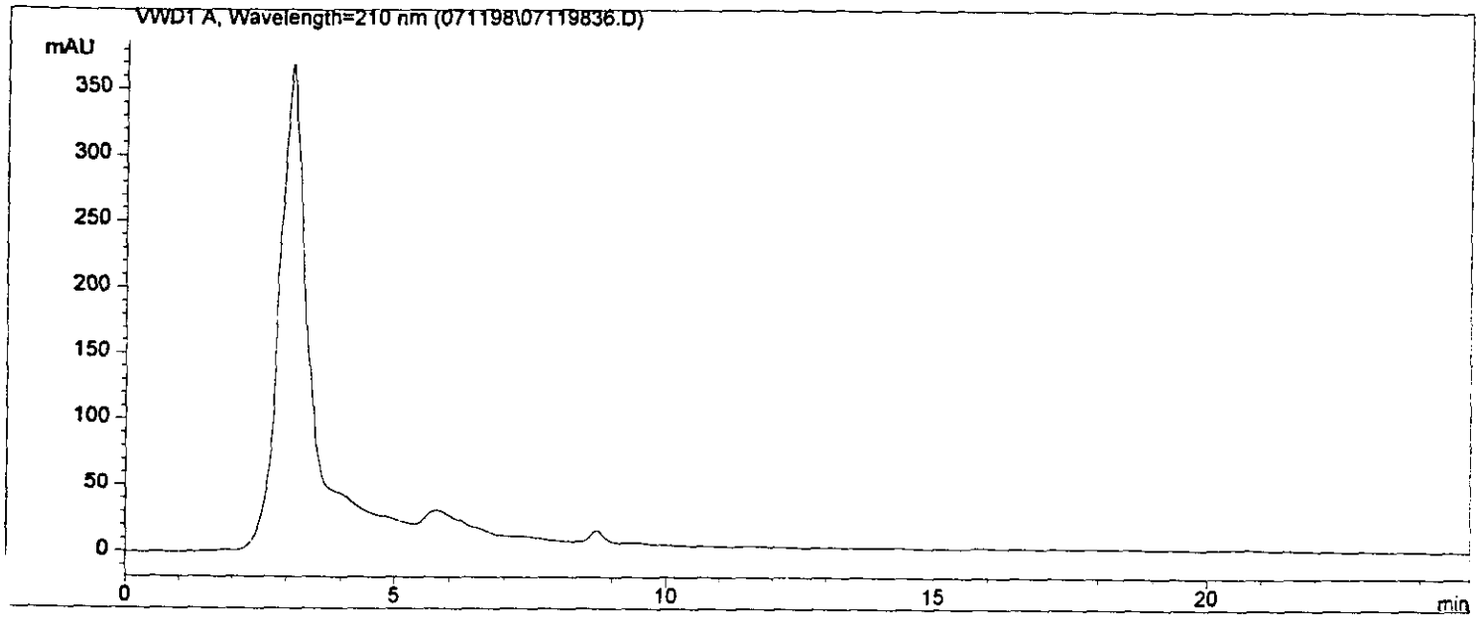
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		250	U

FORM I

Data File F:\HPCHEM\LC4\DATA\071198\07119836.D Sample Name: 34654.05

Injection Date	: 7/12/98 11:15:38 AM	Seq. Line :	36
Sample Name	: 34654.05	Vial :	36
Acq. Operator	: SS	Inj :	1
		Inj Volume :	200 µl
Sequence File	: F:\HPCHEM\LC4\SEQUENCE\071198.S		
Acq. Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/11/98 5:56:44 PM by SS		
Analysis Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/13/98 12:57:21 PM by SS		

PETN SOIL



External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	7/13/98 12:53:15 PM
Multiplier	:	5.0000
Dilution	:	2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIOS00515073R2

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.06

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

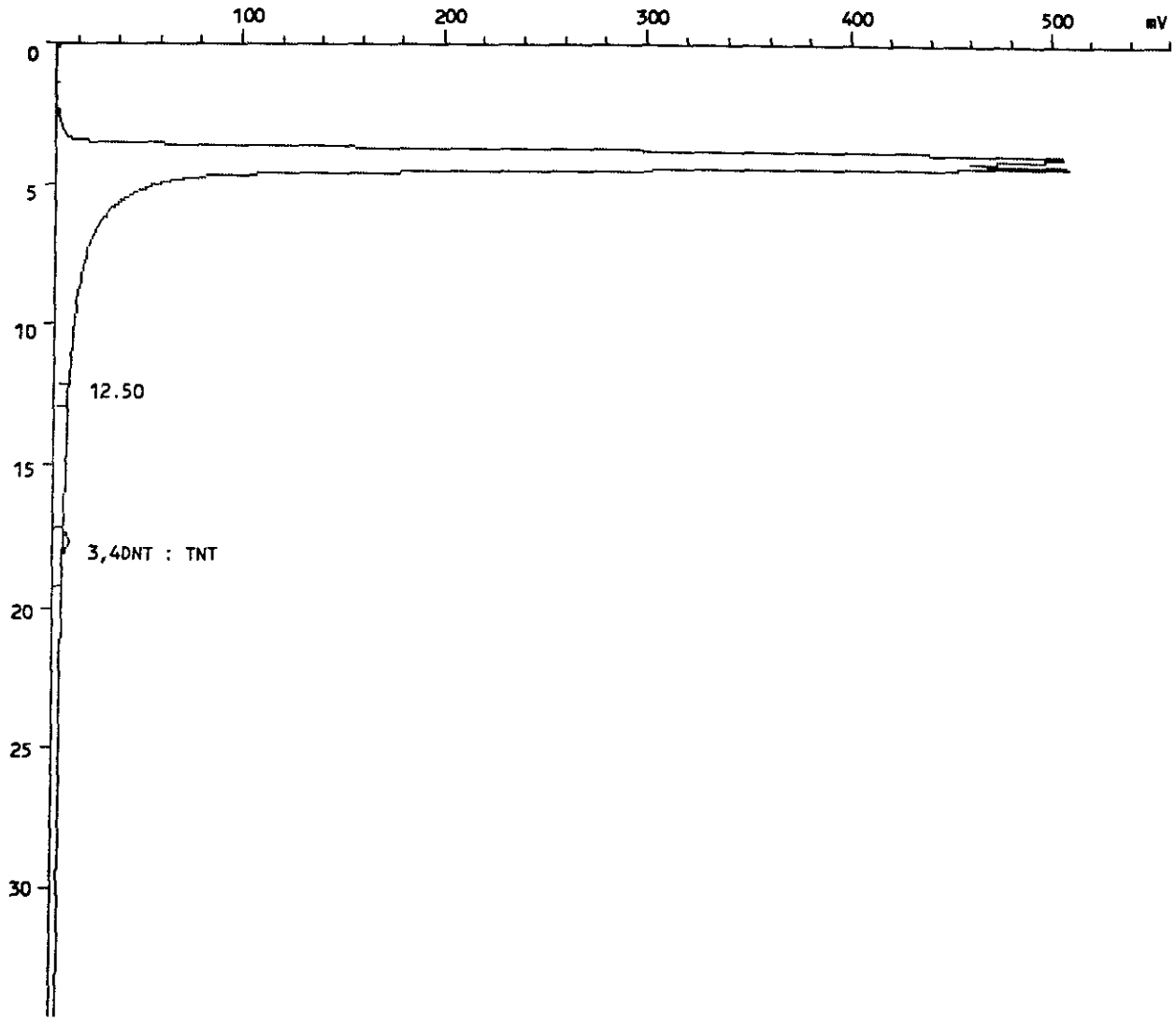
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,12,1

Sample name.....: BIOS00515073R2
Sample ID.....: 34654.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 08:29:47
Reported on 13-Jul-98 at 10:13:34



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,12,1

Acquired on 12-Jul-98 at 08:29:47
Modified on 13-Jul-82 at 10:05:00
Reported on 28-Jul-98 at 11:50:10

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 16:43:14
Method file.....: EXPLOS Last modified on 27-Jul-82 at 16:35:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515073R2
Sample ID.....: 34654.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

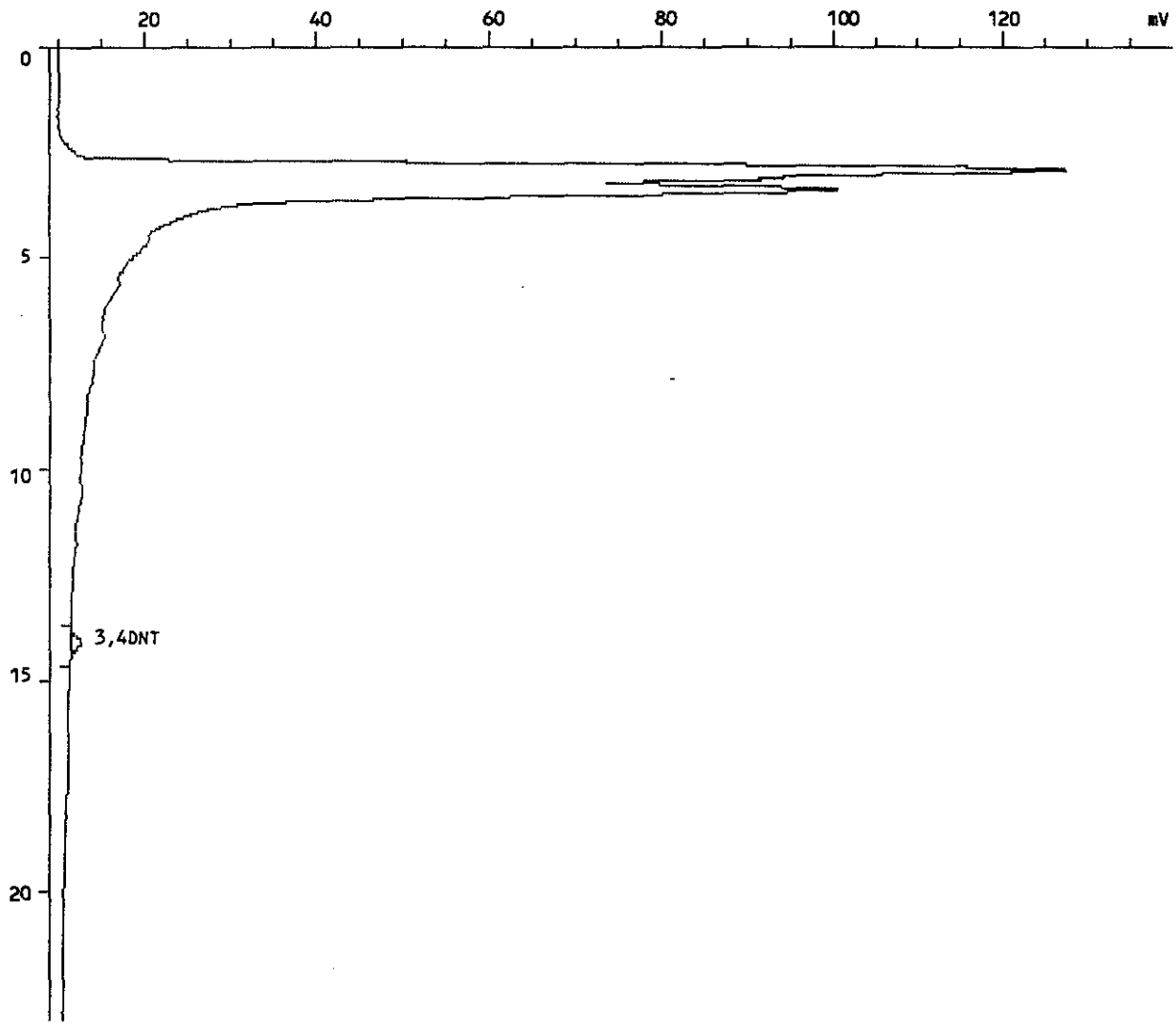
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	17.701	3839	113226	2080.590	3,4DNT/OH
3	18.149	842	27424	270.778	TNT
Total		4681	140650	2351.368	
Residual		502	12230	120.751	

LONG PLOT

Injection F: <MC3> 3 3CN0727A,4,1

Sample name.....: BIOS00515073R2
Sample ID.....: 34654.06
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:100, UV

Acquired on 27-Jul-98 at 23:55:17
Reported on 28-Jul-98 at 11:34:07



INJECTION REPORT

Injection F: <MC3> 3 3CN0727A,4,1

Acquired on 27-Jul-98 at 23:55:17
Modified on 28-Jul-82 at 11:29:56
Reported on 28-Jul-98 at 11:30:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01,INJ:100, UV
Number of samples.: 7
Calibration file..: 3CN0727A Last modified on 28-Jul-82 at 11:29:40
Method file.....: LCCN Last modified on 28-Jul-82 at 11:25:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515073R2
Sample ID.....: 34654.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	14.064	1306	28792	1486.419	3,4DNT
Total		1306	28792	1486.419	
Residual		0	0	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515073R2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.06

Sample Amt: 2g % Moisture 3.83 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

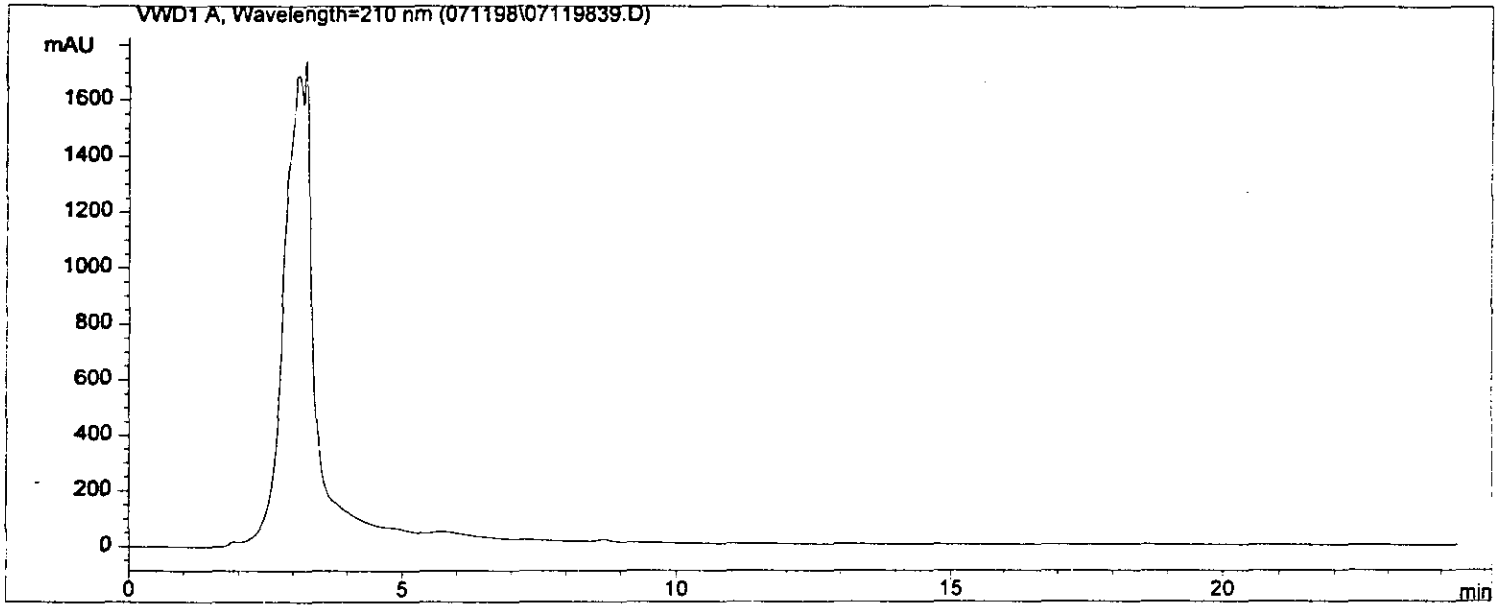
Data File F:\HPCHEM\LC4\DATA\071198\07119839.D Sample Name: 34654.06

==========

Injection Date : 7/12/98 12:40:08 PM Seq. Line : 39
Sample Name : 34654.06 Vial : 39
Acq. Operator : SS Inj : 1
Inj Volume : 200 µl

Sequence File : F:\HPCHEM\LC4\SEQUENCE\071198.S
Acq. Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/11/98 5:56:44 PM by SS
Analysis Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/13/98 12:57:21 PM by SS
PETN SOIL

==========



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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 7/13/98 12:53:15 PM
Multiplier : 5.0000
Dilution : 2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515091R1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.07

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
06-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

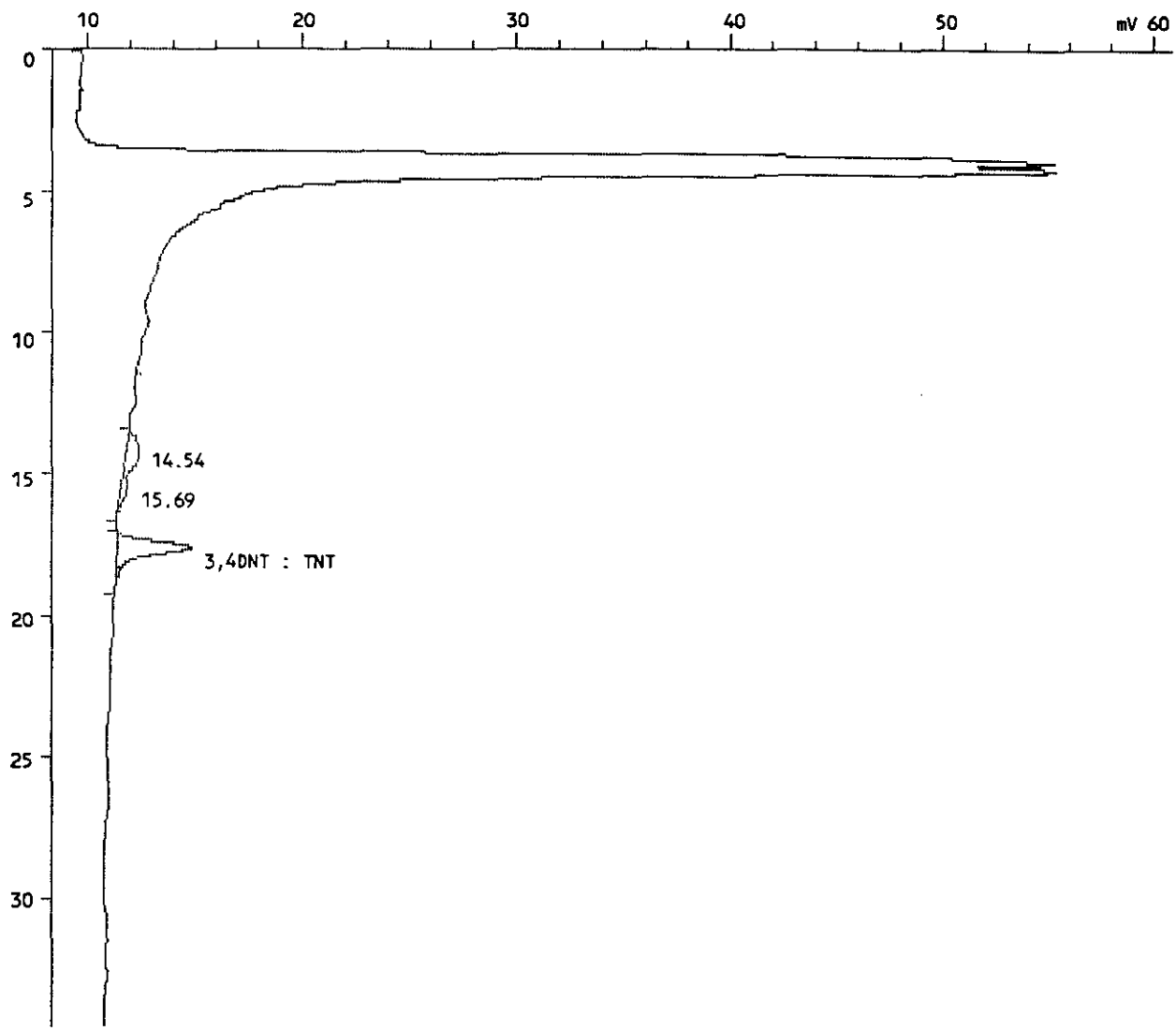
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,13,1

Sample name.....: BIOS00515091R1
Sample ID.....: 34654.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 09:14:25
Reported on 13-Jul-98 at 10:13:53



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,13,1

Acquired on 12-Jul-98 at 09:14:25
Modified on 13-Jul-82 at 10:05:14
Reported on 13-Jul-98 at 10:05:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:05:14
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515091R1
Sample ID.....: 34654.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	17.595	3539	113067	2077.679	3,4DNT IDH
4	18.229	313	8107	80.049	TNT
Total		3852	121175	2157.728	
Residual		889	57449	-448.817	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515091R1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.07

Sample Amt: 2g % Moisture 37.76 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

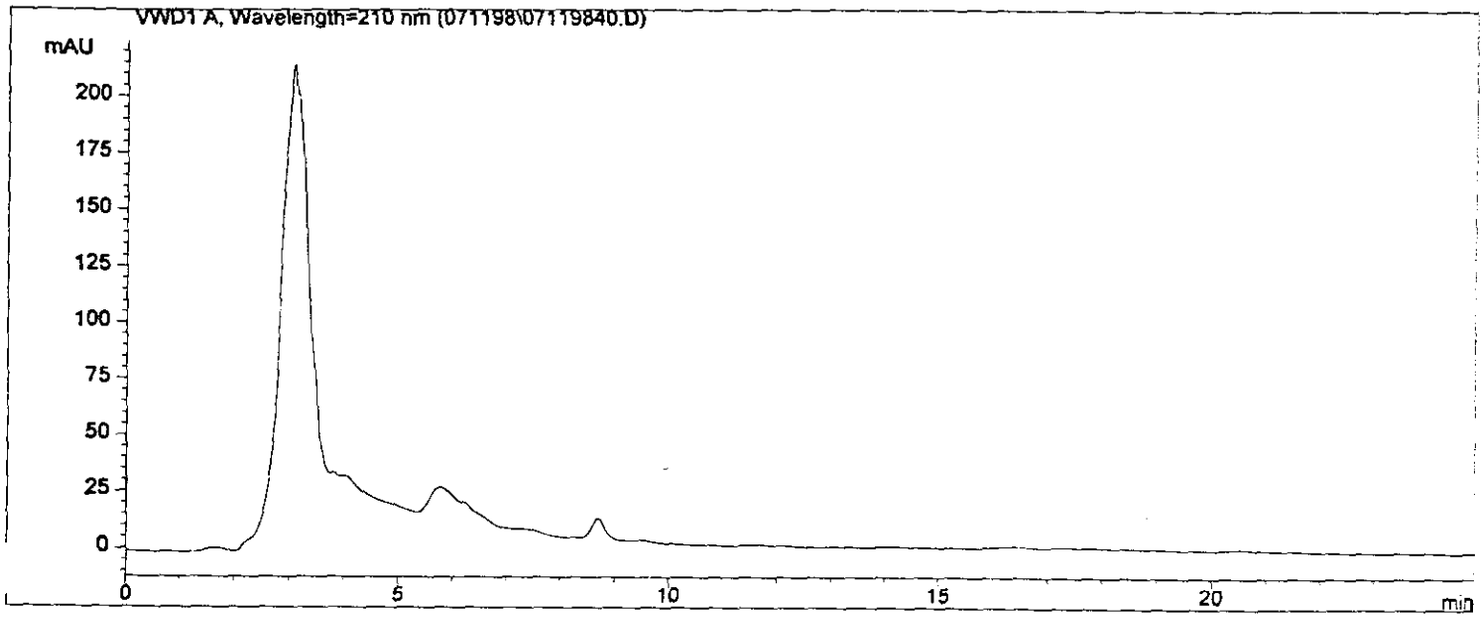
Data File F:\HPCHEM\LC4\DATA\071198\07119840.D Sample Name: 34654.07

==========

Injection Date : 7/12/98 1:08:16 PM Seq. Line : 40
Sample Name : 34654.07 Vial : 40
Acq. Operator : SS Inj : 1
Inj Volume : 200 µl

Sequence File : F:\HPCHEM\LC4\SEQUENCE\071198.S
Acq. Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/11/98 5:56:44 PM by SS
Analysis Method : F:\HPCHEM\LC4\METHODS\071198.M
Last changed : 7/13/98 12:57:21 PM by SS
PETN SOIL

==========



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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 7/13/98 12:53:15 PM
Multiplier : 5.0000
Dilution : 2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515091R2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.08

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

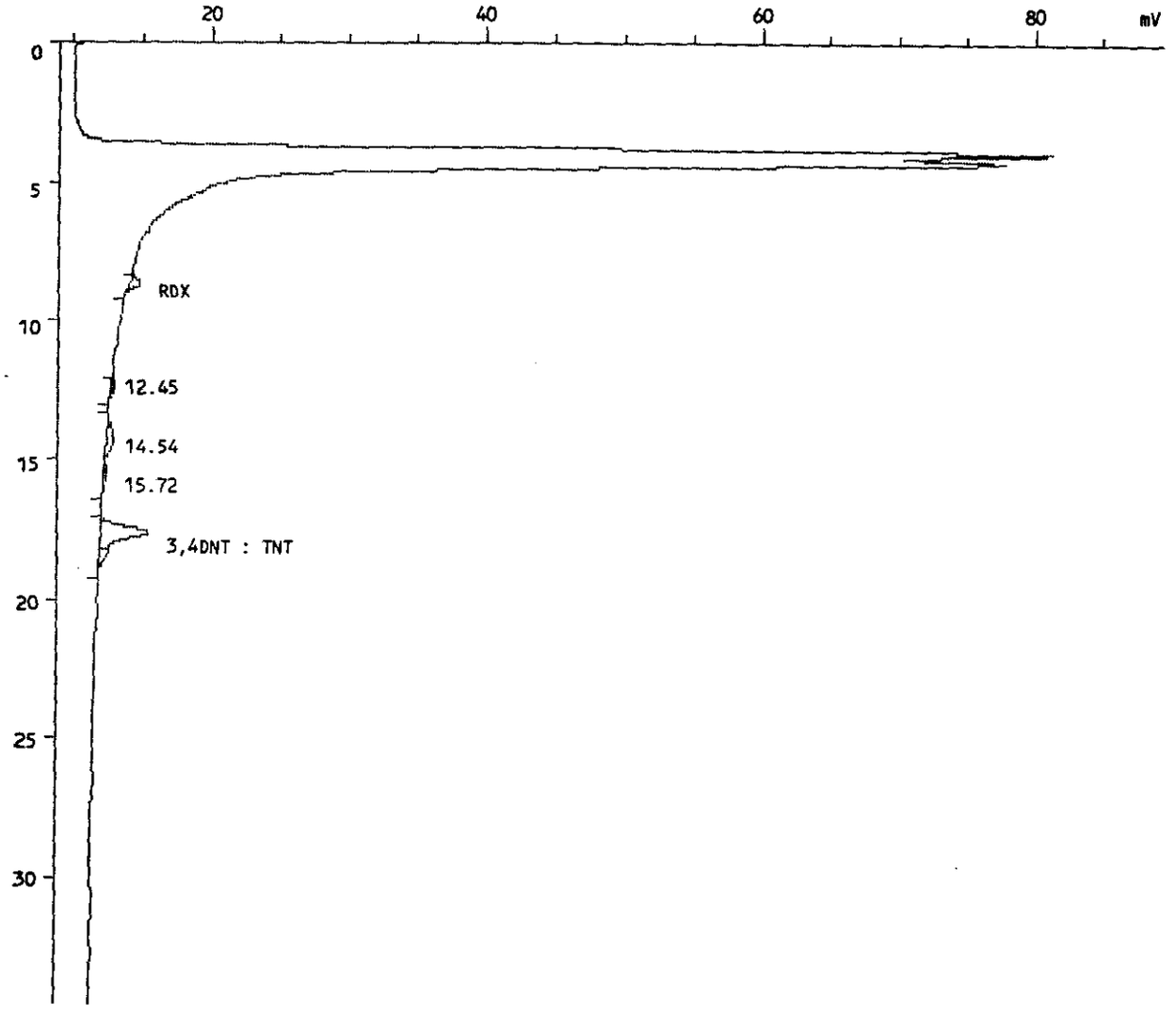
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,16,1

Sample name.....: BIOS00515091R2
Sample ID.....: 34654.08
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 11:28:19
Reported on 13-Jul-98 at 10:14:51



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,16,1

Acquired on 12-Jul-98 at 11:28:19
Modified on 13-Jul-82 at 10:06:14
Reported on 13-Jul-98 at 10:06:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:05:14
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515091R2
Sample ID.....: 34654.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.656	883	18724	480.843	RDX
5	17.589	3488	110077	2022.728	3,4DNT |O|
6	18.229	706	22104	218.249	TNT
Total		5077	150905	2721.820	
Residual		939	47874	1229.428	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515091R2

·b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.08

Sample Amt: 2g % Moisture 3.40 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

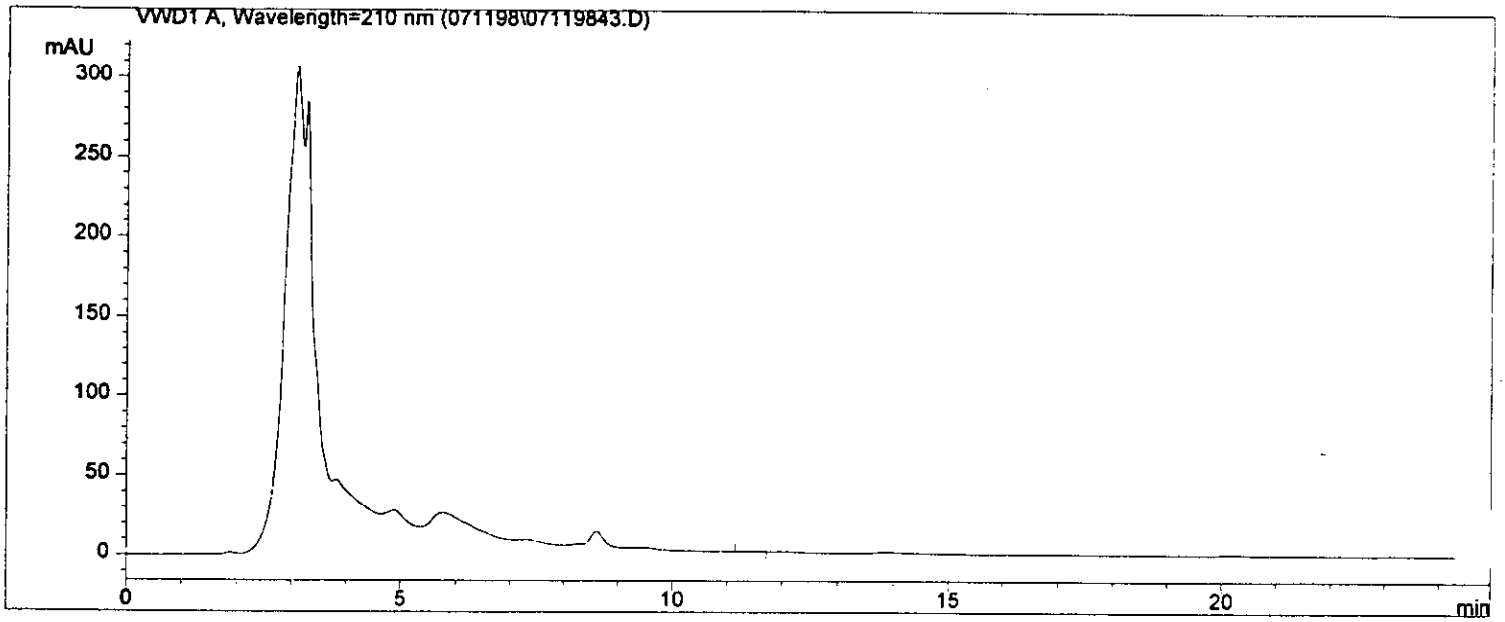
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Data File F:\HPCHEM\LC4\DATA\071198\07119843.D Sample Name: 34654.08

Injection Date	: 7/12/98 2:32:47 PM	Seq. Line :	43
Sample Name	: 34654.08	Vial :	43
Acq. Operator	: SS	Inj :	1
		Inj Volume :	200 µl
Sequence File	: F:\HPCHEM\LC4\SEQUENCE\071198.S		
Acq. Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/11/98 5:56:44 PM by SS		
Analysis Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/13/98 12:57:21 PM by SS		

PETN SOIL



External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	7/13/98 12:53:15 PM
Multiplier	:	5.0000
Dilution	:	2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515112R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.09

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
6-20-2	26DNT	260	U
21-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

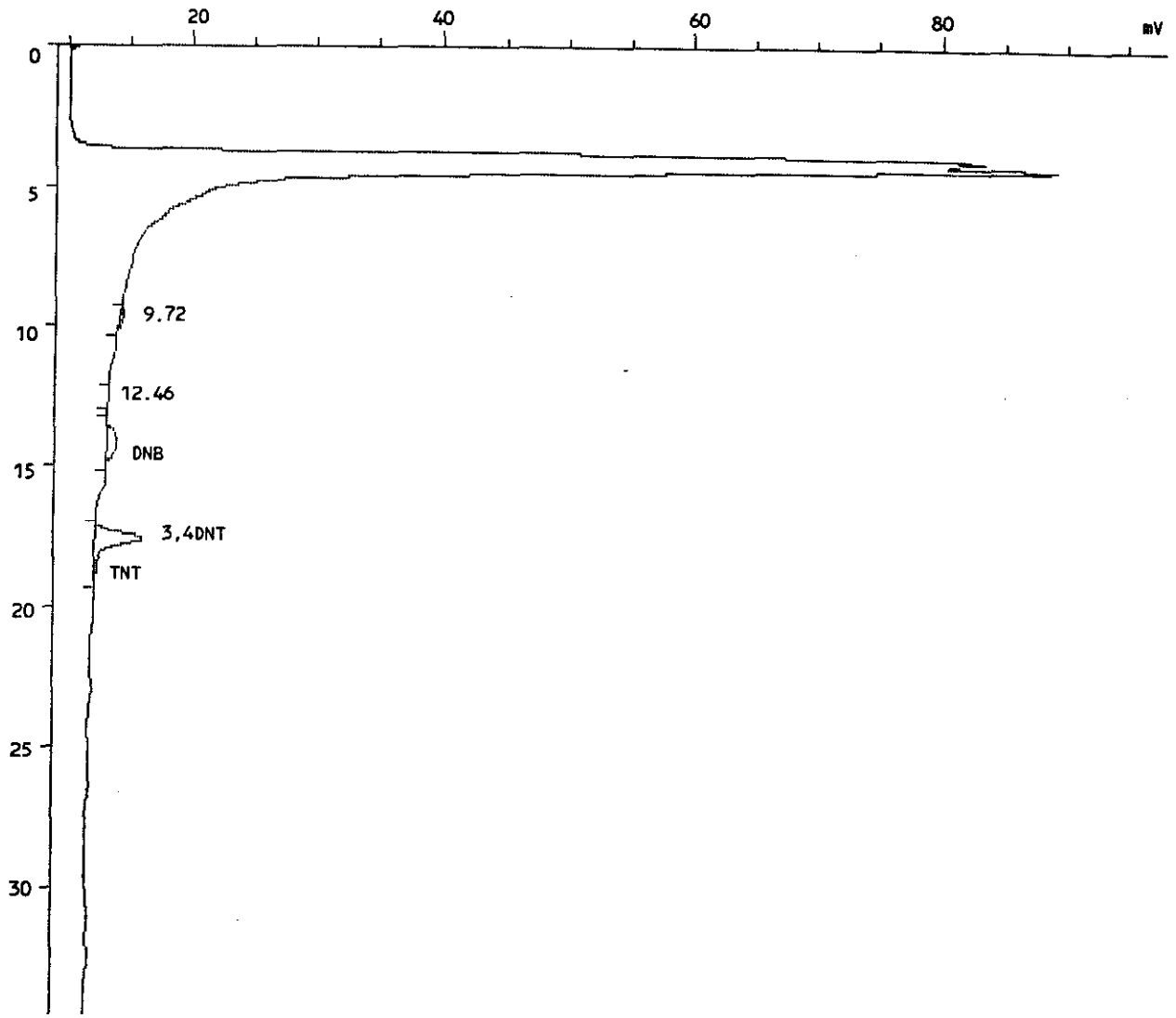
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,17,1

Sample name.....: BIOS00515112R1
Sample ID.....: 34654.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 12:13:00
Reported on 13-Jul-98 at 10:15:12



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,17,1

Acquired on 12-Jul-98 at 12:13:00
Modified on 13-Jul-82 at 10:06:28
Reported on 13-Jul-98 at 10:06:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:05:14
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515112R1
Sample ID.....: 34654.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

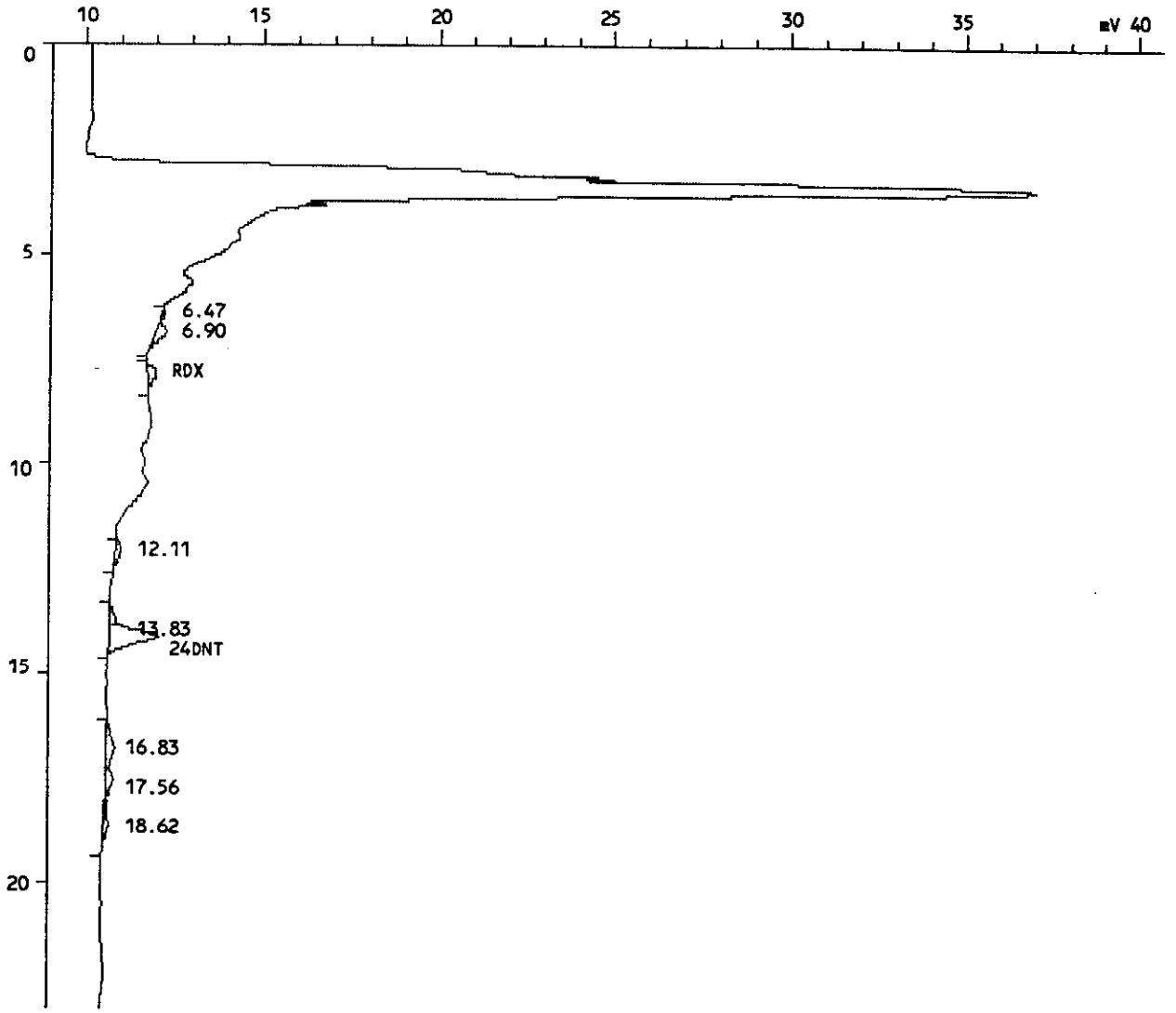
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	14.181	786	49501	335.102	DNB
4	17.568	3781	123313	2265.944	3,4DNT 13
5	18.315	283	9380	92.613	TNT
Total		4851	182194	2693.659	
Residual		516	15646	154.486	

LONG PLOT

Injection F: <MC3> 3 3CN0727A,5,1

Sample name.....: BIOS00515112R1
Sample ID.....: 34654.09
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:100, UV

Acquired on 28-Jul-98 at 00:39:39
Reported on 28-Jul-98 at 11:42:15



INJECTION REPORT

Injection F: <MC3> 3 3CN0727A,5,1

Acquired on 28-Jul-98 at 00:39:39
Modified on 28-Jul-82 at 11:37:22
Reported on 28-Jul-98 at 11:38:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01,INJ:100, UV
Number of samples.: 7
Calibration file..: 3CN0727B Last modified on 28-Jul-82 at 11:36:56
Method file.....: LCCN Last modified on 28-Jul-82 at 11:37:50
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515112R1
Sample ID.....: 34654.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.883	287	6178	417.157	RDX
6	14.117	1421	32672	969.482	24DNT
Total		1707	38850	1386.639	
Residual		1563	43371	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515112R1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.09

Sample Amt: 2g % Moisture 21.24 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

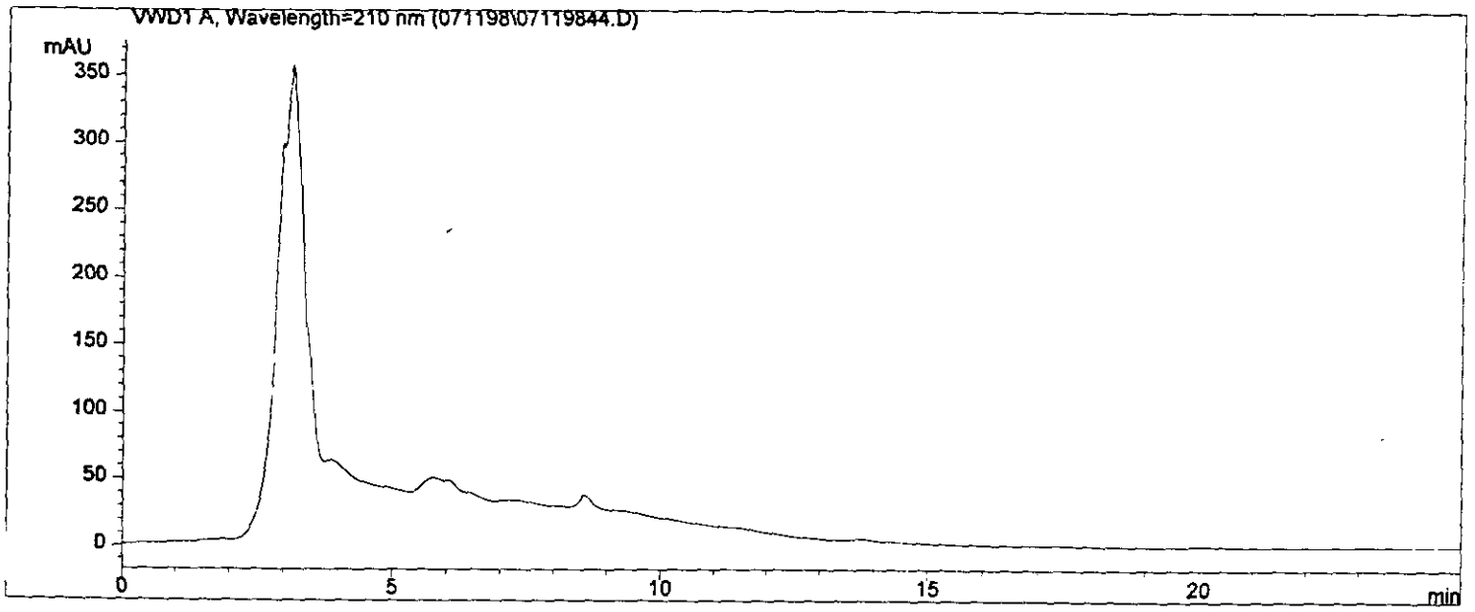
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Data File F:\HPCHEM\LC4\DATA\071198\07119844.D Sample Name: 34654.09

Injection Date	: 7/12/98 3:00:59 PM	Seq. Line :	44
Sample Name	: 34654.09	Vial :	44
Acq. Operator	: SS	Inj :	1
		Inj Volume :	200 µl
Sequence File	: F:\HPCHEM\LC4\SEQUENCE\071198.S		
Acq. Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/11/98 5:56:44 PM by SS		
Analysis Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/13/98 12:57:21 PM by SS		

PETN SOIL



External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	7/13/98 12:53:15 PM
Multiplier	:	5.0000
Dilution	:	2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515112R2

`b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.10

Sample Amt: 2g % Moisture Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/07/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

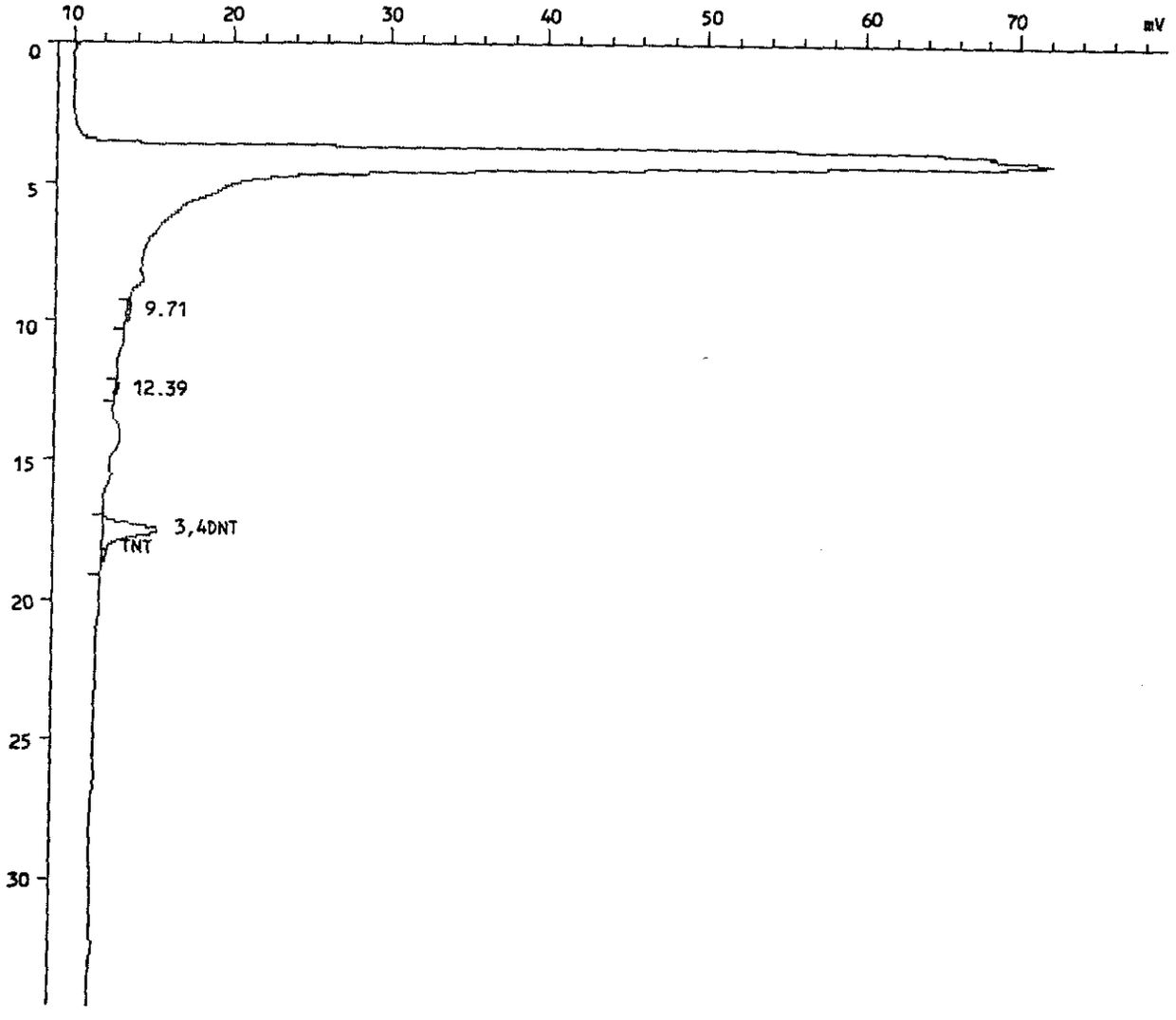
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711A,18,1

Sample name.....: BIOS00515112R2
Sample ID.....: 34654.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 12:57:38
Reported on 13-Jul-98 at 10:15:30



INJECTION REPORT

Injection F: <MC3> 2 2EX0711A,18,1

Acquired on 12-Jul-98 at 12:57:38
Modified on 13-Jul-82 at 10:06:44
Reported on 13-Jul-98 at 10:06:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 20
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 10:05:14
Method file.....: EXPLOS Last modified on 13-Jul-82 at 09:34:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOS00515112R2
Sample ID.....: 34654.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	17.504	3452	109240	2007.358	3,4DNT 100
4	18.139	393	10865	107.278	TNT
Total		3845	120106	2114.637	
Residual		413	11712	115.642	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOS00515112R2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34654

Matrix: (soil/water) SOIL Lab Sample ID: 34654.10

Sample Amt: 2g % Moisture 3.99 Date Received: 07/02/98

Extraction Volume: 10ml Date Extracted: 07/04/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

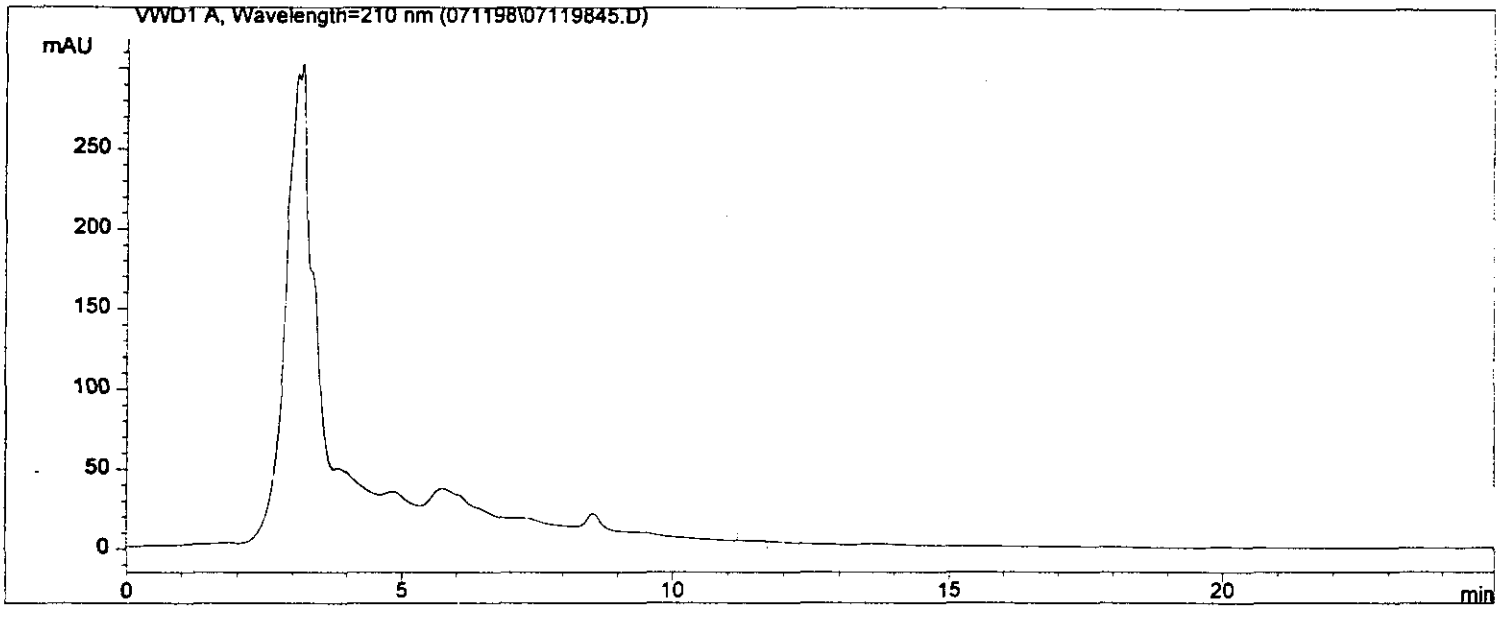
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Data File F:\HPCHEM\LC4\DATA\071198\07119845.D Sample Name: 34654.10

Injection Date	: 7/12/98 3:29:06 PM	Seq. Line :	45
Sample Name	: 34654.10	Vial :	45
Acq. Operator	: SS	Inj :	1
		Inj Volume :	200 µl
Sequence File	: F:\HPCHEM\LC4\SEQUENCE\071198.S		
Acq. Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/11/98 5:56:44 PM by SS		
Analysis Method	: F:\HPCHEM\LC4\METHODS\071198.M		
Last changed	: 7/13/98 12:57:21 PM by SS		

PETN SOIL



External Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	7/13/98 12:53:15 PM
Multiplier	:	5.0000
Dilution	:	2.0000

Signal 1: VWD1 A, Wavelength=210 nm

RetTime [min]	Type	Area mAU *s	Amt/Area	Amount [ug/Kg]	Grp	Name
11.150		-	-	-		PETN

Totals : 0.00000

Results obtained with enhanced integrator!
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

APPENDIX F
CALIBRATION SUMMARIES FOR LABORATORY ANALYSIS OF WINDROW S-005 DAY FINAL

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Calibration Summary for Analysis of Windrow S-005 Day Final . . . . . 27 pages

CALIBRATION FACTOR DATA
FORM 9A-1

:PLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0711,4
Injection File Name Level 2 : 2EX0711,5
Injection File Name Level 3 : 2EX0711,6
Injection File Name Level 4 : 2EX0711,7
Injection File Name Level 5 : 2EX0711,8

Calibration Date : 07/11/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	12938	1276	336021	1323	944421	1431	1243733	1256	1918922	1454
RDX	7482	1773	200355	1897	571436	2070	763747	1854	1176159	2138
TNB	11289	3738	300908	3980	828066	4203	1105116	3734	1721555	4369
DNB	11471	7081	291880	7189	824364	7806	1085120	6851	1696763	8004
TETRYL	10846	2916	253224	2723	646413	2671	825112	2267	1322733	2733
NB	22850	6924	590648	7168	1572054	7346	2255663	7005	3220308	7489
3,4-DNT	13424	2643	334919	2641	946234	2867	1243174	2506	1946595	2945
TNT	12963	4801	335091	4957	936678	5322	1249405	4733	1937698	5505
4ADNT	8480	3593	213616	3608	610432	3964	801371	3454	1253935	4071
2ADNT	10517	4456	258332	4364	727654	4725	954300	4113	1482934	4815
26DNT	10030	2585	269535	2773	751599	2959	1001778	2636	1552509	3069
IT	14766	6257	374235	6322	1049451	6815	1406605	6063	2172110	7052
	8983	2658	243591	2879	652229	2965	936181	2837	1332843	3029
	8233	2436	222191	2626	616536	2802	881688	2672	1259274	2862
	9344	2902	263158	3273	722207	3439	1045202	3329	1478164	3536

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0711,4
Injection File Name Level 2 : 2EX0711,5
Injection File Name Level 3 : 2EX0711,6
Injection File Name Level 4 : 2EX0711,7
Injection File Name Level 5 : 2EX0711,8

Calibration Date : 07/11/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1348	6.67	0.99471	1394	0.000
RDX	1947	7.85	0.99512	2046	0.000
TNB	4005	7.04	0.99413	4165	0.000
DNB	7386	6.69	0.99416	7647	0.000
TETRYL	2662	8.99	0.99122	2599	0.000
NB	7187	3.26	0.99889	7323	0.000
3,4-DNT	2721	6.68	0.99362	2811	0.000
[illegible]	5064	6.63	0.99455	5257	0.000
NT	3738	7.08	0.99347	3879	0.000
NT	4495	6.29	0.99388	4601	0.000
26DNT	2804	7.37	0.99452	2929	0.000
24DNT	6502	6.37	0.99452	6732	0.000
2NT	2874	4.94	0.99894	2961	0.000
4NT	2680	6.21	0.99882	2794	0.000
3NT	3296	7.36	0.99910	3457	0.000

CALIBRATION FACTOR DATA
FORM 9C

:ial Calibration Date: 07/11/1998
itinuing Calibration #: 1
:inuing Cal Date : 07/12/1998
.tinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0711A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	978322	1482	1348	9.97	1394	6.36
RDX	592772	2148	1947	10.33	2046	4.97
TNB	874833	4441	4005	10.88	4165	6.63
DNB	859628	8140	7386	10.21	7647	6.46
TETRYL	698012	2884	2662	8.36	2599	10.97
NB	1471460	6876	7187	4.32	7323	6.10
3,4-DNT	998689	3026	2721	11.20	2811	7.65
TNT	967786	5499	5064	8.60	5257	4.60
4ADNT	640368	4158	3738	11.24	3879	7.21
2ADNT	763113	4955	4495	10.25	4601	7.70
26DNT	795093	3130	2804	11.62	2929	6.88
24DNT	1071780	6960	6502	7.04	6732	3.38
2NT	611204	2778	2874	3.32	2961	6.19
	585963	2663	2680	0.60	2794	4.68
	680389	3240	3296	1.69	3457	6.28

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/1998
ıtinuing Calibration #: 2
:inuing Cal Date : 07/12/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0711A,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	880601	1334	1348	1.02	1394	4.27
RDX	527922	1913	1947	1.74	2046	6.51
TNB	770891	3913	4005	2.29	4165	6.04
DNB	750293	7105	7386	3.81	7647	7.08
TETRYL	589483	2436	2662	8.49	2599	6.28
NB	1463709	6840	7187	4.83	7323	6.60
3,4-DNT	882465	2674	2721	1.74	2811	4.87
TNT	847803	4817	5064	4.87	5257	8.37
4ADNT	564652	3667	3738	1.92	3879	5.47
2ADNT	683752	4440	4495	1.22	4601	3.50
26DNT	688076	2709	2804	3.40	2929	7.50
24DNT	962138	6248	6502	3.91	6732	7.20
2NT	619679	2817	2874	1.98	2961	4.89
4NT	587525	2671	2680	0.34	2794	4.42
T	691634	3293	3296	0.07	3457	4.74

CALIBRATION FACTOR DATA
FORM 9D

'PLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN12
olumn ID : CARB-07
Calibration Date : 07/11/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.68	5.66	5.66	5.66	5.66
RDX	8.70	8.68	8.69	8.68	8.68
TNB	11.66	11.63	11.63	11.62	11.62
DNB	14.22	14.20	14.20	14.19	14.19
TETRYL	15.41	15.39	15.40	15.39	15.38
NB	16.06	16.04	16.05	16.03	16.03
3,4-DNT	17.63	17.58	17.57	17.56	17.55
TNT	18.36	18.31	18.31	18.29	18.29
4ADNT	19.50	19.41	19.43	19.41	19.42
2ADNT	20.54	20.49	20.51	20.49	20.50
26DNT	21.47	21.38	21.39	21.37	21.38
24DNT	22.22	22.12	22.13	22.11	22.12
2NT	25.91	25.88	25.89	25.87	25.87
4NT	27.68	27.69	27.69	27.67	27.66
3NT	29.85	29.81	29.82	29.80	29.80

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.67	5.66	5.68	5.66	5.66
RDX	8.72	8.66	8.54	8.66	8.66
TNB	11.67	11.61	11.49	11.63	11.62
DNB	14.25	14.15	14.03	14.18	14.18
TETRYL	15.47	15.34	15.20	15.39	15.39
NB	16.10	16.00	15.88	16.04	16.03
3,4-DNT	17.65	17.51	17.36	17.56	17.56
TNT	18.39	18.26	18.14	18.32	18.30
4ADNT	19.53	19.30	19.14	19.36	19.37
2ADNT	20.61	20.35	20.19	20.42	20.44
26DNT	21.49	21.30	21.17	21.38	21.38
24DNT	22.24	22.03	21.89	22.10	22.10
2NT	26.01	25.78	25.66	25.87	25.88
4NT	27.82	27.56	27.44	27.66	27.68
3NT	29.97	29.69	29.56	29.80	29.82

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.66	0.008	0.024	5.64 - 5.69
RDX	8.66	0.050	0.149	8.51 - 8.81
'B	11.61	0.048	0.144	11.47 - 11.76
B	14.17	0.066	0.197	13.97 - 14.36
TETRYL	15.36	0.080	0.241	15.12 - 15.60
NB	16.02	0.063	0.190	15.83 - 16.21
3,4-DNT	17.54	0.090	0.270	17.27 - 17.81
TNT	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]	19.36	0.147	0.442	18.91 - 19.80
2ADNT	20.42	0.164	0.491	19.93 - 20.91
26DNT	21.35	0.108	0.323	21.03 - 21.67
24DNT	22.08	0.122	0.365	21.72 - 22.45
2NT	25.84	0.115	0.345	25.49 - 26.18
NT	27.63	0.132	0.396	27.23 - 28.02
T	29.76	0.141	0.424	29.34 - 30.19

CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
lumn ID : CARB-07
Calibration Date : 07/11/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.68	5.66	5.66	5.66	5.66
RDX	8.70	8.68	8.69	8.68	8.68
TNB	11.66	11.63	11.63	11.62	11.62
DNB	14.22	14.20	14.20	14.19	14.19
TETRYL	15.41	15.39	15.40	15.39	15.38
NB	16.06	16.04	16.05	16.03	16.03
3,4-DNT	17.63	17.58	17.57	17.56	17.55
TNT	18.36	18.31	18.31	18.29	18.29
4ADNT	19.50	19.41	19.43	19.41	19.42
2ADNT	20.54	20.49	20.51	20.49	20.50
26DNT	21.47	21.38	21.39	21.37	21.38
24DNT	22.22	22.12	22.13	22.11	22.12
2NT	25.91	25.88	25.89	25.87	25.87
4NT	27.68	27.69	27.69	27.67	27.66
3NT	29.85	29.81	29.82	29.80	29.80

COMPONENT NAME	RT Cont CA6
HMX	5.65
RDX	8.61
TNB	11.57
DNB	14.06
TETRYL	15.23
NB	15.93
3,4-DNT	17.39
TNT	18.17
4ADNT	19.05
2ADNT	20.05
26DNT	21.15
24DNT	21.84
2NT	25.61
4NT	27.35
3NT	29.46

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.66	0.008	0.024	5.64 - 5.69
RDX	8.66	0.050	0.149	8.51 - 8.81
TNB	11.61	0.048	0.144	11.47 - 11.76
B	14.17	0.066	0.197	13.97 - 14.36
TRYL	15.36	0.080	0.241	15.12 - 15.60
NB	16.02	0.063	0.190	15.83 - 16.21
3,4-DNT	17.54	0.090	0.270	17.27 - 17.81
TNT	18.29	0.074	0.221	18.06 - 18.51
4ADNT	[illegible]	[illegible]	[illegible]	[illegible]

2ADNT	20.42	0.164	0.491	19.93 - 20.91
26DNT	21.35	0.108	0.323	21.03 - 21.67
24DNT	22.08	0.122	0.365	21.72 - 22.45
2NT	25.84	0.115	0.345	25.49 - 26.18
NT	27.63	0.132	0.396	27.23 - 28.02
NT	29.76	0.141	0.424	29.34 - 30.19

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: LC4
lumn ID :

Inj 1

Injection File Name Level 1 : 071198,4
Injection File Name Level 2 : 071198,5
Injection File Name Level 3 : 071198,6
Injection File Name Level 4 : 071198,7
Injection File Name Level 5 : 071198,8

Calibration Date : 07/11/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.61856	3.02E0	54.8907	2.91E0	109.465	2.92E0	437.918	2.92E0	876.322	2.92E0

CALIBRATION FACTOR DATA
FORM 9B

XPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: LC4
lumn ID :

	Inj 1
Injection File Name Level 1	: 071198,4
Injection File Name Level 2	: 071198,5
Injection File Name Level 3	: 071198,6
Injection File Name Level 4	: 071198,7
Injection File Name Level 5	: 071198,8

Calibration Date : 07/11/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	2.94E0	1.54	1.00000	2.92E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/98
ntinuing Calibration #: 1
inuing Cal Date : 07/11/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 071198,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	107.418	2.98E0	2.94E0	1.30	2.92E0	1.96

CALIBRATION FACTOR DATA
FORM 9C

tial Calibration Date: 07/11/98
tinuing Calibration #: 3
tinuing Cal Date : 07/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 071198,26
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	110.167	2.90E0	2.94E0	1.23	2.92E0	0.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/98
ntinuing Calibration #: 4
tinuing Cal Date : 07/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 071198,37
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	113.242	2.83E0	2.94E0	3.91	2.92E0	3.28

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/98
Continuing Calibration #: 5
Continuing Cal Date : 07/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 071198,46
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.606	2.92E0	2.94E0	0.72	2.92E0	0.07

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

XPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
lumn ID :
Calibration Date : 07/11/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.12	11.13	11.14	11.15	11.15

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	11.22	11.22	11.22	11.16	11.01

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.15	0.063	0.188	10.97 - 11.34

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : MET-01

Inj 1

Injection File Name Level 1 : 3CN0727,4
Injection File Name Level 2 : 3CN0727,5
Injection File Name Level 3 : 3CN0727,6
Injection File Name Level 4 : 3CN0727,7
Injection File Name Level 5 : 3CN0727,8

Calibration Date : 07/27/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	7179	1026	40960	1170	102013	1166	206763	1182	450037	12[illegible]
TNB	16258	3534	75591	3287	185411	3225	383718	3337	825717	35[illegible]
TNT	12949	2815	68058	2959	169369	2946	329149	2862	710553	309[illegible]
TETRYL	11442	1271	66577	1479	151335	1345	369320	1641	818952	182[illegible]
3,4DNT	3016	2285	12446	1886	30049	1821	56515	1713	130697	19[illegible]
26DNT	10730	2146	53916	2157	133575	2137	265391	2123	571771	228[illegible]

CALIBRATION FACTOR DATA
FORM 9A-1

ˣPLOSIVE CALIBRATION - METHOD SW846-8330
ˌstrument ID: IN10
ˌlumn ID : MET-01

Inj 1

Injection File Name Level 1 : 3CN0727,9
Injection File Name Level 2 : 3CN0727,10
Injection File Name Level 3 : 3CN0727,11
Injection File Name Level 4 : 3CN0727,12
Injection File Name Level 5 : 3CN0727,13

Calibration Date : 07/27/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
RDX	7874	1575	35972	1439	91000	1456	185629	1485	362415	1450
DNB	14845	3711	75518	3776	191214	3824	387140	3871	782093	3910
NB	10070	2014	49880	1995	121763	1948	246944	1976	501704	2007
24DNT	16573	3315	83464	3339	209318	3349	424669	3397	862188	3449
4ADNT	15806	1718	78433	1705	196351	1707	397675	1729	790181	1718
2ADNT	27177	2718	139630	2793	353272	2826	732045	2928	1467220	2934

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : MET-01

Inj 1

Injection File Name Level 1 : 3CN0727,4
Injection File Name Level 2 : 3CN0727,5
Injection File Name Level 3 : 3CN0727,6
Injection File Name Level 4 : 3CN0727,7
Injection File Name Level 5 : 3CN0727,8

Calibration Date : 07/27/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1166	7.95	0.99912	1261	0.000
TNB	3394	4.70	0.99920	3527	0.000
TNT	2934	3.58	0.99928	3041	0.000
TETRYL	1511	14.73	0.99758	1769	0.000
3,4DNT	1937	11.23	0.99733	1927	0.000
26DNT	2170	3.07	0.99929	2250	0.000

CALIBRATION FACTOR DATA
FORM 9B

XPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
lumn ID : MET-01

Inj 1

Injection File Name Level 1 : 3CN0727,9
Injection File Name Level 2 : 3CN0727,10
Injection File Name Level 3 : 3CN0727,11
Injection File Name Level 4 : 3CN0727,12
Injection File Name Level 5 : 3CN0727,13

Calibration Date : 07/27/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
RDX	1481	3.73	0.99991	1457	0.000
DNB	3819	2.05	0.99998	3898	0.000
NB	1988	1.34	0.99995	1998	0.000
24DNT	3370	1.59	0.99996	3434	0.000
4ADNT	1715	0.56	0.99999	1719	0.000
2ADNT	2840	3.25	0.99996	2927	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/27/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/28/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0727A,6
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	107791	1232	1166	5.67	1261	2.32
TNB	188630	3281	3394	3.36	3527	6.98
TNT	159104	2767	2934	5.70	3041	9.02
TETRYL	176434	1568	1511	3.76	1769	11.35
3,4DNT	27102	1643	1937	15.20	1927	14.78
26DNT	131086	2097	2170	3.35	2250	6.79

CALIBRATION FACTOR DATA
FORM 9C

itial Calibration Date: 07/27/1998
ıtinuing Calibration #: 1
tinuing Cal Date : 07/28/1998
tinuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0727A,7
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	89153	1426	1481	3.68	1457	2.08
DNB	222871	4457	3819	16.73	3898	14.35
NB	143208	2291	1988	15.26	1998	14.67
24DNT	215584	3449	3370	2.36	3434	0.46
4ADNT	201119	1749	1715	1.95	1719	1.72
2ADNT	356710	2854	2840	0.49	2927	2.51

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	7.000	35.000	87.500	175.000	350.000
TNB	4.600	23.000	57.500	115.000	230.000
TNT	4.600	23.000	57.500	115.000	230.000
TETRYL	9.000	45.000	112.500	225.000	450.000
3,4DNT	1.320	6.600	16.500	33.000	66.000
26DNT	5.000	25.000	62.500	125.000	250.000

CALIBRATION FACTOR DATA
FORM 9D

XPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
RDX	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
NB	5.000	25.000	62.500	125.000	250.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : MET-01
Calibration Date : 07/27/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.18	5.15	5.13	5.11	5.09
TNB	7.80	7.76	7.72	7.70	7.68
TNT	11.75	11.66	11.61	11.58	11.54
TETRYL	12.71	12.60	12.53	12.50	12.44
3,4DNT	14.08	13.93	13.85	13.82	13.76
26DNT	14.66	14.53	14.46	14.42	14.36

COMPONENT NAME	RT Cont CA1
HMX	5.21
TNB	7.86
TNT	11.86
TETRYL	12.84
3,4DNT	14.22
6DNT	14.83

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.14	0.047	0.140	5.00 - 5.28
TNB	7.75	0.066	0.199	7.55 - 7.95
TNT	11.66	0.118	0.355	11.31 - 12.02
TETRYL	12.60	0.149	0.448	12.16 - 13.05
3,4DNT	13.94	0.175	0.525	13.42 - 14.47
26DNT	14.54	0.174	0.521	14.02 - 15.06

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : MET-01
Calibration Date : 07/27/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
RDX	7.79	7.78	7.77	7.84	7.89
DNB	9.62	9.59	9.58	9.65	9.72
NB	10.73	10.69	10.68	10.77	10.85
24DNT	13.89	13.86	13.86	13.98	14.10
4ADNT	14.92	14.87	14.87	15.02	15.19
2ADNT	15.42	15.38	15.38	15.55	15.71

COMPONENT NAME	RT Cont CAl
RDX	8.08
DNB	9.95
NB	11.12
24DNT	14.48
DNT	15.67
NT	16.22

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
RDX	7.86	0.120	0.361	7.50 - 8.22
DNB	9.68	0.140	0.421	9.26 - 10.11
NB	10.81	0.163	0.488	10.32 - 11.29
24DNT	14.03	0.240	0.721	13.31 - 14.75
4ADNT	15.09	0.309	0.927	14.16 - 16.02
2ADNT	15.61	0.325	0.976	14.63 - 16.58

APPENDIX G
FIELD QC DATA FOR WILEY MILL/RIFFLE SPLITTER SAMPLING

TABLE OF CONTENTS

DESCRIPTION	PAGES
Field QC Data	21 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-09-1 100X

ıb Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33609

Matrix: (soil/water) SOIL Lab Sample ID: 33609.12

Sample Amt: 2g % Moisture 37.61 Date Received: 04/16/98

Extraction Volume: 10ml Date Extracted: 04/16/98

Extraction Method: SONC Date Analyzed: 04/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	247000	
121-82-4	RDX	1840000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	178000	
1946-51-0	4ADNT	28500	P
35572-78-2	2ADNT	9010	J
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

					EPA SAMPLE NO:
Lab Name: SWL-TULSA		Contract:			BIO-S-001-00-09-1
Lab Code:	SWOK	Case No: MKF-OH		SDG:	33609
Matrix: (soil/water)	SOIL		Lab Sample ID:		33609.12
Sample Amt: 2g	% Moisture	37.61	Date Received:		04/16/98
Extraction Volume:	10ml		Date Extracted:		Direct Inj.
Extraction Method:	DIRECT		Date Analyzed:		04/25/98
GPC Cleanup: (Y/N)	N		Dilution Factor:		100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	12500.0	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-001-00-09
-1FD 100X

.b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33609

Matrix: (soil/water) SOIL Lab Sample ID: 33609.13

Sample Amt: 2g % Moisture 38.60 Date Received: 04/16/98

Extraction Volume: 10ml Date Extracted: 04/16/98

Extraction Method: SONC Date Analyzed: 04/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	225000	
121-82-4	RDX	1790000	
99-35-4	TNB	12500	U
99-65-0	DNB	12500	U
479-45-8	TETRYL	32500	U
98-95-3	NB	13000	U
118-96-7	TNT	210000	
1946-51-0	4ADNT	13400	P
35572-78-2	2ADNT	6680	J
606-20-2	26DNT	13000	U
121-14-2	24DNT	12500	U
88-72-2	2NT	12500	U
99-99-0	4NT	12500	U
99-08-1	3NT	12500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

					EPA SAMPLE NO:
Lab Name: SWL-TULSA		Contract:			BIO-S-001-00-09-1FD
Lab Code:	SWOK	Case No: MKF-OH		SDG:	33609
Matrix: (soil/water)	SOIL		Lab Sample ID:		33609.13
Sample Amt: 2g	% Moisture	38.6	Date Received:		04/16/98
Extraction Volume:	10ml		Date Extracted:		Direct Inj.
Extraction Method:	DIRECT		Date Analyzed:		04/25/98
GPC Cleanup: (Y/N)	N		Dilution Factor:		100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	12500.0	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB-041598

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33609

Matrix: (soil/water) WATER Lab Sample ID: 33609.19

Sample Amt: 1ml % Moisture Date Received: 04/16/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 04/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-RB-041598
Lab Code: SWOK	Case No: MKF-OH	SDG:	33609
Matrix: (soil/water)	WATER	Lab Sample ID:	33609.19
Sample Amt: 1ml	% Moisture	Date Received:	04/16/98
Extraction Volume:	1ml	Date Extracted:	Direct Inj.
Extraction Method:	DIRECT	Date Analyzed:	04/21/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-FB-052798

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) WATER Lab Sample ID: 34140.16

Sample Amt: 1ml % Moisture Date Received: 05/28/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/29/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
21-14-2	24DNT	5.70	U
-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-FB-052798

Lab Name: SWL-TULSA Contract:

b Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) WATER Lab Sample ID: 34140.16

Sample Amt: 1ml % Moisture Date Received: 05/28/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/31/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

CRA/MFAR0317

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33193

Matrix: (soil/water) WATER Lab Sample ID: 33193.15

Sample Amt: 1ml % Moisture Date Received: 03/18/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 03/19/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) ~~200~~ 400
3,4-DNT DO 3/25/98

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-00-05-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34266

Matrix: (soil/water) SOIL Lab Sample ID: 34266.08

Sample Amt: 2g % Moisture 46.29 Date Received: 06/05/98

Extraction Volume: 10ml Date Extracted: 06/05/98

Extraction Method: SONC Date Analyzed: 06/10/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	14900	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U × DSC
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-00-05-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34266

Matrix: (soil/water) SOIL Lab Sample ID: 34266.08

Sample Amt: 2g % Moisture 46.29 Date Received: 06/05/98

Extraction Volume: 10ml Date Extracted: 06/05/98

Extraction Method: SONC Date Analyzed: 06/11/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-00-05
-3FD 10%

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34266

Matrix: (soil/water) SOIL Lab Sample ID: 34266.09

Sample Amt: 2g % Moisture 39.35 Date Received: 06/05/98

Extraction Volume: 10ml Date Extracted: 06/05/98

Extraction Method: SONC Date Analyzed: 06/10/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	22000	U
121-82-4	RDX	20600	P
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	UX DSC
98-95-3	NB	2600	U
118-96-7	TNT	2500	U
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
606-20-2	26DNT	2600	U
121-14-2	24DNT	2500	U
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-00-05-3FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34266

Matrix: (soil/water) SOIL Lab Sample ID: 34266.09

Sample Amt: 2g % Moisture 39.35 Date Received: 06/05/98

Extraction Volume: 10ml Date Extracted: 06/05/98

Extraction Method: SONC Date Analyzed: 06/11/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-R-060398

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34266

Matrix: (soil/water) WATER Lab Sample ID: 34266.19

Sample Amt: 1ml % Moisture Date Received: 06/05/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 06/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

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EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-R-060398

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34266

Matrix: (soil/water) WATER Lab Sample ID: 34266.19

Sample Amt: 1ml % Moisture Date Received: 06/05/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 06/11/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-15-05-1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34449

Matrix: (soil/water) SOIL Lab Sample ID: 34449.06

Sample Amt: 2g % Moisture 42.29 Date Received: 06/19/98

Extraction Volume: 10ml Date Extracted: 06/20/98

Extraction Method: SONC Date Analyzed: 06/30/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2960	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-15-05-1

ıb Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34449

Matrix: (soil/water) SOIL Lab Sample ID: 34449.06

Sample Amt: 2g % Moisture 42.29 Date Received: 06/19/98

Extraction Volume: 10ml Date Extracted: 06/20/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-15-05-1FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34449

Matrix: (soil/water) SOIL Lab Sample ID: 34449.07

Sample Amt: 2g % Moisture 46.40 Date Received: 06/19/98

Extraction Volume: 10ml Date Extracted: 06/20/98

Extraction Method: SONC Date Analyzed: 06/30/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-S-005-15-05
-1FD

ıb Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34449

Matrix: (soil/water) SOIL Lab Sample ID: 34449.07

Sample Amt: 2g % Moisture 46.40 Date Received: 06/19/98

Extraction Volume: 10ml Date Extracted: 06/20/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB061898

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34450

Matrix: (soil/water) WATER Lab Sample ID: 34450.19

Sample Amt: 1ml % Moisture Date Received: 06/19/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 06/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB061898

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34450

Matrix: (soil/water) WATER Lab Sample ID: 34450.19

Sample Amt: 1ml % Moisture Date Received: 06/19/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 06/28/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

APPENDIX H
LABORATORY QC DATA FOR
WILEY MILL/RIFFLE SPLITTER SAMPLING

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Laboratory QC Data	23 pages

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

L Code: SWOK Case No: MKF-OH SDG No:33673

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-S-001-00-03-1-R1	76.4	0
2	BIO-S-001-00-03-1-R2	63.1	0
3	BIO-S-001-00-03-1-R2	76.7	0
4	BIO-S-001-00-03-1-R2	54.8*	0
5	BIO-S-001-00-05-2-R1	90.4	0
6	BIO-S-001-00-05-2-R2	52.3*	0
7	BIO-S-001-00-07-3-R1		0
8	BIO-S-001-00-07-3-R2	62.2	0
9	BIO-S-001-00-09-1-R1		0
10	BIO-S-001-00-09-1-R2		0
11	BIO-S-001-00-11-2-R1	121	0
12	BIO-S-001-00-11-2-R2	82.2	0
13	BL0421SG	106	0
14	LC0421SG	102	0
15	LD0421SG	95.8	0
16			
17			
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29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

4

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:33673

Client Sample No: BIO-S-001-00-03-1-R2

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500	117000	140000	242*	54-128
RDX	9500	1010000	983000	284*	66-109
TNB	9500		9510	100	57-130
DNB	9500		11600	122	74-122
TETRYL	9500		9060	95	32-119
NB	9500		10300	108	70-135
TNT	9500	71000	86000	158*	44-124
4ADNT	9500	15700	27000	119	60-140
2ADNT	9500	4000	14500	110	60-140
26DNT	9500		11400	120	58-125
24DNT	9500		10400	109	59-120
2NT	9500		6850	72*	79-124
4NT	9500		6020	63*	74-128
3NT	9500		6630	70*	79-121

of Analyte recoveries out of QC Advisory Limits = 6

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	116000	11*	183*	30	54-128
RDX	9500	872000	1450*	134*	30	66-109
TNB	9500	8390	88	12	30	57-130
DNB	9500	10800	114	7	45	74-122
TETRYL	9500	8200	86	10	30	32-119
NB	9500	9220	97	11	35	70-135
TNT	9500	89400	194*	20	30	44-124
4ADNT	9500	26400	113	5	40	60-140
2ADNT	9500	14200	107	3	40	60-140
26DNT	9500	9900	104	14	35	58-125
24DNT	9500	10600	112	3	35	59-120
2NT	9500	8320	88	19	35	79-124
4NT	9500	7710	81	25	35	74-128
3NT	9500	6980	74*	5	35	79-121

o of Analyte recoveries out of QC Advisory Limits = 6
o of RPD's out of QC Limits 2

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

.b Name: SWL-TULSA Contract:

..b Code: SWOK Case No: MKF-OH SDG No: ~~33579~~ 33673 05/08/98

Client Sample No: BIO-S-001-00-03-1-R2

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000			0*	70-130

No of Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000		0*	100*		70-130

No of Analyte recoveries out of QC Advisory Limits = 1
of RPD's out of QC Limits 1

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33673

Client Sample No: LC0421SG

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		10500	110	57-137
RDX	9500		9360	99	77-113
TNB	9500		9020	95	64-125
DNB	9500		10000	105	82-118
TETRYL	9500		2760	29	23-124
NB	9500		9810	103	69-143
TNT	9500		9420	99	75-118
4ADNT	9500		12600	133	60-140
2ADNT	9500		9750	103	60-140
26DNT	9500		9380	99	78-117
24DNT	9500		9810	103	74-126
2NT	9500		10000	105	78-123
4NT	9500		9740	102	79-125
3NT	9500		9730	102	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

3G

EXPLOSIVES SOIL LABORATORY CONTROL SPIKE RECOVERY

Job Name: SWL-TULSA Contract:

Code: SWOK Case No:MKF-OH SDG No: 33673

Client Sample ID: LC0421SI

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000	0.0	3150	105	70-130

No of Analyte recoveries out of QC Advisory Limits= 0

FORM III

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:33673

Client Sample No: LD0421SG

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		10400	109	57-137
RDX	9500		9110	96	77-113
TNB	9500		9670	102	64-125
DNB	9500		9960	105	82-118
TETRYL	9500		8890	94	23-124
NB	9500		9610	101	69-143
TNT	9500		9510	100	75-118
4ADNT	9500		9530	100	60-140
2ADNT	9500		9670	102	60-140
26DNT	9500		9340	98	78-117
24DNT	9500		9750	103	74-126
2NT	9500		10000	105	78-123
4NT	9500		9860	104	79-125
3NT	9500		9780	103	78-121

›f Analyte recoveries out of QC Advisory Limits = 0

3G

EXPLOSIVES SOIL LABORATORY CONTROL SPIKE RECOVERY

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No:MKF-OH SDG No: 33673

Client Sample ID: LD0421SI

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000	0.0	3070	102	70-130

No of Analyte recoveries out of QC Advisory Limits= 0

FORM III

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34353

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-5-005-00-03-1-R1	66.0	0
2	BIO-5-005-00-03-1-R1	73.0D	0
3	BIO-5-005-00-03-1-R2	75.6	0
4	BIO-5-005-00-03-1-R2	72.0D	0
5	BIO-5-005-00-05-2-R1	63.1	0
6	BIO-5-005-00-05-2-R1	68.1D	0
7	BIO-5-005-00-05-2-R2	82.4	0
8	BIO-5-005-00-05-2-R2	84.0D	0
9	BIO-5-005-00-07-3-R1	83.4	0
10	BIO-5-005-00-07-3-R1	164*D	0
11	BIO-5-005-00-07-3-R2	69.4	0
12	BIO-5-005-00-07-3-R2	51.8*D	0
13	BIO-5-005-00-09-1-R1	63.2	0
14	BIO-5-005-00-09-1-R1	141*D	0
15	BIO-5-005-00-09-1-R2	70.6	0
16	BIO-5-005-00-09-1-R2	274*D	0
17	BIO-5-005-00-11-2-R1	72.8	0
18	BIO-5-005-00-11-2-R1	30.1*D	0
19	BIO-5-005-00-11-2-R2	78.4	0
20	BIO-5-005-00-11-2-R2	72.8D	0
21	BL0613SA	89.8	0
22	LC0613SA	98.9	0
23	LD0613SA	108	0
24			
25			
26			
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34266

Client Sample No: BIO-S-005-00-03 MSD

(Same analytical batch as 34353) vm

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500	30200	19200	116	54-128
RDX	9500	144000	96000	505*	66-109
TNB	9500		7790	82	57-130
DNB	9500		7750	82	74-122
TETRYL	9500		2950	31*	32-119
NB	9500		7130	75	70-135
TNT	9500		7160	75	44-124
4ADNT	9500		7260	76	60-140
2ADNT	9500		7280	77	60-140
26DNT	9500		6880	72	58-125
24DNT	9500		8720	92	59-120
2NT	9500		7590	80	79-124
4NT	9500		4680	49*	74-128
3NT	9500		7360	78*	79-121

# of Analyte recoveries out of QC Advisory Limits = 4

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	22400	82	34*	30	54-128
RDX	9500	103000	432*	16	30	66-109
TNB	9500	7590	80	3	30	57-130
DNB	9500	8070	85	4	45	74-122
TETRYL	9500	5020	53	52*	30	32-119
NB	9500	8320	88	15	35	70-135
TNT	9500	7440	78	4	30	44-124
4ADNT	9500	8210	86	12	40	60-140
2ADNT	9500	8180	86	12	40	60-140
26DNT	9500	7530	79	9	35	58-125
24DNT	9500	9270	98	6	35	59-120
2NT	9500	7310	77*	4	35	79-124
4NT	9500	7820	82	50*	35	74-128
3NT	9500	7540	79	2	35	79-121

# of Analyte recoveries out of QC Advisory Limits = 4
RPD's out of QC Limits 3

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34266 (same analytical batch as 34353)

Client Sample No: BIO-R-060398 MSD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
HMX	400		342	86	44-154
RDX	150		146	97	66-139
TNB	225		208	92	56-129
DNB	125		121	97	76-122
TETRYL	413		441	107	76-120
NB	213		204	96	82-111
TNT	188		173	92	76-137
4ADNT	313		274	88	60-140
2ADNT	313		306	98	60-140
26DNT	288		280	97	80-118
24DNT	175		163	93	72-123
2NT	363		349	96	74-130
4NT	250		280	112	78-116
3NT	238		204	86	72-126

# of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	400	320	80	7	15	44-154
RDX	150	149	99	2	12	66-139
TNB	225	204	91	2	10	56-129
DNB	125	117	94	3	15	76-122
TETRYL	413	429	104	3	14	76-120
NB	213	194	91	5	13	82-111
TNT	188	182	97	5	15	76-137
4ADNT	313	288	92	5	40	60-140
2ADNT	313	314	100	2	40	60-140
26DNT	288	293	102	5	13	80-118
24DNT	175	169	97	4	14	72-123
2NT	363	346	95	1	15	74-130
4NT	250	276	110	2	14	78-116
3NT	238	229	96	12	15	72-126

# of Analyte recoveries out of QC Advisory Limits = 0
# of RPD's out of QC Limits 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

I Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34353

Client Sample No: LC0613SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9460	100	57-137
RDX	9500		9200	97	77-113
TNB	9500		9920	104	64-125
DNB	9500		9430	99	82-118
TETRYL	9500		7500	79	23-124
NB	9500		9600	101	69-143
TNT	9500		7920	83	75-118
4ADNT	9500		10000	105	60-140
2ADNT	9500		9600	101	60-140
26DNT	9500		9120	96	78-117
24DNT	9500		10600	112	74-126
2NT	9500		10200	107	78-123
4NT	9500		10000	105	79-125
3NT	9500		9320	98	78-121

Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34353

Client Sample No: LC0613SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		2530	84	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

L Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34353

Client Sample No: LD0613SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9310	98	57-137
RDX	9500		9290	98	77-113
TNB	9500		9670	102	64-125
DNB	9500		9300	98	82-118
TETRYL	9500		6930	73	23-124
NB	9500		9660	102	69-143
TNT	9500		7770	82	75-118
4ADNT	9500		10000	105	60-140
2ADNT	9500		9490	100	60-140
26DNT	9500		9030	95	78-117
24DNT	9500		10400	109	74-126
2NT	9500		9930	104	78-123
4NT	9500		9470	100	79-125
3NT	9500		8960	94	78-121

Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34353

Client Sample No: LD0613SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		2670	89	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:34654

	SAMPLE NUMBER	S1 #	OTHER
1	BIOS00515031R1	106	0
2	BIOS00515031R2	104	0
3	BIOS00515052R1	106	0
4	BIOS00515052R2	99.9	0
5	BIOS00515073R1	106	0
6	BIOS00515073R2	104	0
7	BIOS00515091R1	104	0
8	BIOS00515091R1 MS	83.9	0
9	BIOS00515091R1 MSD	84.2	0
10	BIOS00515091R2	101	0
11	BIOS00515112R1	113	0
12	BIOS00515112R2	100	0
13	BL0707SC	102	0
14	LC0707SC	95.3	0
15	LD0707SC	92.1	0
16			
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30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

page _ 1

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34654

Client Sample No: BIOS00515091R1 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		8040	85	54-128
RDX	9500		7580	80	66-109
TNB	9500		8760	92	57-130
DNB	9500		7760	82	74-122
TETRYL	9500		5390	57	32-119
NB	9500		6310	66*	70-135
TNT	9500		7480	79	44-124
4ADNT	9500		7540	79	60-140
2ADNT	9500		8660	91	60-140
26DNT	9500		8330	88	58-125
24DNT	9500		8790	93	59-120
2NT	9500		9100	96	79-124
4NT	9500		9130	96	74-128
3NT	9500		8950	94	79-121

No. of Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	8020	84	0	30	54-128
RDX	9500	7580	80	0	30	66-109
TNB	9500	8840	93	1	30	57-130
DNB	9500	7760	82	0	45	74-122
TETRYL	9500	5820	61	8	30	32-119
NB	9500	6330	67*	0	35	70-135
TNT	9500	7460	79	0	30	44-124
4ADNT	9500	7460	79	1	40	60-140
2ADNT	9500	8680	91	0	40	60-140
26DNT	9500	8320	88	0	35	58-125
24DNT	9500	8770	92	0	35	59-120
2NT	9500	9120	96	0	35	79-124
4NT	9500	9160	96	0	35	74-128
3NT	9500	8940	94	0	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 0

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34654

Client Sample No: BIOS00515091R1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2840	95	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	3060	102	7	30	70-130

N f Analyte recoveries out of QC Advisory Limits = 0
N of RPD's out of QC Limits 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34654

Client Sample No: LC0707SC

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		8830	93	57-137
RDX	9500		8040	85	77-113
TNB	9500		9010	95	64-125
DNB	9500		7310	77*	82-118
TETRYL	9500		5710	60	23-124
NB	9500		6590	69	69-143
TNT	9500		7270	77	75-118
4ADNT	9500		7470	79	60-140
2ADNT	9500		8730	92	60-140
26DNT	9500		8190	86	78-117
24DNT	9500		8610	91	74-126
2NT	9500		8910	94	78-123
4NT	9500		9300	98	79-125
3NT	9500		9000	95	78-121

No. of Analyte recoveries out of QC Advisory Limits = 1

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34654

Client Sample No: LC0707SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3040	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34654

Client Sample No: LD0707SC

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		8130	86	57-137
RDX	9500		7470	79	77-113
TNB	9500		8270	87	64-125
DNB	9500		6760	71*	82-118
TETRYL	9500		5810	61	23-124
NB	9500		6000	63*	69-143
TNT	9500		6710	71*	75-118
4ADNT	9500		6820	72	60-140
2ADNT	9500		8010	84	60-140
26DNT	9500		7770	82	78-117
24DNT	9500		7850	83	74-126
2NT	9500		8190	86	78-123
4NT	9500		8430	89	79-125
3NT	9500		8240	87	78-121

Of Analyte recoveries out of QC Advisory Limits = 3

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34654

Client Sample No: LD0707SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3010	100	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

APPENDIX I
FIELD TEST KIT RAW DATA

TABLE OF CONTENTS

DESCRIPTION	PAGES
Detailed Summary Comparison of Field Test Kits and Lab Analysis	1 page
Field Test Kit Raw Data	10 pages

ANALYTICAL SUMMARY OF RESULTS OF FIELD TEST KITS / LAB COMPARISON

		FIELD TEST KIT RESULTS				LAB RESULTS						
		"AS IS" ANALYSIS		DRY WEIGHT								
Date	ID	RDX	TNT	RDX	TNT	RDX	TNT	% Moisture	False Positive for RDX	False Negative for RDX	False Positive forTNT	False Negative forTNT
Units		MG/KG		MG/KG		MG/KG		%				
Day 0	A1	64.5	9.9	107.3	16.5	273	31.3	39.87				
Day 0	A2	66.5	13.2	106.6	21.2	118	3.68	37.64				
Day 0	A3	31.3	2.8 J	59.2	5.3	60.8	6.25 U	47.09				
Day 0	B1	238.6	17	325.6	23.2	400	32.7	26.72				
Day 0	B2	93.9	7.3	150.6	11.7	475	53	37.66				
Day 0	B3	47.9	2.8 J	85.4	5.0 J	129	4.65 J	43.89				
Day 0	C1	427.3	19	673.2	29.9	510	57.2	36.53				
Day 0	C2	140.8	3.4 J	229.6	5.5 J	150	5.18 J	38.68				
Day 0	C3	115.4	3.1 J	184.1	4.9 J	112	9.95	37.31				X
Day 0	D1	133	5.1	221.9	8.5	357	27.6	40.05				
Day 0	D2	314.8	25.1	589.0	47.0	281	20.1	46.55				
Day 0	D3	118.3	3.7 J	213.8	6.7 J	271	30.9	44.68				X
Day 5	A1	19.7	5.0 U	36.8	10.75 U	36.3	0.733 J	46.51				
Day 5	A2	27.3	5.0 U	54.8	9.96 U	28.7	1.25 U	50.18				
Day 5	A3	59.9	5.0 U	92.8	14.11 U	119	1.25 U	35.43				
Day 5	B1	24.5	5.0 U	39.5	13.19 U	37.4	0.256 J	37.91				
Day 5	B2	69.5	5.0 U	134.3	10.36 U	91.6	1.25 U	48.25				
Day 5	B3	69.2	5.0 U	104.9	14.70 U	96.7	1.25 U	34.02				
Day 5	C1	23	5.0 U	35.7	14.08 U	18.8	0.628 J	35.51				
Day 5	C2	30.7	5.0 U	71.4	8.77 U	87.2	19	56.99				X
Day 5	C3	67.2	5.0 U	96.3	16.56 U	78.9	1.25 U	30.19				
Day 5	D1	19	5.0 U	27.1	16.70 U	16.6	1.25 U	29.94				
Day 5	D2	32.5	5.0 U	46.8	16.37 U	40.3	1.33 P	30.55				
Day 5	D3	52.7	5.0 U	75.0	16.84 U	53.9	1.25 U	29.70				
Day 10	A1	0.88 U	5.0 U	3.20 U	18.19 U	1.34	0.25 U	27.49				
Day 10	A2	2.8	5.0 U	3.5	23.95 U	2.33	2.50 P	20.88				
Day 10	A3	13.5	5.0 U	17.7	21.10 U	3.7	0.397 P	23.70				
Day 10	B1	0.88 U	5.0 U	3.20 U	18.17 U	.710 J	0.25 U	27.52				
Day 10	B2	6.2	5.0 U	8.2	20.59 U	4.57	0.25 U	24.28				
Day 10	B3	0.9	5.0 U	1.2	21.42 U	.857 J	0.25 U	23.34				
Day 10	C1	0.88 U	5.0 U	3.17 U	18.03 U	0.25 U	0.25 U	27.73				
Day 10	C2	8.7	5.0 U	11.0	23.69 U	2.57	0.25 U	21.11				
Day 10	C3	6.3	5.0 U	8.0	23.07 U	2.79	0.25 U	21.67				
Day 10	D1	0.88 U	5.0 U	2.98 U	16.97 U	112	44.5 P	29.47		X		X
Day 10	D2	3.2	5.0 U	4.1	22.00 U	2.78	0.25 U	22.73				
Day 10	D3	2.7	5.0 U	3.6	20.11 U	1.09	0.25 U	24.86				
Day 40	A1	0.88 U	5.9	1.1 U	7.3	1.42	0.164 JP	19.1		X	X	
Day 40	A2	0.88 U	5.0 U	1.1 U	6.1 U	1.0 U	0.392 P	17.4				
Day 40	A3	0.88 U	5.0 U	1.1 U	6.1 U	1.0 U	0.836 P	18.2				
Day 40	B1	0.88 U	5.0 U	1.1 U	6.2 U	1.0 U	0.25 U	18.8				
Day 40	B2	0.88 U	5.0 U	1.1 U	6.3 U	0.772 J	0.271 P	21.2				
Day 40	B3	0.88 U	5.0 U	1.1 U	6.2 U	1.0 U	0.25 U	18.7				
Day 40	C1	2.3	5.0 U	2.8	6.2 U	1.48	0.219 JP	19.0				
Day 40	C2	0.88 U	5.0 U	1.1 U	6.2 U	36.8	16.2	19.2		X		X
Day 40	C3	0.88 U	5.0 U	1.1 U	6.2 U	1.0 U	0.25 U	18.8				
Day 40	D1	0.88 U	5.0 U	1.1 U	6.0 U	1.68	0.156 JP	17.1		X		
Day 40	D2	0.88 U	5.0 U	1.1 U	6.2 U	0.636 J	0.397 P	19.2				
Day 40	D3	0.88 U	5.0 U	1.1 U	6.1 U	1.0 U	0.302	18.1				
Day 60	A1	0.88 U	5.0 U	1.0 U	5.7 U	2.29 P	0.695	11.94		X		
Day 60	A2	0.88 U	5.0 U	1.0 U	5.8 U	7.17 P	0.384	14.19		X		
Day 60	A3	0.88 U	5.0 U	1.0 U	5.8 U	2.23 P	0.148 J	13.41		X		
Day 60	B1	0.8 J	5.0 U	1.0 U	5.9 U	5.57 P	0.213 J	15.83		X		
Day 60	B2	0.8 J	5.0 U	1.2 U	6.8 U	1.66 P	0.144 J	26.90		X		
Day 60	B3	0.88 U	5.0 U	1.0 U	5.9 U	4.16 P	0.359	14.76		X		
Day 60	C1	0.88 U	5.0 U	1.0 U	5.9 U	5.65 P	0.38	15.23		X		
Day 60	C2	0.88 U	5.0 U	1.1 U	6.0 U	5.49 P	0.102 J	16.93		X		
Day 60	C3	1.1	5.0 U	1.3	6.0 U	5.53 P	0.479	16.08				
Day 60	D1	0.88 U	5.0 U	1.0 U	5.7 U	2.40 P	0.191 J	12.99		X		
Day 60	D2	0.88 U	5.0 U	1.0 U	5.9 U	3.32 P	0.223 J	15.03		X		
Day 60	D3	0.88 U	5.0 U	1.0 U	5.9 U	47.8	14.1 P	15.81		X		X

Chevalier

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
30%-00-A1	out of range	—
30%-00-A2	oor	—
30%-00-A1 1/40	0.047	1.47×1.1×40 = 64.5
-A2 1/40	0.048	1.5×1.1×40 = 66.5
-A3 1/20	0.046	1.4×1.1×20 = 31.3
B1-1/20	0.258	10.84×1.1×20 = 238.6
B2-1/20	0.11	4.27×1.1×20 = 93.9
B3-1/20	0.0163	2.18×1.1×20 = 47.9
C1-1/20	0.451	19.4×1.1×20 = 427.3
C2-1/20	0.158	6.4×1.1×20 = 140.8
~~D1~~ C3-1/20	0.132	5.2×1.1×20 = 115.4
D1-1/20	0.15	6.0×1.1×20 = 133.0
D2-1/20	0.336	14.3×1.1×20 = 314.8
D3 1/20	0.135	5.4×1.1×20 = 118.3
method	0.031	0.8×1.1 = 0.8
dilution vial blank	0.037	1.0 ~~×1.1×20~~
A1 1/40 dup	0.085	3.2×1.1×40 = 138.8
method	0.033	0.8×1.1 = 0.9
A1 1/40 dup	0.101	3.9×1.1×40 = 170

1) Abs "background" 0.000 2) Abs "control" 0.195 3) Abs "Nitrate/Nitrite" _____

Chew.

TNT SOIL TEST KIT WORKSHEET

Abs background 0.002 Abs control 0.337

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial #2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) x5
30%-00-A1	0.016	0.096	0.032	0.064	1.98 x 5 = 9.9
-A2	0.014	0.113	0.028	0.085	2.63 x 5 = 13.2
-A3	0.02	0.058	0.04	0.018	0.6 x 5 = 2.8 n2
B1	0.012	0.134	0.024	0.11	3.4 x 5 = 17.0
B2	0.011	0.069	0.022	0.047	1.5 x 5 = 7.3
B3	0.015	0.048	0.03	0.018	0.6 x 5 = 2.8
C1	0.014	0.151	0.028	0.123	3.8 x 5 = 19.0
C2	0.017	0.056	0.034	0.022	0.7 x 5 = 3.4
C3	0.014	0.048	0.028	0.02	0.6 x 5 = 3.1
D1	0.015	0.062	0.03	0.033	1.0 x 5 = 5.1
D2	0.017	0.196	0.034	0.162	5.0 x 5 = 25.1
D3	0.017	0.058	0.034	0.024	0.7 x 5 = 3.7
Bdup	0.012	0.071	0.024	0.047	1.5 x 5 = 7.3
Method	0.001	0.002	0.002	—	—

Orev.

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
30%-05 - A1	0.417	17.8 x 1.1 = 19.7
A2 1/2	0.293	12.4 x 1.1 x 2 = 27.3
Method	0.013	–
A3 1/2	0.627	27.2 x 1.1 x 2 = 59.9
B1 1/2	0.265	11.2 x 1.1 x 2 = 24.5
B2 1/2	0.725	31.6 x 1.1 x 2 = 69.5
B3 1/2	0.722	31.5 x 1.1 x 2 = 69.2
C1 1/2	0.249	10.4 x 1.1 x 2 = 23
C2 1/2	0.328	13.9 x 1.1 x 2 = 30.7
C3 1/2	0.701	30.5 x 1.1 x 2 = 67.2
D1 1/2	0.208	8.6 x 1.1 x 2 = ~~18~~ 19
D2 1/2	0.346	14.8 x 1.1 x 2 = 32.5
D3 1/2	0.553	24 x 1.1 x 2 = 52.7
C3 1/5	0.253	10.6 x 1.1 x 5 = 58.4
A1 dup	0.403	17.3 x 1.1 = 19.0

1) Abs "background" 0.002 2) Abs "control" ~~0.280~~ let develop too long 0.276 3) Abs "Nitrate/Nitrite" _____

Chevalier

TNT SOIL TEST KIT WORKSHEET

Abs background 0.004 Abs control 0.348

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x 2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) X 5
30% -OS-A1	0.007	0.02			nd
A2	0.006	0.017			nd
A3	0.011	0.025			nd
B1	0.008	0.017			nd
B2	0.006	0.018			nd
B3	0.007	0.035	0.014	0.021	nd
C1	0.006	0.014			nd
C2	0.004	0.015			nd
C3	0.009	0.026			nd
D1	0.004	0.01			nd
D2	0.005	0.026			nd
D3	0.005	0.014			nd
dup B3	0.008	0.039	0.016	0.023	0.71x5=3.6 nd
method	0.002	0.003			nd

Chev.

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
30%-10 - A1	0.02	0.27 x 1.1 = 0.29 nd
A2	0.072	2.6 x 1.1 = 2.8
A3	0.290	12.3 x 1.1 = 13.5
B1	0.019	nd
B2	0.14	5.6 x 1.1 = 6.2
B3	0.032	0.8 x 1.1 = 0.9
C1	0.02	nd
C2	0.192	7.9 x 1.1 = 8.7
C3	0.143	5.7 x 1.1 = 6.3
D1	0.021	nd
D2	0.079	2.9 x 1.1 = 3.2
D3	0.069	2.4 x 1.1 = 2.7
dup A1	0.022	nd
method	0.014	nd

1) Abs "background" 0.000 2) Abs "control" 0.258 3) Abs "Nitrate/Nitrite" _____

char. 5/14/98

TNT SOIL TEST KIT WORKSHEET

Abs background 0.001 Abs control 0.332

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x 42	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) x 5
30%-10-A1	0.002	0.009	.004	.005	nd
A2	0.004	0.013			nd
A3	0.006	0.015			nd
B1	0.003	0.01			nd
B2	0.004	0.011			nd
B3	0.004	0.014			nd
C1	0.004	0.012			nd.
C2	0.004	0.014			nd
C3	0.004	0.016	0.008	0.008	0.25×5=1.2 nd
D1	0.004	0.01			nd
D2	0.005	0.013			nd
D3	0.006	0.013			nd
dup A1	0.006	0.014			nd
method	0.003	0.004			nd

6/15/98 5076 Day 40

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
A1	0.02	0.27 × 1.1 = 0.29 nd
B2	0.016	nd
C1	0.06	2.0 × 1.1 = 2.3
D1	0.024	0.44 × 1.1 = 0.5 nd
A2	0.025	nd
B1	0.02	nd
C2	0.012	nd
D2	0.014	nd
A3	0.02	nd
B3	0.017	nd
C3	0.016	nd
D3	0.013	nd
method	0.016	nd
B2 dup.	0.015	nd

1) Abs "background" 0.001 2) Abs "control" 0.224 3) Abs "Nitrate/Nitrite" _____

6/16 0.000

6/18/98 N130%
Day 40

TNT SOIL TEST KIT WORKSHEET

Abs background 0.000 Abs control 0.332

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x 2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) x 5
A1	0.006	0.05	0.012	0.038	1.18x5=5.9
A2	0.005	0.013			nd
A3	0.002	0.011			nd
B1	0.006	0.026			nd
B2	0.002	0.009			nd
B3	0.002	0.013			nd
C1	0.014	0.037			nd
C2	0.011	0.026			nd
C3	0.007	0.015			nd
D1	0.016	0.041			nd
D2	0.004	0.016			nd
D3	0.002	0.012			nd
B2 dup	0.003	0.012			nd
method	0.001	0.002			nd

Day 60

RDX SOIL TEST KIT WORKSHEET

Inter results

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225}$ x1.1
A1	0.016	~~0.8~~ nd
A2	0.027	~~1.3~~ nd
A3	0.015	nd
Method	0.017	nd
B1	0.03	0.8
B2	0.031	0.8
B3	0.019	nd
B3-FD	0.082	3.3
C1	0.021	nd
C2	0.023	nd
C3	0.037	1.1
D1	0.021	nd
D2	0.024	nd
D3	0.026	nd

1) Abs "background" 0.000 2) Abs "control" 0.208 3) Abs "Nitrate/Nitrite" _____

Day 60

Abs background 0.000

Abs control ~~0.069~~ 22 0.319

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial ~~x4~~ x2	Abs final (Column 3 - Column 4)	TNT CONC ppm x 5 (Column 5/0.0323)
A-1	0.006	0.016	0.012	0.004	ND ~~0.62~~
Method	0.003	0.005	0.006	0.001	ND
A-2	0.004	0.013	0.008	0.005	ND
A-3	0.007	0.017	0.014 ~~0.05~~	0.003	ND
B-1	0.001	0.011	0.002	0.009	ND
B-2	0.010	0.037	0.02	0.017	ND
B-3	0.011	0.026	0.022	0.004	ND
B-3FD	0.013	0.031	0.026	0.005	ND
C-1	0.006	0.017	0.012	0.005	ND
C-2	0.006	0.027	0.032	-0.005	ND
C-3	0.004	0.015	0.008	0.007	ND
D-1	0.003	0.010	0.006	0.004	ND
D-2	0.004	0.013	0.008	0.005	ND
D-3	0.003	0.016	0.006	0.01	ND

APPENDIX J
RAW DATA DAY 0 FOR ENSYS
TEST KIT/LAB COMPARISON

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Raw Data of Windrow N-30% Day 0 . . . . . 117 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.01

Sample Amt: 2g % Moisture 39.87 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	42600	J
121-82-4	RDX	273000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	31300	
1946-51-0	4ADNT	2170	JP
35572-78-2	2ADNT	1910	J
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

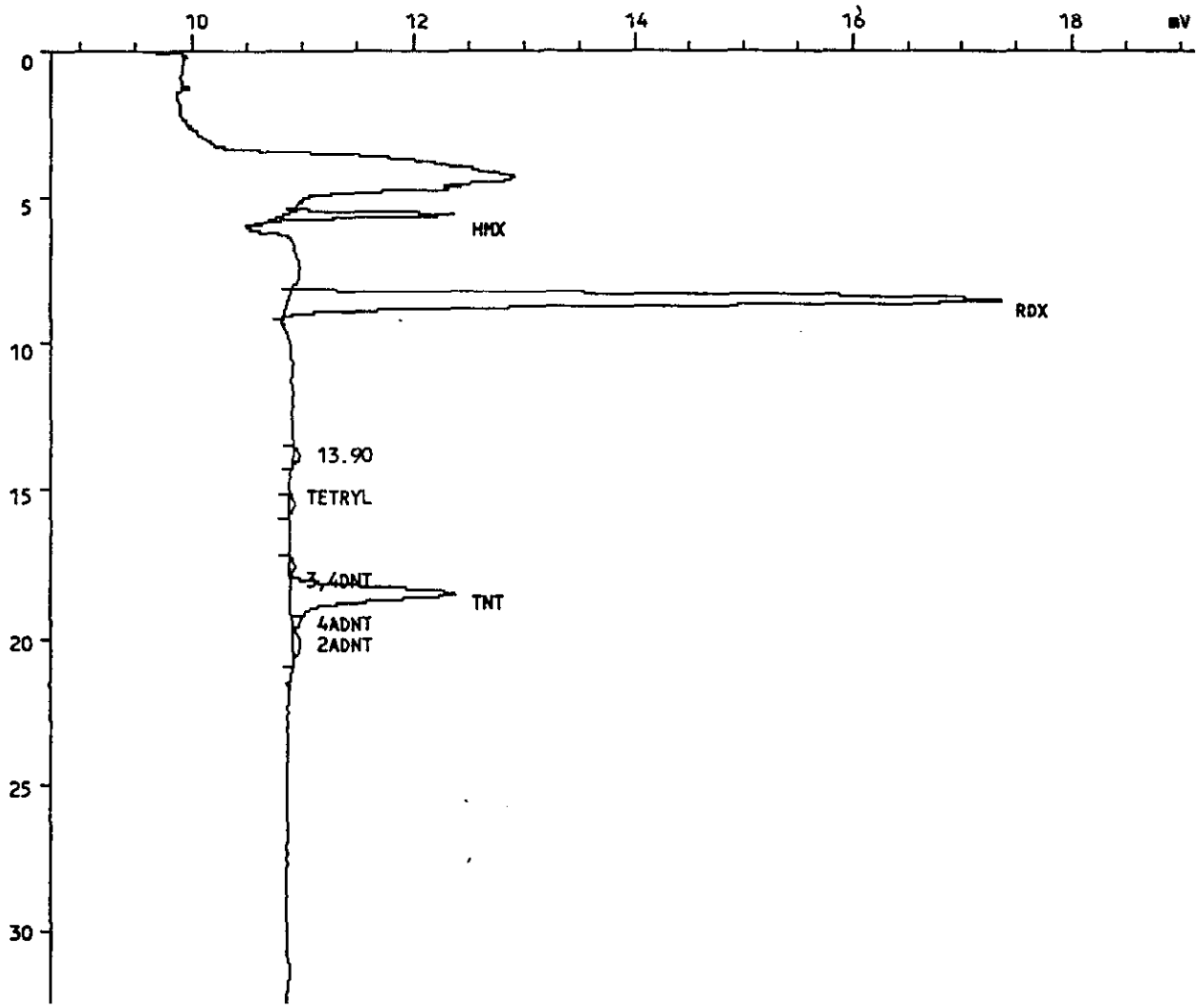
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,5,1

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 00:21:20
Reported on 05-May-98 at 19:04:53



INJECTION REPORT

on F: <MC3> 2 2EX0502A,5,1

ed on 03-May-98 at 00:21:20
ed on 05-May-82 at 18:51:24
ed on 05-May-98 at 18:51:24

ANALYSIS INFORMATION

s ID.....: EXP, GC200
name.....: SS
.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
of samples.: 23
tion file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
title.....: SW846-8330

SAMPLE INFORMATION

name.....: BIO-N-30%-00-A1 50X
ID.....: 33783.01
type.....: Sample
amount.....: 2.0000
of injections.....: 1
Number.....: 1

n factor amounts:
MOISTURE.....: 0.000

tors:
(mL).....: 20.000
n.....: 50.000
(g or mL).....: 2.000

PEAK INFORMATION

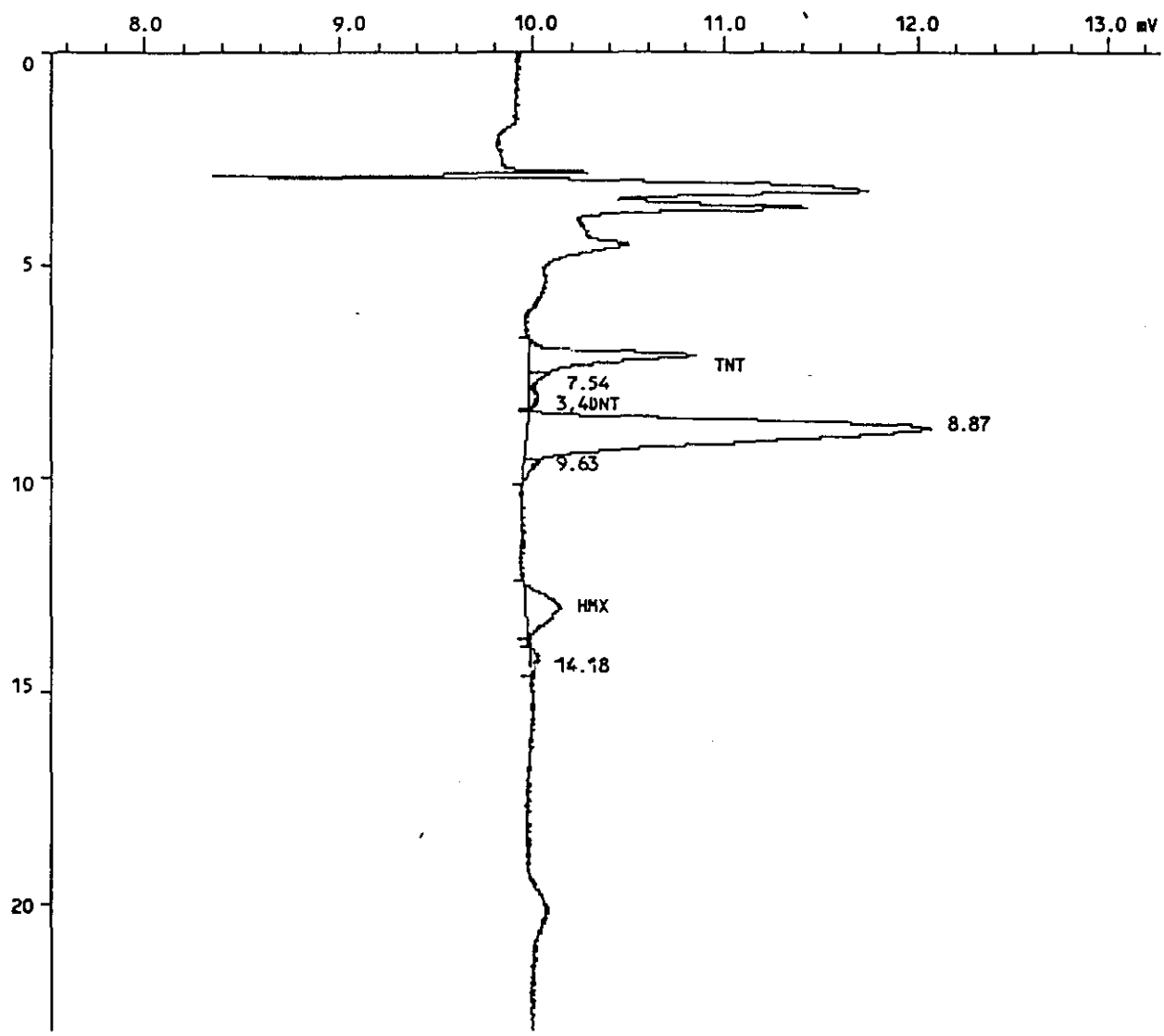
PT mins	Hght uV	Area uVs	ug/Kg	Peak name
5.605	1581	18831	42643.203	HMX *
8.549	6509	179314	272845.813	RDX *
15.387	49	1611	2121.441	TETRYL
17.696	49	1253	1362.188	3,4DNT 68
18.485	1489	47252	31309.418	TNT *
19.173	126	2358	2168.531	4ADNT * JP
20.101	75	3031	1910.517	2ADNT * J
	9878	253650	354361.094	
al	71	1850	2814.778	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,2,1

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:12:18
Reported on 06-May-98 at 09:45:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,2,1

Acquired on 03-May-98 at 17:12:18
Modified on 06-May-82 at 09:37:18
Reported on 06-May-98 at 09:37:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

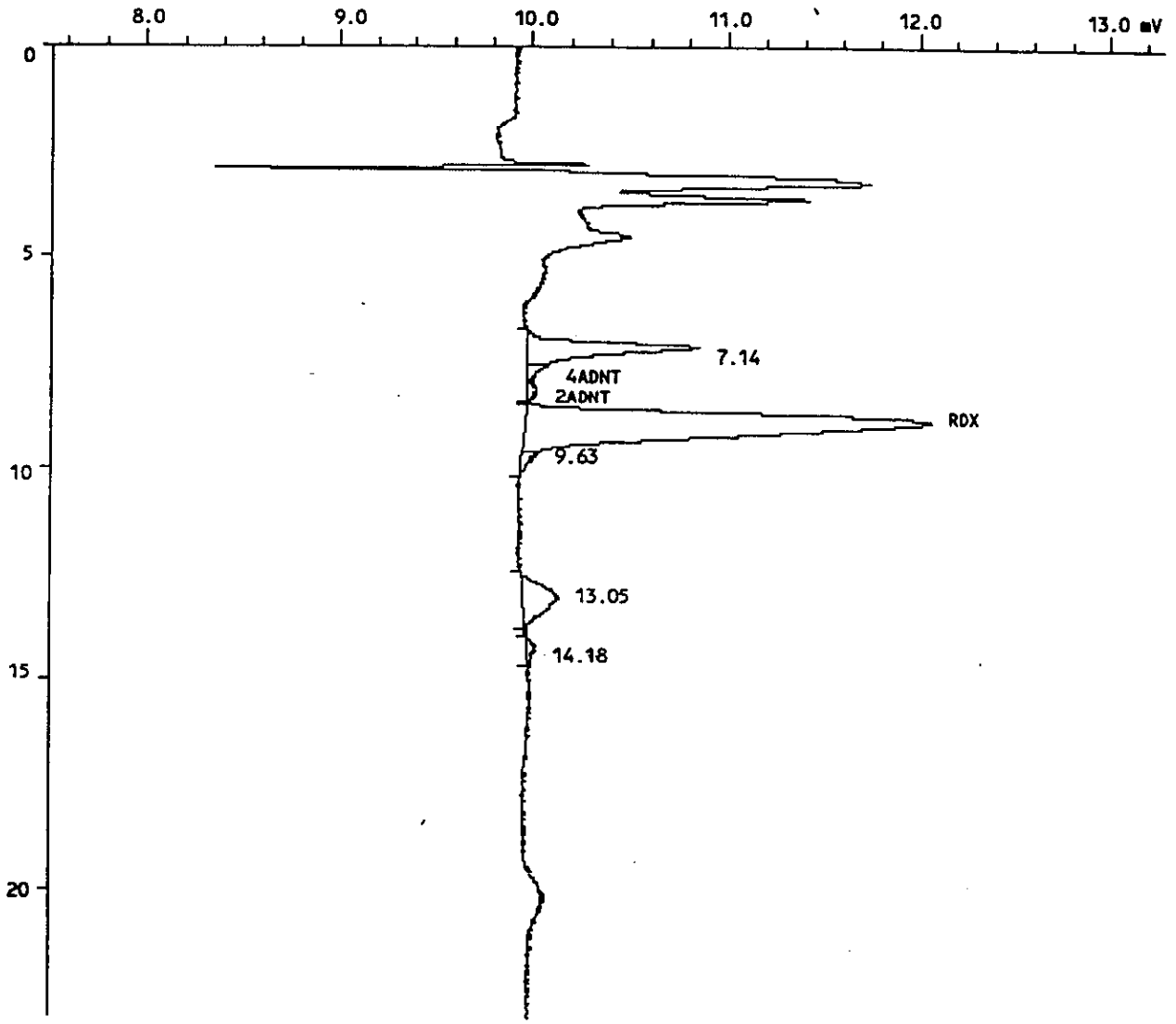
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.141	869	15814	30225.260	TNT
3	8.133	50	988	3597.126	3,4DNT
6	13.051	187	7631	33035.844	HMX
Total		1107	24433	66858.234	
Residual		2347	74457	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,2,1

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:12:18
Reported on 06-May-98 at 11:00:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,2,1

Acquired on 03-May-98 at 17:12:18
Modified on 06-May-82 at 10:51:50
Reported on 06-May-98 at 10:51:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.541	112	1329	4162.834	4ADNT
3	8.133	50	988	1888.663	2ADNT
4	8.875	2102	70828	257556.688	RDX
Total		2265	73145	263608.188	
Residual		1188	25746	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.01

Sample Amt: 2g % Moisture 39.87 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

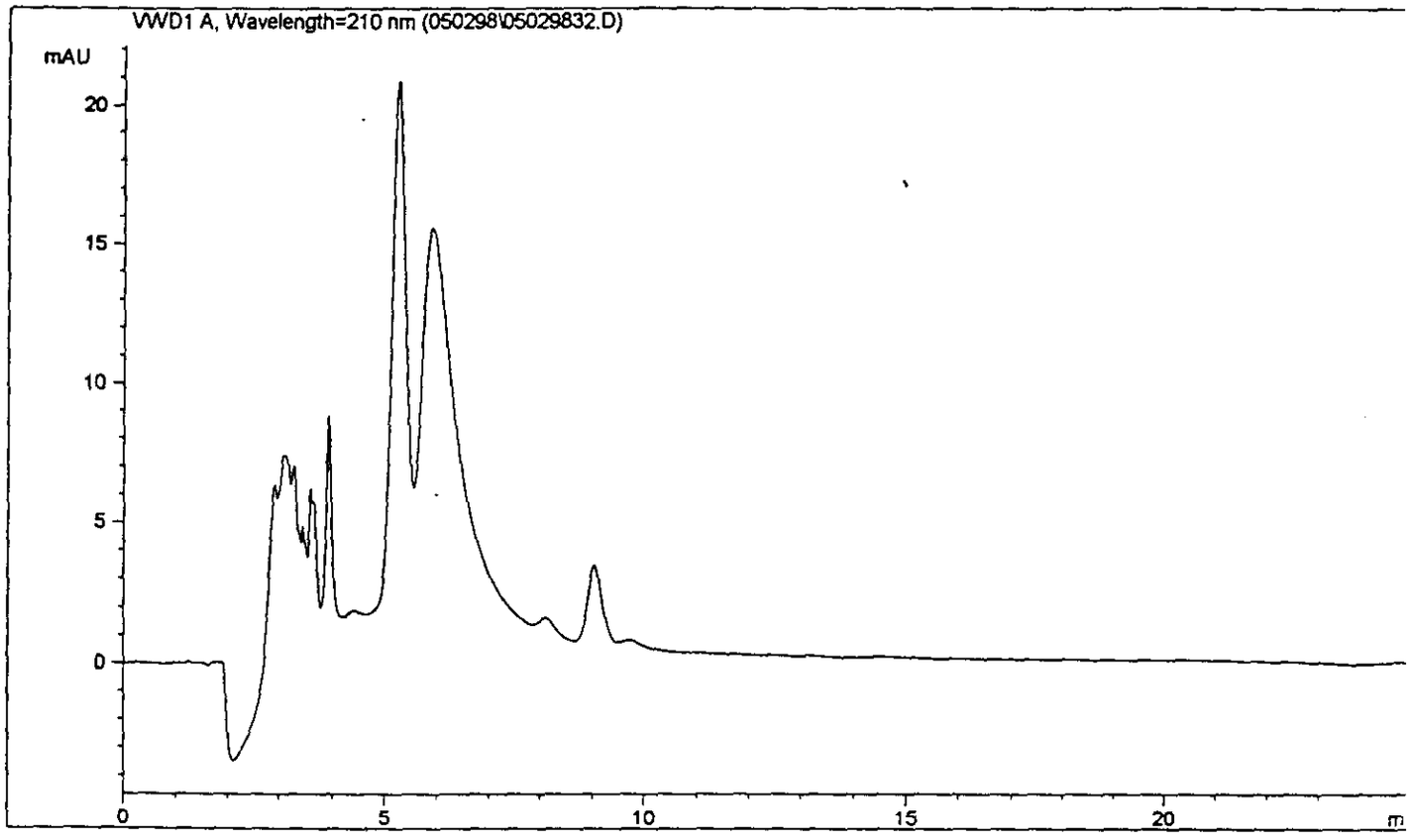
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 32
Sample Name	: 33783.01	Vial No.	: 32
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.02

Sample Amt: 2g % Moisture 37.64 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	17400	J
121-82-4	RDX	118000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	3680	J
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

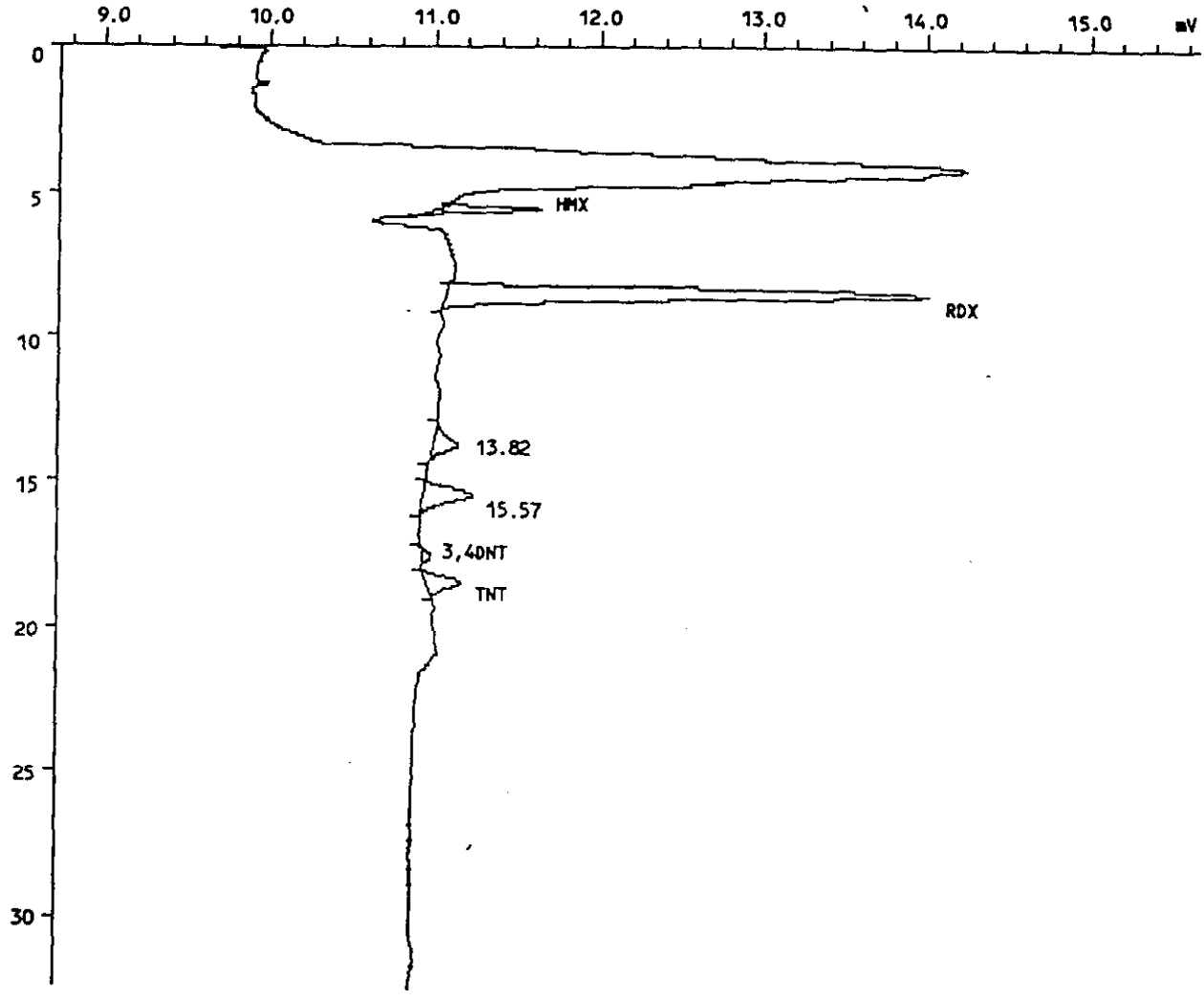
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,6,1

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 01:05:57
Reported on 05-May-98 at 19:04:30



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,6,1

Acquired on 03-May-98 at 01:05:57
Modified on 05-May-82 at 18:51:40
Reported on 05-May-98 at 18:51:42

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

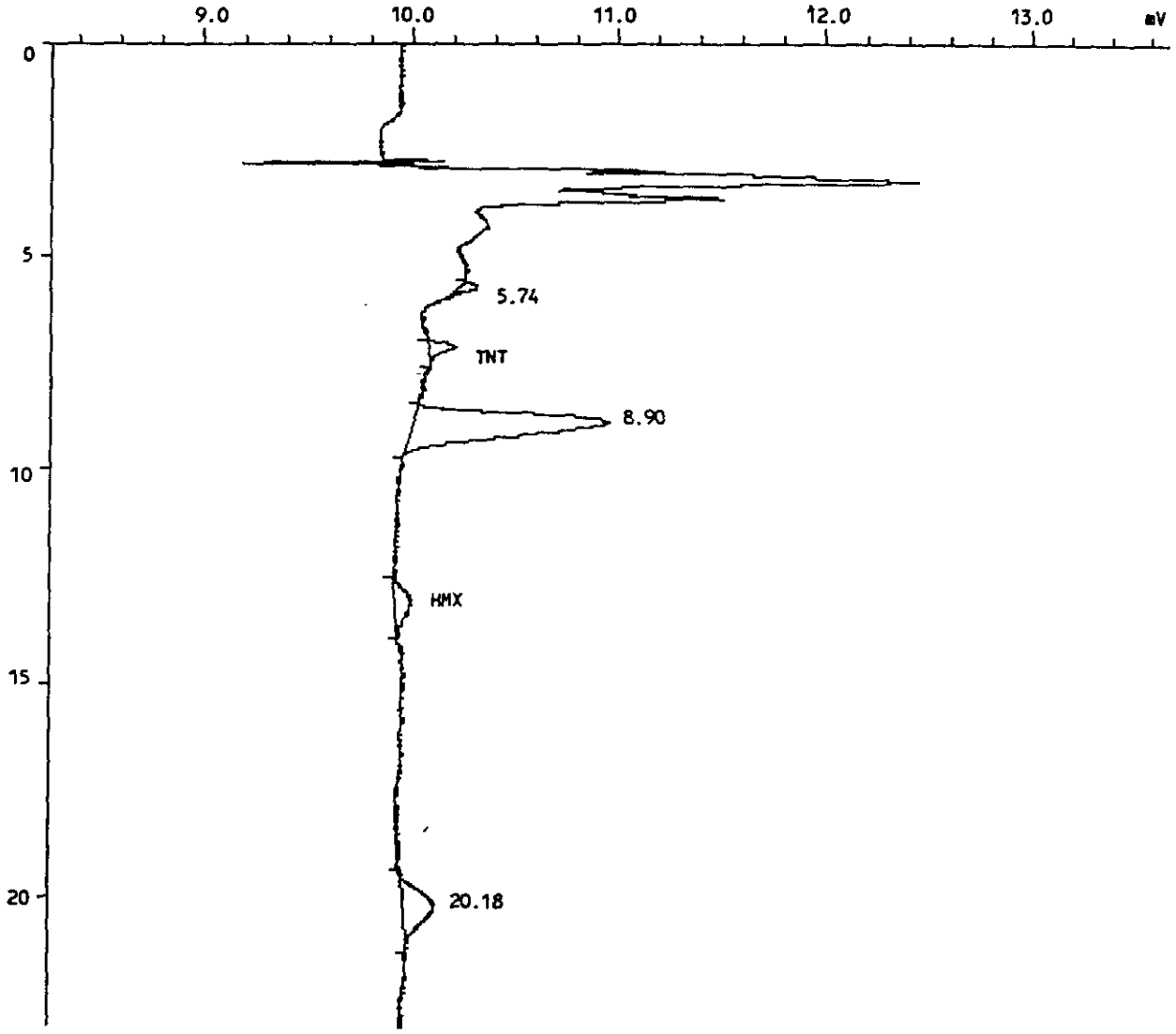
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.595	668	7674	17378.182	HMX *J
2	8.528	2940	77863	118477.164	RDX *
5	17.595	60	1352	1469.584	3,4DNT
6	18.475	204	5550	3677.318	TNT *J
Total		3872	92439	141002.234	
Residual		464	15795	24033.883	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,3,1

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:56:39
Reported on 06-May-98 at 09:45:46



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,3,1

Acquired on 03-May-98 at 17:56:39
Modified on 06-May-82 at 09:37:04
Reported on 06-May-98 at 09:37:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

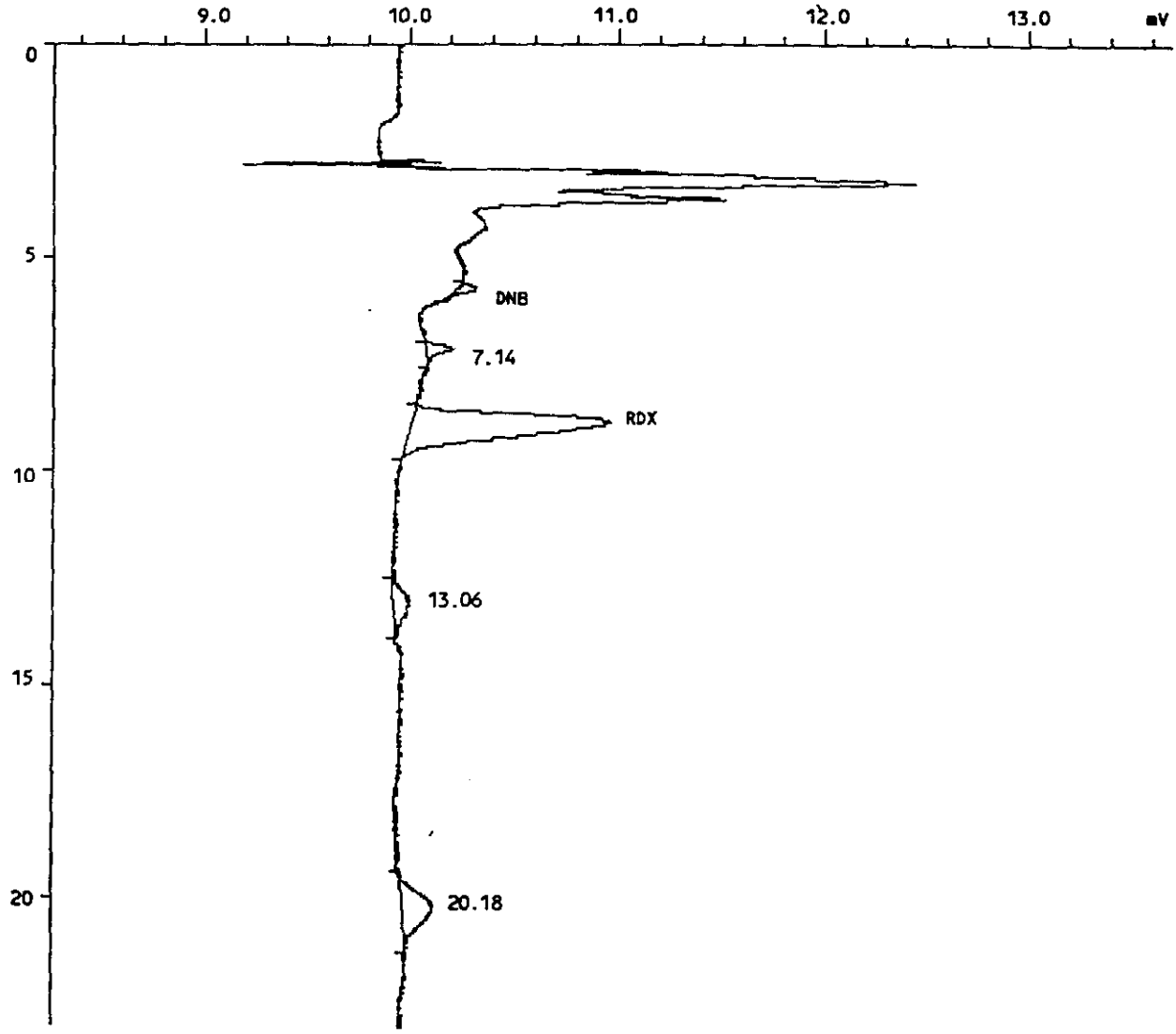
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.136	135	2041	3900.937	TNT
4	13.061	80	3153	13648.065	HMX
Total		215	5194	17549.002	
Residual		1196	41439	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,3,1

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:56:39
Reported on 06-May-98 at 11:00:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,3,1

Acquired on 03-May-98 at 17:56:39
Modified on 06-May-82 at 10:51:38
Reported on 06-May-98 at 10:51:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.739	95	1337	1838.967	DNB
3	8.896	951	32690	118872.391	RDX
Total		1045	34027	120711.359	
Residual		366	12606	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.02

Sample Amt: 2g % Moisture 37.64 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

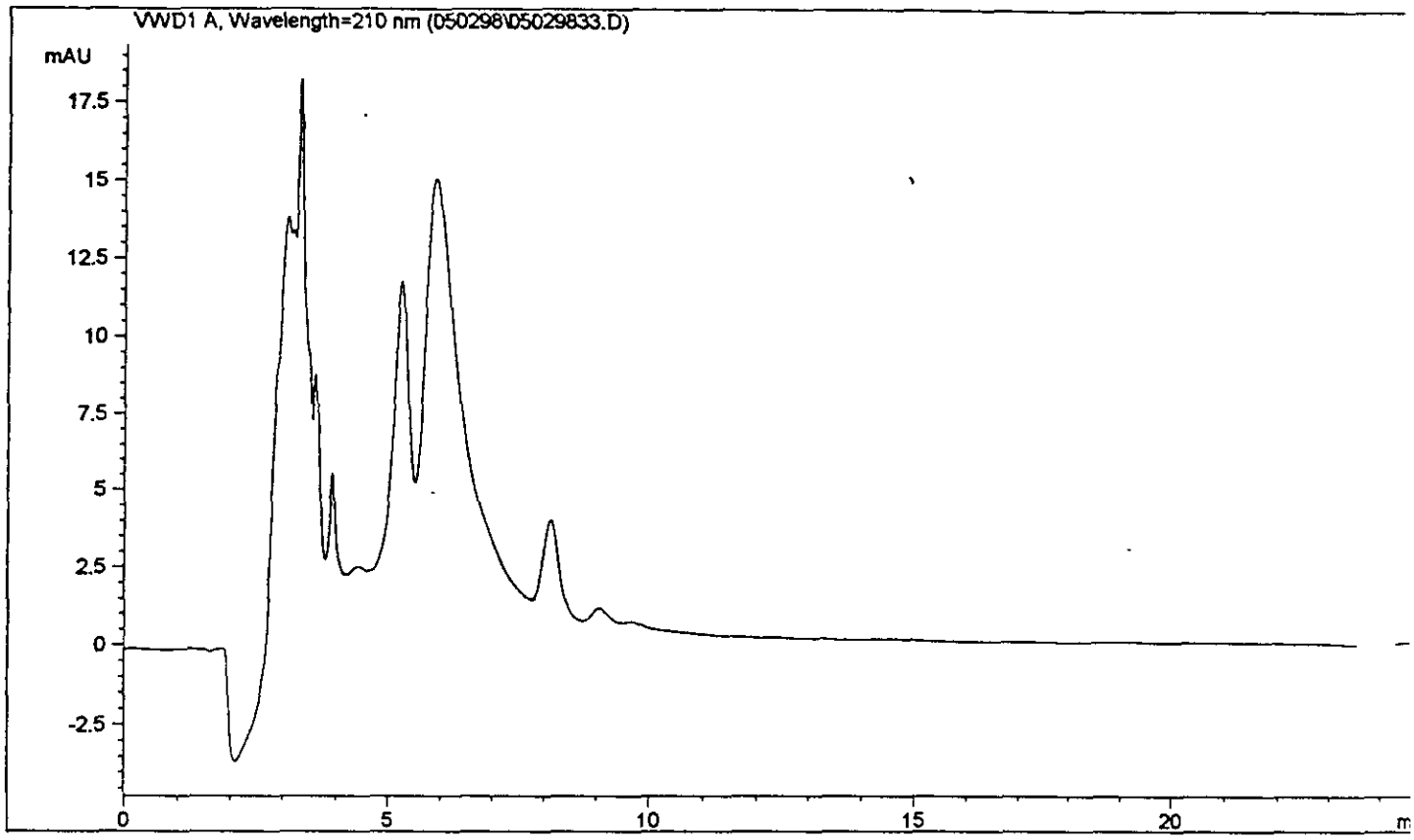
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 33
Sample Name	: 33783.02	Vial No.	: 33
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

==========

*** End of Report ***

LC4 5/13/98 10:11:41 AM SS

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A3
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.03

Sample Amt: 2g % Moisture 47.09 Date Received: 04/29/98

Extraction Volume: 20ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	6980	J
121-82-4	RDX	67700	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1300	P
1946-51-0	4ADNT	1640	P
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

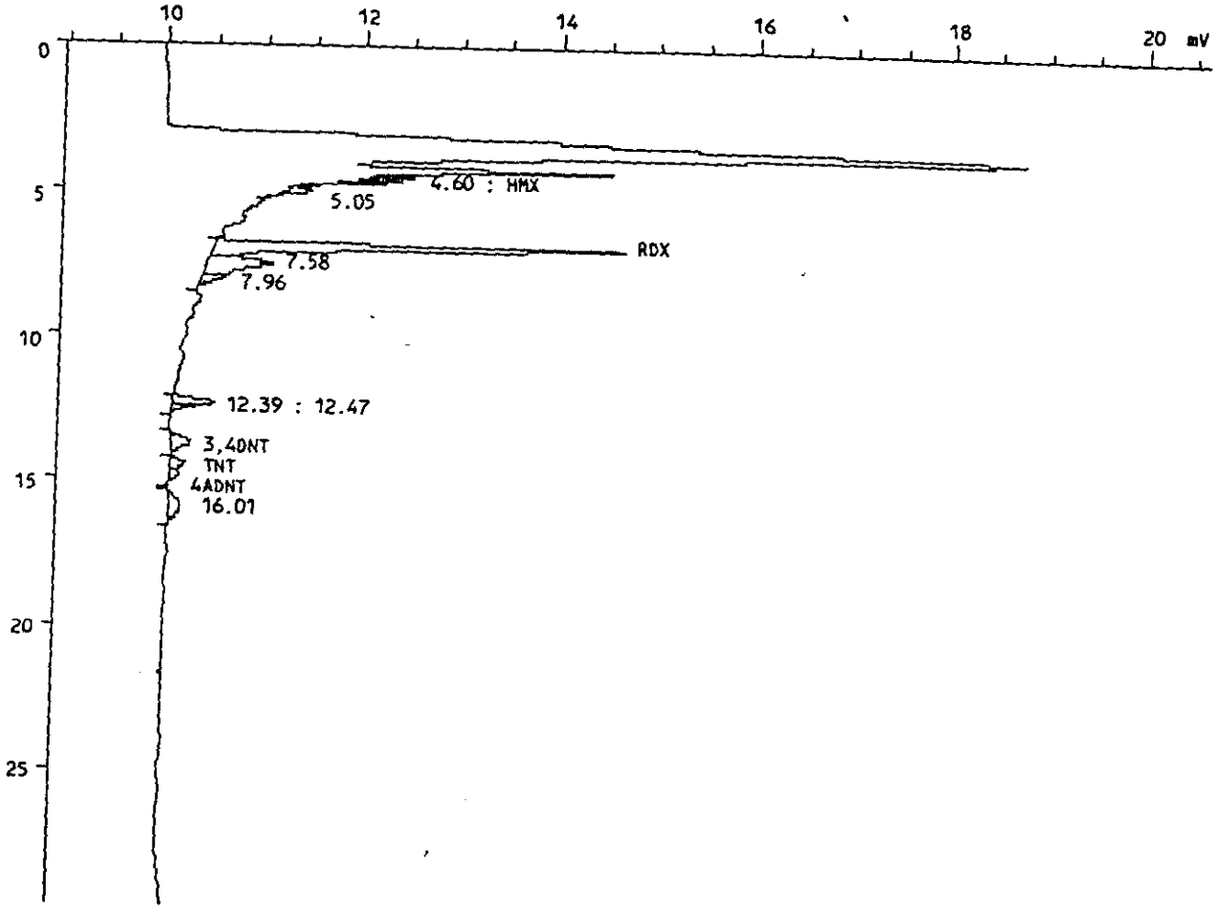
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,24,1

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 14:45:58
Reported on 11-May-98 at 19:50:46



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,24,1

Acquired on 09-May-98 at 14:45:58
Modified on 11-May-82 at 19:50:12
Reported on 11-May-98 at 19:50:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

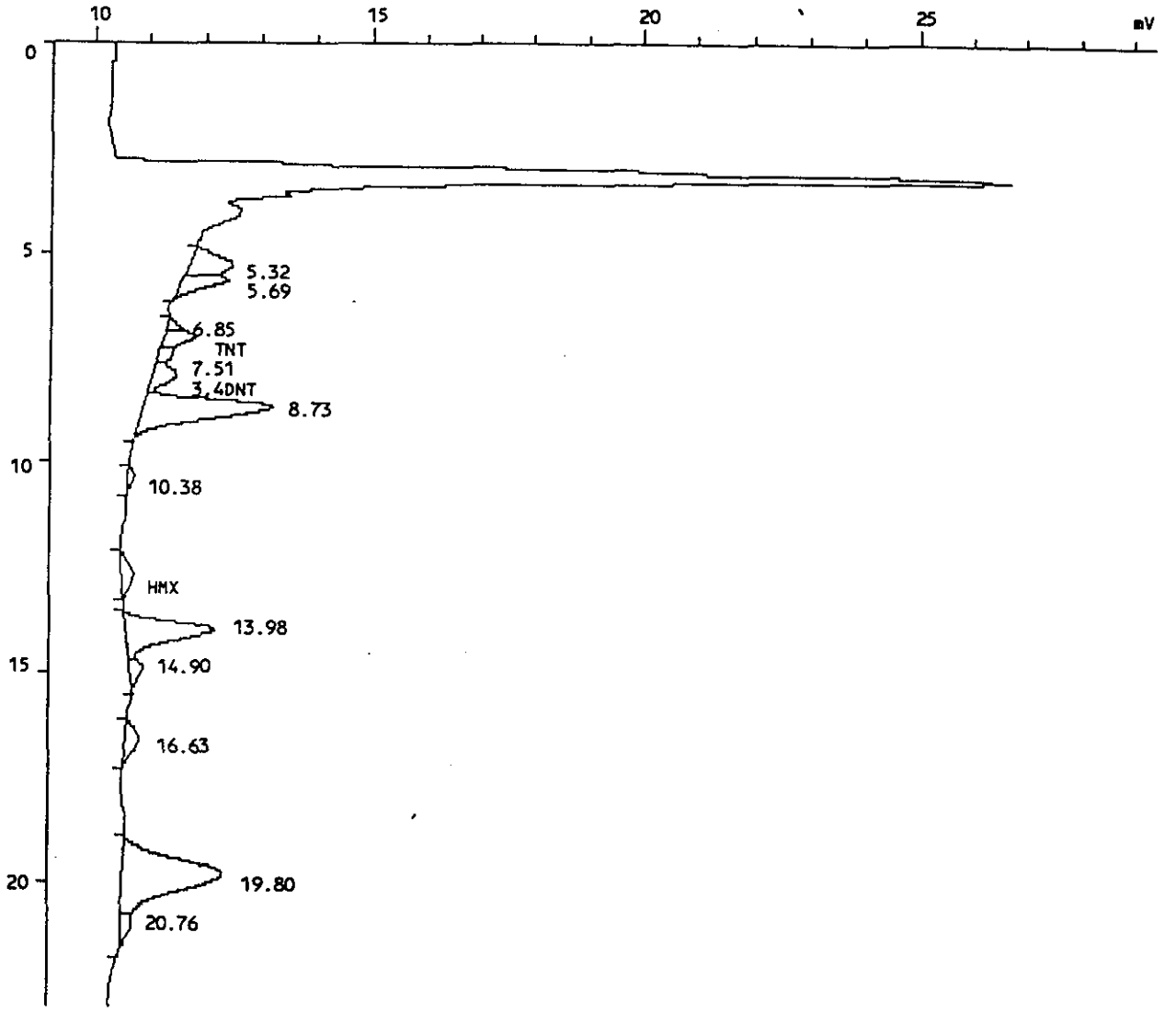
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.736	773	4702	6976.499	HMX * J
4	6.981	4174	57568	67726.633	RDX *
9	13.739	203	4604	4239.358	3,4DNT 212
10	14.491	149	2519	1301.273	TNT *P
11	14.869	97	2159	1637.771	4ADNT *P
Total		5397	71552	81881.539	
Residual		2657	40394	47842.730	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,19,1

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 17:16:13
Reported on 11-May-98 at 20:12:31



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,19,1

Acquired on 08-May-98 at 17:16:13
Modified on 11-May-82 at 20:11:44
Reported on 11-May-98 at 20:12:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 20:10:24
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 9

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

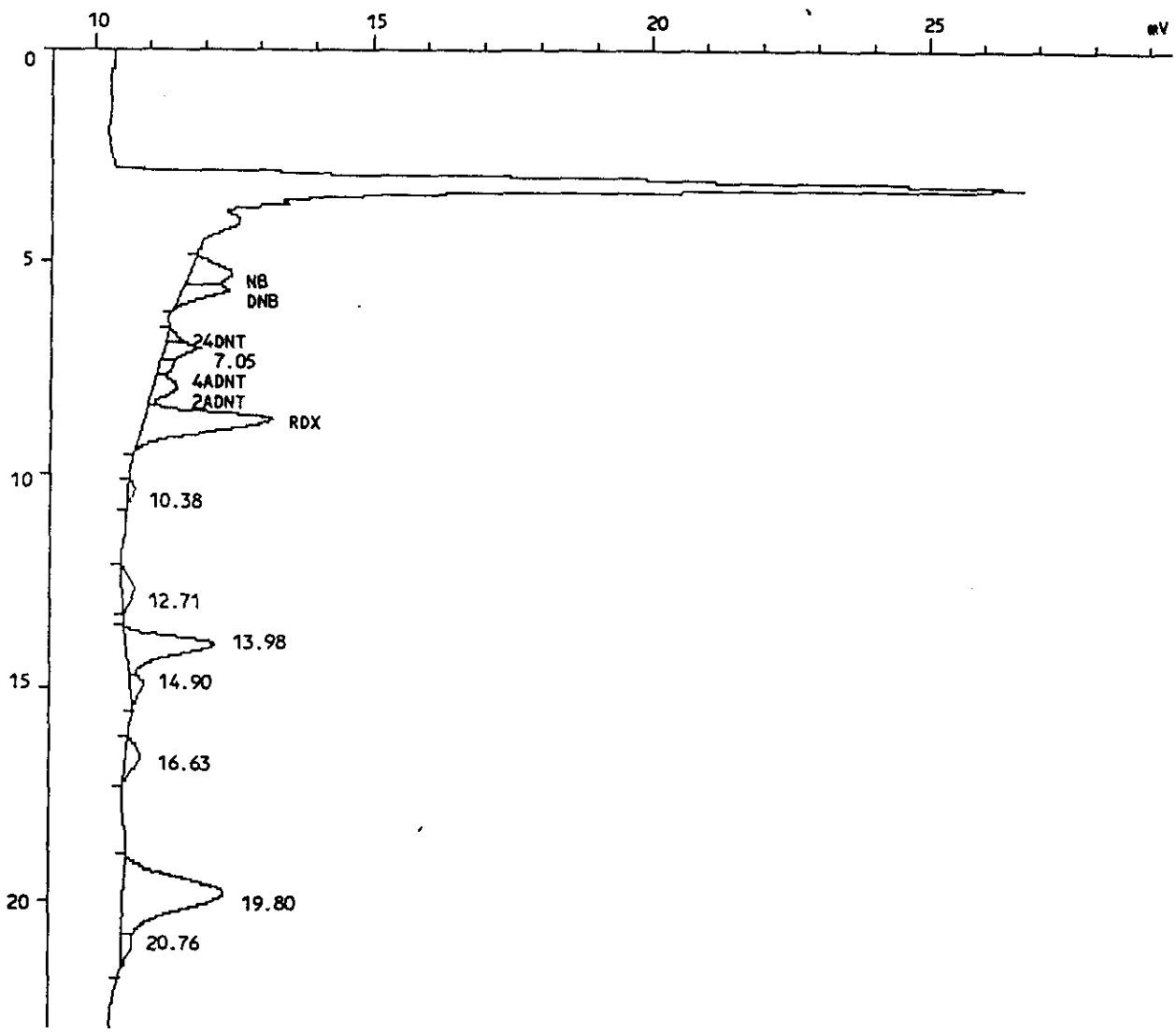
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.045	576	11771	4305.472	TNT
6	7.979	442	12105	8280.002	3,4DNT
9	12.709	221	8997	7782.698	HMX
Total		1238	32873	20368.172	
Residual		8823	294915	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,19,1

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 17:16:13
Reported on 11-May-98 at 20:13:20



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,19,1

Acquired on 08-May-98 at 17:16:13
Modified on 11-May-82 at 20:13:00
Reported on 11-May-98 at 20:13:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 9

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.323	817	21694	11056.883	NB
2	5.691	855	18057	4967.518	DNB
3	6.853	286	2623	814.916	24DNT
5	7.509	270	5143	3222.577	4ADNT
6	7.979	442	12105	4629.202	2ADNT
7	8.725	2315	71958	52332.984	RDX
Total		4986	131580	77024.078	
Residual		5076	196208	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.03

Sample Amt: 2g % Moisture 47.09 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

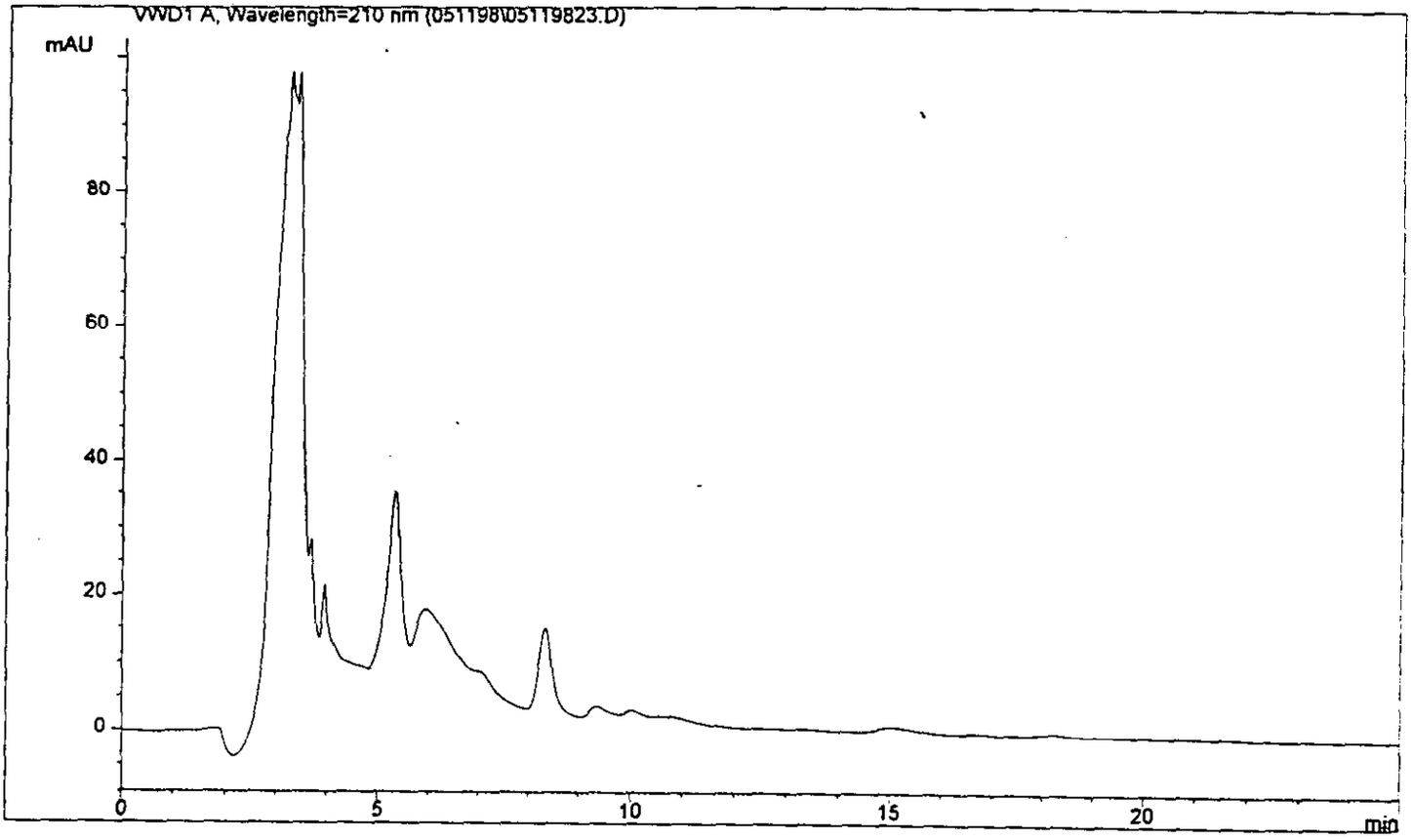
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	1250	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 23
Sample Name	: 33783.03	Vial No.	: 23
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

IC4 5/15/98 6:59:19 PM SS

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.04

Sample Amt: 2g % Moisture 26.72 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	56500	
121-82-4	RDX	400000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	32700	
1946-51-0	4ADNT	3860	PJ
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

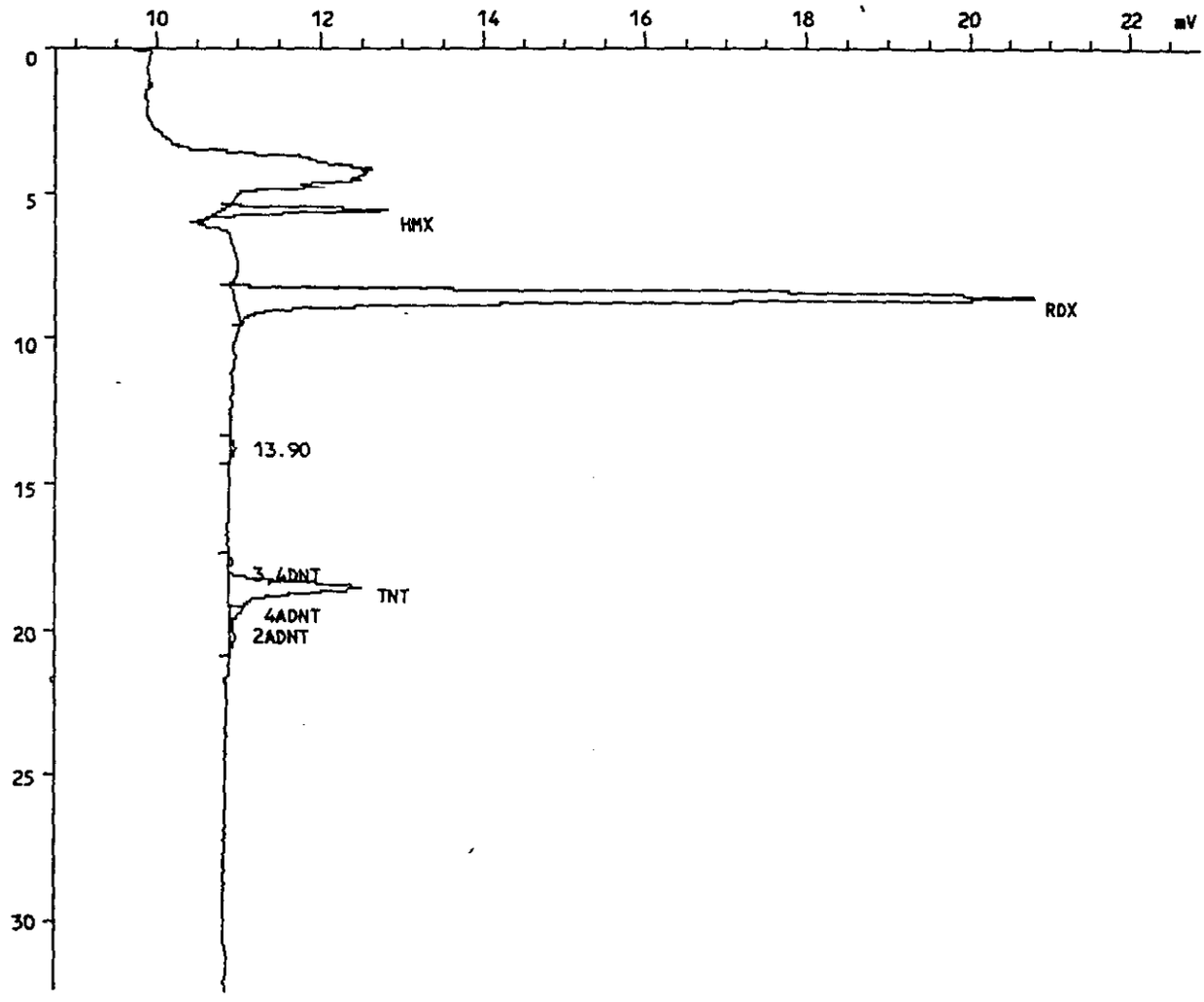
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,8,1

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 02:35:12
Reported on 05-May-98 at 19:03:38



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,8,1

Acquired on 03-May-98 at 02:35:12
Modified on 05-May-82 at 18:52:12
Reported on 05-May-98 at 18:52:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

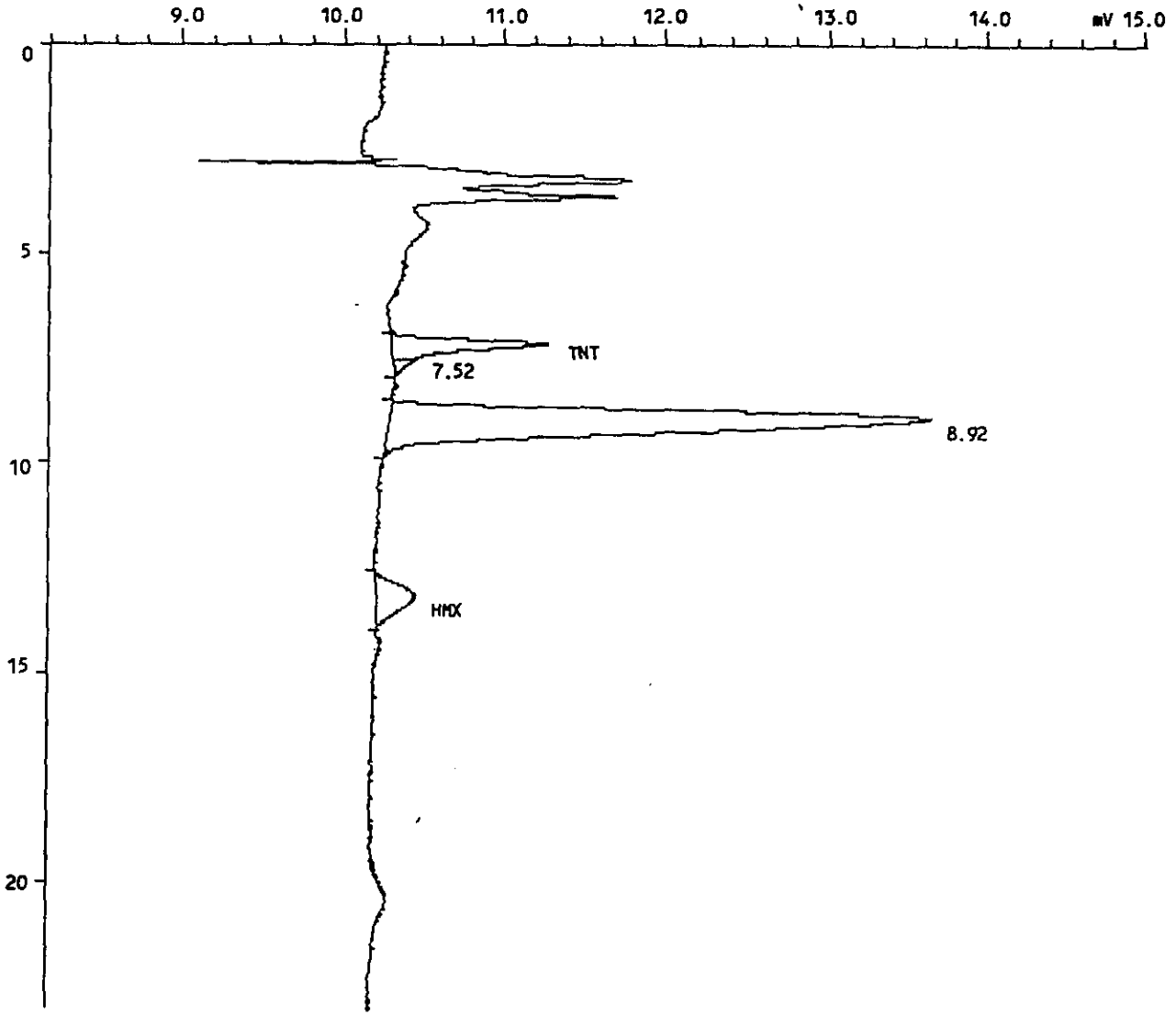
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	2048	24966	56535.754	HMX*
2	8.560	9826	262685	399703.000	RDX*
4	17.685	54	1120	1217.252	3,4DNT 61%
5	18.512	1599	49368	32711.389	TNT*
6	19.136	180	4199	3862.459	4ADNT *TJ
7	20.155	62	2532	1596.032	2ADNT
Total		13770	344870	495625.875	
Residual		55	1670	2541.076	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,5,1

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 19:25:21
Reported on 06-May-98 at 10:38:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,5,1

Acquired on 03-May-98 at 19:25:21
Modified on 06-May-82 at 09:36:38
Reported on 06-May-98 at 09:36:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

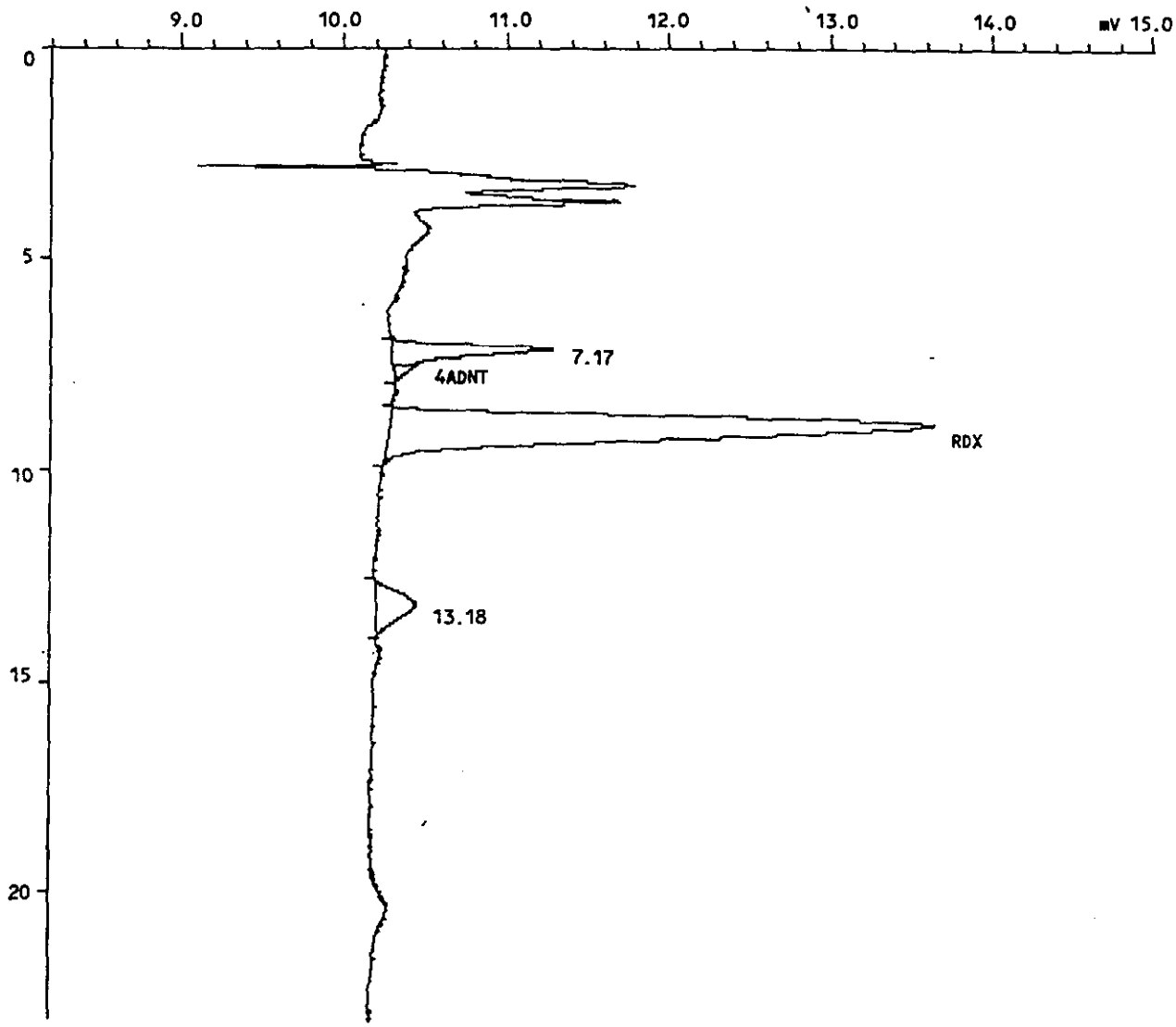
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.168	986	17189	32853.715	TNT
4	13.184	246	10248	44363.734	HMX
Total		1232	27437	77217.453	
Residual		3510	115562	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,5,1

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 19:25:21
Reported on 06-May-98 at 11:01:28



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,5,1

Acquired on 03-May-98 at 19:25:21
Modified on 06-May-82 at 10:51:10
Reported on 06-May-98 at 10:51:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.520	147	1831	5736.746	4ADNT
3	8.923	3363	113731	413567.969	RDX
Total		3510	115562	419304.719	
Residual		1232	27437	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B1

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.04

Sample Amt: 2g % Moisture 26.72 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

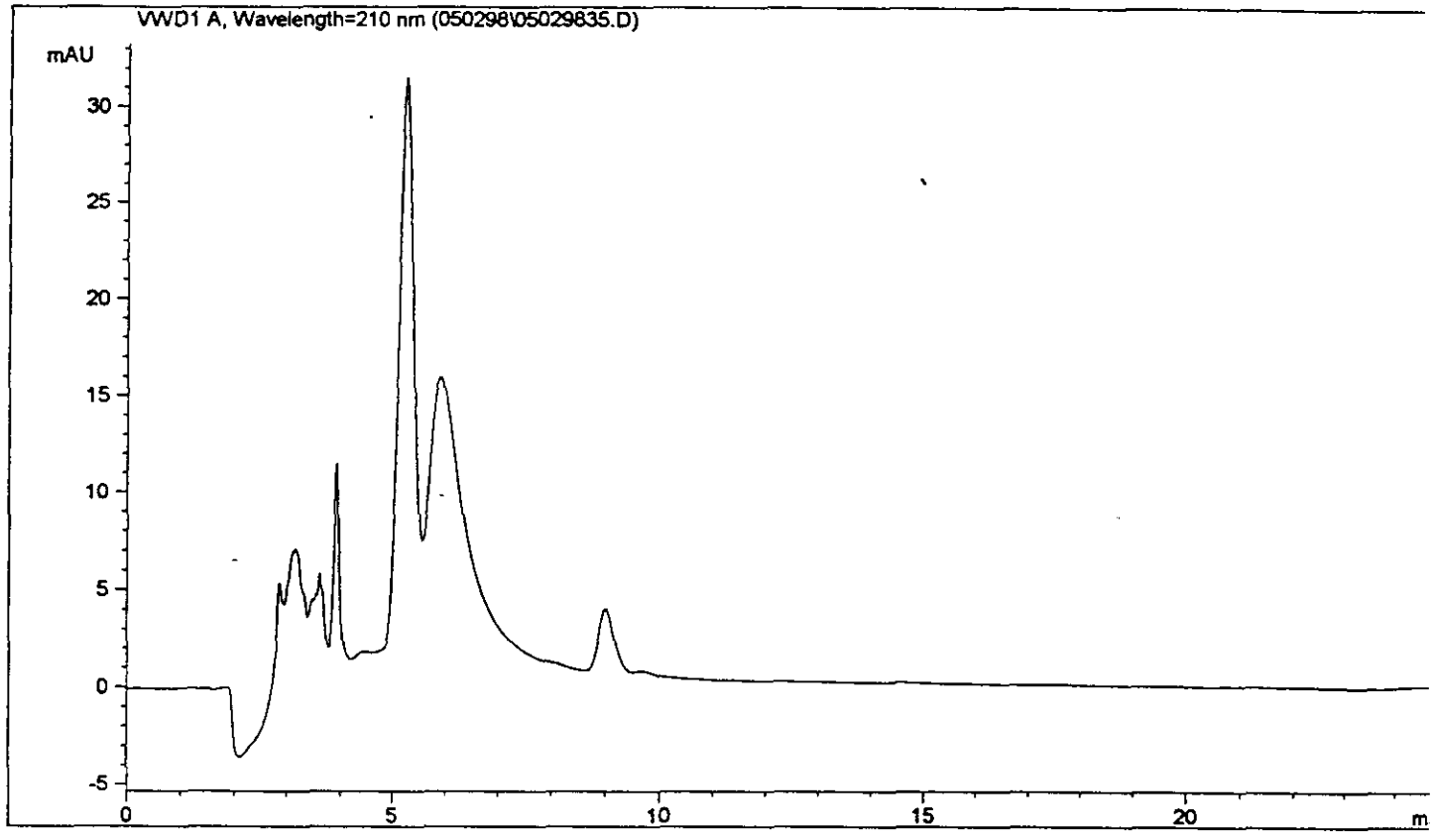
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 35
Sample Name	: 33783.04	Vial No.	: 35
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.05

Sample Amt: 2g % Moisture 37.66 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	56100	
121-82-4	RDX	475000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	53000	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

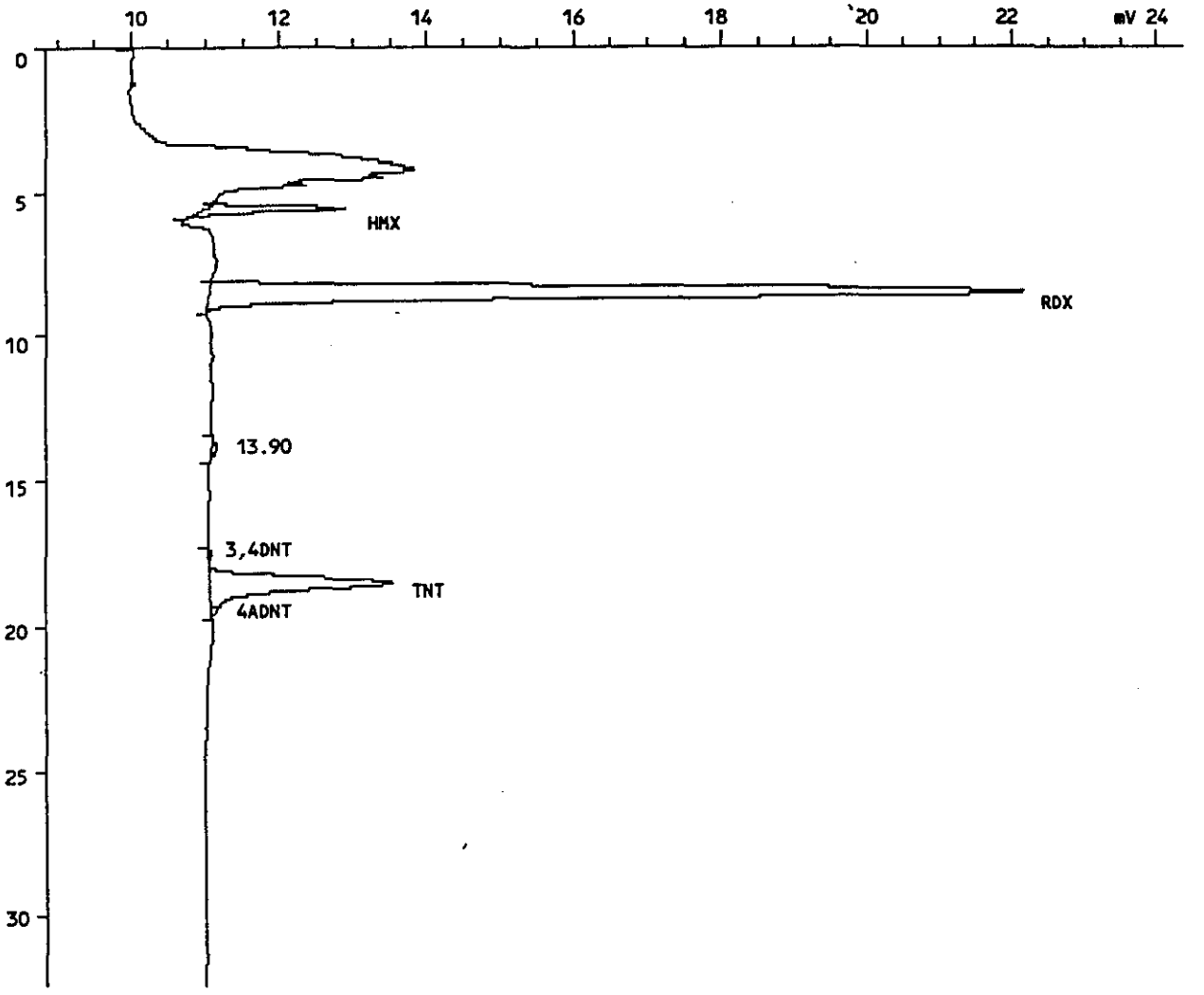
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,9,1

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 03:19:50
Reported on 05-May-98 at 19:03:16



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,9,1

Acquired on 03-May-98 at 03:19:50
Modified on 05-May-82 at 18:52:28
Reported on 05-May-98 at 18:52:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

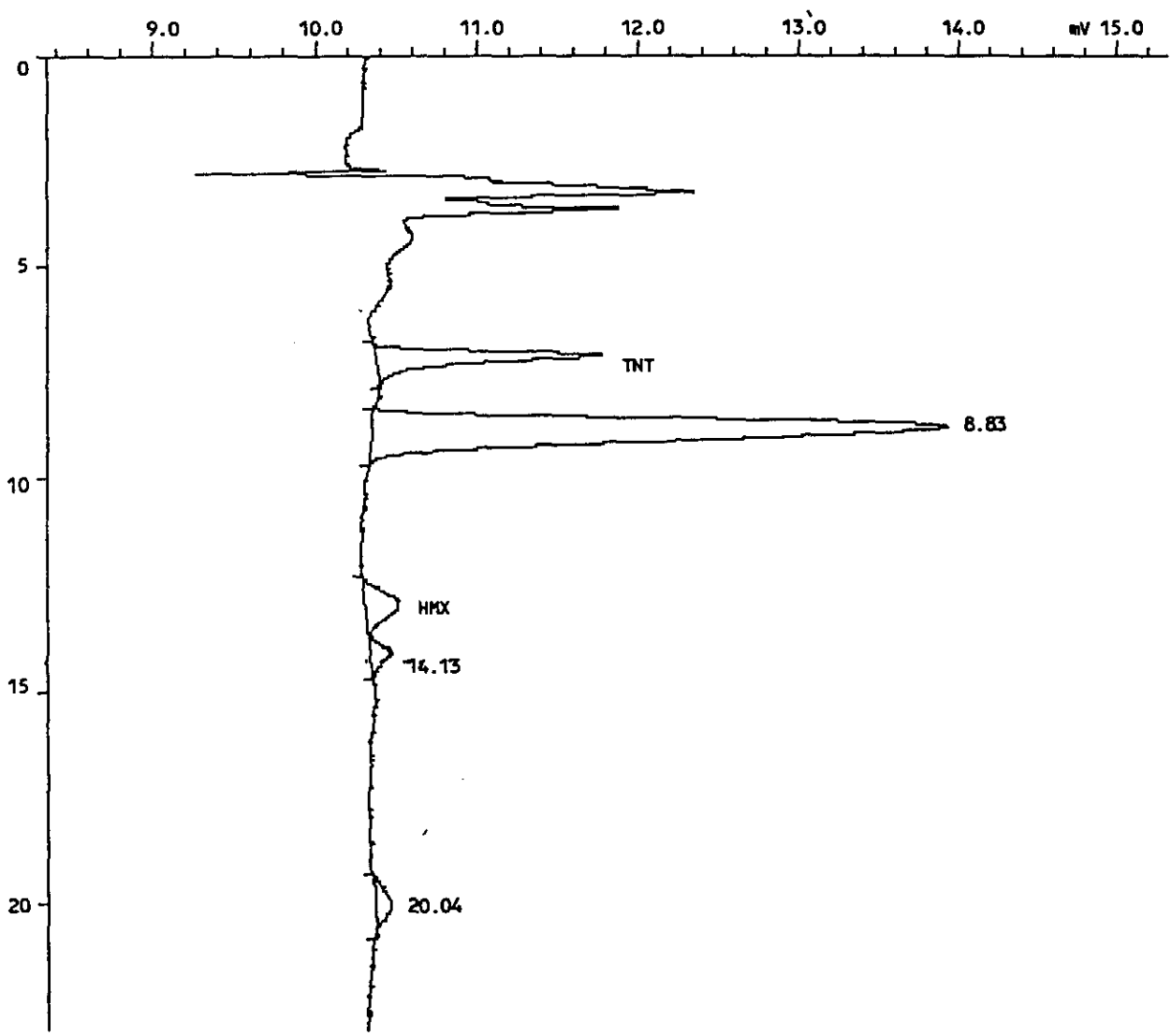
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	1973	24782	56119.762	HMX
2	8.560	11119	312104	474899.313	RDX
4	17.573	51	1136	1234.578	3,4DNT
5	18.517	2488	80049	53040.578	TNT
6	19.280	122	1767	1625.202	4ADNT
Total		15753	419838	586919.375	
Residual		87	2393	3640.978	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,6,1

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:09:42
Reported on 06-May-98 at 10:39:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,6,1

Acquired on 03-May-98 at 20:09:42
Modified on 06-May-82 at 09:36:24
Reported on 06-May-98 at 09:36:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

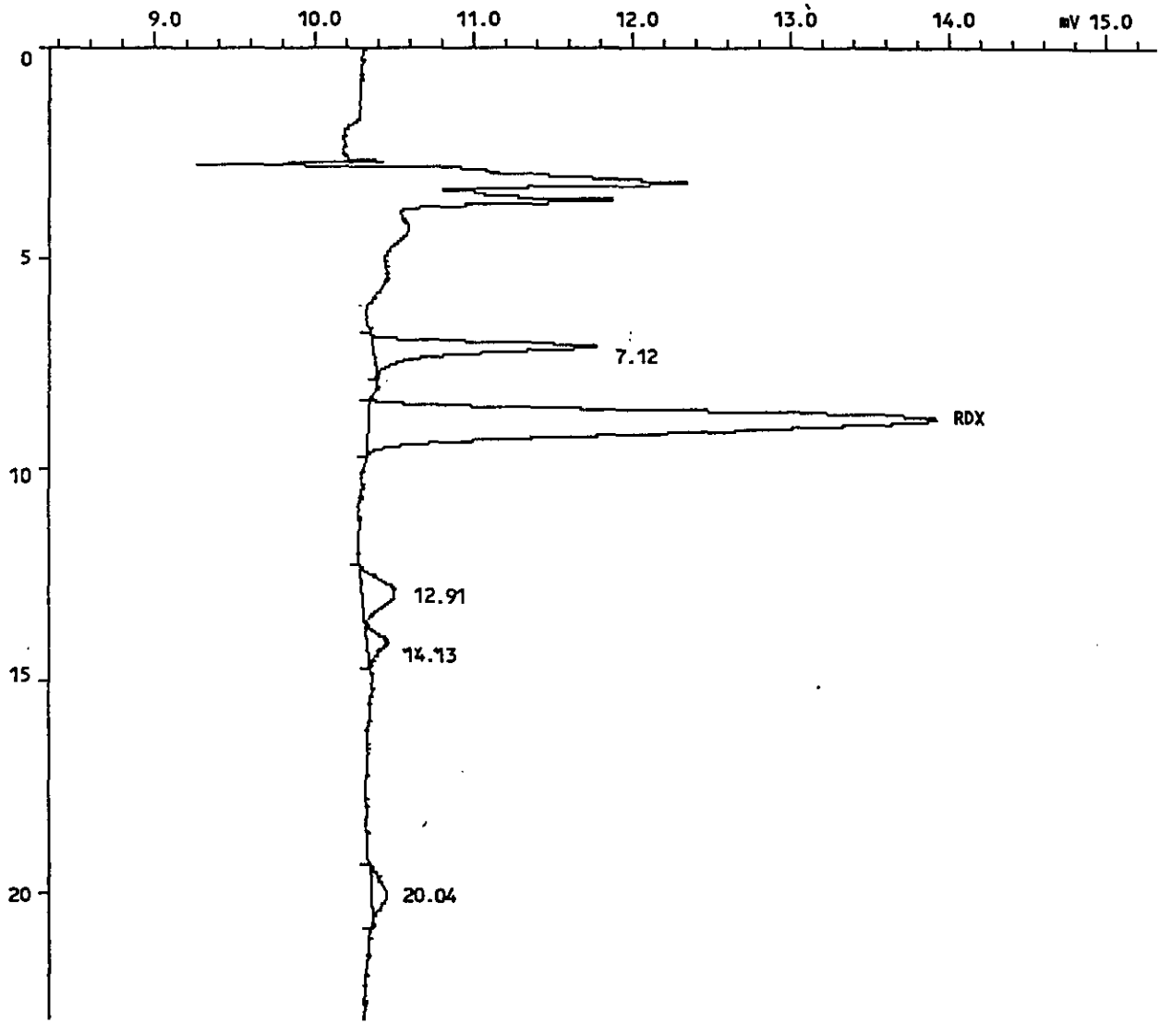
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.120	1407	26198	50072.719	TNT
3	12.912	213	9135	39543.949	HMX
Total		1620	35333	89616.672	
Residual		3820	130674	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,6,1

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:09:42
Reported on 06-May-98 at 11:01:53



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,6,1

Acquired on 03-May-98 at 20:09:42
Modified on 06-May-82 at 10:50:58
Reported on 06-May-98 at 10:50:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.832	3580	122016	443693.813	RDX
Total		3580	122016	443693.813	
Residual		1860	43991	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B2

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.05

Sample Amt: 2g % Moisture 37.66 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

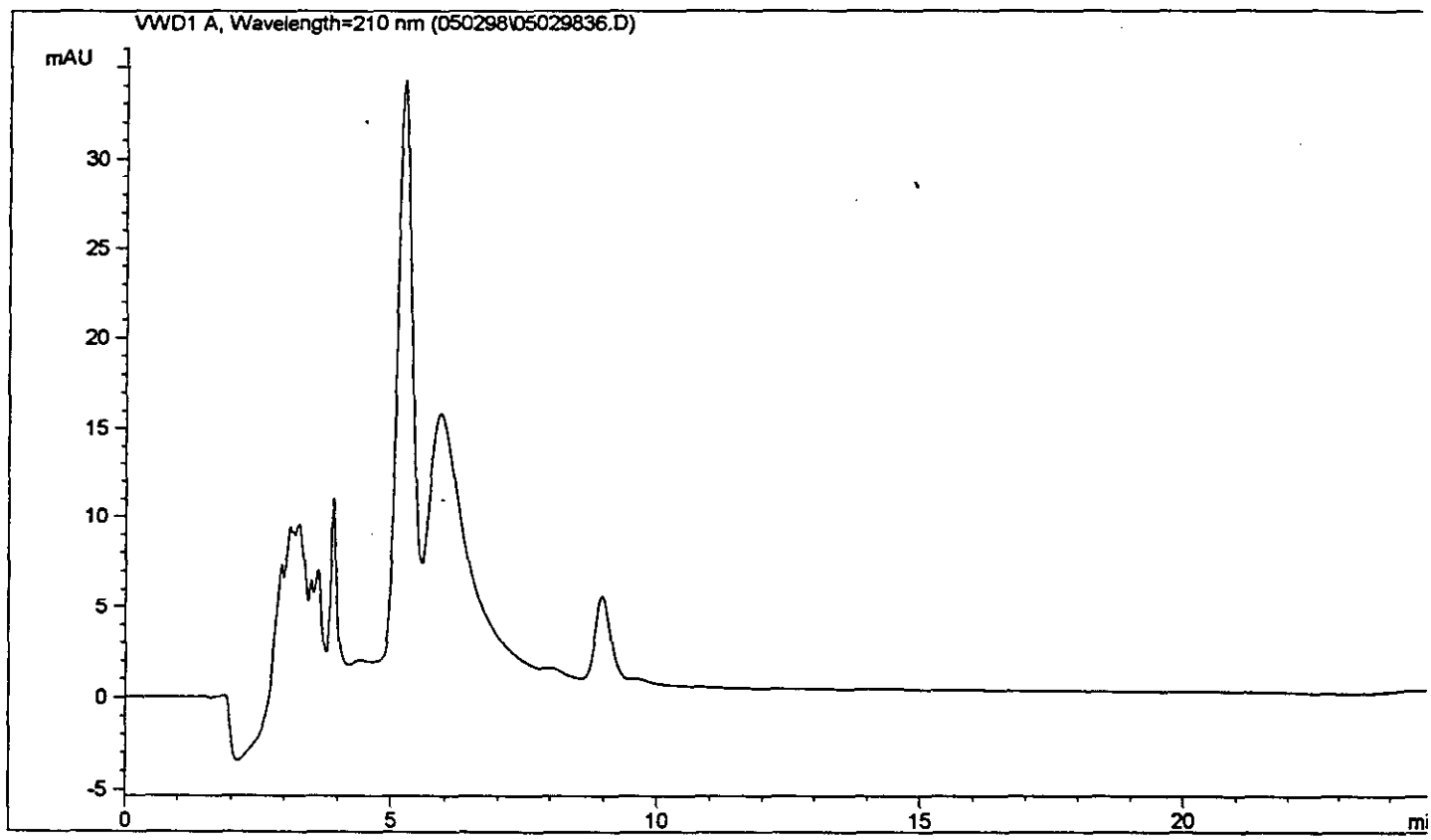
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 36
Sample Name	: 33783.05	Vial No.	: 36
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B3
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.06

Sample Amt: 2g % Moisture 43.89 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	20900	JP
121-82-4	RDX	129000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	4650	J
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

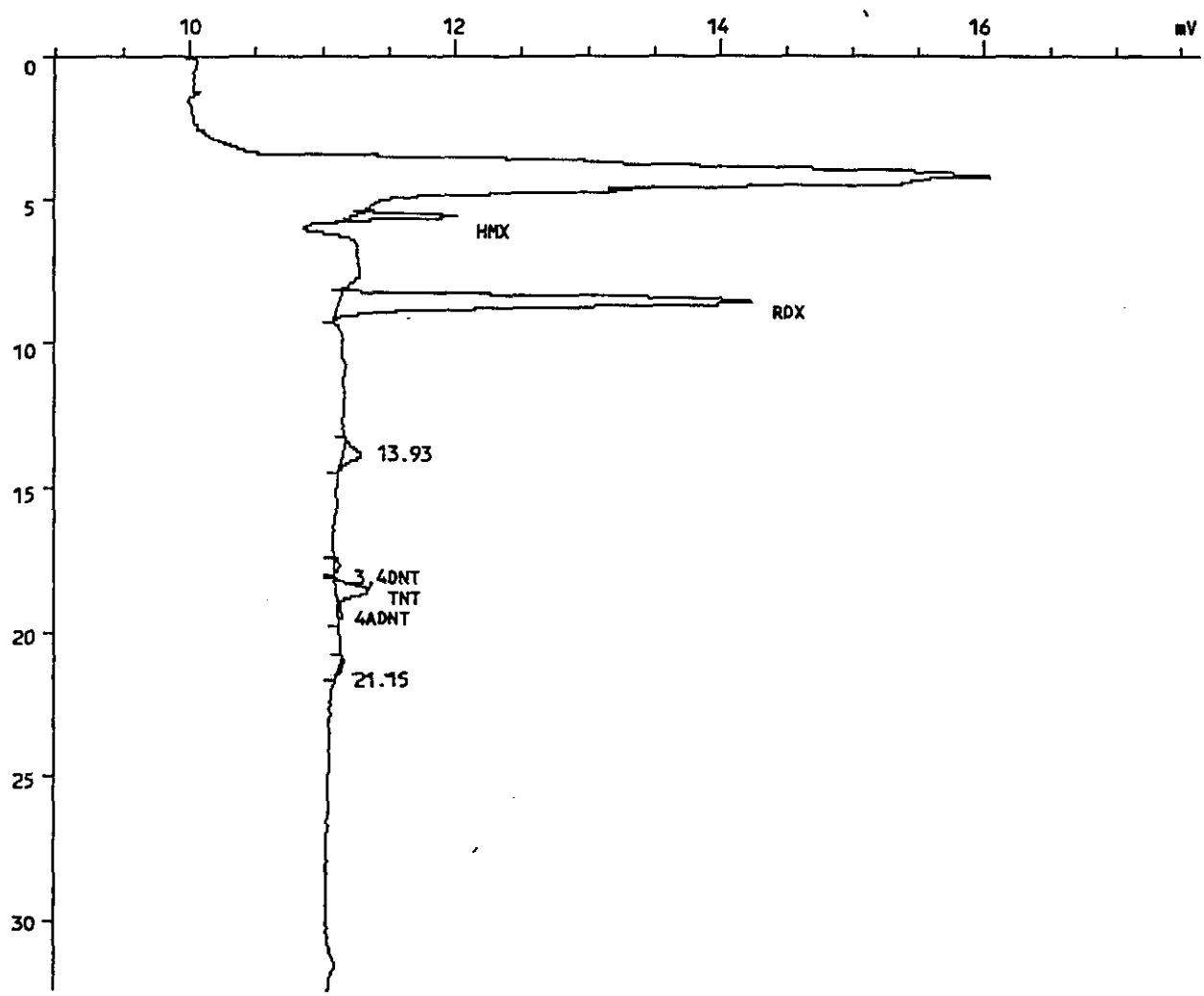
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,10,1

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 04:04:27
Reported on 05-May-98 at 19:00:28



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,10,1

Acquired on 03-May-98 at 04:04:27
Modified on 05-May-82 at 18:52:44
Reported on 05-May-98 at 18:52:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

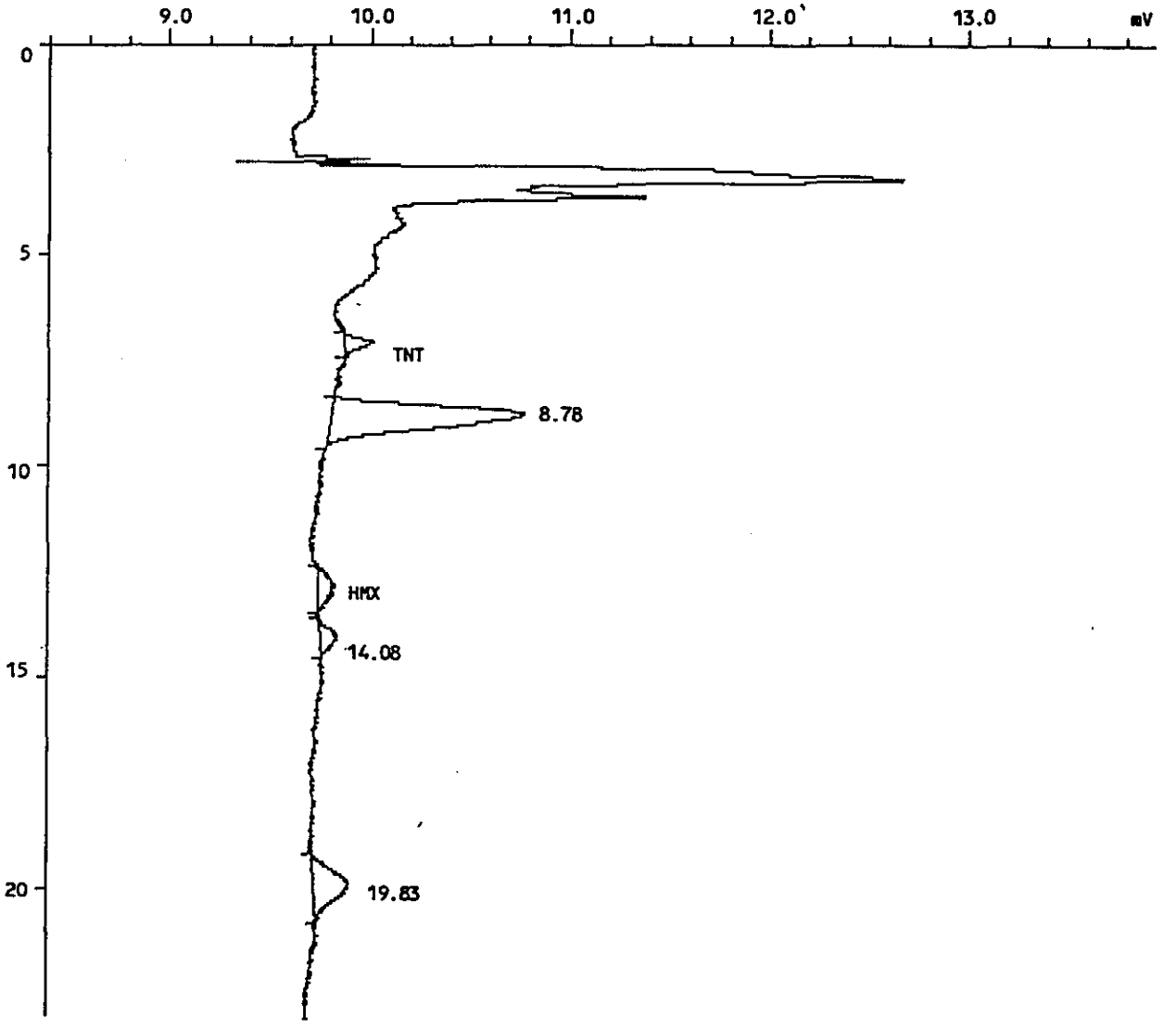
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	823	9219	20875.717	HMX * J
2	8.576	3106	84879	129152.328	RDX *
4	17.659	40	816	886.464	3,4DNT 44%
5	18.528	251	7017	4649.788	TNT * J
6	19.376	34	922	847.845	4ADNT
Total		4255	102852	156412.141	
Residual		175	5228	7393.022	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,7,1

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:54:03
Reported on 06-May-98 at 10:39:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,7,1

Acquired on 03-May-98 at 20:54:03
Modified on 06-May-82 at 09:36:10
Reported on 06-May-98 at 09:36:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.067	144	2138	4086.292	TNT
3	12.832	82	2839	12289.926	HMX
Total		226	4977	16376.217	
Residual		1234	43381	0.000	

INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,7,1

Acquired on 03-May-98 at 20:54:03
Modified on 06-May-82 at 10:50:46
Reported on 06-May-98 at 10:50:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.784	972	32670	118798.281	RDX
Total		972	32670	118798.281	
Residual		487	15688	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B3

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.06

Sample Amt: 2g % Moisture 43.89 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

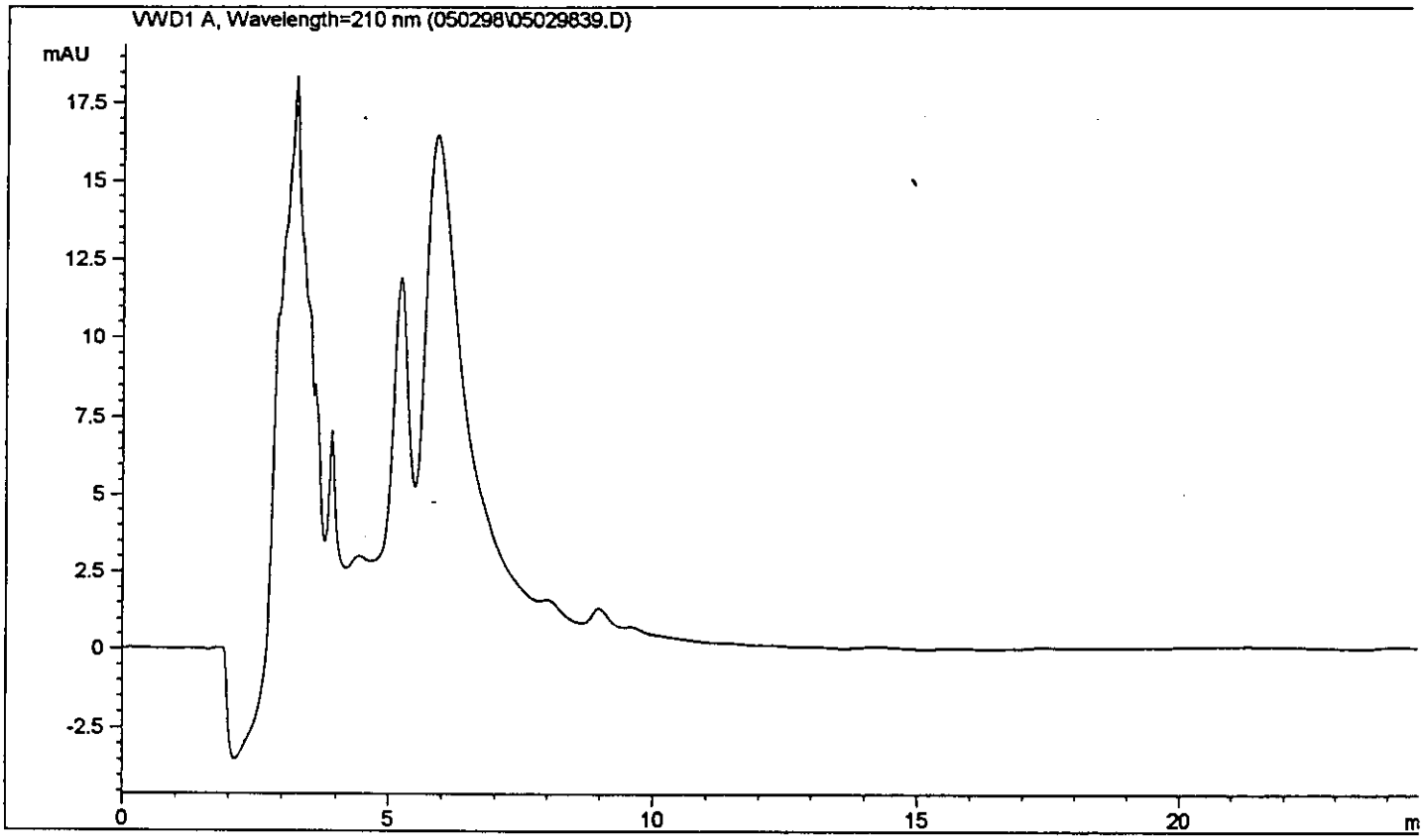
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 39
Sample Name	: 33783.06	Vial No.	: 39
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.09

Sample Amt: 2g % Moisture 36.53 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	66400	
121-82-4	RDX	510000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	57200	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

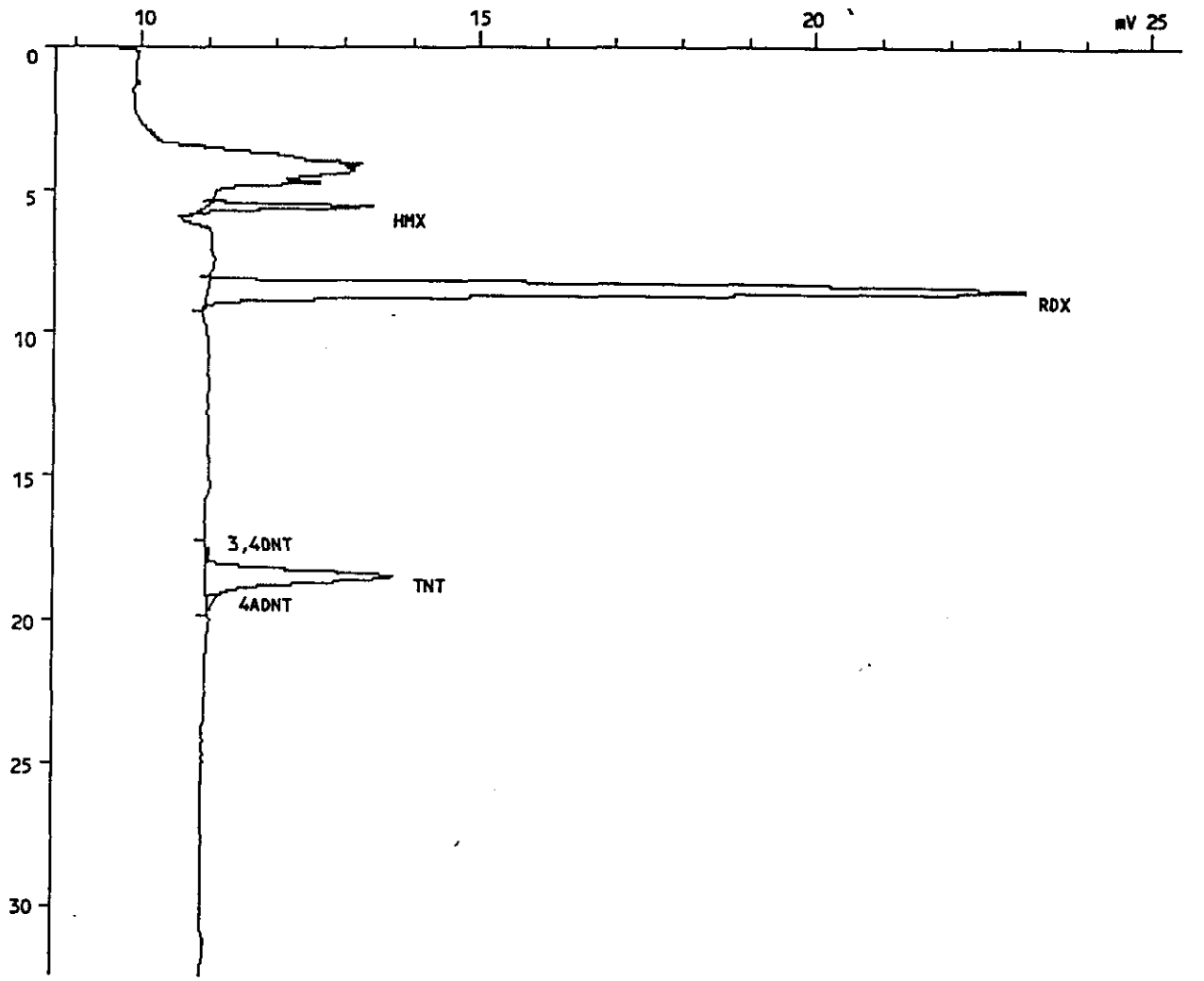
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,15,1

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 07:47:35
Reported on 05-May-98 at 18:59:23



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,15,1

Acquired on 03-May-98 at 07:47:35
Modified on 05-May-82 at 18:53:46
Reported on 05-May-98 at 18:53:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

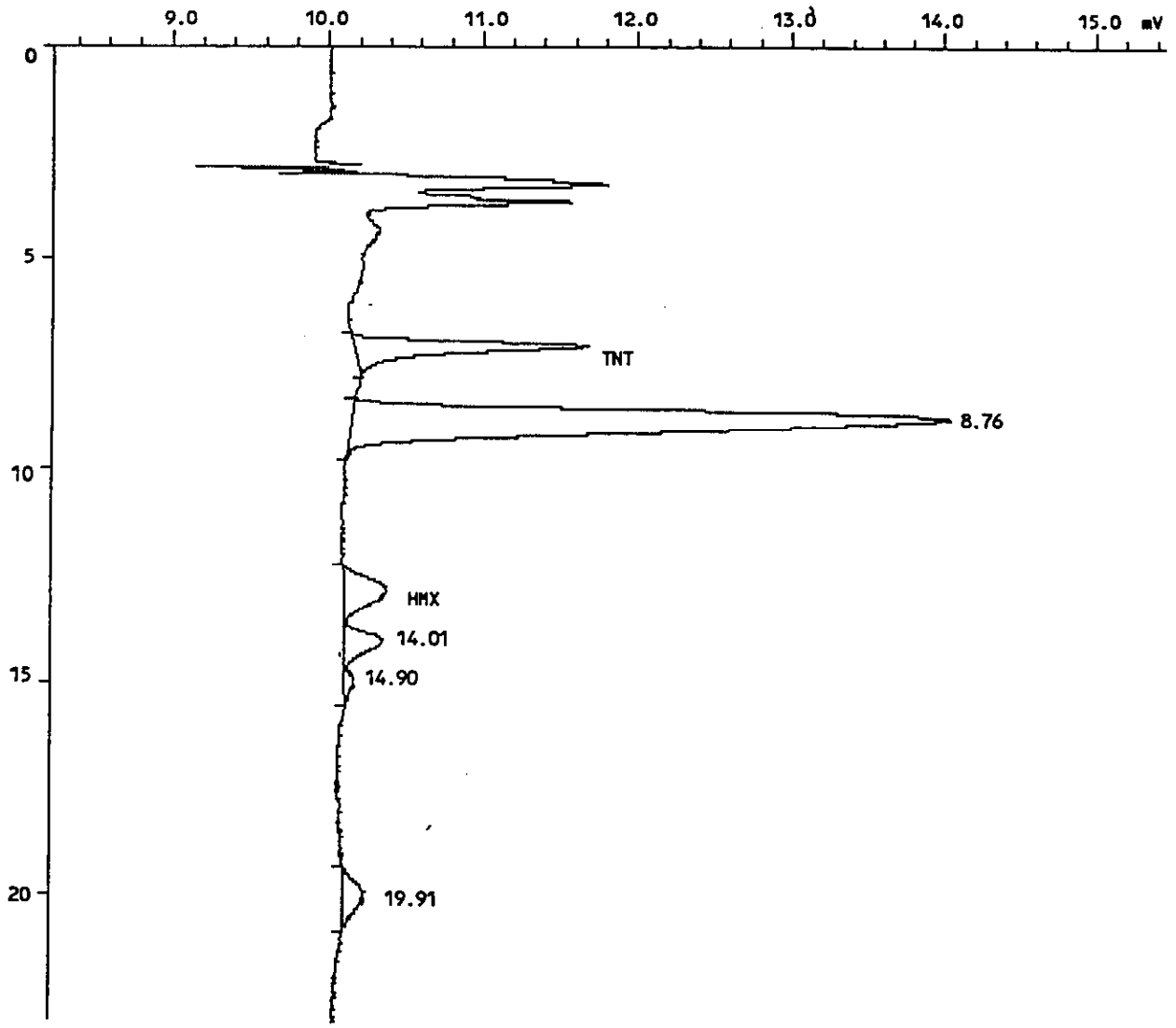
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	2492	29348	66458.609	HMX *
2	8.549	12158	334870	509540.000	RDX *
3	17.547	50	1211	1315.889	3,4DNT
4	18.485	2736	86390	57242.090	TNT *
5	19.099	213	4027	3704.243	4ADNT
Total		17649	455845	638260.813	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,8,1

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 21:38:24
Reported on 06-May-98 at 10:45:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,8,1

Acquired on 03-May-98 at 21:38:24
Modified on 06-May-82 at 09:35:58
Reported on 06-May-98 at 09:35:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

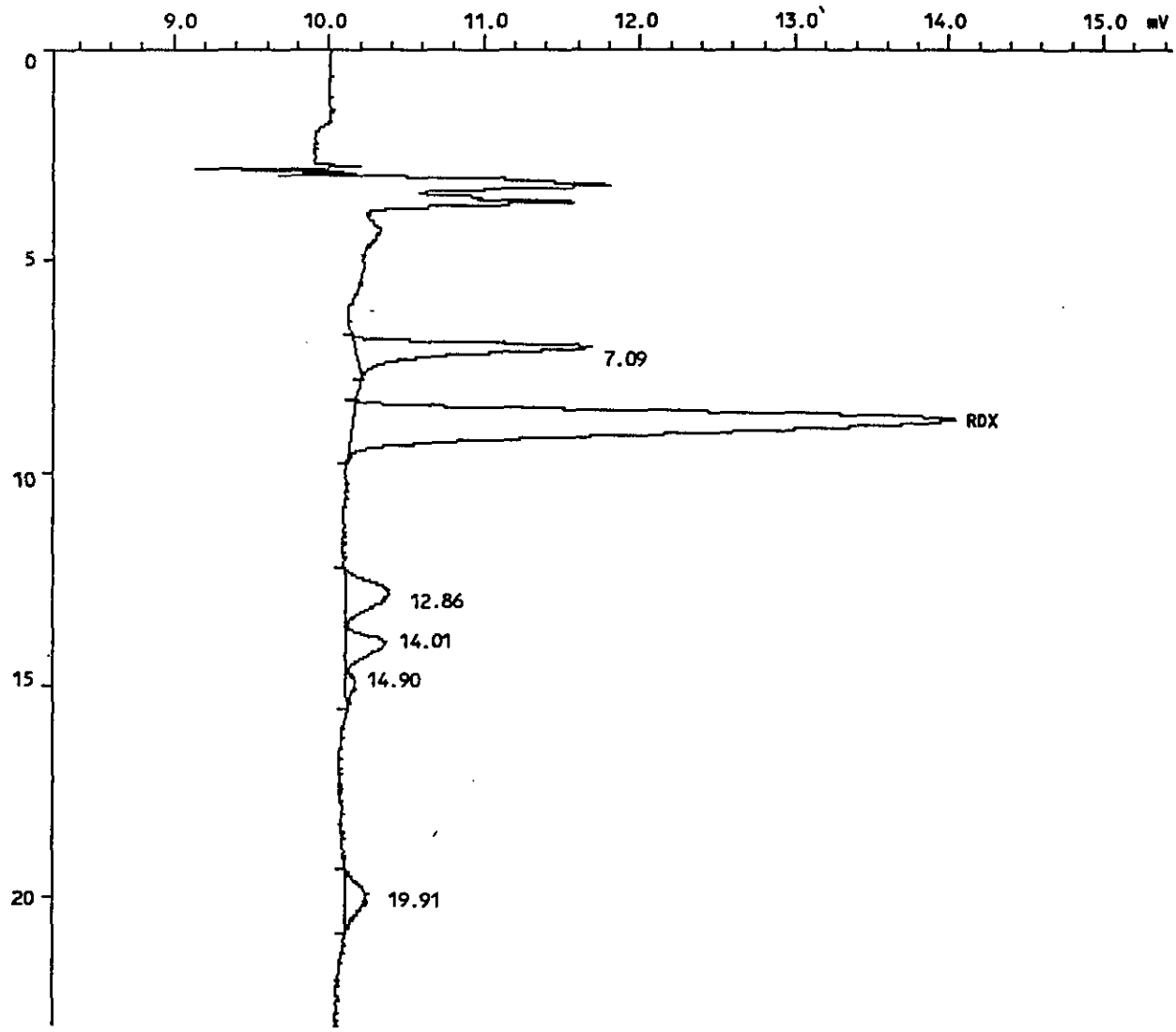
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.088	1513	27814	53161.766	TNT
3	12.859	288	12337	53407.609	HMX
Total		1802	40151	106569.375	
Residual		4361	147588	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,8,1

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 21:38:24
Reported on 06-May-98 at 11:02:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,8,1

Acquired on 03-May-98 at 21:38:24
Modified on 06-May-82 at 10:50:32
Reported on 06-May-98 at 10:50:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.763	3891	130755	475473.094	RDX
Total		3891	130755	475473.094	
Residual		2271	56984	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.09

Sample Amt: 2g % Moisture 36.53 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

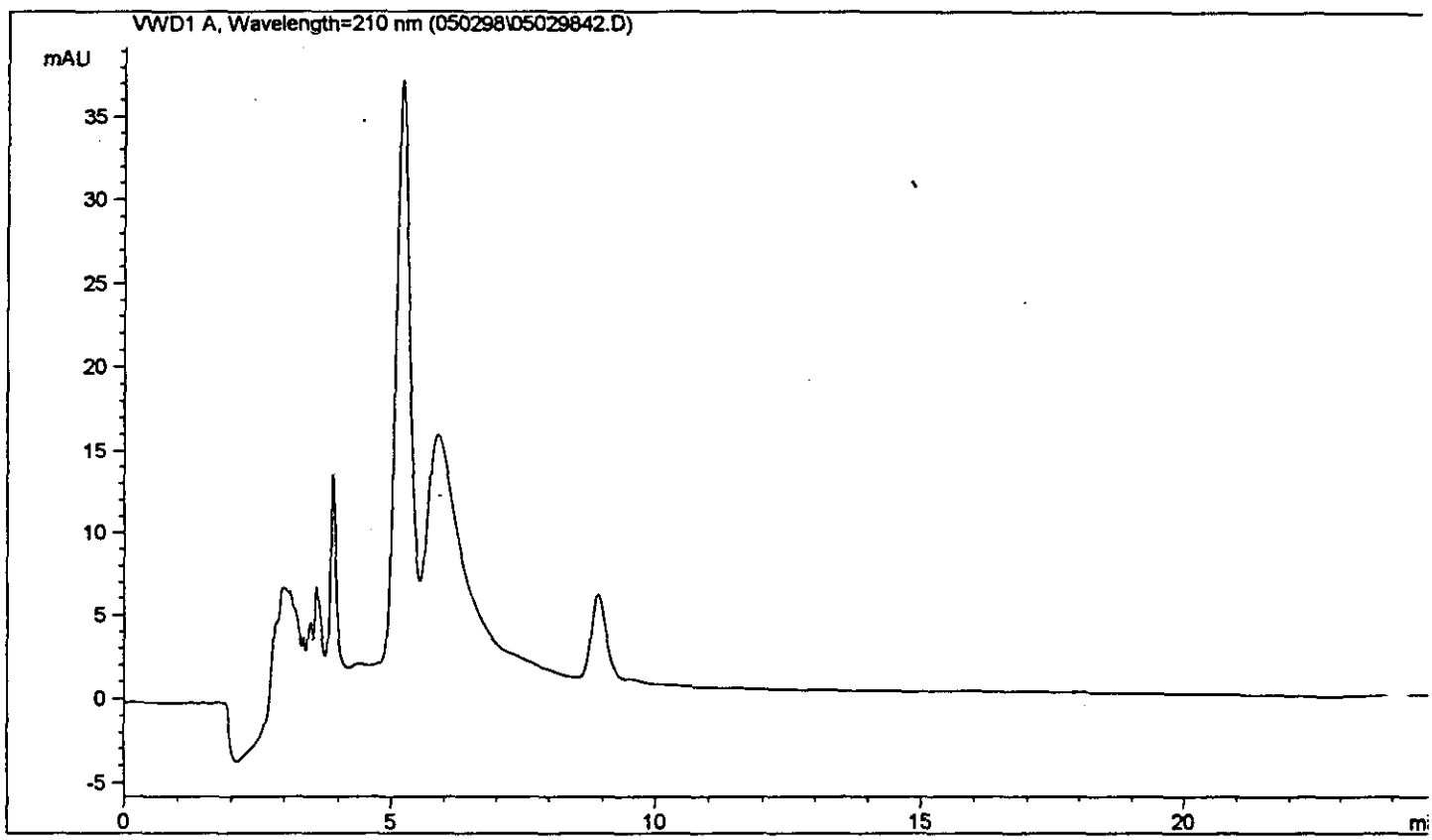
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 42
Sample Name	: 33783.09	Vial No.	: 42
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.10

Sample Amt: 2g % Moisture 38.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	22800	J
121-82-4	RDX	150000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	5180	J
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

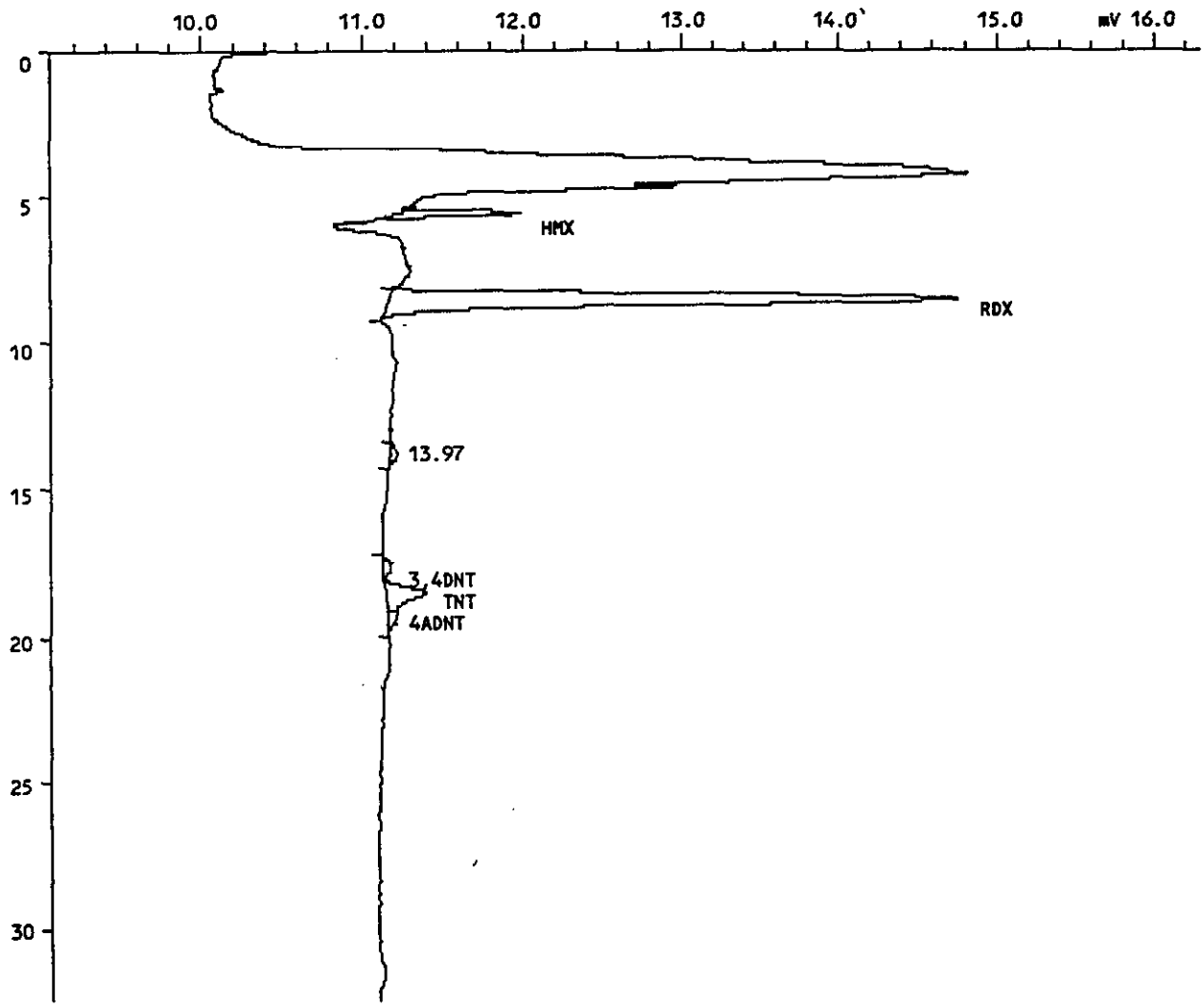
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,16,1

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 08:32:13
Reported on 05-May-98 at 18:58:29



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,16,1

Acquired on 03-May-98 at 08:32:13
Modified on 05-May-82 at 18:54:02
Reported on 05-May-98 at 18:54:02

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

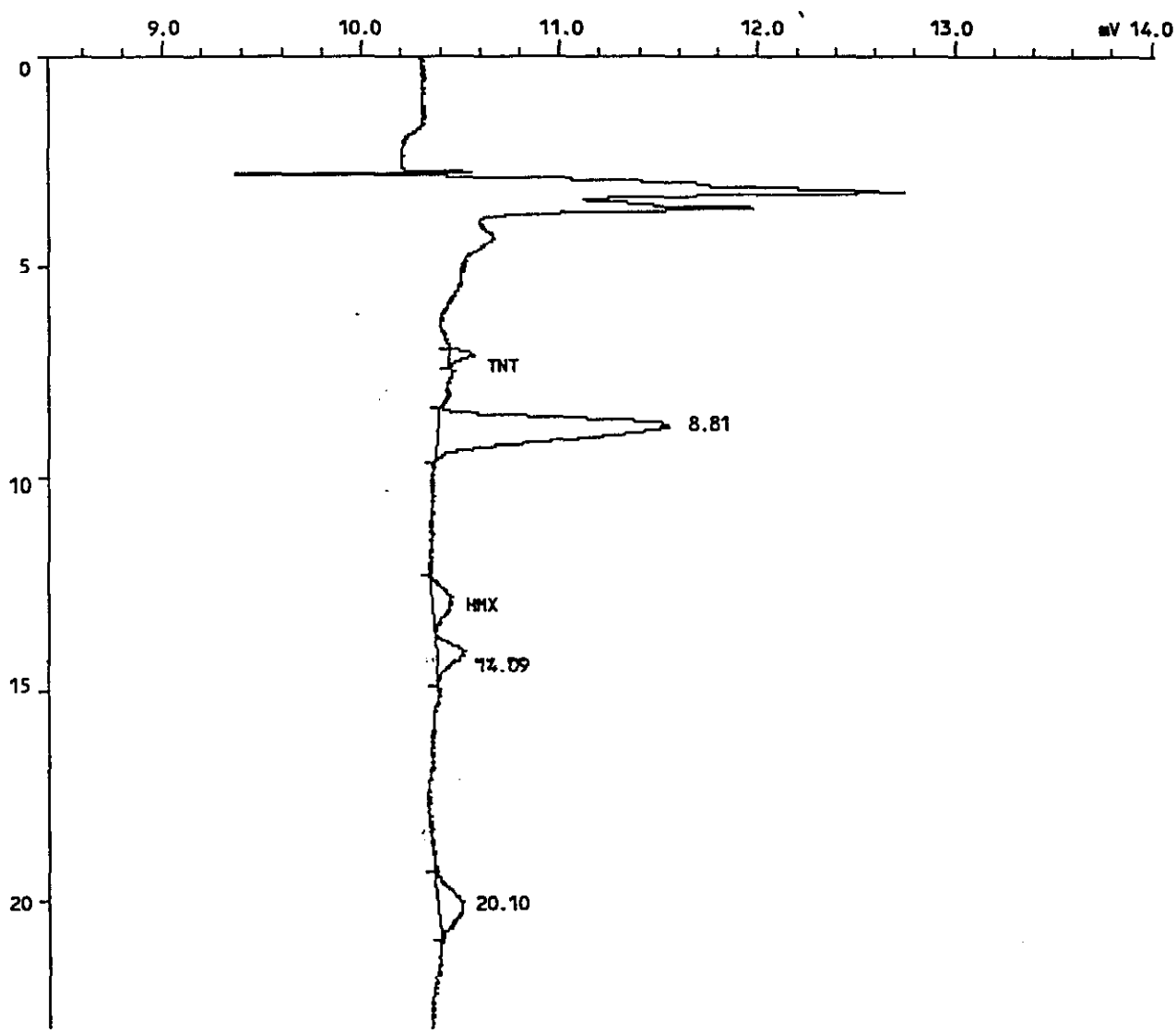
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	847	10069	22802.188	HMX * J
2	8.571	3597	98254	149503.875	RDX *
4	17.675	48	1319	1433.414	3,4DNT -12
5	18.528	256	7811	5175.864	TNT * J
6	19.051	66	1954	1796.846	4ADNT
Total		4813	119407	180712.172	
Residual		44	1259	1916.422	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,11,1

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 23:51:31
Reported on 06-May-98 at 10:46:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,11,1

Acquired on 03-May-98 at 23:51:31
Modified on 06-May-82 at 09:35:44
Reported on 06-May-98 at 09:35:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

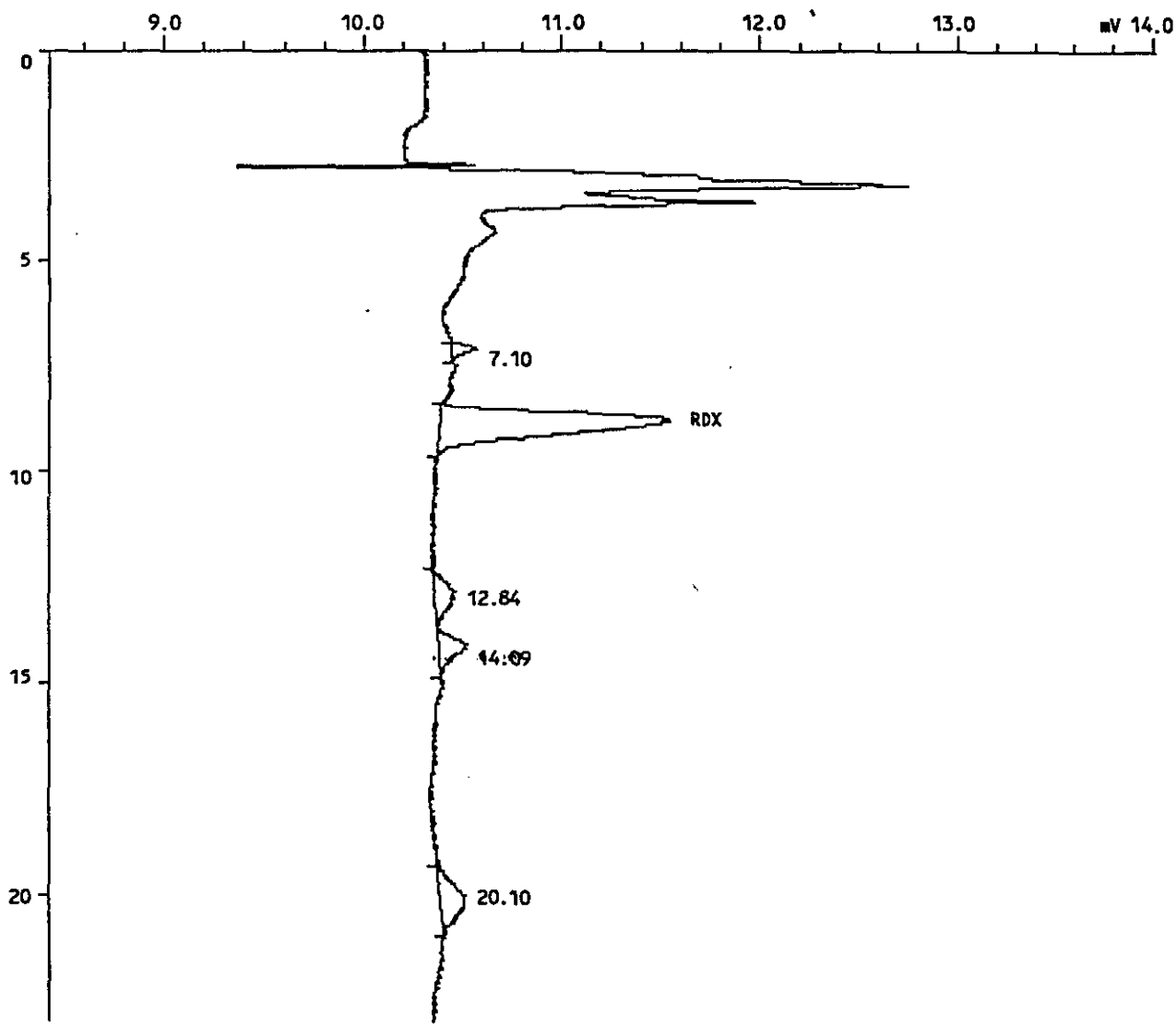
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.104	126	1655	3163.489	TNT
3	12.843	102	3951	17103.164	HMX
Total		228	5606	20266.652	
Residual		1429	49524	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,11,1

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 23:51:31
Reported on 06-May-98 at 11:02:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,11,1

Acquired on 03-May-98 at 23:51:31
Modified on 06-May-82 at 10:50:18
Reported on 06-May-98 at 10:50:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.805	1160	38838	141229.953	RDX
Total		1160	38838	141229.953	
Residual		497	16292	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.10

Sample Amt: 2g % Moisture 38.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

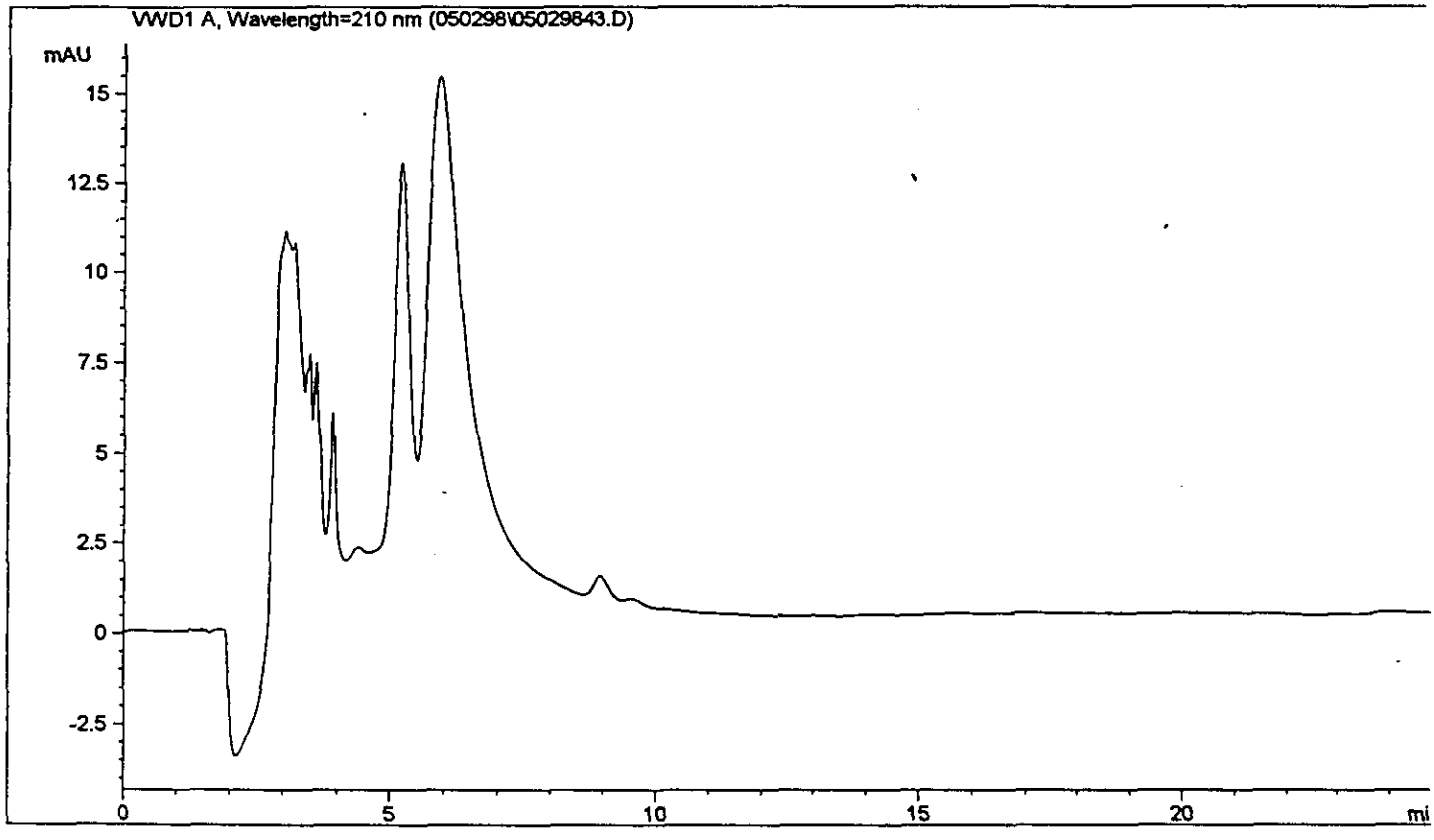
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 43
Sample Name	: 33783.10	Vial No.	: 43
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C3
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.11

Sample Amt: 2g % Moisture 37.31 Date Received: 04/29/98

Extraction Volume: 20ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	16100	
121-82-4	RDX	125000	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	11300	
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

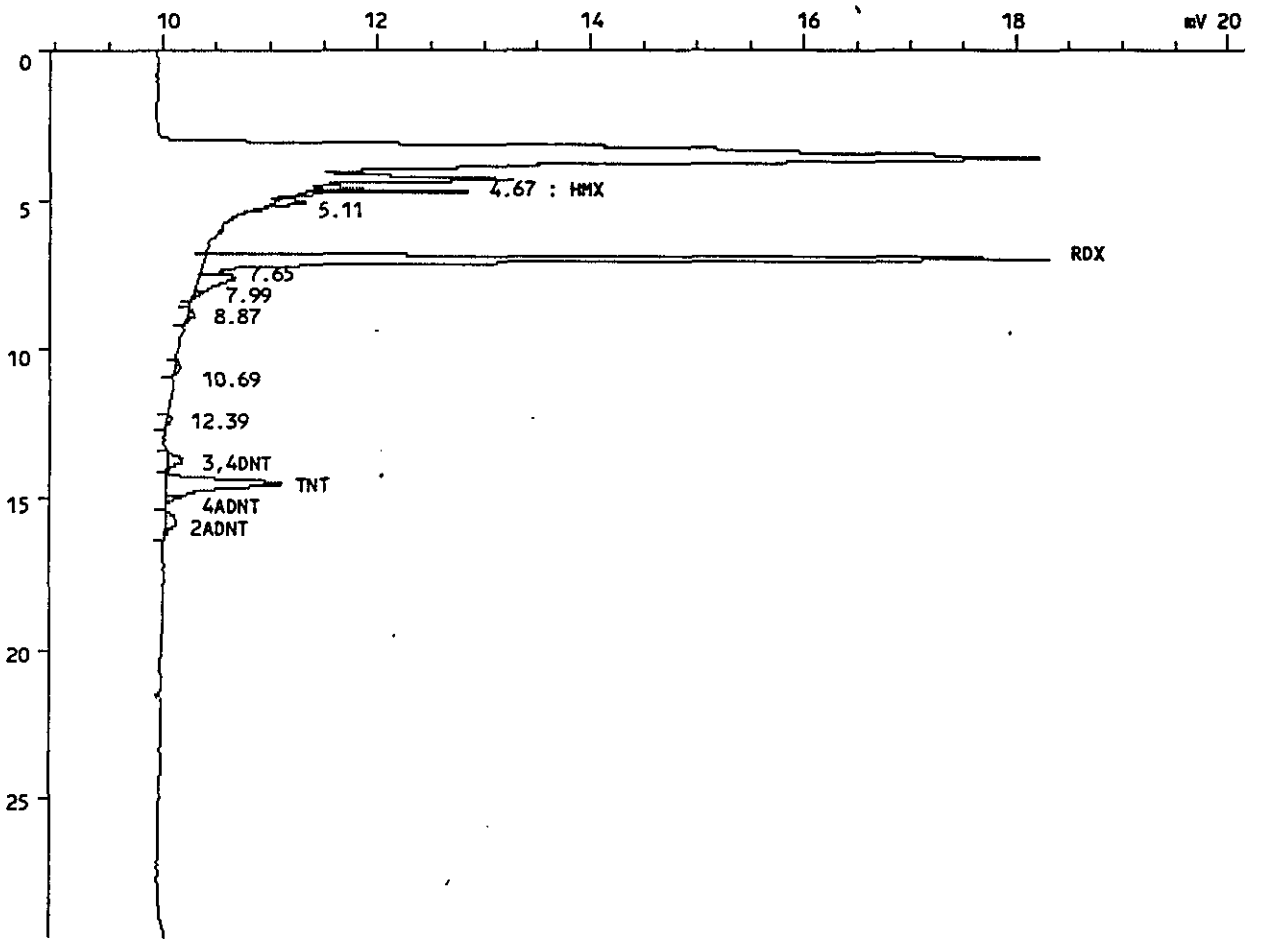
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,25,1

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 15:30:38
Reported on 11-May-98 at 19:51:40



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,25,1

Acquired on 09-May-98 at 15:30:38
Modified on 11-May-82 at 19:51:20
Reported on 11-May-98 at 19:51:22

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

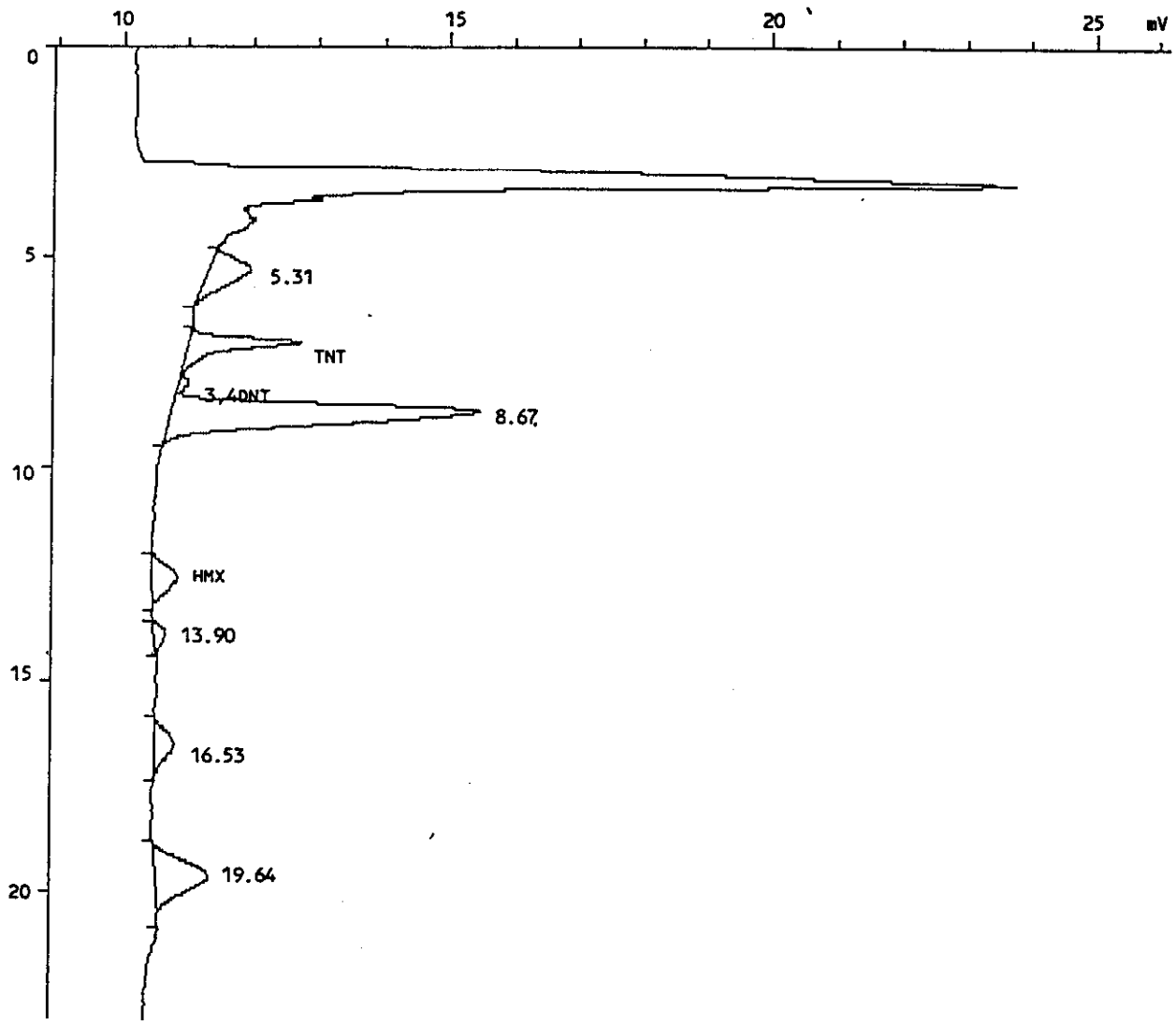
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.752	1595	10878	16139.197	HMX *
4	6.997	7948	106639	125458.117	RDX *
10	13.760	146	2694	2480.489	3,4DNT 124
11	14.528	1068	21928	11326.549	TNT *
12	14.901	188	1779	1349.921	4ADNT
13	15.765	100	2826	1509.598	2ADNT
Total		11044	146744	158263.859	
Residual		1539	19617	25154.125	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,18,1

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 16:31:49
Reported on 11-May-98 at 20:26:55



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,18,1

Acquired on 08-May-98 at 16:31:49
Modified on 11-May-82 at 20:26:28
Reported on 11-May-98 at 20:26:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 20:10:24
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 8

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

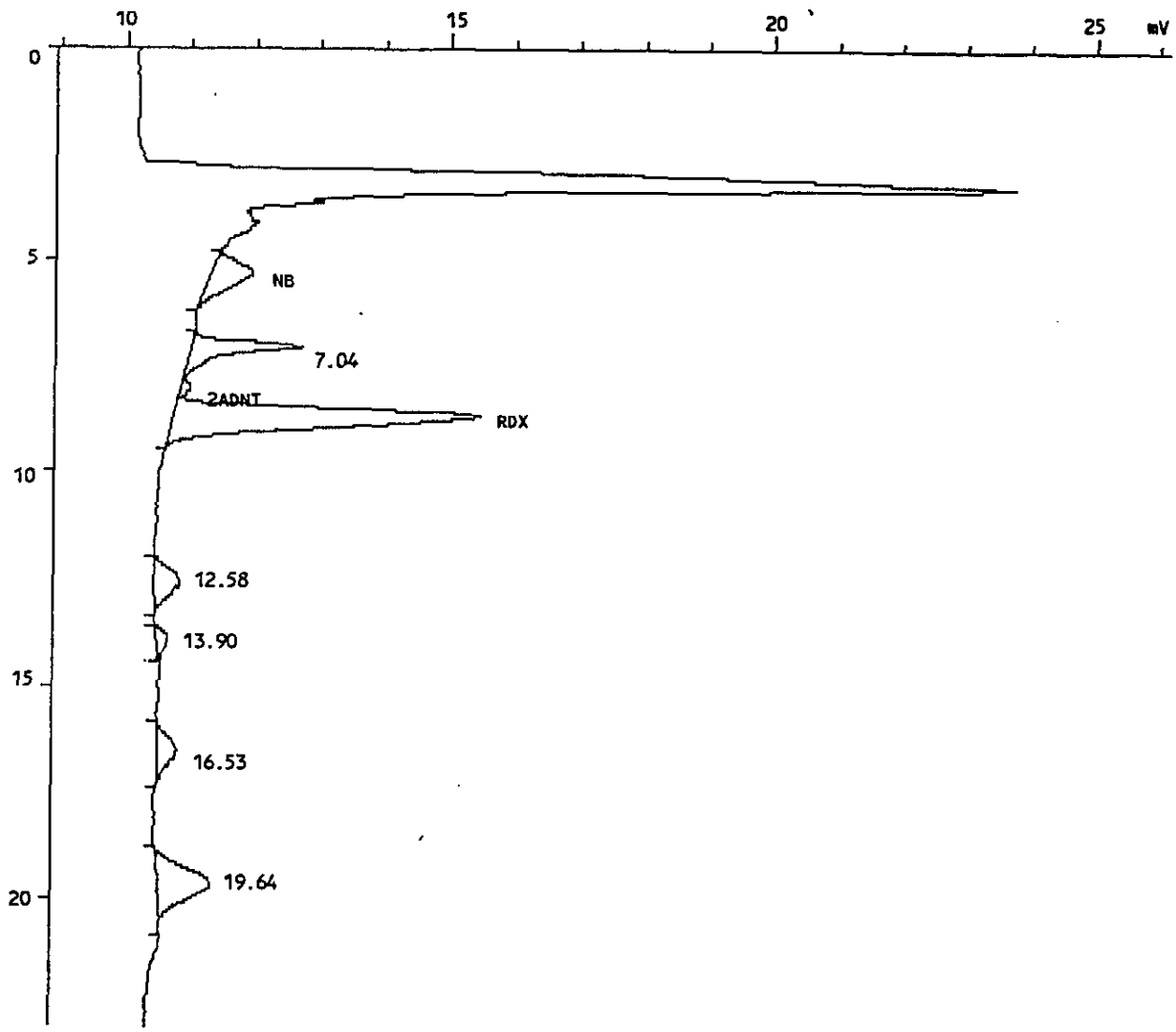
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.040	1698	33080	12099.322	TNT
3	8.000	153	2787	1906.017	3,4DNT
5	12.581	398	16535	14303.760	HMX
Total		2248	52401	28309.100	
Residual		6672	231596	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,18,1

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 16:31:49
Reported on 11-May-98 at 20:27:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,18,1

Acquired on 08-May-98 at 16:31:49
Modified on 11-May-82 at 20:27:24
Reported on 11-May-98 at 20:27:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 8

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.312	658	27052	13788.137	NB
3	8.000	153	2787	1065.620	2ADNT
4	8.667	4706	145160	105570.664	RDX
Total		5516	174999	120424.422	
Residual		3403	108999	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C3

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.11

Sample Amt: 2g % Moisture 37.31 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

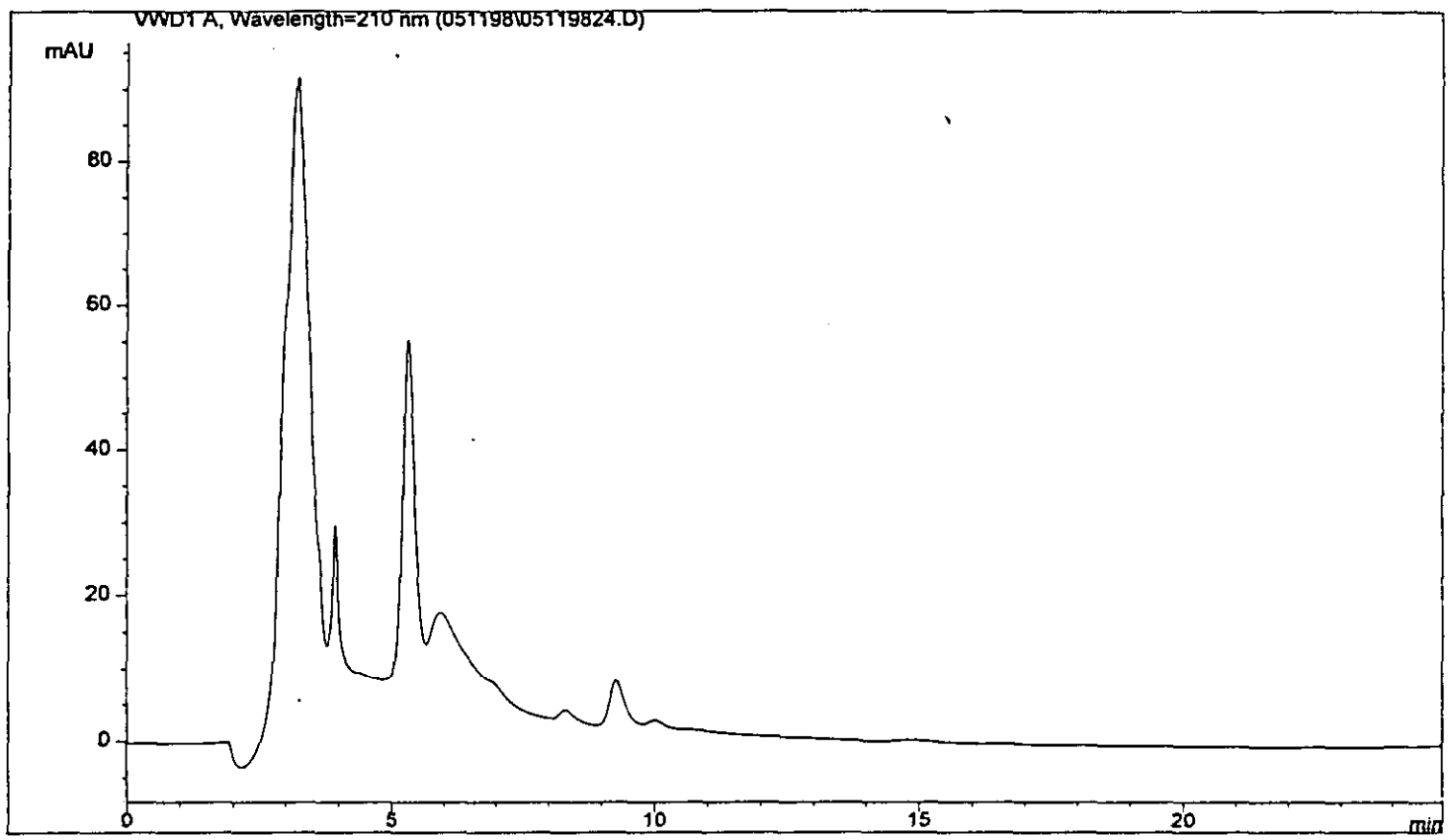
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	1250	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 24
Sample Name	: 33783.11	Vial No.	: 24
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.12

Sample Amt: 2g % Moisture 40.05 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	51200	J
121-82-4	RDX	357000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	27600	
1946-51-0	4ADNT	3550	JP
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

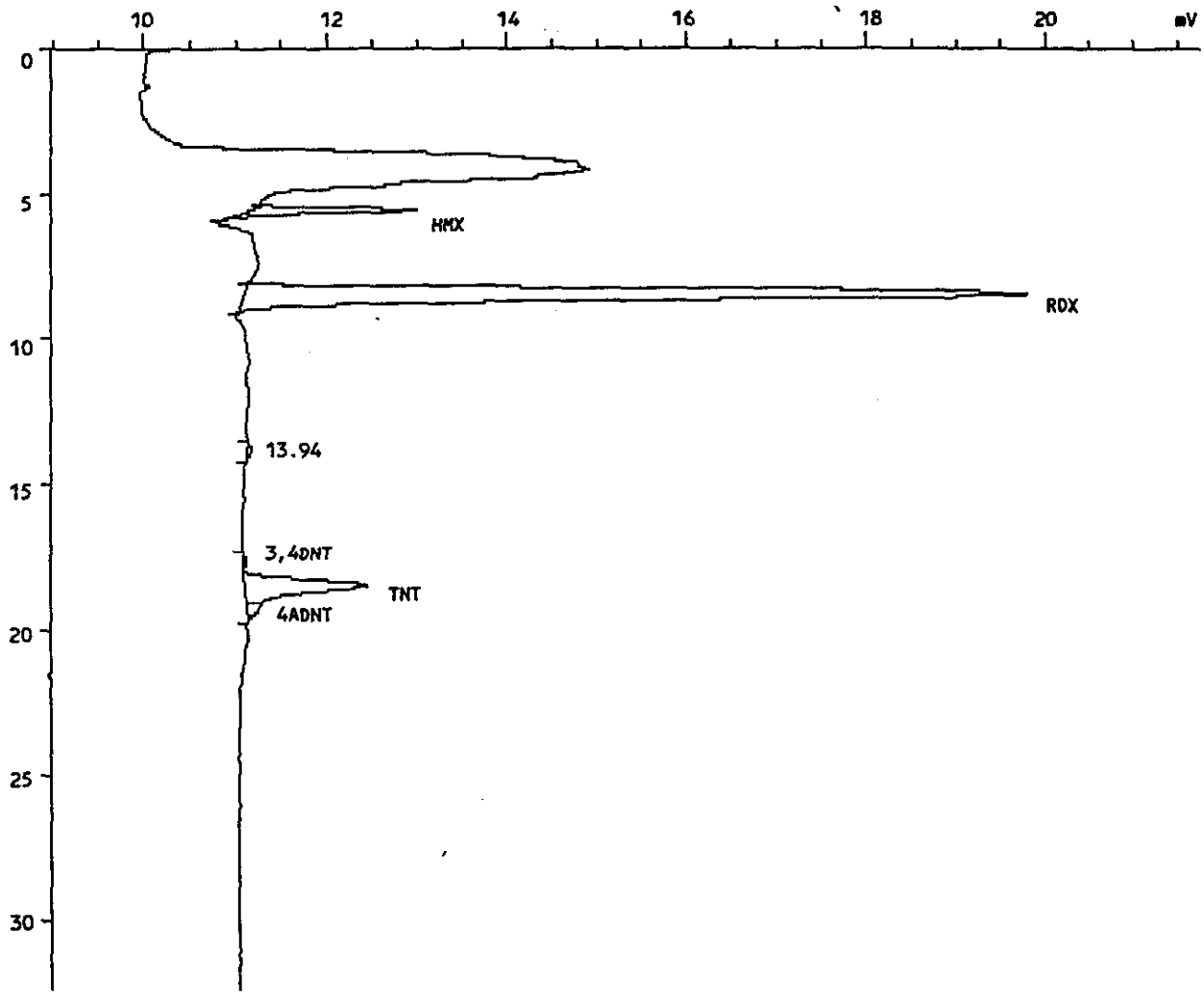
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,18,1

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 10:01:28
Reported on 06-May-98 at 12:08:16



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,18,1

Acquired on 03-May-98 at 10:01:28
Modified on 06-May-82 at 12:07:54
Reported on 06-May-98 at 12:08:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 19:25:20
Method file.....: EXPLOS Last modified on 06-May-82 at 11:50:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

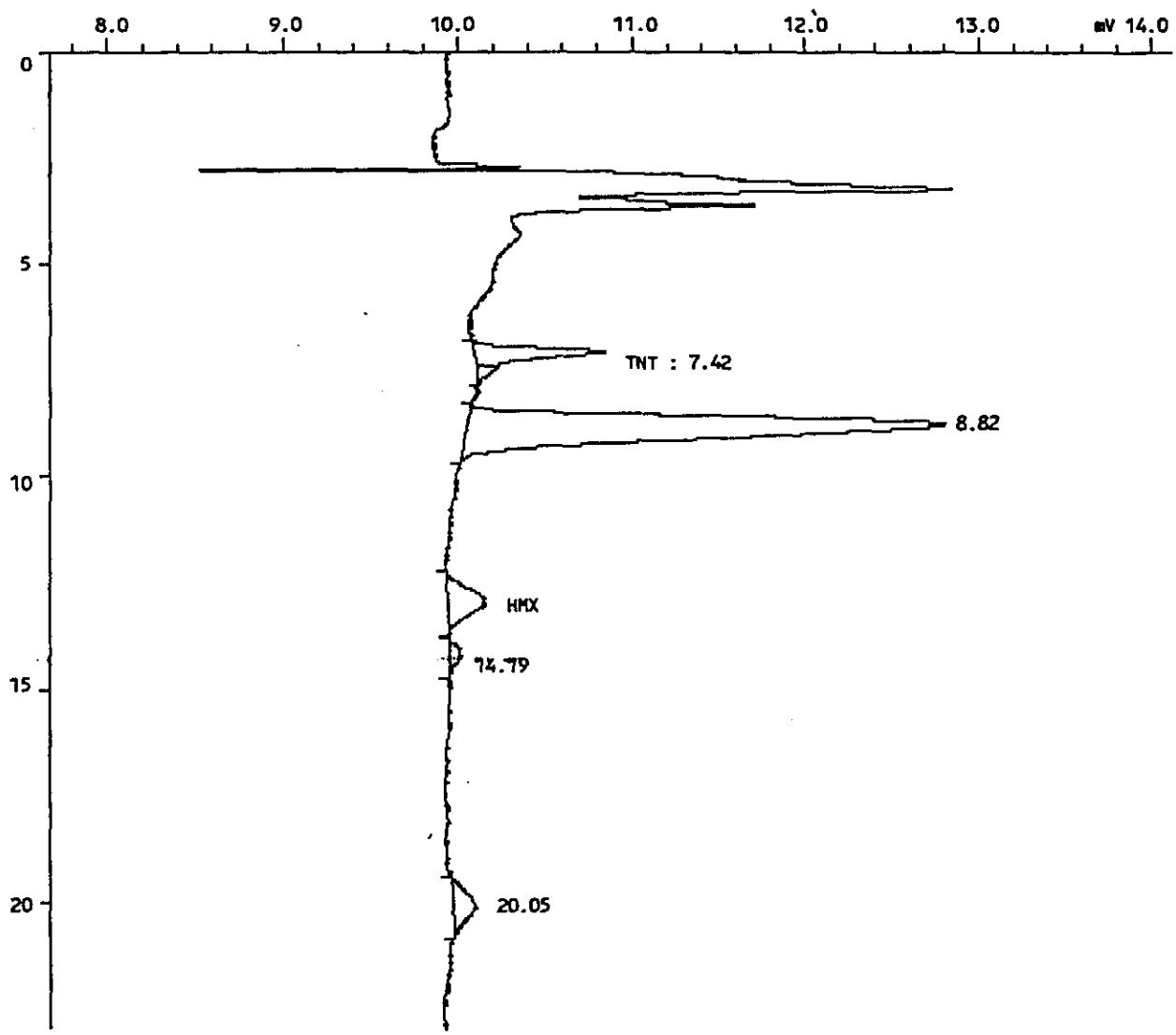
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	1876	22631	51247.449	HMX *J
2	8.560	8704	234477	356781.281	RDX *
4	17.600	43	985	1070.462	3,4DNT 53%
5	18.533	1344	41665	27607.107	TNT *
6	19.115	178	3861	3550.928	4ADNT * JP
Total		12146	303618	440257.219	
Residual		53	1299	1976.747	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,13,1

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 01:20:18
Reported on 06-May-98 at 10:47:09



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INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,13,1

Acquired on 04-May-98 at 01:20:18
Modified on 06-May-82 at 09:35:18
Reported on 06-May-98 at 09:35:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

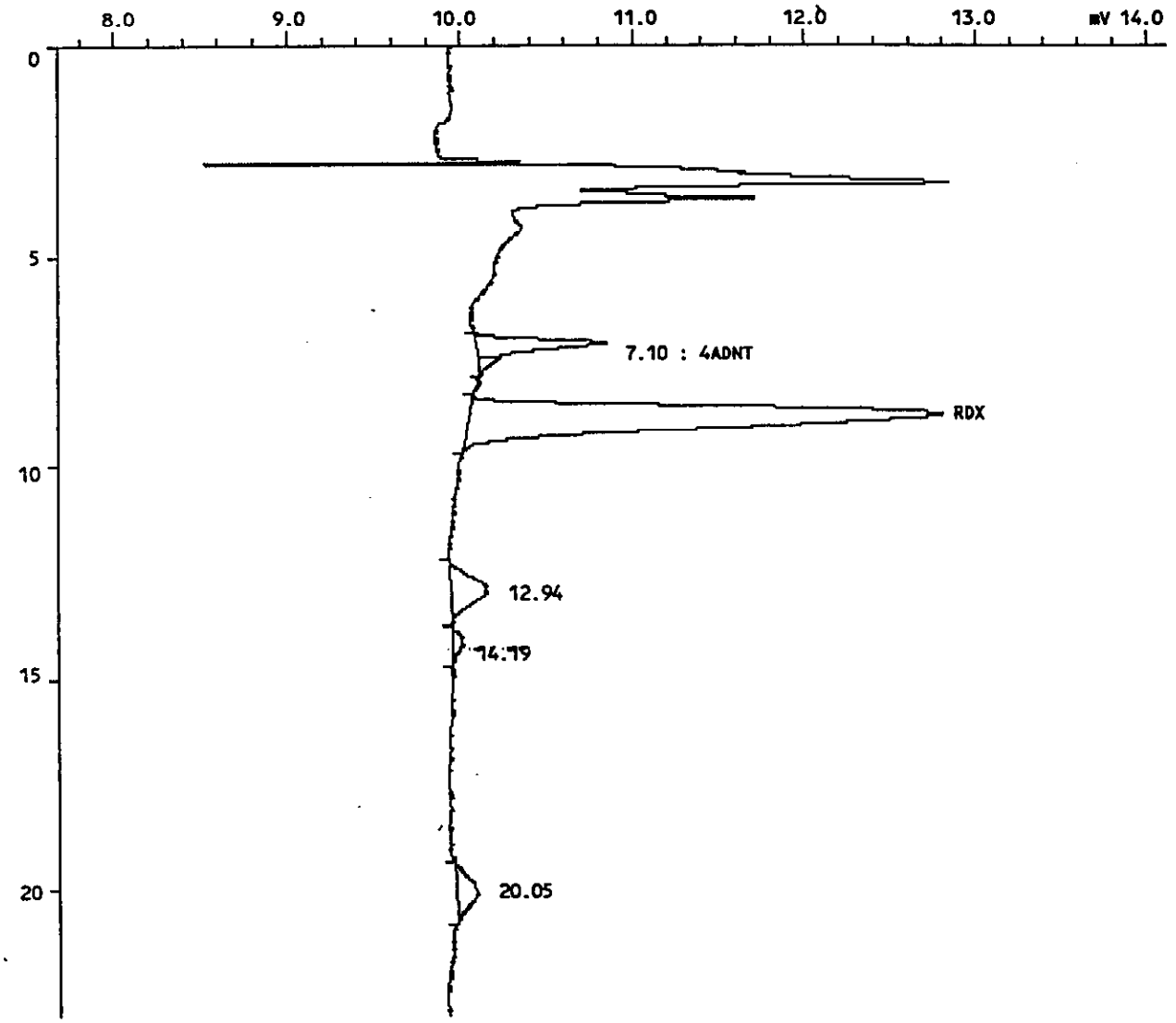
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.099	756	12637	24153.955	TNT
4	12.939	219	9204	39844.605	HMX
Total		975	21841	63998.563	
Residual		3088	101336	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,13,1

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 01:20:18
Reported on 06-May-98 at 11:04:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,13,1

Acquired on 04-May-98 at 01:20:18
Modified on 06-May-82 at 10:49:52
Reported on 06-May-98 at 10:49:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.424	128	1606	5030.029	4ADNT
3	8.816	2757	91985	334489.156	RDX
Total		2885	93590	339519.188	
Residual		1178	29587	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.12

Sample Amt: 2g % Moisture 40.05 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

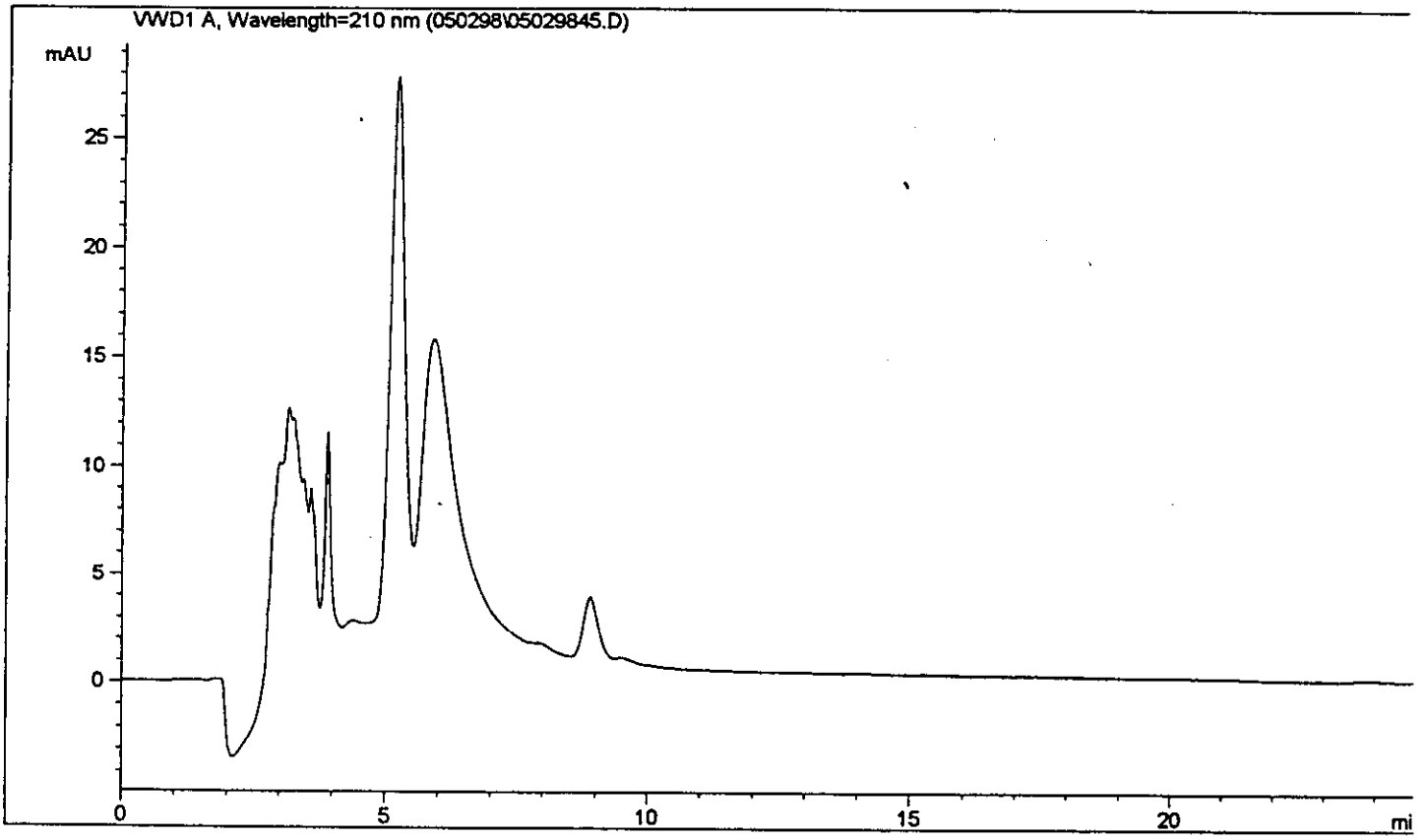
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 45
Sample Name	: 33783.12	Vial No.	: 45
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1
FD 50

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.13

Sample Amt: 2g % Moisture 46.19 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	64800	
121-82-4	RDX	445000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	32400	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

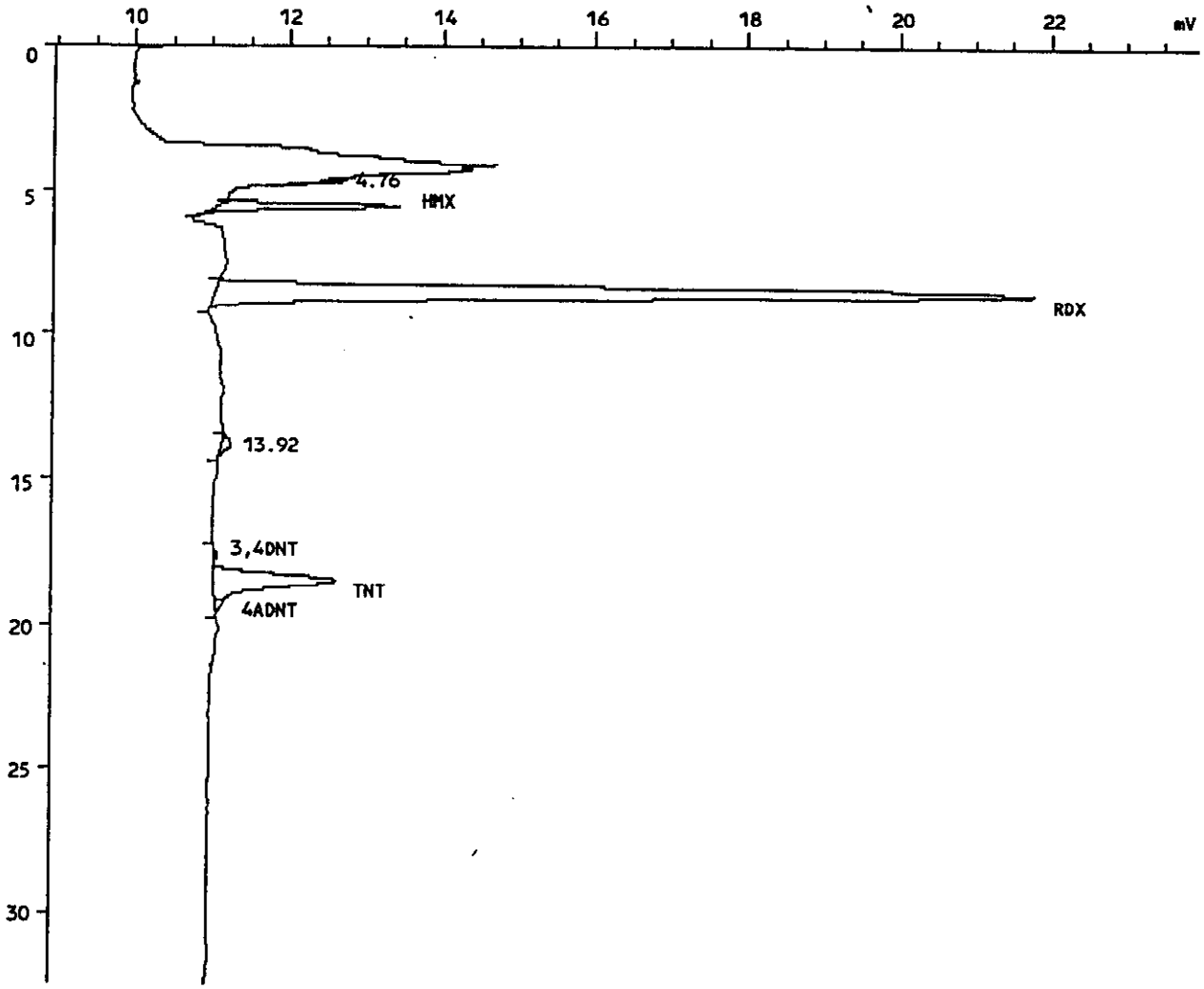
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,19,1

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 10:46:05
Reported on 05-May-98 at 18:57:24



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,19,1

Acquired on 03-May-98 at 10:46:05
Modified on 05-May-82 at 18:54:48
Reported on 05-May-98 at 18:54:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

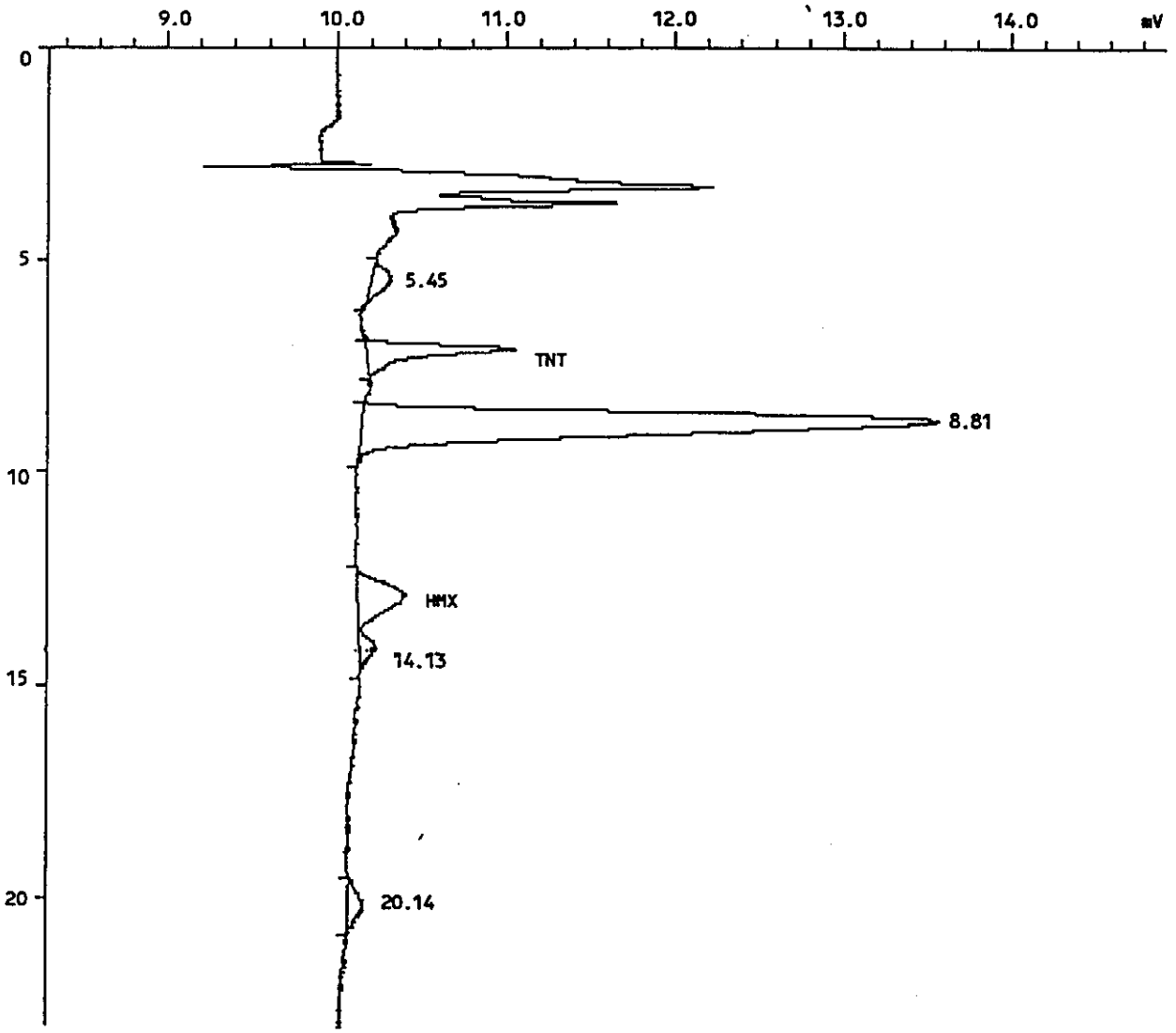
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.600	2417	28623	64816.777	HMX
3	8.544	10726	292431	444964.313	RDX
5	17.579	45	1031	1120.311	3,4DNT
6	18.517	1563	48926	32418.613	TNT
7	19.131	130	2501	2300.581	4ADNT
Total		14881	373512	545620.563	
Residual		671	8038	15226.292	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,14,1

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:04:42
Reported on 06-May-98 at 10:47:36



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,14,1

Acquired on 04-May-98 at 02:04:42
Modified on 06-May-82 at 09:35:04
Reported on 06-May-98 at 09:35:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

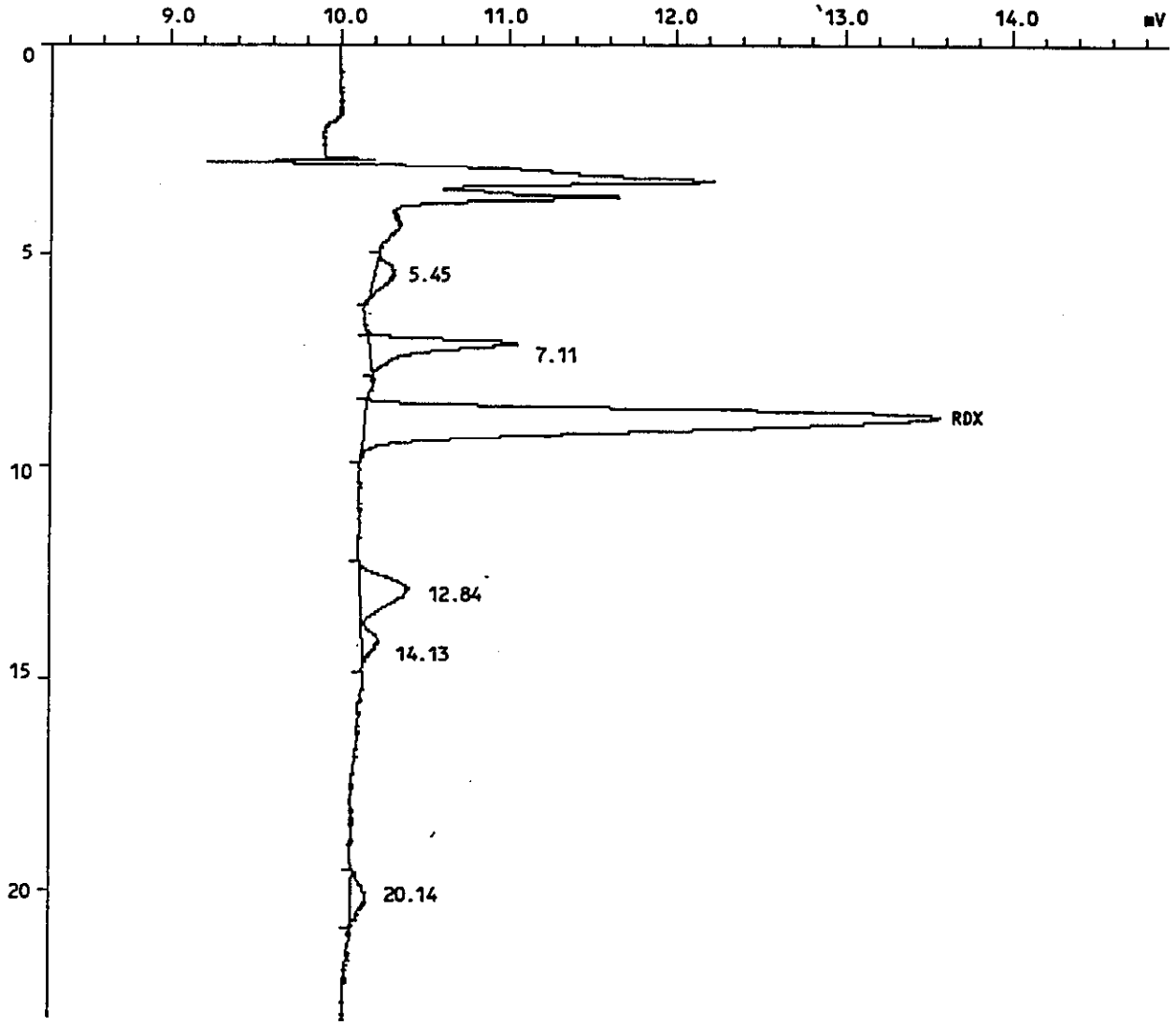
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.109	881	16174	30914.191	TNT
4	12.843	288	12698	54970.266	HMX
Total		1170	28872	85884.453	
Residual		3735	124827	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,14,1

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:04:42
Reported on 06-May-98 at 11:05:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,14,1

Acquired on 04-May-98 at 02:04:42
Modified on 06-May-82 at 10:49:40
Reported on 06-May-98 at 10:49:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.811	3425	113792	413787.656	RDX
Total		3425	113792	413787.656	
Residual		1480	39908	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.13

Sample Amt: 2g % Moisture 46.19 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

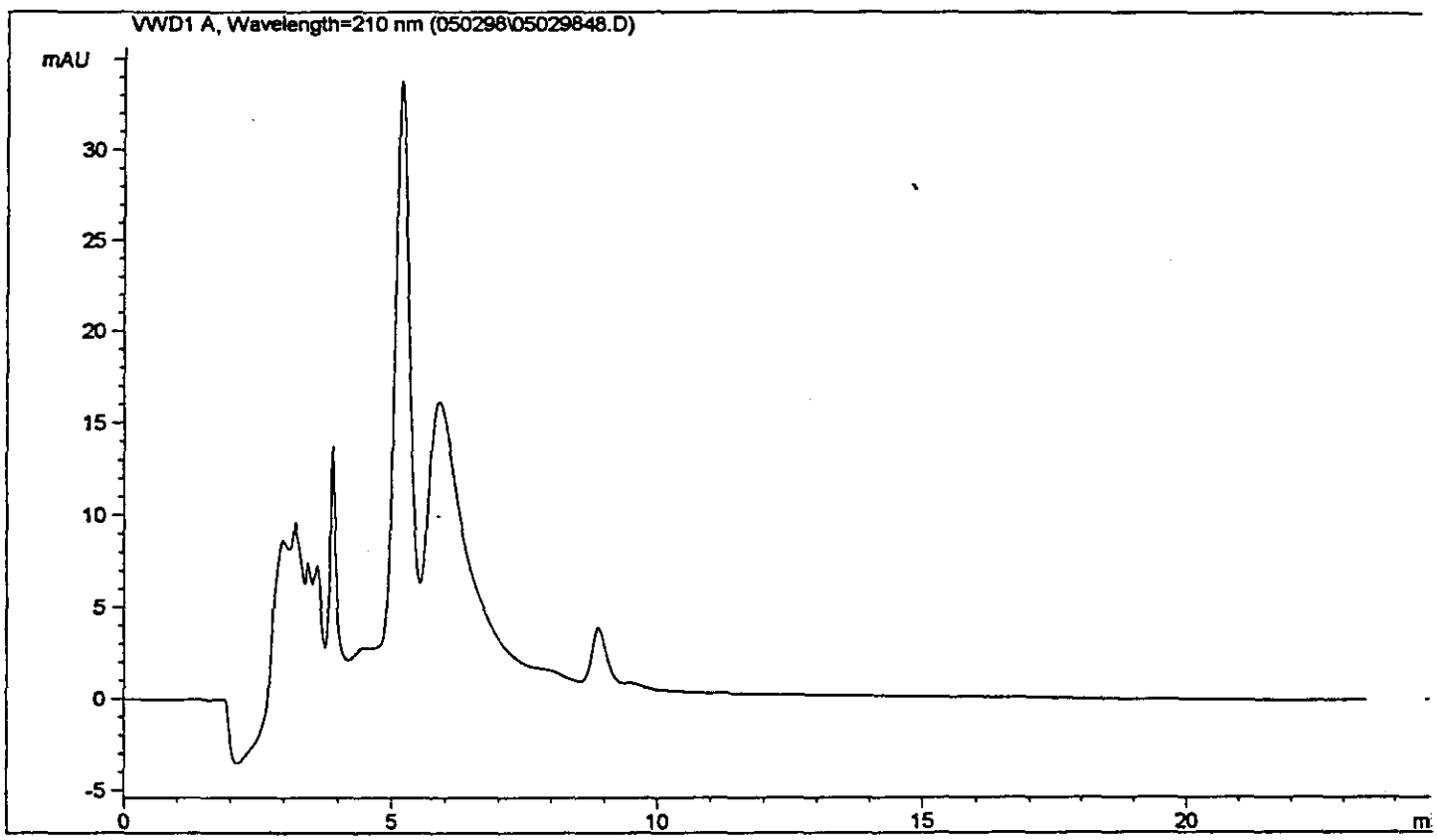
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 48
Sample Name	: 33783.13	Vial No.	: 48
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.14

Sample Amt: 2g % Moisture 46.55 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	37300	J
121-82-4	RDX	281000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	20100	
1946-51-0	4ADNT	1760	J
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

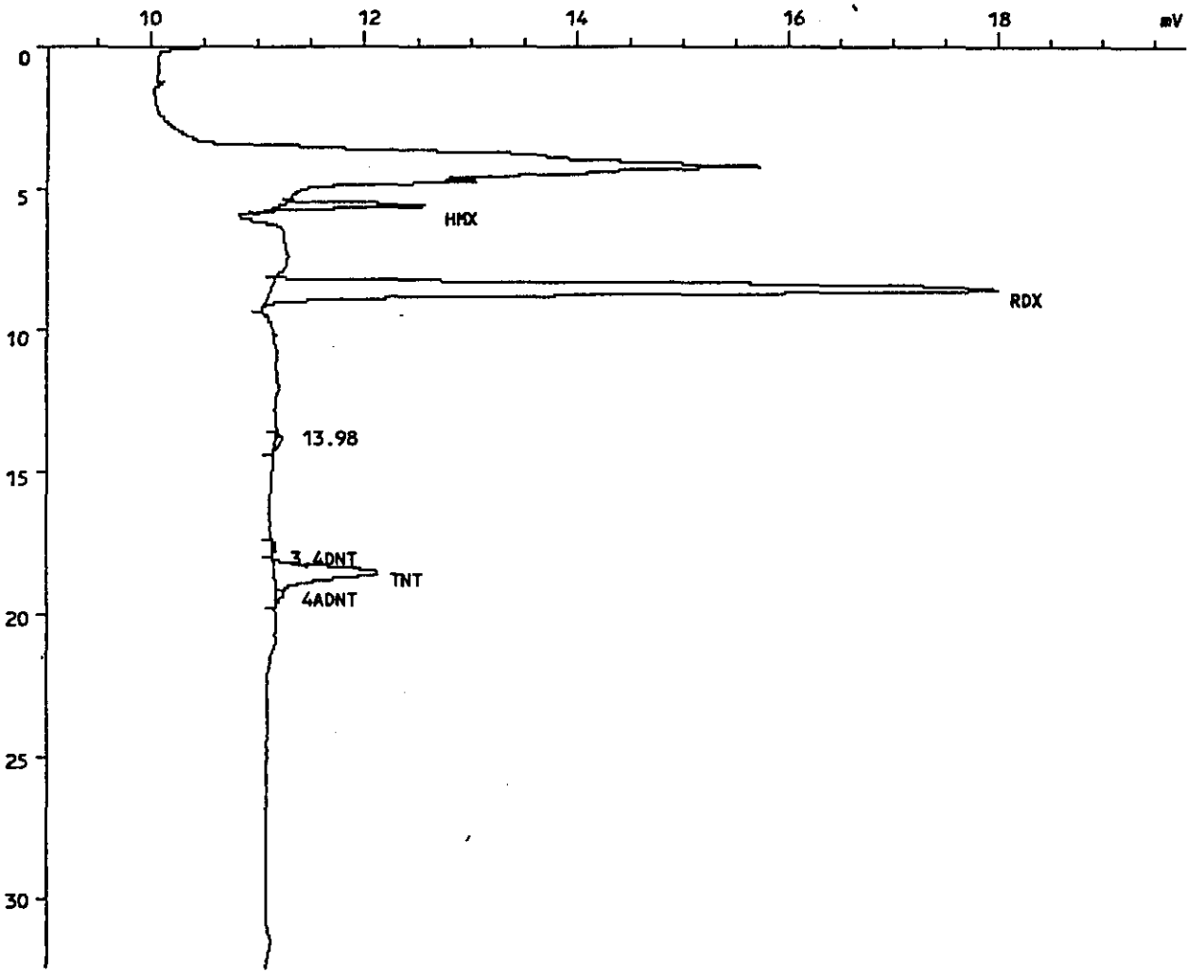
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,20,1

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 11:30:43
Reported on 05-May-98 at 18:56:43



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,20,1

Acquired on 03-May-98 at 11:30:43
Modified on 05-May-82 at 18:55:04
Reported on 05-May-98 at 18:55:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

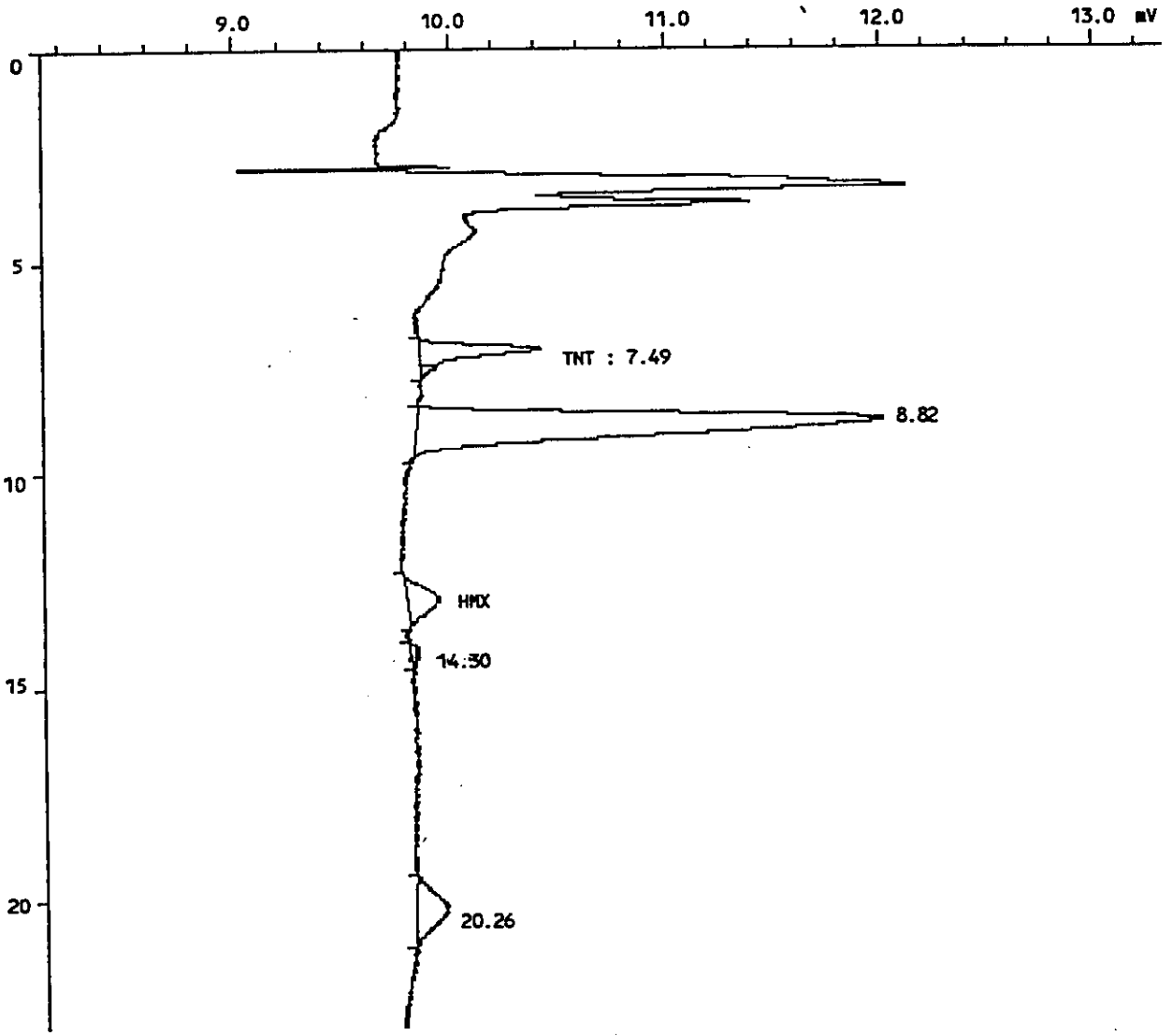
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.621	1422	16490	37342.293	HMX * J
2	8.581	6878	184947	281416.875	RDX *
4	17.675	42	799	868.585	3,4DNT 13
5	18.544	992	30340	20103.400	TNT *
6	19.147	97	1917	1763.549	4ADNT * J
Total		9432	234494	341494.719	
Residual		74	1746	2656.255	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,15,1

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:49:06
Reported on 06-May-98 at 10:47:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,15,1

Acquired on 04-May-98 at 02:49:06
Modified on 06-May-82 at 09:34:50
Reported on 06-May-98 at 09:34:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

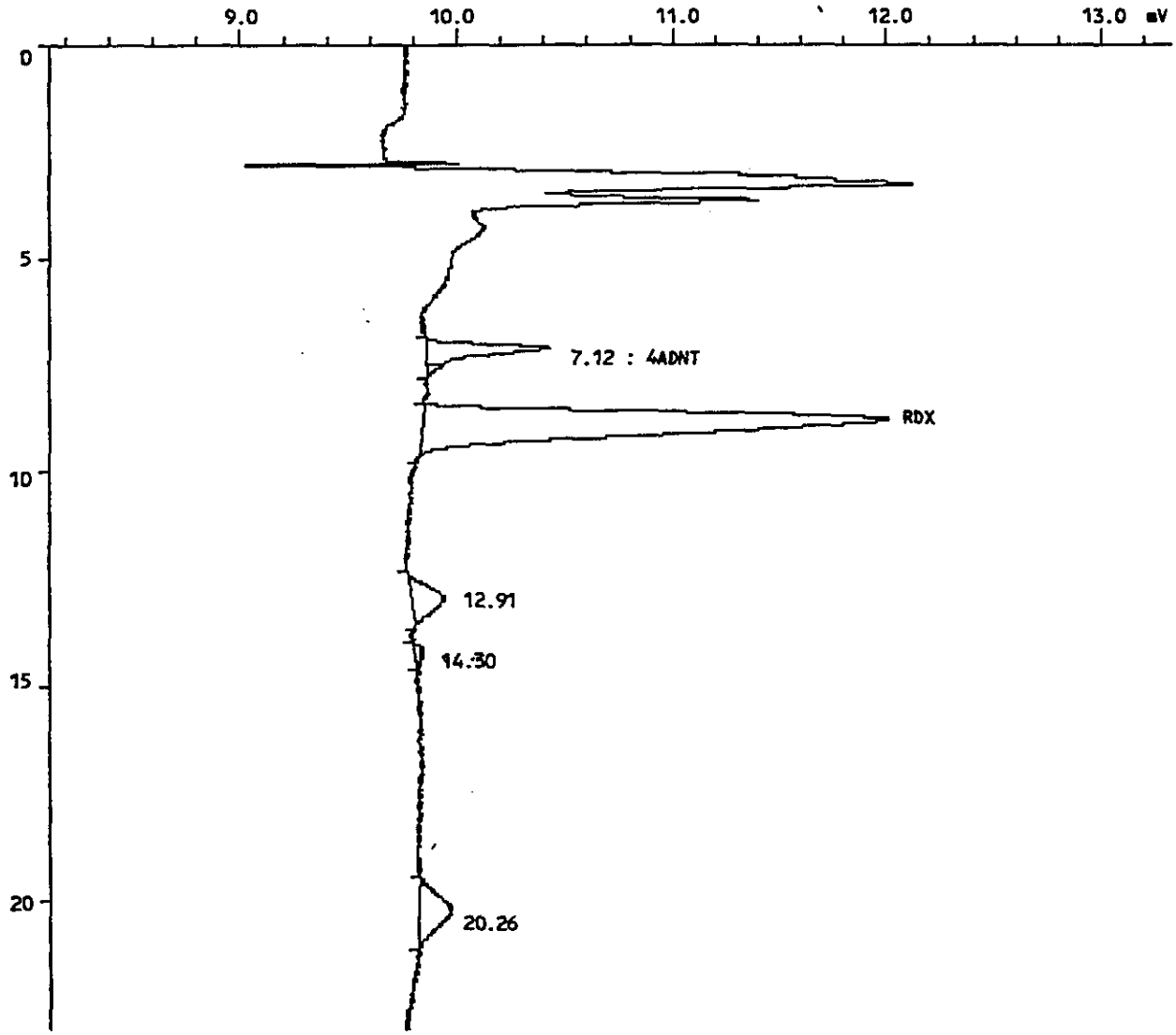
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.120	575	9935	18988.223	TNT
4	12.907	153	5999	25970.352	HMX
Total		728	15934	44958.574	
Residual		2431	80548	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,15,1

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:49:06
Reported on 06-May-98 at 11:13:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,15,1

Acquired on 04-May-98 at 02:49:06
Modified on 06-May-82 at 10:49:26
Reported on 06-May-98 at 10:49:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.488	81	717	2246.270	4ADNT
3	8.816	2165	71673	260627.438	RDX
Total		2246	72390	262873.719	
Residual		913	24093	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.14

Sample Amt: 2g % Moisture 46.55 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

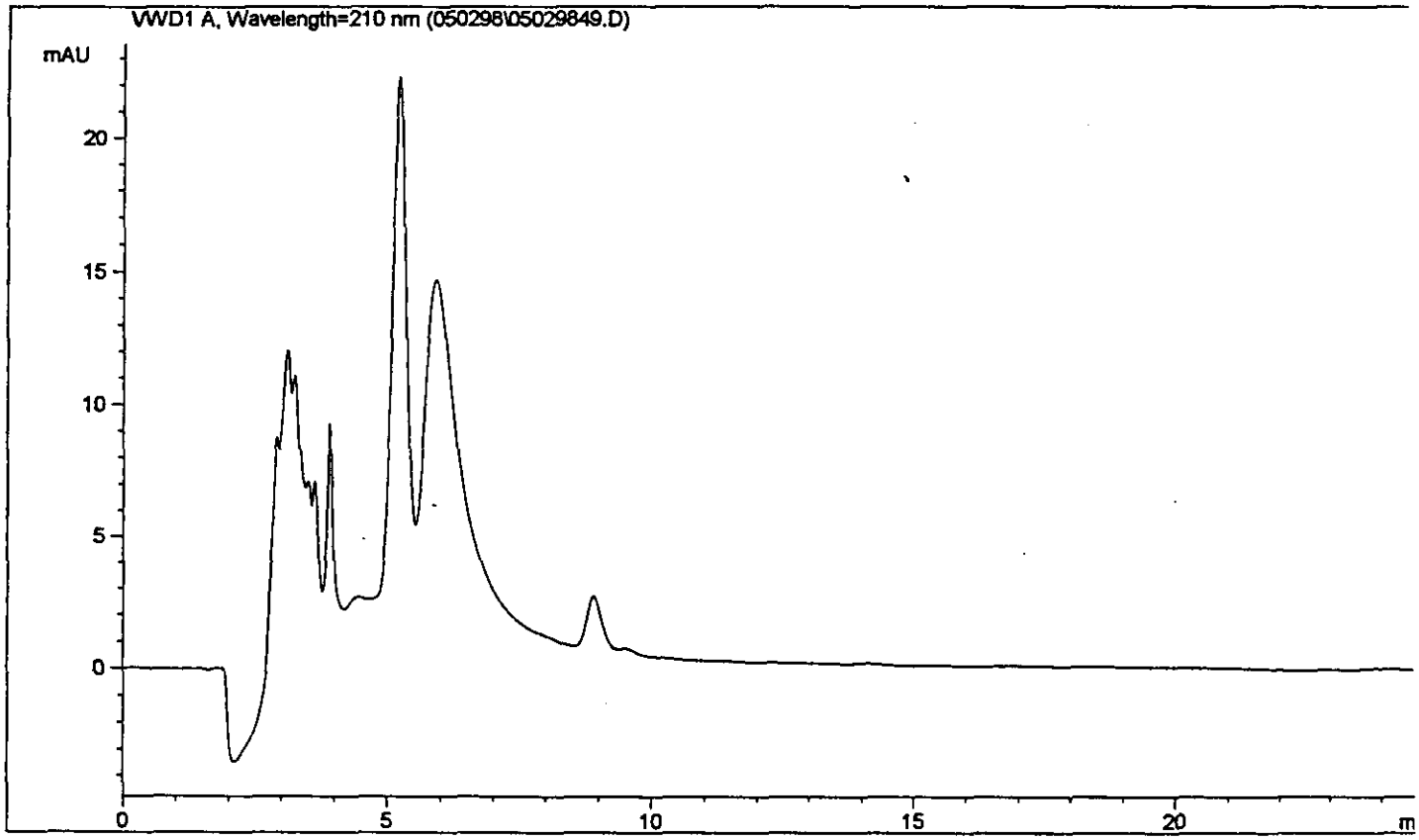
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 49
Sample Name	: 33783.14	Vial No.	: 49
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D3
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.15

Sample Amt: 2g % Moisture 44.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	38000	J
121-82-4	RDX	271000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	30900	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

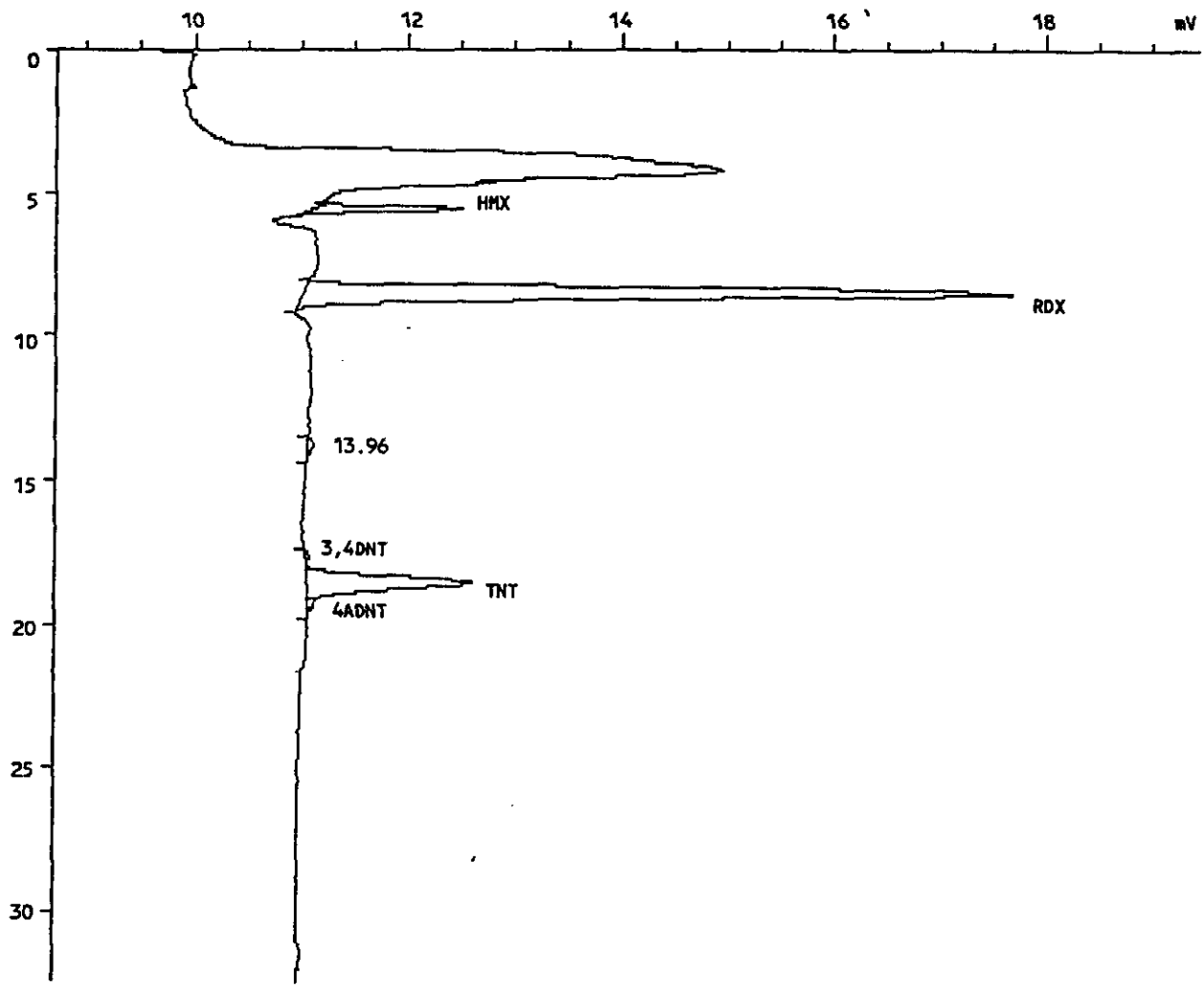
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,21,1

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 12:15:20
Reported on 05-May-98 at 18:55:56



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,21,1

Acquired on 03-May-98 at 12:15:20
Modified on 05-May-82 at 18:55:18
Reported on 05-May-98 at 18:55:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

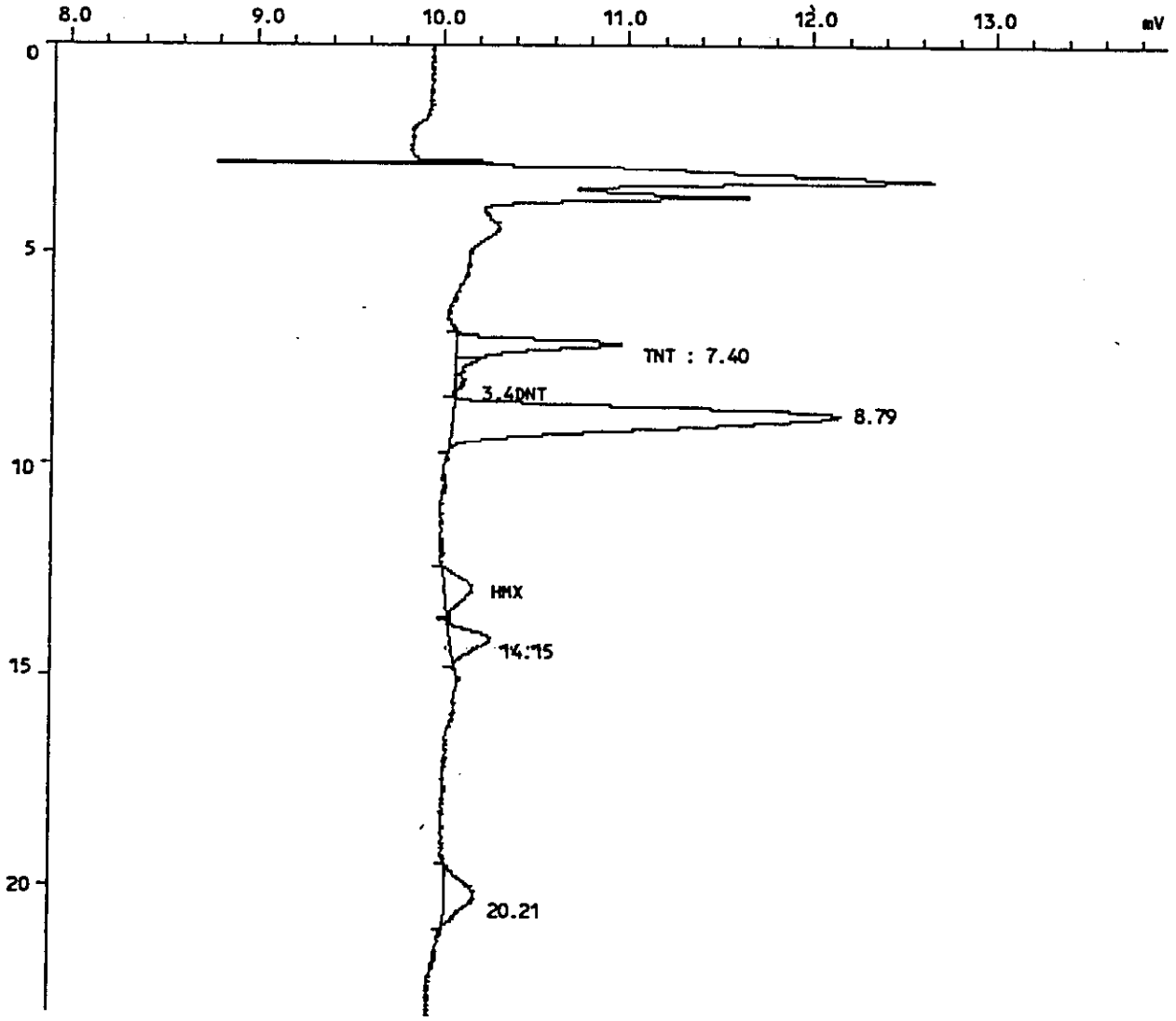
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.600	1446	16769	37972.875	HMX * J
2	8.560	6660	177890	270678.188	RDX *
4	17.600	34	791	859.474	3,4DNT 43
5	18.549	1554	46652	30911.740	TNT *
6	19.109	114	1793	1649.024	4ADNT
Total		9808	243894	342071.313	
Residual		50	1225	1863.292	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,16,1

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 03:33:30
Reported on 06-May-98 at 10:48:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,16,1

Acquired on 04-May-98 at 03:33:30
Modified on 06-May-82 at 09:34:38
Reported on 06-May-98 at 09:34:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

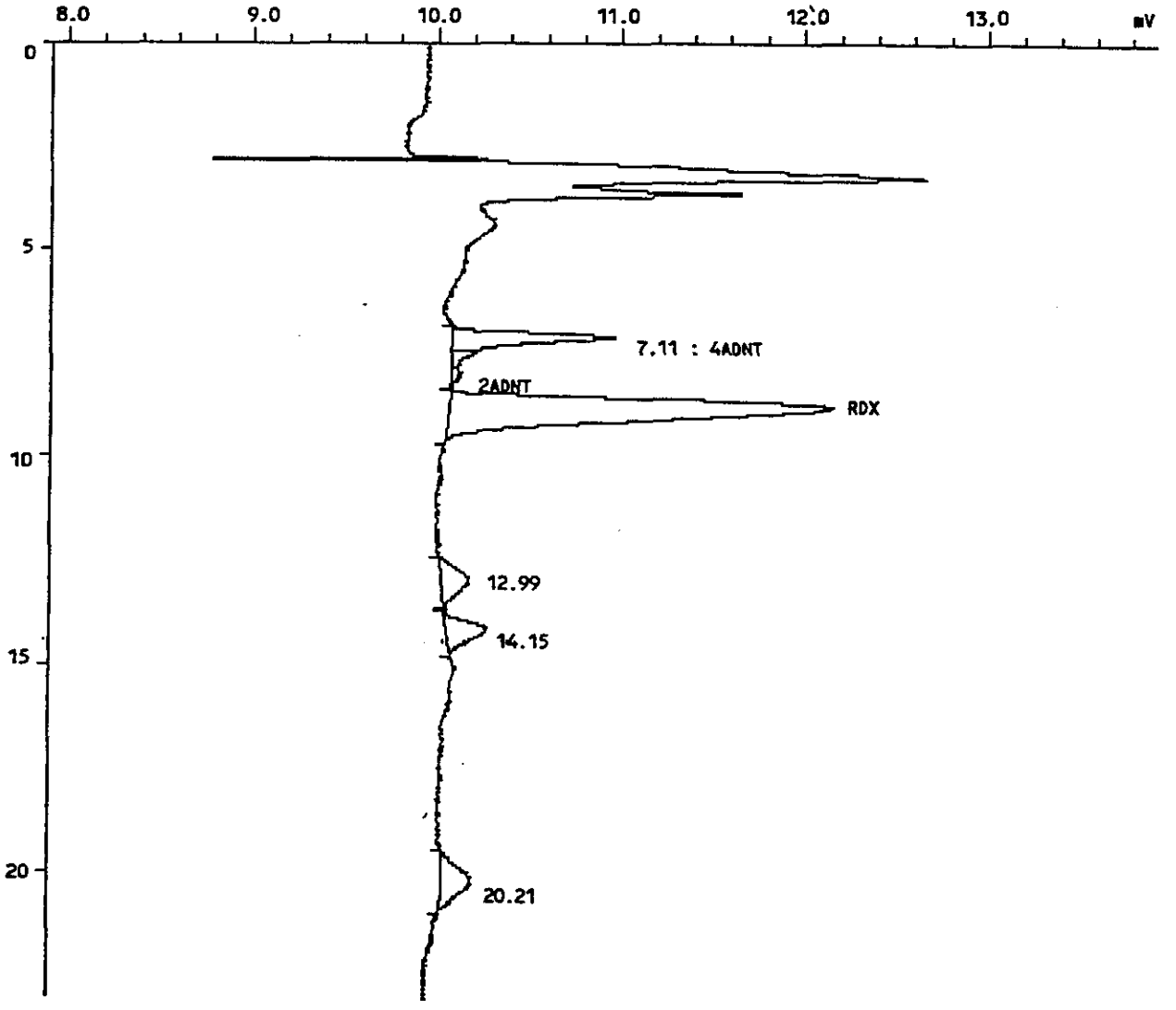
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.109	893	14959	28590.670	TNT
3	7.979	56	986	3591.168	3,4DNT
5	12.992	151	6002	25980.766	HMX
Total		1099	21946	58162.602	
Residual		2655	85555	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,16,1

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 03:33:30
Reported on 06-May-98 at 11:14:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,16,1

Acquired on 04-May-98 at 03:33:30
Modified on 06-May-82 at 10:49:14
Reported on 06-May-98 at 10:49:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.403	164	2043	6400.679	4ADNT
3	7.979	56	986	1885.535	2ADNT
4	8.795	2099	69040	251053.266	RDX
Total		2318	72069	259339.484	
Residual		1436	35432	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.15

Sample Amt: 2g % Moisture 44.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

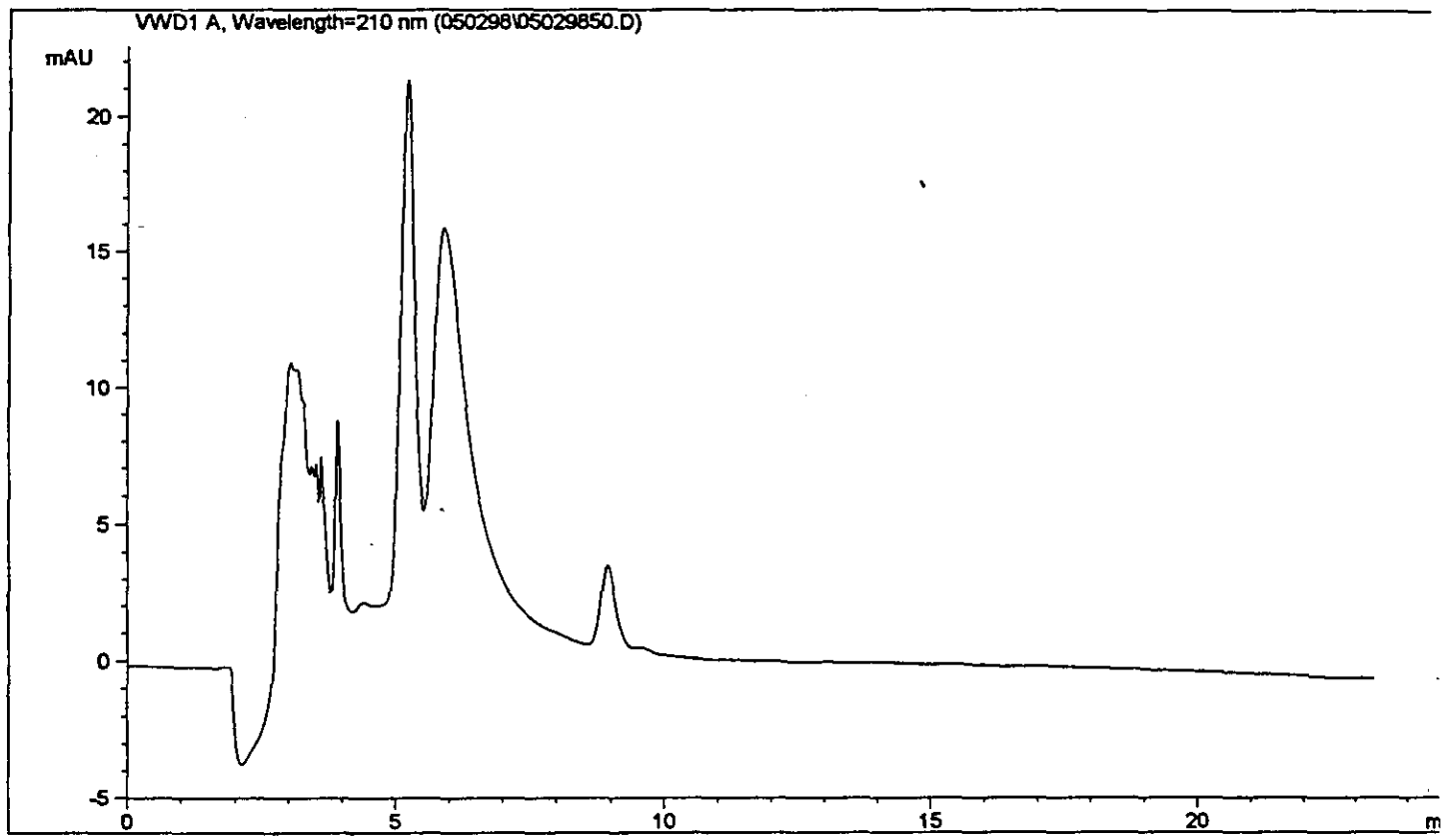
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 50
Sample Name	: 33783.15	Vial No.	: 50
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



Customized Report: extstd.frp

Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

*** End of Report ***

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MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

BIO-010

Project No.: 4329-0009-007-35

Project Name: NSWC Crane Biofacility

Samplers: (Signature) Ryan Ewin

Sampler: (Print) Ryan Ewin

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	8330 Explosives	Remarks
Compost	CSA SL1	4/27/98	1419	BIO-N-30%-00-A1	✓		✓	MS/MSD
	CSA SL2		1423	BIO-N-30%-00-A2	✓		✓	at ~~B3~~ D1
	CSA SL3		1409	BIO-N-30%-00-A3	✓		✓	
	CSB SL1		1425	BIO-N-30%-00-B1	✓		✓	Full-Scale
	CSB SL2		1410	BIO-N-30%-00-B2	✓		✓	Compost
	CSB SL3		1444	BIO-N-30%-00-B3	✓		✓	
	CSC SL1		1540	BIO-N-30%-00-C1	✓		✓	
	CSC SL2		1529	BIO-N-30%-00-C2	✓		✓	
	CSC SL3		1533	BIO-N-30%-00-C3	✓		✓	
	CSD SL1		1458	BIO-N-30%-00-D1	✓		✓	
	CSD SL1		1458	BIO-N-30%-00-D1-FD	✓		✓	
	CSD SL2		1506	BIO-N-30%-00-D2	✓		✓	
	CSD SL3		1447	BIO-N-30%-00-D3	✓		✓	
liquid	Rinse Blank		1519	BIO-RB-0427-98		✓	✓	
	~~Trip Blank~~	~~4/28/98~~	~~1530~~	~~BIOT042898~~				~~RE~~
								South West Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Ryan Ewin	4/28/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company:	Date/Time 4/29/98 0915	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal #'s 2139, 2140

APPENDIX K
CALIBRATION SUMMARIES FOR LAB ANALYSIS OF DAY 0 SAMPLES

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Calibration Summary for Analysis of Windrow N-30% Day 0 . . . . . 67 pages

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0502,4
Injection File Name Level 2 : 2EX0502,5
Injection File Name Level 3 : 2EX0502,6
Injection File Name Level 4 : 2EX0502,7
Injection File Name Level 5 : 2EX0502,8

Calibration Date : 05/02/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	10647	1050	277491	1092	742836	1126	1114701	1126	1487192	1127
RDX	7076	1677	165236	1565	452885	1641	688186	1670	914111	1662
TNB	9398	3112	252411	3339	689084	3498	1031680	3485	1381279	3506
DNB	7832	4835	204222	5030	560536	5308	832082	5253	1117816	5273
TETRYL	6684	1797	173477	1865	473542	1957	700101	1923	941647	1946
NB	13295	4029	344198	4177	953115	4454	1426772	4431	1913429	4450
3,4-DNT	10931	2152	283691	2237	782366	2371	1171327	2362	1571272	2381
TNT	9680	3585	245691	3634	677299	3848	1019405	3861	1385816	3937
4ADNT	6232	2641	156277	2640	430145	2793	640517	2761	847977	2753
2ADNT	8857	3753	226340	3823	627094	4072	942942	4064	1267958	4117
26DNT	8868	2286	222394	2288	599513	2360	894331	2354	1200910	2373
24DNT	11821	5009	305315	5157	839938	5454	1274098	5492	1718823	5581
2NT	8617	2549	209982	2482	564646	2567	846186	2564	1137501	2585
	7995	2365	202352	2392	544955	2477	816344	2474	1095401	2490
	8942	2777	224357	2791	599191	2853	911102	2902	1216241	2910

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
›lumn ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0502,4
Injection File Name Level 2 : 2EX0502,5
Injection File Name Level 3 : 2EX0502,6
Injection File Name Level 4 : 2EX0502,7
Injection File Name Level 5 : 2EX0502,8

Calibration Date : 05/02/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1104	3.04	0.99999	1126	0.000
RDX	1643	2.79	0.99991	1660	0.000
TNB	3388	4.98	0.99996	3495	0.000
DNB	5140	3.94	0.99995	5267	0.000
TETRYL	1898	3.50	0.99992	1939	0.000
NB	4308	4.52	0.99993	4440	0.000
3,4-DNT	2300	4.41	0.99994	2371	0.000
TNT	3773	4.08	0.99984	3897	0.000
)NT	2718	2.65	0.99992	2759	0.000
..DNT	3966	4.17	0.99990	4089	0.000
26DNT	2332	1.80	0.99997	2364	0.000
24DNT	5339	4.56	0.99986	5529	0.000
2NT	2549	1.56	0.99996	2574	0.000
4NT	2440	2.32	0.99997	2481	0.000
3NT	2846	2.15	0.99994	2897	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/02/1998
Continuing Calibration #: 1
tinuing Cal Date : 05/03/1998
.tinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0502A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	742184	1125	1104	1.85	1126	0.10
RDX	448313	1624	1643	1.13	1660	2.14
TNB	689055	3498	3388	3.24	3495	0.07
DNB	555231	5258	5140	2.30	5267	0.17
TETRYL	462396	1911	1898	0.69	1939	1.45
NB	948329	4431	4308	2.86	4440	0.18
3,4-DNT	779194	2361	2300	2.64	2371	0.41
TNT	676200	3842	3773	1.82	3897	1.40
4ADNT	431626	2803	2718	3.14	2759	1.59
2ADNT	626384	4067	3966	2.56	4089	0.54
26DNT	598943	2358	2332	1.11	2364	0.25
24DNT	845200	5488	5339	2.81	5529	0.73
2NT	563902	2563	2549	0.54	2574	0.43
4NT	542826	2467	2440	1.14	2481	0.56
3NT	604823	2880	2846	1.18	2897	0.60

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/02/1998
Continuing Calibration #: 2
.tinuing Cal Date : 05/03/1998
.ntinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0502A,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	743701	1127	1104	2.06	1126	0.11
RDX	454984	1648	1643	0.34	1660	0.69
TNB	684410	3474	3388	2.54	3495	0.61
DNB	557274	5277	5140	2.68	5267	0.19
TETRYL	463687	1916	1898	0.97	1939	1.17
NB	941920	4401	4308	2.17	4440	0.86
3,4-DNT	782671	2372	2300	3.10	2371	0.04
TNT	677924	3852	3773	2.08	3897	1.15
4ADNT	432751	2810	2718	3.41	2759	1.86
2ADNT	629352	4087	3966	3.05	4089	0.06
26DNT	601672	2369	2332	1.57	2364	0.21
24DNT	846675	5498	5339	2.98	5529	0.56
2NT	560920	2550	2549	0.01	2574	0.96
4NT	544135	2473	2440	1.39	2481	0.32
3NT	603007	2871	2846	0.88	2897	0.89

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN12
olumn ID : CARB-07
Calibration Date : 05/02/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.62	5.60	5.59	5.59	5.62
RDX	8.62	8.54	8.53	8.53	8.52
TNB	11.63	11.62	11.62	11.61	11.59
DNB	14.24	14.18	14.18	14.17	14.16
TETRYL	15.46	15.40	15.39	15.39	15.38
NB	16.16	16.13	16.12	16.11	16.11
3,4-DNT	17.72	17.62	17.61	17.60	17.60
TNT	18.58	18.50	18.49	18.48	18.48
4ADNT	19.30	19.18	19.17	19.16	19.17
2ADNT	20.29	20.20	20.19	20.18	20.20
26DNT	21.62	21.56	21.54	21.53	21.55
24DNT	22.33	22.28	22.25	22.24	22.26
2NT	26.30	26.27	26.22	26.20	26.24
4NT	28.15	28.08	28.03	28.01	28.06
3NT	30.36	30.30	30.25	30.24	30.28

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.61	5.61	5.62	5.63	5.63
RDX	8.55	8.56	8.58	8.60	8.58
TNB	11.63	11.65	11.67	11.71	11.66
DNB	14.20	14.22	14.25	14.29	14.23
TETRYL	15.42	15.45	15.49	15.55	15.44
NB	16.16	16.18	16.20	16.26	16.18
3,4-DNT	17.65	17.68	17.72	17.79	17.66
TNT	18.53	18.57	18.59	18.67	18.54
4ADNT	19.23	19.26	19.31	19.39	19.24
2ADNT	20.25	20.28	20.33	20.41	20.26
26DNT	21.60	21.64	21.68	21.76	21.61
24DNT	22.31	22.35	22.39	22.48	22.33
2NT	26.30	26.35	26.39	26.50	26.32
4NT	28.12	28.18	28.21	28.34	28.12
3NT	30.35	30.41	30.44	30.58	30.36

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.61	0.014	0.041	5.57 - 5.65
RDX	8.56	0.033	0.099	8.46 - 8.66
TB	11.64	0.035	0.104	11.53 - 11.74
DB	14.21	0.042	0.125	14.09 - 14.34
TETRYL	15.44	0.053	0.159	15.28 - 15.59
NB	16.16	0.047	0.142	16.02 - 16.30
3,4-DNT	17.66	0.063	0.188	17.48 - 17.85
TNT	18.54	0.061	0.183	18.36 - 18.73

page 2

4ADNT	19.24	0.075	0.226	19.01 - 19.47
2ADNT	20.26	0.072	0.215	20.04 - 20.47
26DNT	21.61	0.072	0.217	21.39 - 21.82
24DNT	22.32	0.073	0.218	22.10 - 22.54
2NT	26.31	0.089	0.267	26.04 - 26.58
4NT	28.13	0.096	0.289	27.84 - 28.42
	30.36	0.102	0.305	30.05 - 30.66

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1

Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	3070	303	86593	341	228418	346	340786	344	463335	351
RDX	1396	331	45744	433	124796	452	188079	457	248447	452
TNB	3050	1010	65041	860	182698	927	272939	922	363472	923
DNB	1858	1147	47508	1170	127863	1211	191748	1211	258819	1221
TETRYL	1982	533	44411	478	117462	485	171726	472	243575	503
NB	2746	832	66098	802	178122	832	265900	826	354217	824
3,4-DNT	2743	540	67977	536	182412	553	269296	543	358172	543
TNT	2636	976	63145	934	172246	979	256164	970	345817	982
4ADNT	1791	759	37100	627	98571	640	148025	638	194088	630
2ADNT	2244	951	53734	908	146055	948	216916	935	288500	937
26DNT	2242	578	57637	593	156264	615	234025	616	311263	615
24DNT	2669	1131	71439	1207	193842	1259	290768	1253	387419	1258
2NT	1916	567	44975	532	120373	547	180571	547	240624	547
NT	1361	403	38137	451	102223	465	154018	467	205469	46
T	1722	535	45121	561	121601	579	183845	585	244007	58

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

	Inj 1
Injection File Name Level 1 :	5EX0507,4
Injection File Name Level 2 :	5EX0507,5
Injection File Name Level 3 :	5EX0507,6
Injection File Name Level 4 :	5EX0507,7
Injection File Name Level 5 :	5EX0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	337	5.78	0.99990	348	0.000
RDX	425	12.56	0.99994	453	0.000
TNB	928	5.74	0.99990	922	0.000
DNB	1192	2.67	0.99996	1215	0.000
TETRYL	494	4.99	0.99896	491	0.000
NB	823	1.50	0.99996	825	0.000
3,4-DNT	543	1.14	0.99994	544	0.000
TNT	968	2.03	0.99993	977	0.000
NT	659	8.54	0.99994	634	0.000
DNT	936	1.83	0.99995	937	0.000
26DNT	603	2.86	0.99998	615	0.000
24DNT	1222	4.51	0.99997	1256	0.000
2NT	548	2.28	0.99998	547	0.000
4NT	450	6.10	0.99998	466	0.000
3NT	569	3.75	0.99997	583	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 4
ɔntinuing Cal Date : 05/09/1998
.ontinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	229081	347	337	2.99	348	0.29
RDX	125006	453	425	6.60	453	0.01
TNB	183359	931	928	0.25	922	0.96
DNB	133044	1260	1192	5.71	1215	3.66
TETRYL	116442	481	494	2.63	491	2.03
NB	177880	831	823	0.97	825	0.74
3,4-DNT	180458	547	543	0.73	544	0.52
TNT	167126	950	968	1.94	977	2.84
4ADNT	101964	662	659	0.51	634	4.45
2ADNT	143532	932	936	0.39	937	0.55
26DNT	155952	614	603	1.75	615	0.16
24DNT	191408	1243	1222	1.75	1256	1.01
2NT	121220	551	548	0.56	547	0.78
4NT	103340	470	450	4.30	466	0.74
3NT	122184	582	569	2.28	583	0.24

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 5
ntinuing Cal Date : 05/09/1998
ntinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,26
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	232086	352	337	4.35	348	1.02
RDX	125955	456	425	7.41	453	0.77
TNB	185413	941	928	1.37	922	2.09
DNB	134483	1274	1192	6.85	1215	4.78
TETRYL	115906	479	494	3.08	491	2.48
NB	178309	833	823	1.21	825	0.98
3,4-DNT	183811	557	543	2.60	544	2.39
TNT	170010	966	968	0.25	977	1.16
4ADNT	102582	666	659	1.12	634	5.09
2ADNT	145893	947	936	1.24	937	1.08
26DNT	158033	622	603	3.11	615	1.18
24DNT	194427	1263	1222	3.36	1256	0.55
2NT	120609	548	548	0.05	547	0.28
4NT	102522	466	450	3.47	466	0.06
3NT	122920	585	569	2.90	583	0.36

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

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CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-06
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.76	4.74	4.75	4.76	4.77
RDX	7.03	6.95	6.97	7.02	7.03
TNB	9.52	9.41	9.42	9.48	9.50
DNB	11.52	11.44	11.44	11.49	11.55
TETRYL	11.94	11.81	11.79	11.87	11.94
NB	13.07	12.99	12.96	13.03	13.10
3,4-DNT	13.90	13.77	13.72	13.82	13.90
TNT	14.62	14.52	14.49	14.58	14.66
4ADNT	15.05	14.89	14.83	14.94	15.02
2ADNT	15.82	15.71	15.66	15.77	15.86
26DNT	16.98	16.85	16.78	16.90	17.01
24DNT	17.59	17.47	17.40	17.52	17.63
2NT	20.66	20.49	20.36	20.51	20.65
4NT	22.05	21.88	21.73	21.88	22.04
3NT	23.70	23.55	23.40	23.52	23.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	4.74	4.80	4.73	4.77	4.76
RDX	6.97	7.06	6.96	7.04	7.02
TNB	9.38	9.54	9.38	9.50	9.48
DNB	11.36	11.60	11.39	11.54	11.51
TETRYL	11.69	11.98	11.73	11.89	11.82
NB	12.86	13.14	12.89	13.08	13.04
3,4-DNT	13.62	13.95	13.64	13.87	13.81
TNT	14.42	14.69	14.41	14.60	14.56
4ADNT	14.80	15.09	14.80	15.01	14.94
2ADNT	15.65	15.91	15.63	15.82	15.76
26DNT	16.78	17.03	16.72	16.96	16.89
24DNT	17.41	17.65	17.35	17.59	17.52
2NT	20.42	20.69	20.32	20.65	20.53
4NT	21.81	22.11	21.73	22.05	21.93
3NT	23.46	23.76	23.38	23.70	23.58

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.76	0.020	0.060	4.70 - 4.82
RDX	7.01	0.039	0.116	6.89 - 7.12
NB	9.46	0.058	0.175	9.29 - 9.64
NB	11.48	0.075	0.225	11.26 - 11.71
TETRYL	11.85	0.094	0.282	11.56 - 12.13
NB	13.02	0.090	0.271	12.75 - 13.29
3,4-DNT	13.80	0.113	0.338	13.46 - 14.14
TNT	14.55	0.095	0.285	14.27 - 14.84

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4ADNT	14.94	0.107	0.320	14.62 - 15.26
2ADNT	15.76	0.096	0.288	15.47 - 16.05
26DNT	16.89	0.106	0.318	16.57 - 17.21
24DNT	17.51	0.104	0.312	17.20 - 17.82
2NT	20.53	0.132	0.397	20.13 - 20.92
4NT	21.92	0.139	0.417	21.50 - 22.34
3NT	23.57	0.133	0.400	23.17 - 23.97

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

Inj 1

Injection File Name Level 1 : 050298,22
Injection File Name Level 2 : 050298,23
Injection File Name Level 3 : 050298,24
Injection File Name Level 4 : 050298,25
Injection File Name Level 5 : 050298,26

Calibration Date : 05/03/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	5.97601	3.35E0	48.5675	3.29E0	99.1429	3.23E0	409.041	3.13E0	828.958	3.09E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	050298,22
Injection File Name Level 2 :	050298,23
Injection File Name Level 3 :	050298,24
Injection File Name Level 4 :	050298,25
Injection File Name Level 5 :	050298,26

Calibration Date : 05/03/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.21724961	3.38	0.99998	3.10E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/98
ntinuing Calibration #: 1
tinuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298,37
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.8513	3.24E0	3.22E0	0.62	3.10E0	4.48

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CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/98
Continuing Calibration #: 2
Continuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298,46
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	99.7312	3.21E0	3.22E0	0.27	3.10E0	3.55

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/98
tinuing Calibration #: 3
.tinuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298,54
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	97.1303	3.29E0	3.22E0	2.40	3.10E0	6.33

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : LC4
Column ID :
Calibration Date : 05/03/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.25	12.22	12.28	12.21	12.22

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
PETN	12.18	12.07	12.21

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.20	0.063	0.188	12.02 - 12.39

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.03863	3.31E0	49.5231	3.23E0	101.4	3.16E0	416.092	3.08E0	836.72	3.06E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
lumn ID :

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.17E0	3.35	0.99999	3.06E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 1
Continuing Cal Date : 05/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.2126	3.26E0	3.17E0	2.88	3.06E0	6.32

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 2
inuing Cal Date : 05/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,30
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.473	3.12E0	3.17E0	1.39	3.06E0	1.90

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

trument ID : LC4
Column ID :
Calibration Date : 05/11/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.57	12.61	12.59	12.61	12.61

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	12.83	12.68	12.44	12.38	12.73

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.65	0.163	0.490	12.16 - 13.14

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2E0501W,4
Injection File Name Level 2 : 2E0501W,5
Injection File Name Level 3 : 2E0501W,6
Injection File Name Level 4 : 2E0501W,7
Injection File Name Level 5 : 2E0501W,8

Calibration Date : 05/01/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	1302	1017	3880	1220	181386	1141	389120	1224	777284	1222
RDX	1104	1062	3931	1512	196914	1515	417558	1606	843916	1629
TNB	2328	3233	6108	3393	299959	3348	652072	3643	1329695	3714
DNB	2325	6118	5108	5321	240938	5062	521063	5485	1062036	5590
TETRYL	2238	2487	5084	2250	238831	2114	527823	2336	1073568	2386
NB	2749	4043	6893	4055	332945	3917	732790	4311	1496918	4403
3,4-DNT	2755	2152	7374	2290	356175	2226	778906	2434	1577226	2464
TNT	2493	3895	6490	4056	318202	3978	695546	4347	1418212	4432
4ADNT	2276	2276	6255	2482	302634	2421	665583	2662	1358831	2718
2ADNT	2097	3745	5335	3811	252119	3602	554327	3959	1133729	4049
26DNT	2166	2256	5462	2276	258374	2247	558142	2427	1127897	2452
24DNT	2863	5113	7275	5196	348987	4986	756271	5402	1550872	5539
NT	2360	2107	6752	2411	347070	2394	739496	2550	1503142	259[illegible]
NT	1518	1898	4028	2014	230609	2306	488079	2440	991226	247[illegible]
NT	1800	2250	5173	2587	275844	2904	591609	3114	1202789	3165

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: IN12
olumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2E0501W,4
Injection File Name Level 2 : 2E0501W,5
Injection File Name Level 3 : 2E0501W,6
Injection File Name Level 4 : 2E0501W,7
Injection File Name Level 5 : 2E0501W,8

Calibration Date : 05/01/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1165	7.70	0.99985	1219	0.000
RDX	1465	15.80	0.99984	1620	0.000
TNB	3466	5.88	0.99968	3685	0.000
DNB	5515	7.10	0.99970	5547	0.000
TETRYL	2314	6.10	0.99956	2365	0.000
NB	4146	4.89	0.99959	4365	0.000
2,4-DNT	2313	5.78	0.99970	2448	0.000
	4142	5.68	0.99965	4396	0.000
4ADNT	2512	7.17	0.99961	2695	0.000
2ADNT	3833	4.60	0.99959	4013	0.000
26DNT	2331	4.26	0.99977	2438	0.000
24DNT	5247	4.24	0.99965	5489	0.000
2NT	2411	7.89	0.99981	2575	0.000
4NT	2227	11.64	0.99984	2463	0.000
3NT	2804	13.70	0.99978	3144	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/01/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/02/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2E0501W,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	191288	1203	1165	3.29	1219	1.29
RDX	207084	1593	1465	8.76	1620	1.65
TNB	322892	3604	3466	3.96	3685	2.20
DNB	258876	5439	5515	1.39	5547	1.95
TETRYL	238136	2107	2314	8.94	2365	10.87
NB	363074	4271	4146	3.04	4365	2.13
3,4-DNT	398001	2488	2313	7.53	2448	1.60
TNT	346128	4327	4142	4.47	4396	1.59
4ADNT	327194	2618	2512	4.21	2695	2.86
2ADNT	274474	3921	3833	2.29	4013	2.29
26DNT	277267	2411	2331	3.41	2438	1.11
24DNT	373294	5333	5247	1.63	5489	2.85
2NT	360239	2484	2411	3.06	2575	3.52
4NT	238326	2383	2227	7.01	2463	3.25
3NT	283783	2987	2804	6.54	3144	4.99

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

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CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
Column ID : CARB-07
Calibration Date : 05/01/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.49	5.46	5.49	5.45	5.43
RDX	8.73	8.60	8.63	8.58	8.55
TNB	11.75	11.72	11.74	11.68	11.66
DNB	14.33	14.35	14.40	14.32	14.30
TETRYL	15.50	15.54	15.60	15.52	15.50
NB	16.32	16.37	16.39	16.30	16.29
3,4-DNT	17.81	17.84	17.88	17.78	17.77
TNT	18.61	18.67	18.72	18.64	18.63
4ADNT	19.46	19.48	19.58	19.47	19.47
2ADNT	20.48	20.53	20.60	20.50	20.50
26DNT	21.76	21.82	21.89	21.79	21.79
24DNT	22.49	22.58	22.62	22.52	22.52
2NT	26.49	26.57	26.65	26.54	26.54
4NT	28.37	28.43	28.49	28.37	28.37
3NT	30.52	30.62	30.73	30.61	30.61

COMPONENT NAME	RT Cont CAl
HMX	5.46
RDX	8.60
TNB	11.71
DNB	14.35
TETRYL	15.55
NB	16.33
3,4-DNT	17.82
TNT	18.66
4ADNT	19.52
2ADNT	20.54
26DNT	21.81
24DNT	22.55
2NT	26.56
4NT	28.39
3NT	30.63

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.46	0.025	0.074	5.39 - 5.54
RDX	8.62	0.061	0.183	8.43 - 8.80
TNB	11.71	0.034	0.102	11.61 - 11.81
DNB	14.34	0.032	0.095	14.24 - 14.43
TETRYL	15.53	0.037	0.111	15.42 - 15.64
NB	16.33	0.037	0.112	16.22 - 16.45
3,4-DNT	17.82	0.040	0.119	17.70 - 17.93
TNT	18.65	0.040	0.119	18.54 - 18.77

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4ADNT	19.50	0.046	0.137	19.36 - 19.63
2ADNT	20.53	0.045	0.134	20.39 - 20.66
26DNT	21.81	0.044	0.133	21.68 - 21.94
24DNT	22.55	0.048	0.143	22.40 - 22.69
2NT	26.56	0.052	0.157	26.40 - 26.72
T	28.40	0.047	0.140	28.26 - 28.54
NT	30.62	0.064	0.193	30.43 - 30.81

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: LC4
ɔlumn ID :

Inj 1

Injection File Name Level 1 : 050298W,4
Injection File Name Level 2 : 050298W,5
Injection File Name Level 3 : 050298W,6
Injection File Name Level 4 : 050298W,7
Injection File Name Level 5 : 050298W,8

Calibration Date : 05/02/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	5.89737	3.39E0	49.2058	3.25E0	100.799	3.17E0	404.432	3.16E0	816.867	3.13E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: LC4
umn ID :

Inj 1

Injection File Name Level 1 : 050298W,4
Injection File Name Level 2 : 050298W,5
Injection File Name Level 3 : 050298W,6
Injection File Name Level 4 : 050298W,7
Injection File Name Level 5 : 050298W,8

Calibration Date : 05/02/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.22E0	3.21	0.99999	3.14E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/02/98
ntinuing Calibration #: 1
ntinuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298W,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	100.995	3.17E0	3.22E0	1.70	3.14E0	0.88

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.ıjection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

nstrument ID : LC4
Column ID :
Calibration Date : 05/02/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.17	12.19	12.19	12.19	12.17

COMPONENT NAME	RT Cont CAl
PETN	12.29

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.20	0.046	0.139	12.06 - 12.34

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: IN10
umn ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0502,4
Injection File Name Level 2 : 3CN0502,5
Injection File Name Level 3 : 3CN0502,6
Injection File Name Level 4 : 3CN0502,7
Injection File Name Level 5 : 3CN0502,8

Calibration Date : 05/03/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	11125	2418	57431	2497	143675	2499	291984	2539	593137	2579
26DNT	8947	1789	42714	1709	106881	1710	219914	1759	441837	1767
TNT	12323	2679	58769	2555	147369	2563	301882	2625	610823	2656
3,4DNT	9018	1288	45652	1304	114418	1387	236223	1432	479741	1454
TETRYL	12753	1417	67470	1499	147144	1308	295131	1312	623191	1385
HMX	10174	1453	37673	1076	93517	1069	188984	1080	382946	1094

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0502,9
Injection File Name Level 2 : 3CN0502,10
Injection File Name Level 3 : 3CN0502,11
Injection File Name Level 4 : 3CN0502,12
Injection File Name Level 5 : 3CN0502,13

Calibration Date : 05/03/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	9103	1821	47881	1915	123595	1978	261152	2089	501913	2008
DNB	13282	3321	70481	3524	184725	3695	385477	3855	756037	3780
24DNT	15533	3107	77166	3087	201328	3221	424450	3396	821134	3285
4ADNT	14243	1548	70239	1527	181986	1582	397846	1730	732525	1592
2ADNT	24908	2491	126148	2523	329373	2635	684858	2739	1344292	2689
RDX	6626	1325	33548	1342	86787	1389	180355	1443	344377	1378

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
umn ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0502,4
Injection File Name Level 2 : 3CN0502,5
Injection File Name Level 3 : 3CN0502,6
Injection File Name Level 4 : 3CN0502,7
Injection File Name Level 5 : 3CN0502,8

Calibration Date : 05/03/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2506	2.38	0.99996	2567	0.000
26DNT	1747	2.06	0.99997	1763	0.000
TNT	2616	2.11	0.99995	2645	0.000
3,4DNT	1373	5.41	0.99993	1445	0.000
TETRYL	1384	5.76	0.99942	1369	0.000
HMX	1155	14.49	0.99992	1090	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
lumn ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0502,9
Injection File Name Level 2 : 3CN0502,10
Injection File Name Level 3 : 3CN0502,11
Injection File Name Level 4 : 3CN0502,12
Injection File Name Level 5 : 3CN0502,13

Calibration Date : 05/03/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	1962	5.14	0.99970	2021	0.000
DNB	3635	5.90	0.99989	3789	0.000
24DNT	3219	3.98	0.99977	3302	0.000
4ADNT	1596	4.97	0.99884	1619	0.000
2ADNT	2615	4.06	0.99990	2695	0.000
RDX	1375	3.33	0.99965	1391	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/03/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	147438	2564	2506	2.30	2567	0.11
26DNT	118074	1889	1747	8.14	1763	7.17
TNT	160348	2789	2616	6.62	2645	5.43
3,4DNT	125488	1521	1373	10.79	1445	5.23
TETRYL	110033	978	1384	29.34	1369	28.56
HMX	102310	1169	1155	1.28	1090	7.24

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/03/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	123944	1983	1962	1.07	2021	1.90
DNB	196538	3931	3635	8.14	3789	3.75
24DNT	216737	3468	3219	7.73	3302	5.03
4ADNT	201603	1753	1596	9.84	1619	8.26
2ADNT	345880	2767	2615	5.80	2695	2.69
RDX	93282	1493	1375	8.53	1391	7.33

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/04/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	141826	2467	2506	1.59	2567	3.92
26DNT	119639	1914	1747	9.58	1763	8.59
TNT	161974	2817	2616	7.70	2645	6.50
3,4DNT	126769	1537	1373	11.92	1445	6.31
TETRYL	91996	818	1384	40.92	1369	40.27
HMX	102945	1177	1155	1.90	1090	7.91

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/04/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	123351	1974	1962	0.59	2021	2.37
DNB	194191	3884	3635	6.85	3789	2.51
24DNT	212469	3400	3219	5.61	3302	2.96
4ADNT	198522	1726	1596	8.17	1619	6.61
2ADNT	342639	2741	2615	4.81	2695	1.72
RDX	90635	1450	1375	5.45	1391	4.29

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

trument ID : IN10
olumn ID : LC-CN-10
Calibration Date : 05/03/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.93	5.93	5.91	5.92	5.90
26DNT	6.59	6.58	6.56	6.57	6.55
TNT	7.10	7.11	7.09	7.10	7.09
3,4DNT	8.18	8.17	8.15	8.16	8.14
TETRYL	11.20	11.20	11.17	11.19	11.16
HMX	13.05	12.96	12.96	12.97	12.96

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	5.93	5.94	5.96
26DNT	6.58	6.61	6.64
TNT	7.10	7.13	7.16
3,4DNT	8.16	8.21	8.27
TETRYL	11.15	11.20	11.34
	12.90	12.99	13.18

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.93	0.017	0.051	5.88 - 5.98
26DNT	6.58	0.026	0.079	6.51 - 6.66
TNT	7.11	0.024	0.073	7.04 - 7.18
3,4DNT	8.18	0.042	0.126	8.06 - 8.31
TETRYL	11.20	0.059	0.176	11.02 - 11.38
HMX	12.99	0.086	0.258	12.74 - 13.25

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CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : LC-CN-10
Calibration Date : 05/03/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.26	5.26	5.25	5.27	5.24
DNB	5.81	5.82	5.80	5.83	5.80
24DNT	6.83	6.83	6.80	6.84	6.80
4ADNT	7.56	7.57	7.55	7.60	7.55
2ADNT	8.08	8.10	8.06	8.12	8.06
RDX	8.86	8.82	8.80	8.86	8.80

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.28	5.27	5.26
DNB	5.84	5.82	5.82
24DNT	6.85	6.84	6.84
4ADNT	7.61	7.61	7.60
2ADNT	8.12	8.12	8.12
RDX	8.85	8.86	8.84

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.26	0.013	0.038	5.22 - 5.30
DNB	5.82	0.013	0.038	5.78 - 5.86
24DNT	6.83	0.017	0.050	6.78 - 6.88
4ADNT	7.58	0.025	0.074	7.51 - 7.65
2ADNT	8.10	0.026	0.079	8.02 - 8.18
RDX	8.84	0.027	0.082	8.75 - 8.92

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	11774	2560	61483	2673	147926	2573	293362	2551	609551	2650
26DNT	9203	1841	46266	1851	116327	1861	236585	1893	461912	1848
TNT	12139	2639	62673	2725	158324	2753	320719	2789	635846	2765
3,4DNT	9546	1364	49176	1405	123574	1498	251297	1523	500959	1518
TETRYL	10982	1220	61836	1374	113142	1006	220482	980	563813	1253
HMX	8061	1152	40242	1150	100568	1149	205329	1173	404648	1156

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	10361	2072	47515	1901	119475	1912	253954	2032	497380	1990
DNB	15729	3932	73645	3682	186650	3733	386757	3868	782901	3915
24DNT	16713	3343	81074	3243	204192	3267	420522	3364	841807	3367
4ADNT	16141	1754	77826	1692	192571	1675	384276	1671	723604	1573
2ADNT	26527	2653	130686	2614	335017	2680	686424	2746	1410699	2822
RDX	7609	1522	34589	1384	86243	1380	178769	1430	379035	1516

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: IN10
ɔlumn ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2601	2.16	0.99979	2629	0.000
26DNT	1859	1.10	0.99991	1857	0.000
TNT	2734	2.12	0.99998	2768	0.000
3,4DNT	1462	4.96	0.99997	1517	0.000
TETRYL	1167	14.48	0.99214	1202	0.000
HMX	1156	0.87	0.99996	1159	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	1981	3.76	0.99984	1993	0.000
DNB	3826	2.93	0.99993	3896	0.000
24DNT	3317	1.74	0.99997	3361	0.000
4ADNT	1673	3.90	0.99949	1598	0.000
2ADNT	2703	3.04	0.99988	2800	0.000
RDX	1446	4.79	0.99946	1494	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162019	2818	2601	8.32	2629	7.20
26DNT	121706	1947	1859	4.77	1857	4.86
TNT	164689	2864	2734	4.76	2768	3.46
3,4DNT	129363	1568	1462	7.29	1517	3.36
TETRYL	142839	1270	1167	8.84	1202	5.66
HMX	104926	1199	1156	3.73	1159	3.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	133840	2141	1981	8.09	1993	7.42
DNB	207071	4141	3826	8.25	3896	6.30
24DNT	222696	3563	3317	7.43	3361	6.01
4ADNT	207103	1801	1673	7.65	1598	12.67
2ADNT	353952	2832	2703	4.77	2800	1.14
RDX	95434	1527	1446	5.58	1494	2.23

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162521	2826	2601	8.65	2629	7.53
26DNT	124518	1992	1859	7.20	1857	7.29
TNT	168918	2938	2734	7.45	2768	6.12
3,4DNT	131764	1597	1462	9.28	1517	5.27
TETRYL	139066	1236	1167	5.96	1202	2.87
HMX	106956	1222	1156	5.74	1159	5.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
ontinuing Calibration #: 3
ontinuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	125652	2010	1981	1.48	1993	0.85
DNB	204044	4081	3826	6.66	3896	4.75
24DNT	221543	3545	3317	6.87	3361	5.46
4ADNT	210697	1832	1673	9.52	1598	14.62
2ADNT	354957	2840	2703	5.06	2800	1.42
RDX	94423	1511	1446	4.46	1494	1.14

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

3CN0507
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.87	5.88	5.88	5.86	5.85
26DNT	6.50	6.52	6.51	6.49	6.48
TNT	7.01	7.03	7.03	7.00	6.99
3,4DNT	8.02	8.05	8.05	8.01	8.00
TETRYL	10.90	10.95	10.96	10.89	10.90
HMX	12.45	12.61	12.60	12.52	12.52

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	5.89	5.89	5.90
26DNT	6.54	6.54	6.57
TNT	7.05	7.05	7.07
3,4DNT	8.09	8.08	8.12
TETRYL	11.03	10.99	11.04
HMX	12.73	12.64	12.69

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.88	0.017	0.050	5.83 - 5.93
26DNT	6.52	0.029	0.088	6.43 - 6.61
TNT	7.03	0.026	0.079	6.95 - 7.11
3,4DNT	8.05	0.044	0.131	7.92 - 8.18
TETRYL	10.96	0.060	0.180	10.78 - 11.14
HMX	12.60	0.093	0.280	12.32 - 12.88

3CN0507
β STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.24	5.24	5.24	5.22	5.22
DNB	5.79	5.80	5.78	5.77	5.77
24DNT	6.77	6.79	6.77	6.75	6.75
4ADNT	7.50	7.53	7.50	7.49	7.47
2ADNT	8.00	8.04	8.00	7.98	7.97
RDX	8.72	8.75	8.70	8.69	8.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.25	5.26	5.26
DNB	5.79	5.81	5.80
24DNT	6.79	6.80	6.80
4ADNT	7.53	7.55	7.54
2ADNT	8.03	8.06	8.04
RDX	8.74	8.76	8.74

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.24	0.016	0.047	5.20 - 5.29
DNB	5.79	0.016	0.047	5.74 - 5.83
24DNT	6.78	0.021	0.062	6.71 - 6.84
4ADNT	7.51	0.028	0.085	7.43 - 7.60
2ADNT	8.02	0.032	0.096	7.92 - 8.11
RDX	8.72	0.029	0.086	8.64 - 8.81

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3PC0512,3
Injection File Name Level 2 : 3PC0512,4
Injection File Name Level 3 : 3PC0512,5
Injection File Name Level 4 : 3PC0512,6
Injection File Name Level 5 : 3PC0512,7

Calibration Date : 05/12/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
PETN	2079	1040	16328	1021	40071	1252	169441	1324	339001	1324

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

	Inj 1
Injection File Name Level 1 :	3PC0512,3
Injection File Name Level 2 :	3PC0512,4
Injection File Name Level 3 :	3PC0512,5
Injection File Name Level 4 :	3PC0512,6
Injection File Name Level 5 :	3PC0512,7

Calibration Date : 05/12/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	1192	12.66	0.99993	1323	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/12/1998
ntinuing Calibration #: 1
ontinuing Cal Date : 05/13/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3PC0512,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
PETN	40799	1275	1192	6.96	1323	3.60

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
PETN	2.000	16.000	32.000	128.000	256.000

3PC0512

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/12/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	14.78	14.88	14.82	14.90	14.86

COMPONENT NAME	RT Cont CA1
PETN	14.94

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	14.86	0.057	0.170	14.69 - 15.03

APPENDIX L
RAW DATA DAY 5 FOR ENSYS
TEST KIT/LAB COMPARISON

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Raw Data of Windrow N-30% Day 5 . . . . . 116 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-A1
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.01

Sample Amt: 2g % Moisture 46.51 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	19600	
121-82-4	RDX	36300	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	733	JP
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

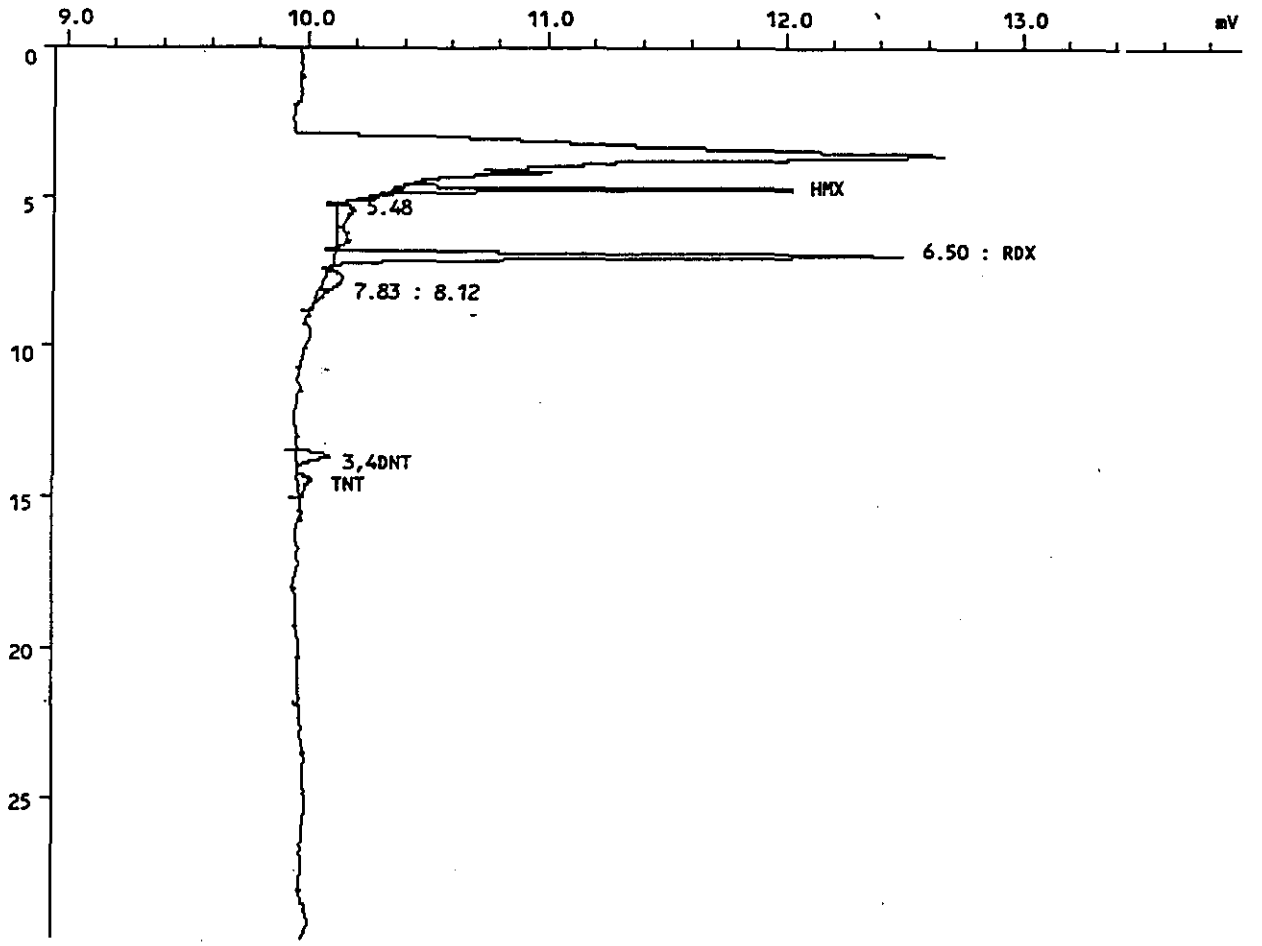
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,5,1

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 20:50:45
Reported on 11-May-98 at 11:54:36



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,5,1.

Acquired on 08-May-98 at 20:50:45
Modified on 11-May-82 at 11:44:46
Reported on 11-May-98 at 11:44:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

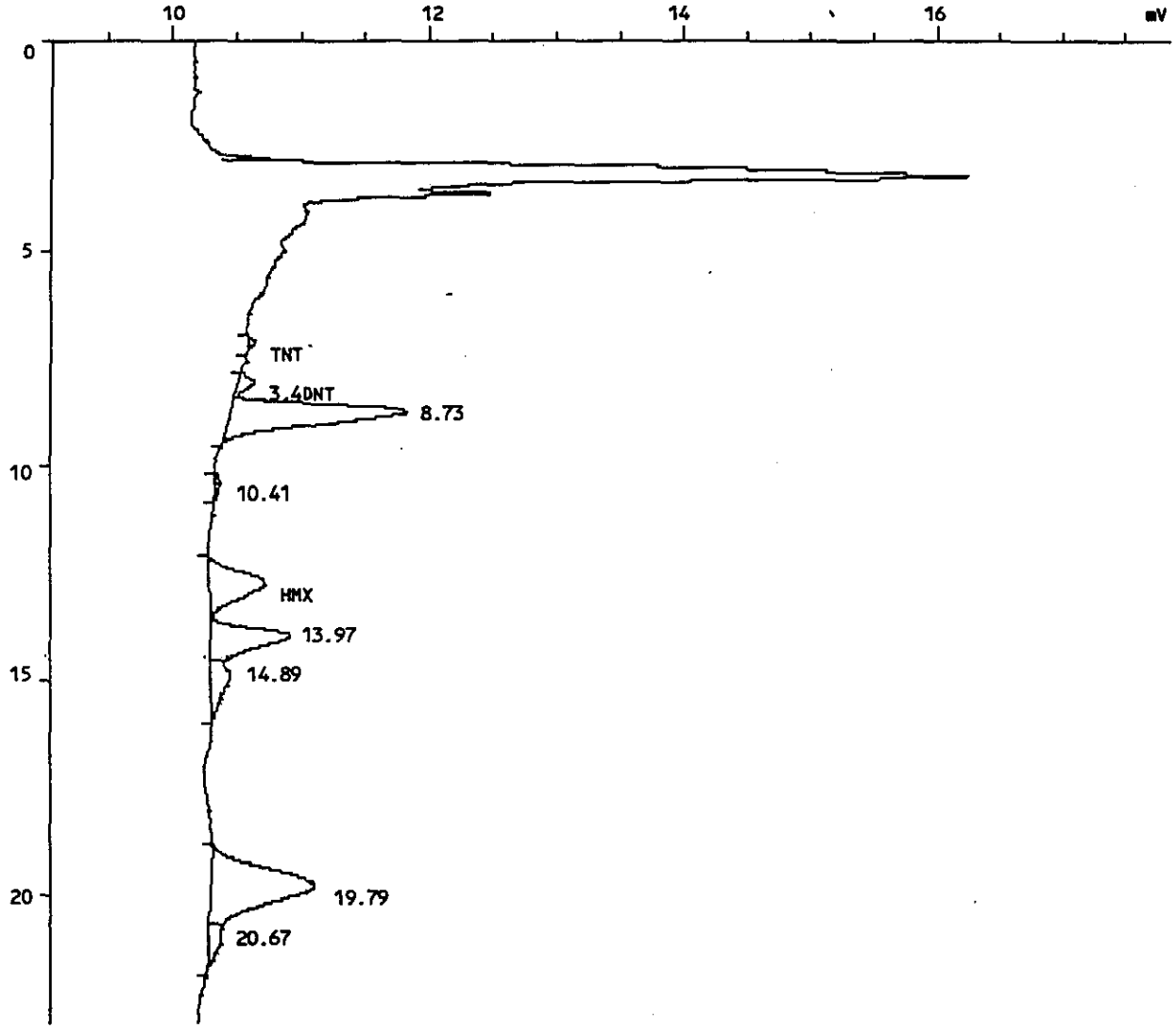
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.757	1689	13201	19586.779	HMX *
4	6.992	2377	30866	36312.391	RDX *
7	13.643	143	2820	2596.239	3,4DNT
8	14.421	56	1419	732.952	TNT *JP
Total		4264	48306	59228.363	
Residual		271	7202	9652.160	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,3,1

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 05:26:15
Reported on 11-May-98 at 14:29:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,3,1 .

Acquired on 08-May-98 at 05:26:15
Modified on 11-May-82 at 14:24:38
Reported on 11-May-98 at 14:24:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

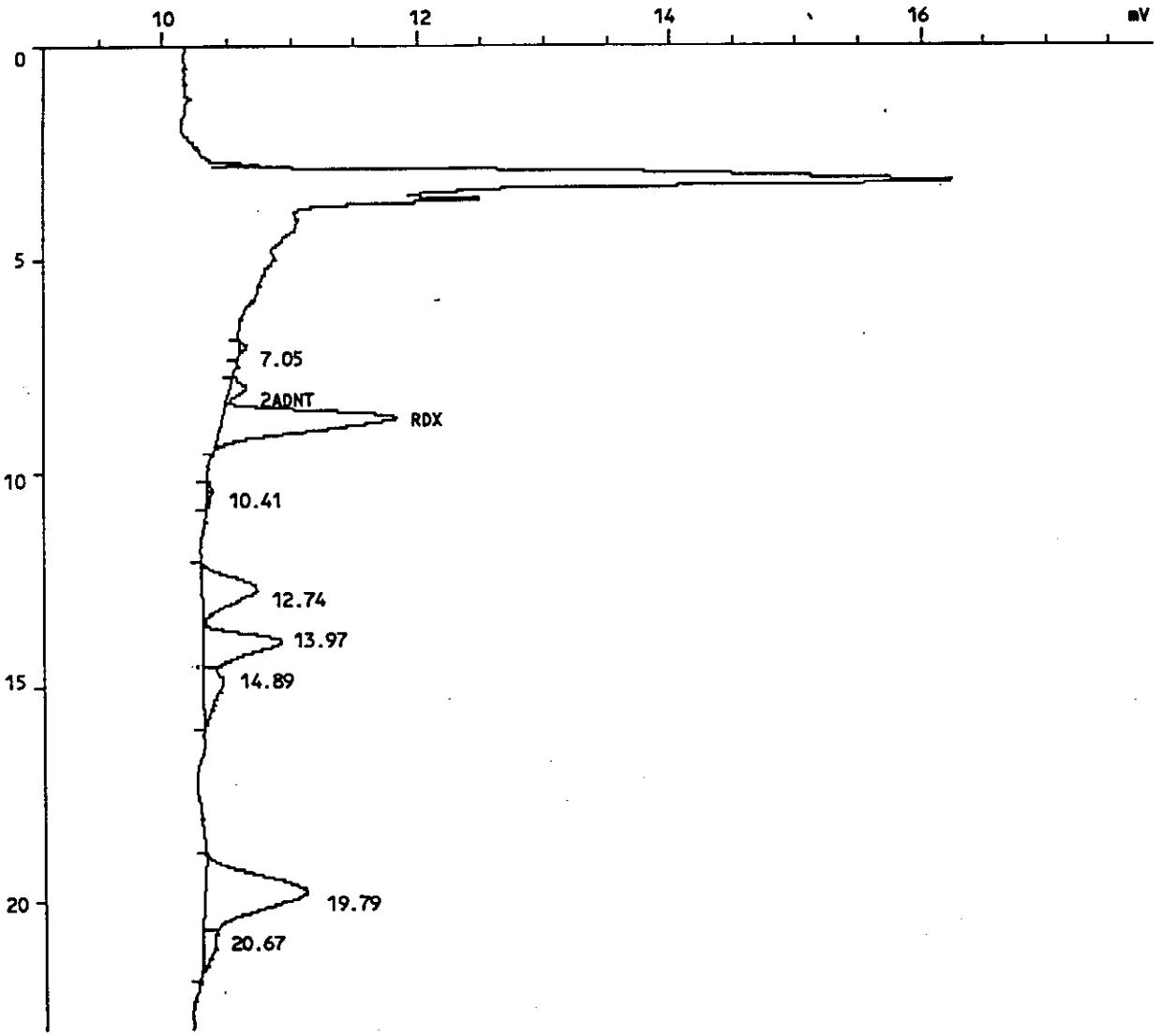
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.051	60	761	278.216	TNT
2	8.043	131	2728	1866.146	3,4DNT
5	12.736	437	18666	16146.763	HMX
Total		628	22155	18291.125	
Residual		3143	121445	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,3,1

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 05:26:15
Reported on 11-May-98 at 14:58:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,3,1

Acquired on 08-May-98 at 05:26:15
Modified on 11-May-82 at 14:52:40
Reported on 11-May-98 at 14:52:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.043	131	2728	1043.329	2ADNT
3	8.731	1377	42249	30726.572	RDX
Total		1508	44977	31769.900	
Residual		2263	98622	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-05-A1

Lab Name: SWL-TULSA	Contract:		
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.01
Sample Amt: 2g	% Moisture 46.51	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

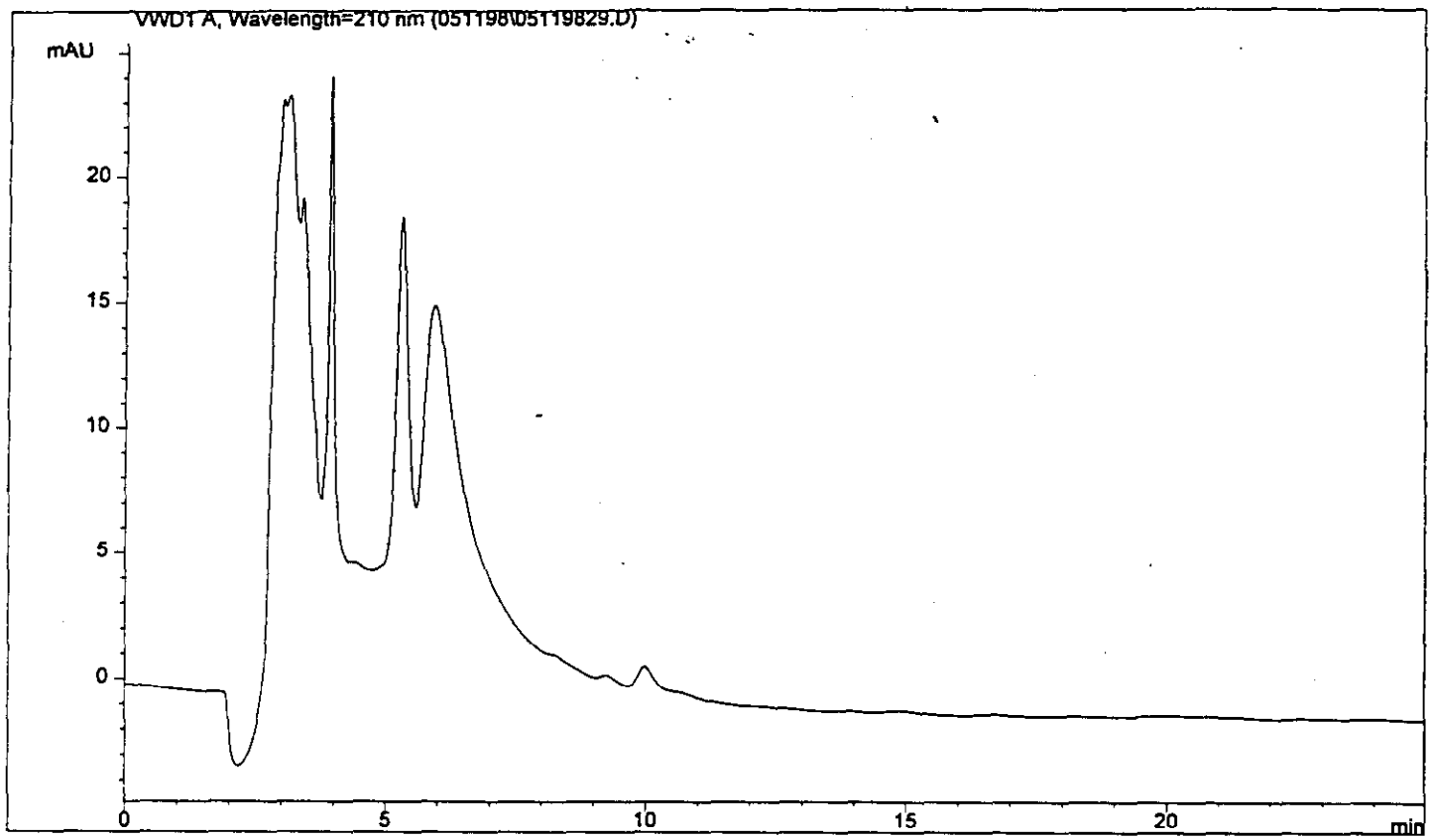
FORM I

020

Injection Date	: Tue, 12. May. 1998	Seq Line	: 29
Sample Name	: 33847.01	Vial No.	: 29
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

021

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-A2
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.02

Sample Amt: 2g % Moisture 50.18 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	21500	
121-82-4	RDX	28700	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

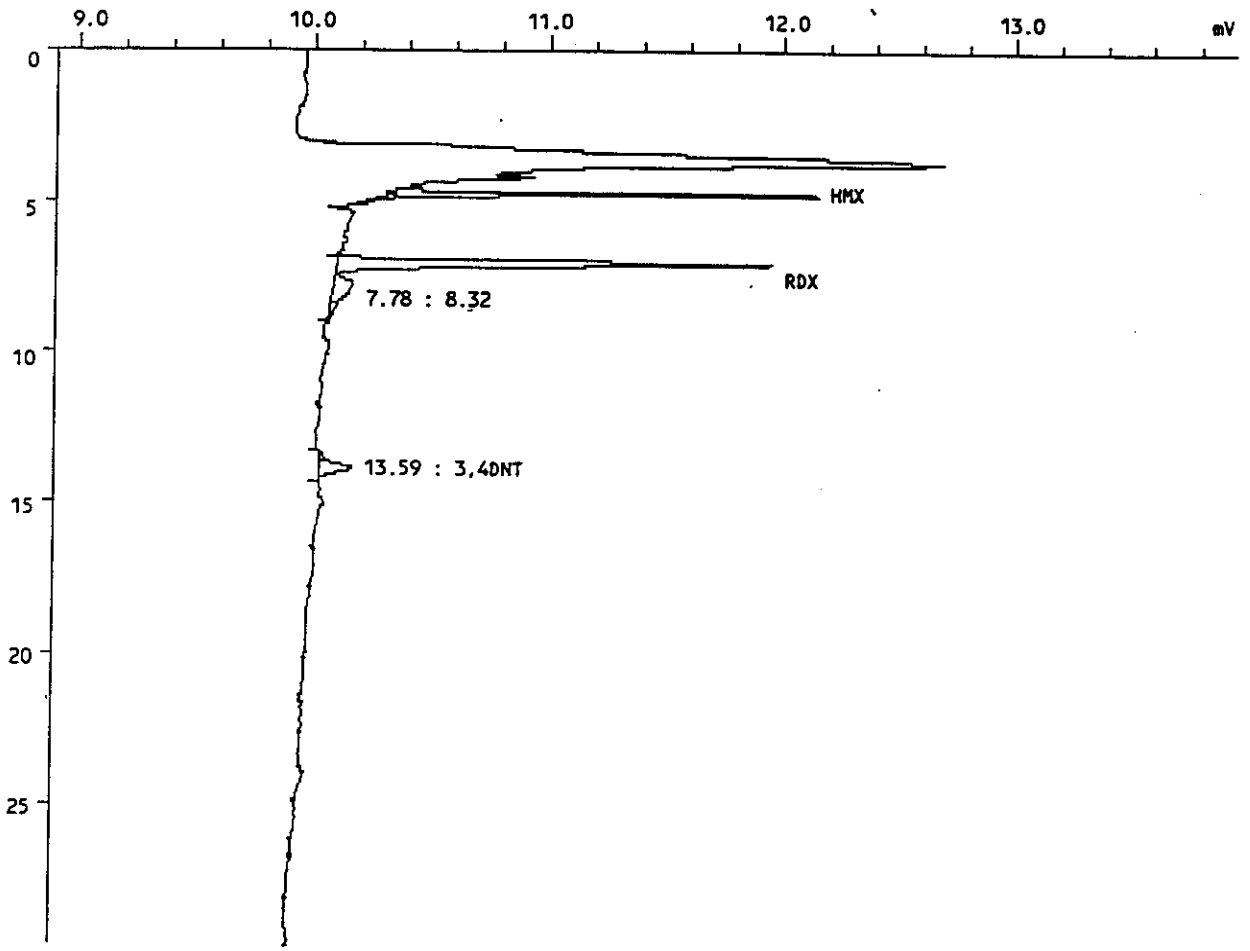
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,6,1

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 21:35:25
Reported on 11-May-98 at 15:31:46



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,6,1

Acquired on 08-May-98 at 21:35:25
Modified on 11-May-82 at 15:31:22
Reported on 11-May-98 at 15:31:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.763	1857	14504	21519.379	HMX *
2	7.045	1855	24379	28680.840	RDX *
6	13.861	145	2738	2520.776	3,4DNT 126%
Total		3857	41620	52720.996	
Residual		148	4146	4877.615	

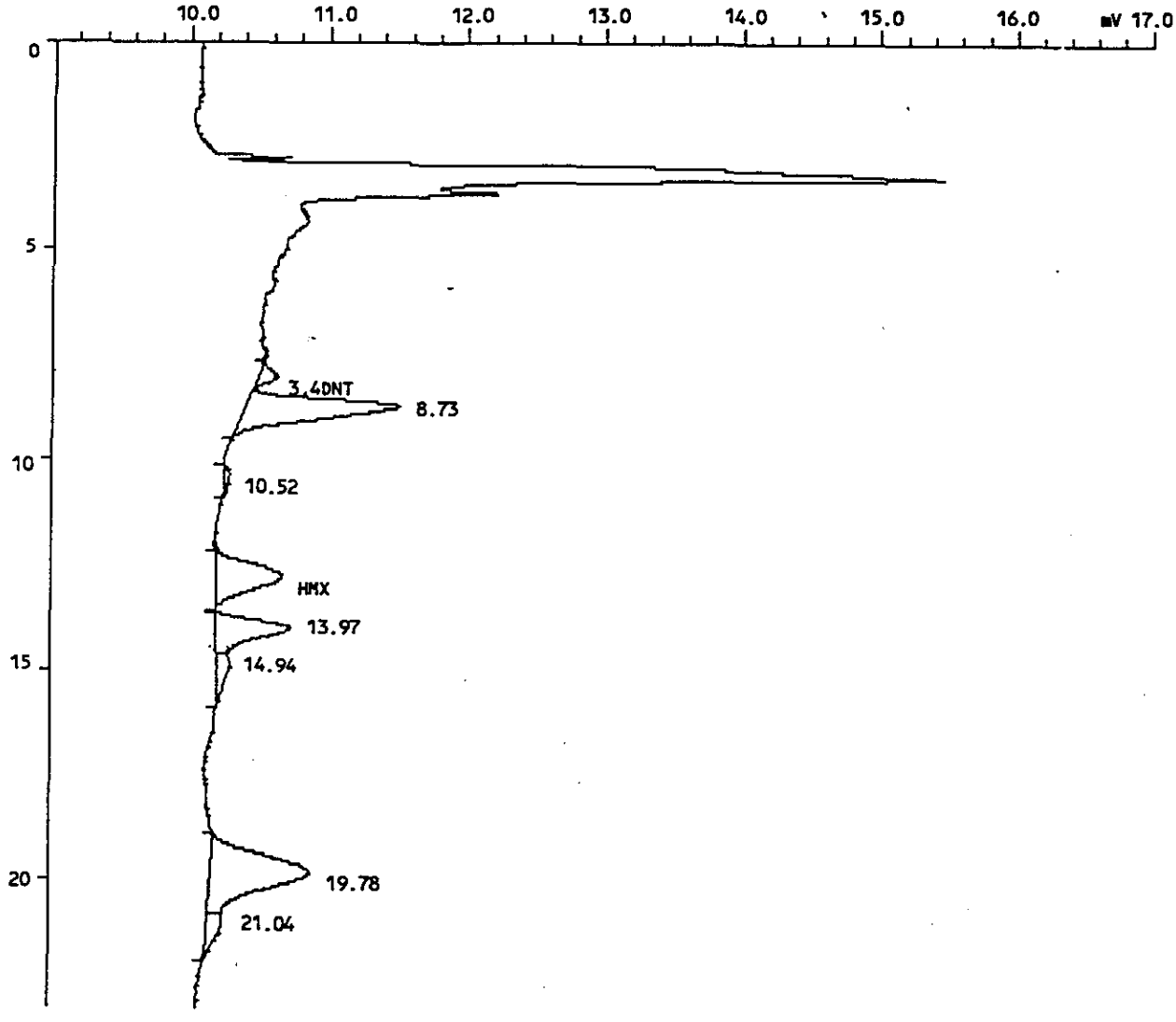
024

LONG PLOT

Injection F: <MC3> 3 3CN0507B,4,1 .

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:10:36
Reported on 11-May-98 at 14:30:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,4,1

Acquired on 08-May-98 at 06:10:36
Modified on 11-May-82 at 14:24:52
Reported on 11-May-98 at 14:24:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

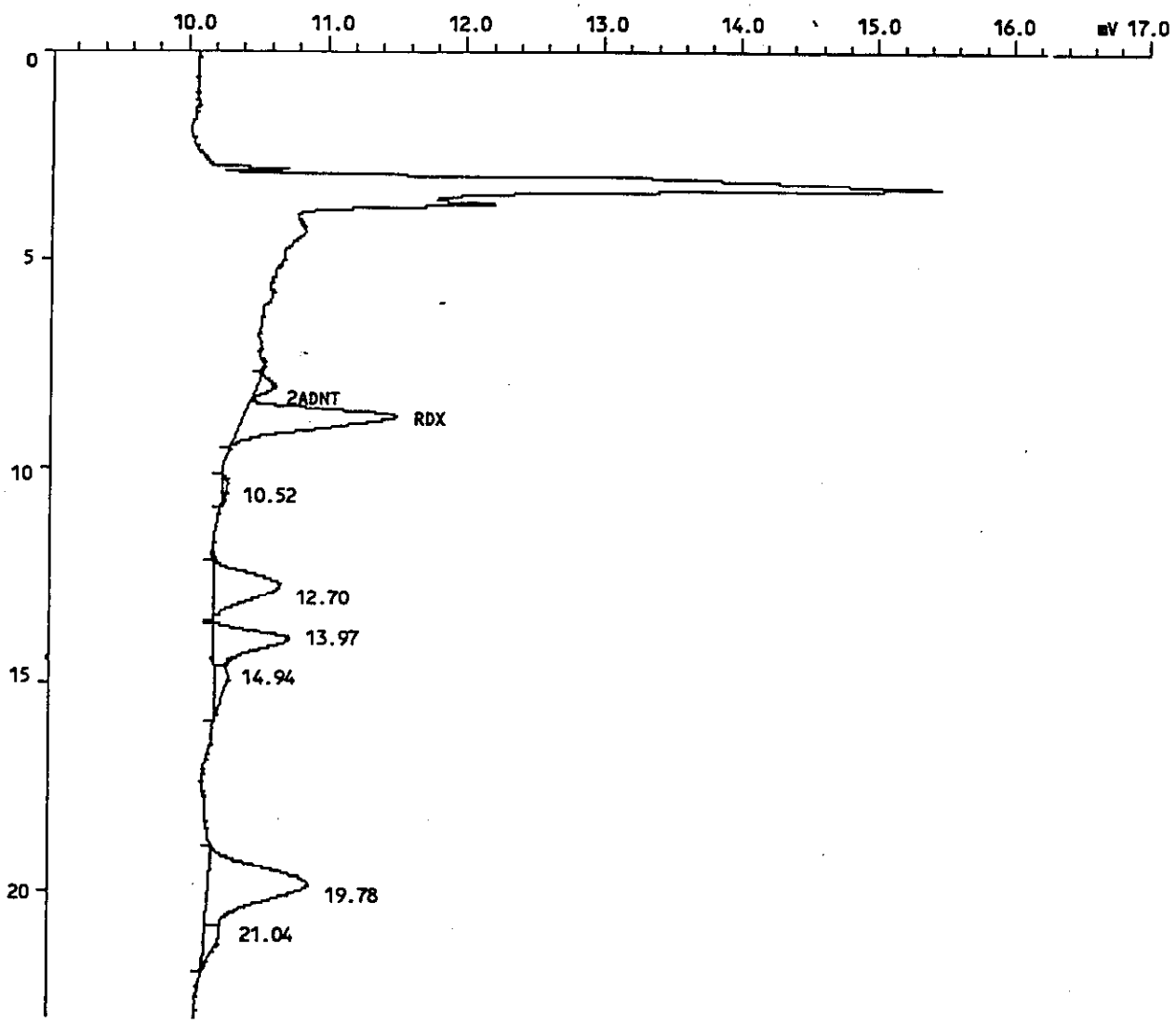
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.059	145	2951	2018.305	3,4DNT
4	12.704	483	19888	17204.143	HMX
Total		628	22839	19222.447	
Residual		2636	100218	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,4,1

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:10:36
Reported on 11-May-98 at 14:58:42



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,4,1

Acquired on 08-May-98 at 06:10:36
Modified on 11-May-82 at 14:52:54
Reported on 11-May-98 at 14:52:50

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.059	145	2951	1128.398	2ADNT
2	8.725	1101	33547	24397.498	RDX
Total		1247	36497	25525.896	
Residual		2017	86560	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-A2	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.02	
Sample Amt: 2g	% Moisture	50.18	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N		Dilution Factor:	10.00	

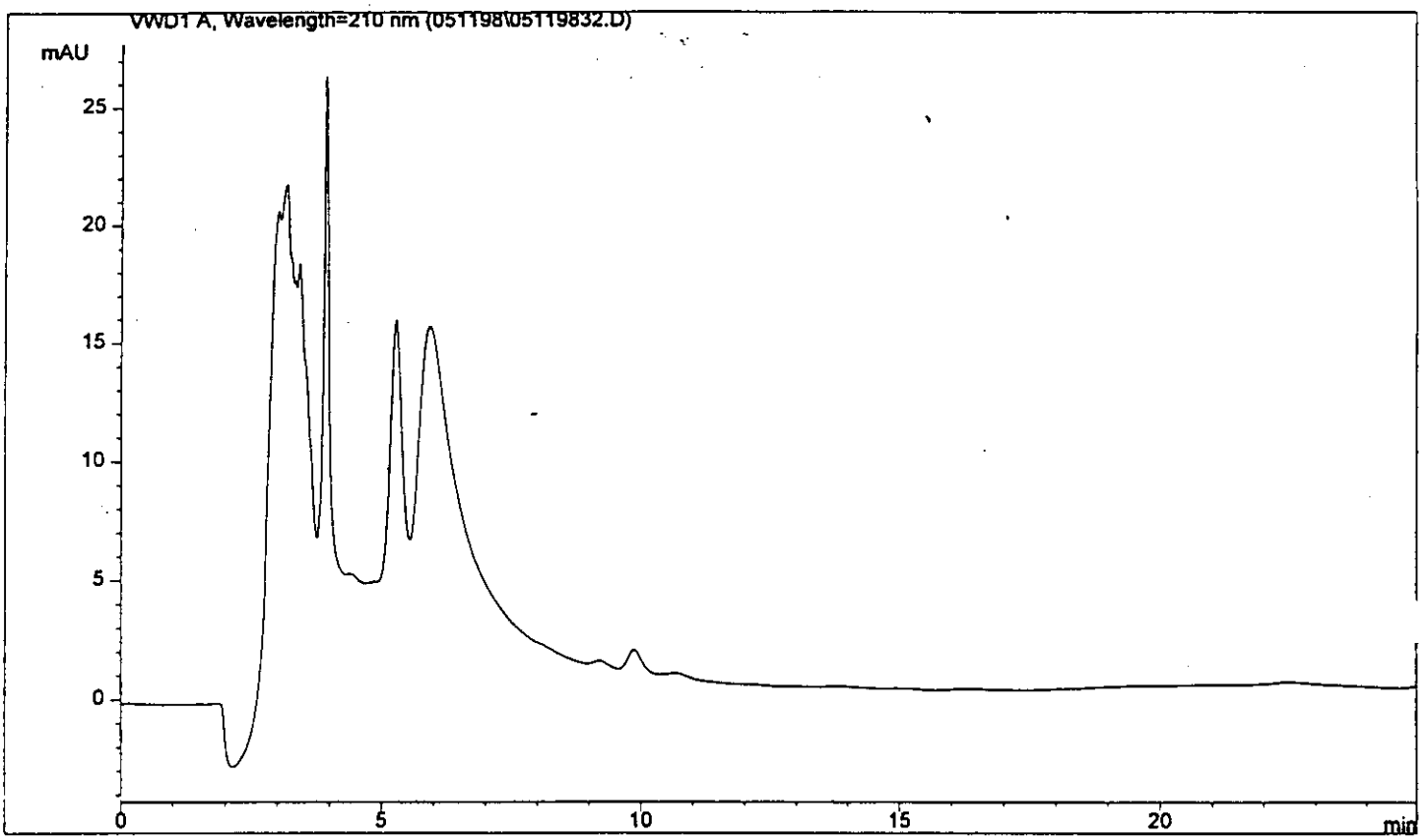
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
5-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 32
Sample Name	: 33847.02	Vial No.	: 32
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-A3 10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.03

Sample Amt: 2g % Moisture 35.43 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	32500	
121-82-4	RDX	119000	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

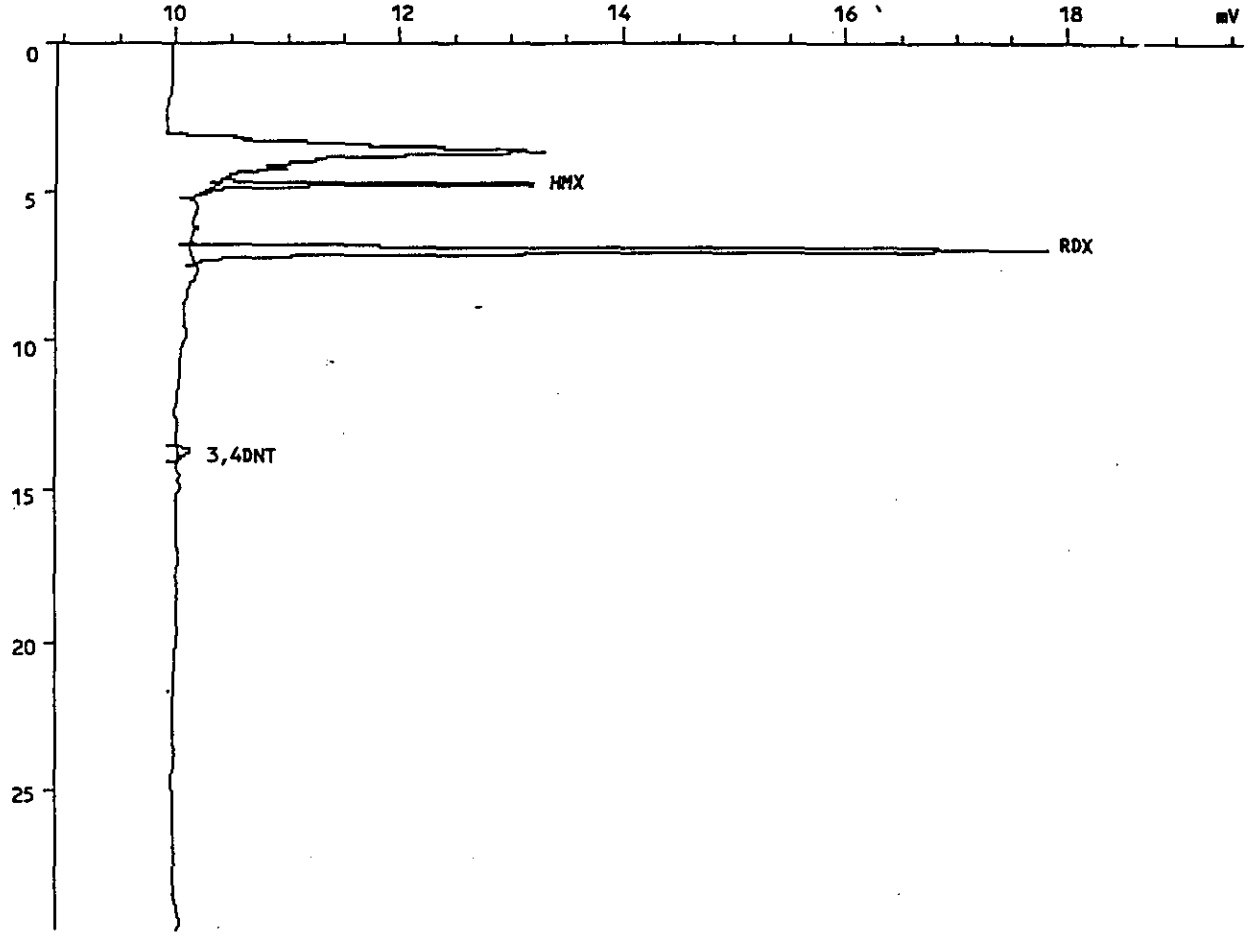
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,7,1

Sample name.....: BIO-N-30%-05-A3 10X
Sample ID.....: 33847.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 22:20:06
Reported on 11-May-98 at 11:55:29



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,7,1

Acquired on 08-May-98 at 22:20:06
Modified on 11-May-82 at 11:45:32
Reported on 11-May-98 at 11:45:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A3 10X
Sample ID.....: 33847.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

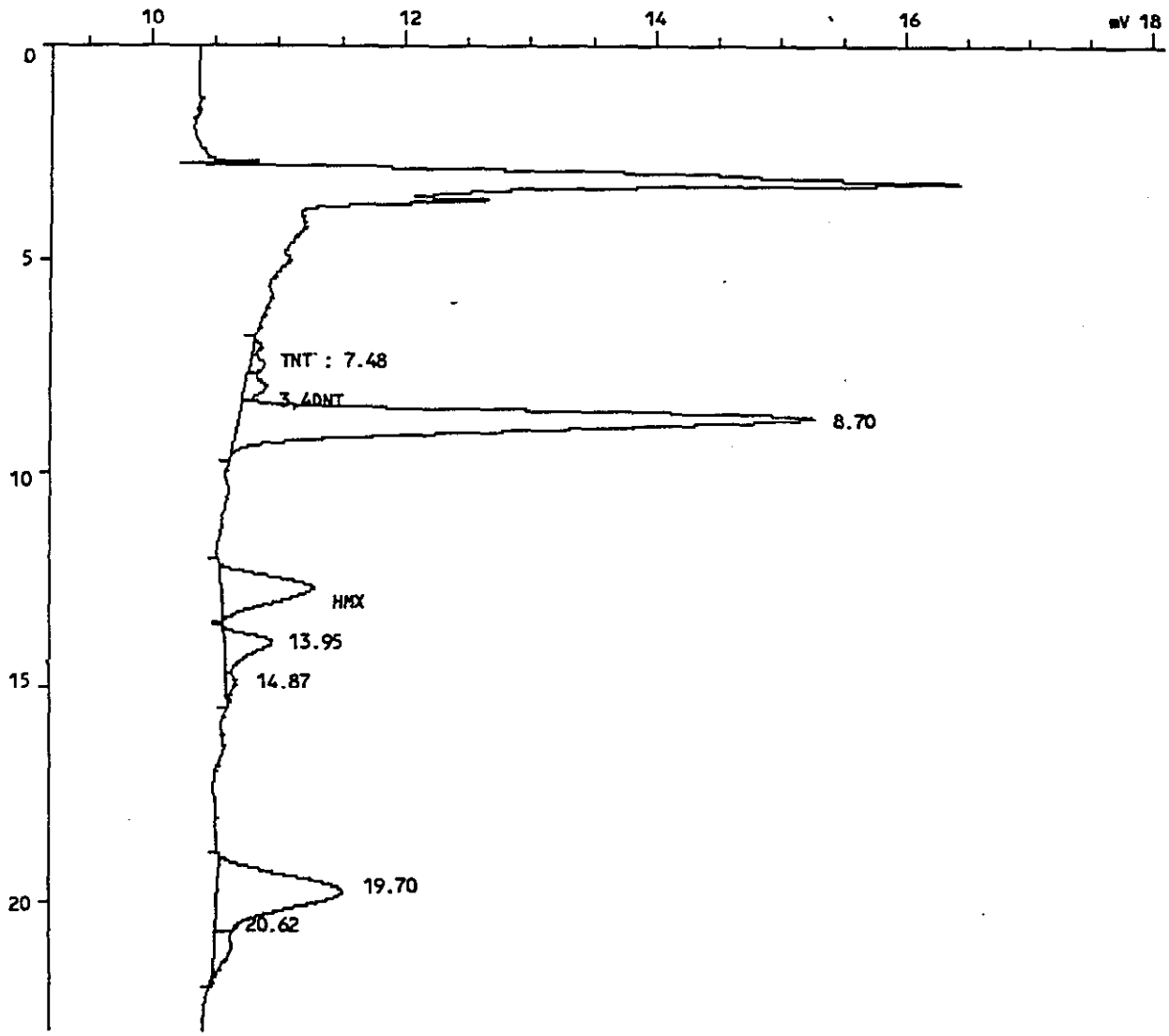
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.768	2869	21924	32527.902	HMX
2	7.008	7673	101491	119401.023	RDX
3	13.728	120	1948	1793.563	3,4DNT
Total		10662	125362	153722.484	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,5,1

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:54:57
Reported on 11-May-98 at 14:30:48



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,5,1 .

Acquired on 08-May-98 at 06:54:57
Modified on 11-May-82 at 14:25:06
Reported on 11-May-98 at 14:25:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

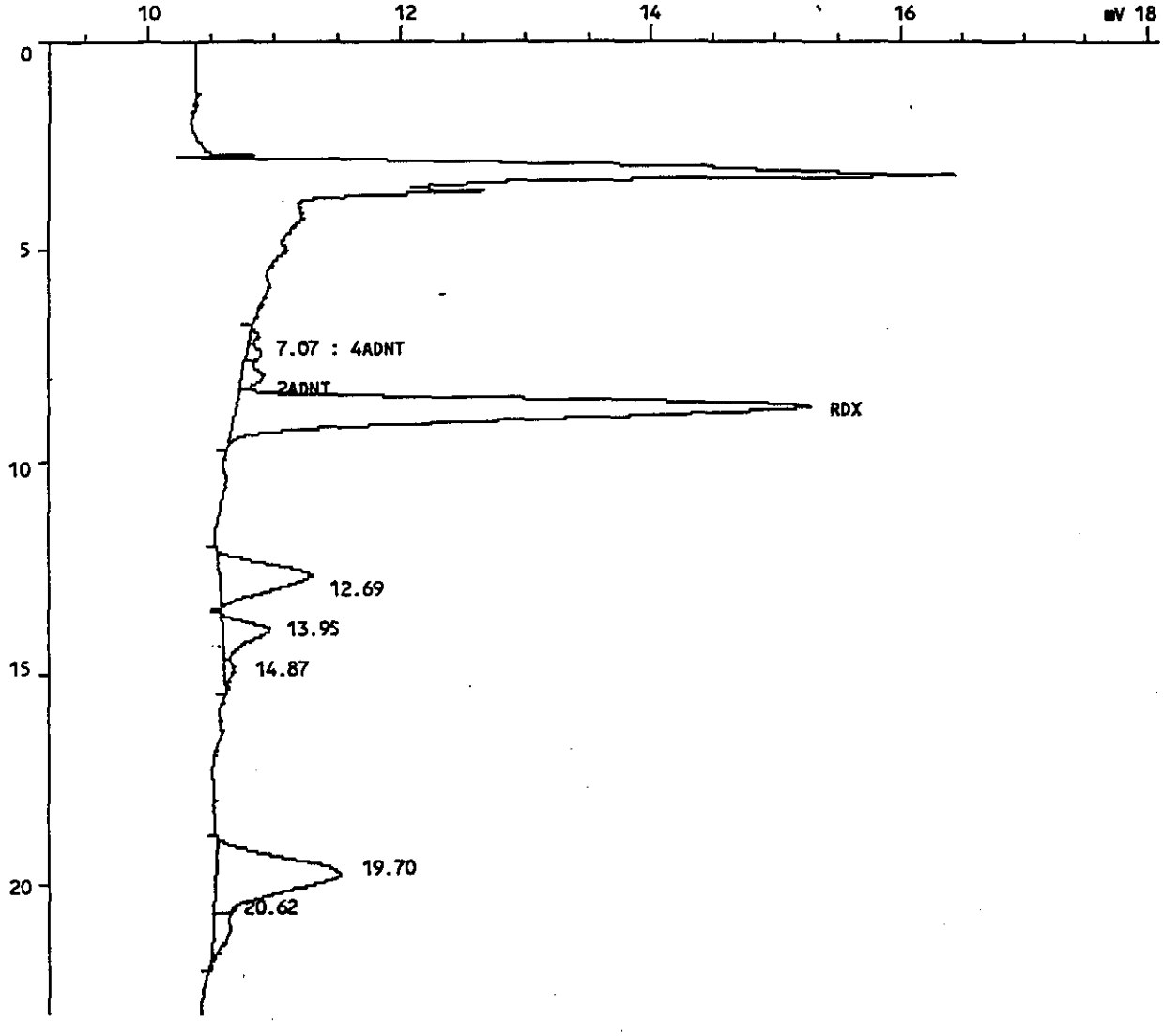
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.072	71	1030	376.744	TNT
3	8.011	177	4725	3231.932	3,4DNT
5	12.688	733	30120	26055.648	HMX
Total		980	35875	29664.324	
Residual		6323	220900	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,5,1

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:54:57
Reported on 11-May-98 at 14:59:11



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,5,1

Acquired on 08-May-98 at 06:54:57
Modified on 11-May-82 at 14:53:08
Reported on 11-May-98 at 14:53:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.483	129	2379	1490.820	4ADNT
3	8.011	177	4725	1806.916	2ADNT
4	8.704	4588	143501	104364.391	RDX
Total		4894	150605	107662.125	
Residual		2409	106170	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-A3	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.03	
Sample Amt: 2g	% Moisture	35.43	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N	-	Dilution Factor:	10.00	

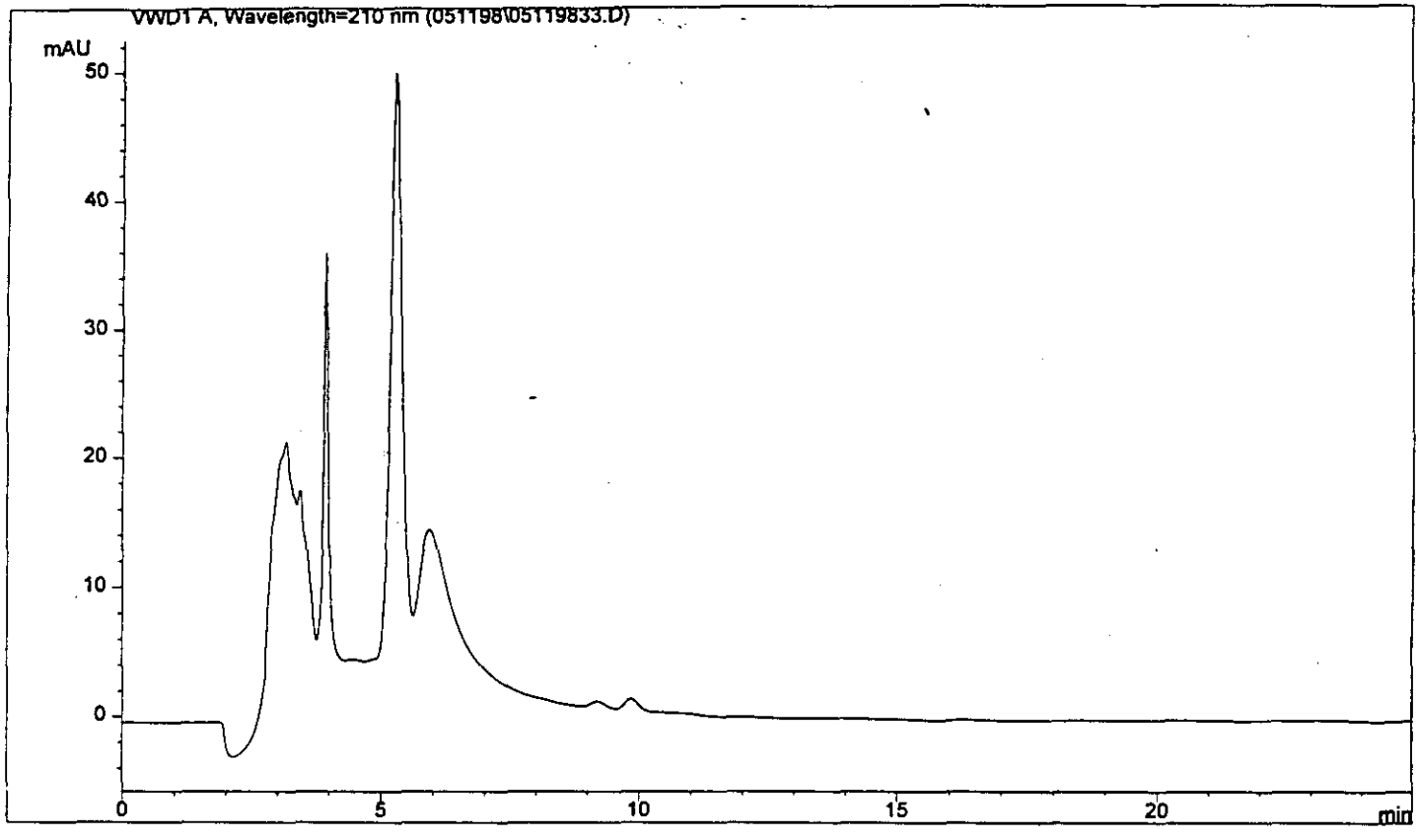
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 33
Sample Name	: 33847.03	Vial No.	: 33
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

039

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-B1
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.04

Sample Amt: 2g % Moisture 37.91 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	13200	
121-82-4	RDX	37400	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	256	J
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

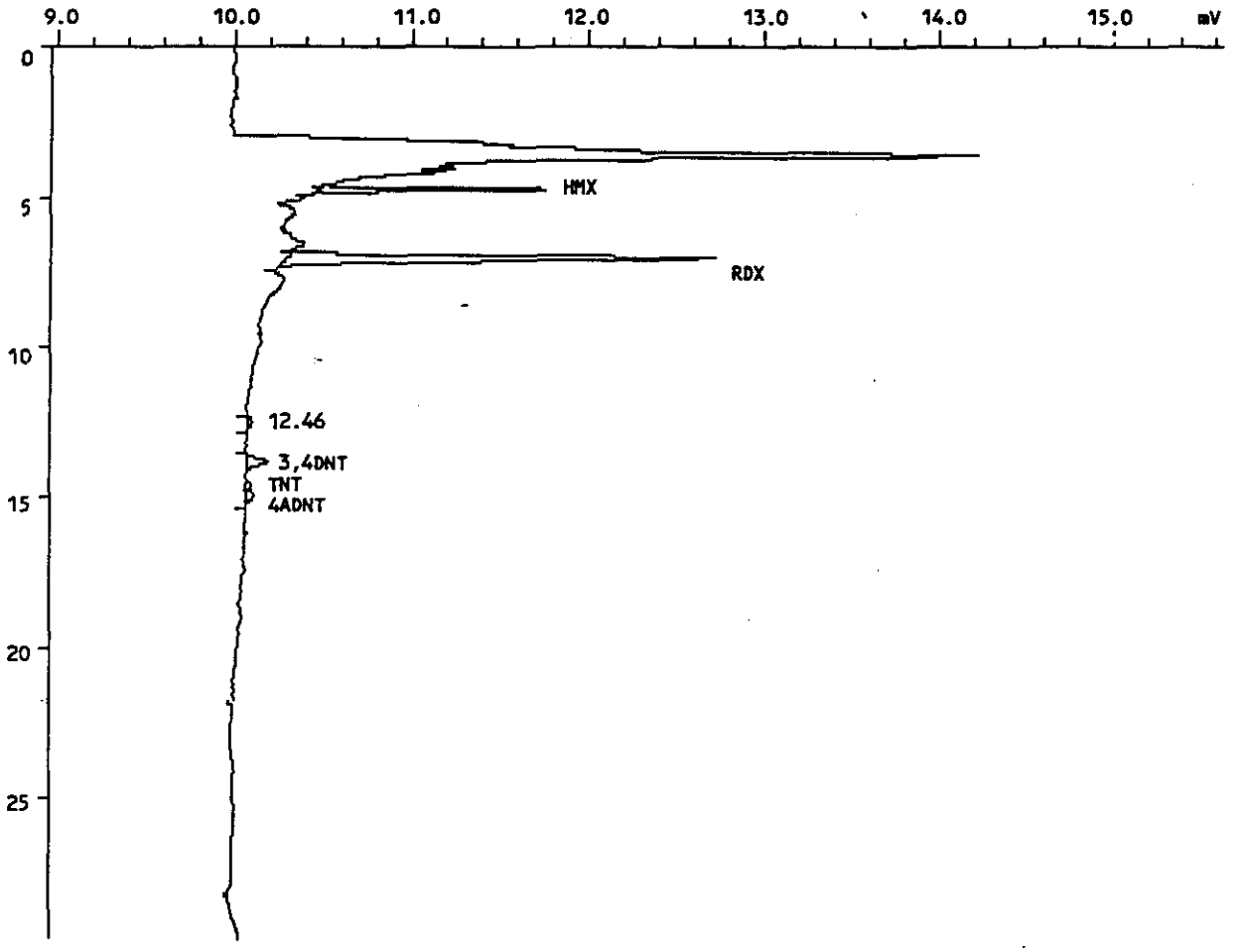
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,8,1

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 23:04:48
Reported on 11-May-98 at 11:55:53



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,8,1

Acquired on 08-May-98 at 23:04:48
Modified on 11-May-82 at 11:45:46
Reported on 11-May-98 at 11:45:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

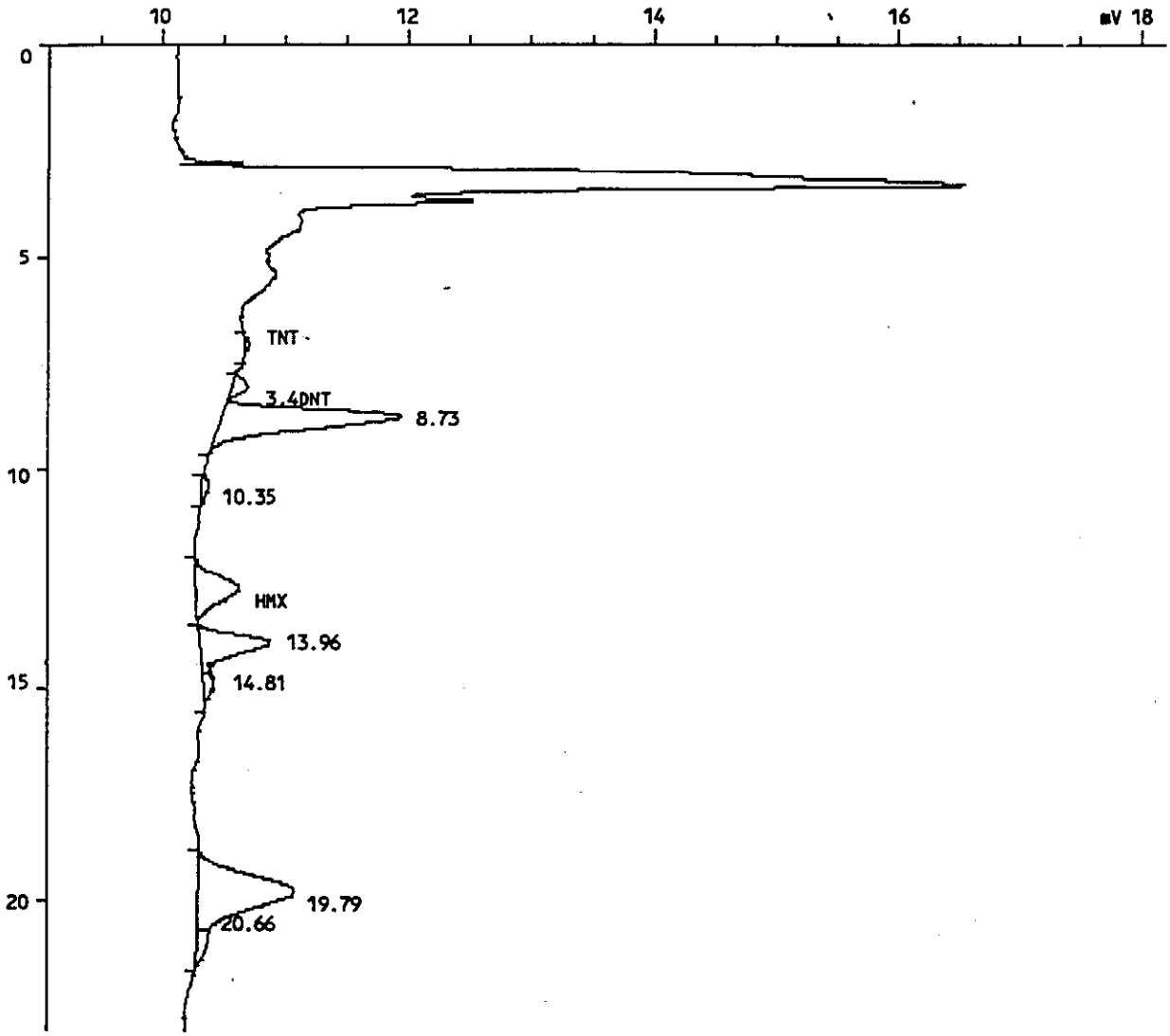
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.768	1293	8894	13195.359	HMX *
2	7.024	2439	31753	37356.672	RDX *
4	13.829	118	2099	1932.905	3,4DNT
5	14.613	37	495	255.575	TNT * J
6	14.981	46	1066	808.514	4ADNT
Total		3933	44306	53549.027	
Residual		31	586	689.947	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,6,1

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 07:39:18
Reported on 11-May-98 at 14:31:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,6,1

Acquired on 08-May-98 at 07:39:18
Modified on 11-May-82 at 14:25:20
Reported on 11-May-98 at 14:25:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

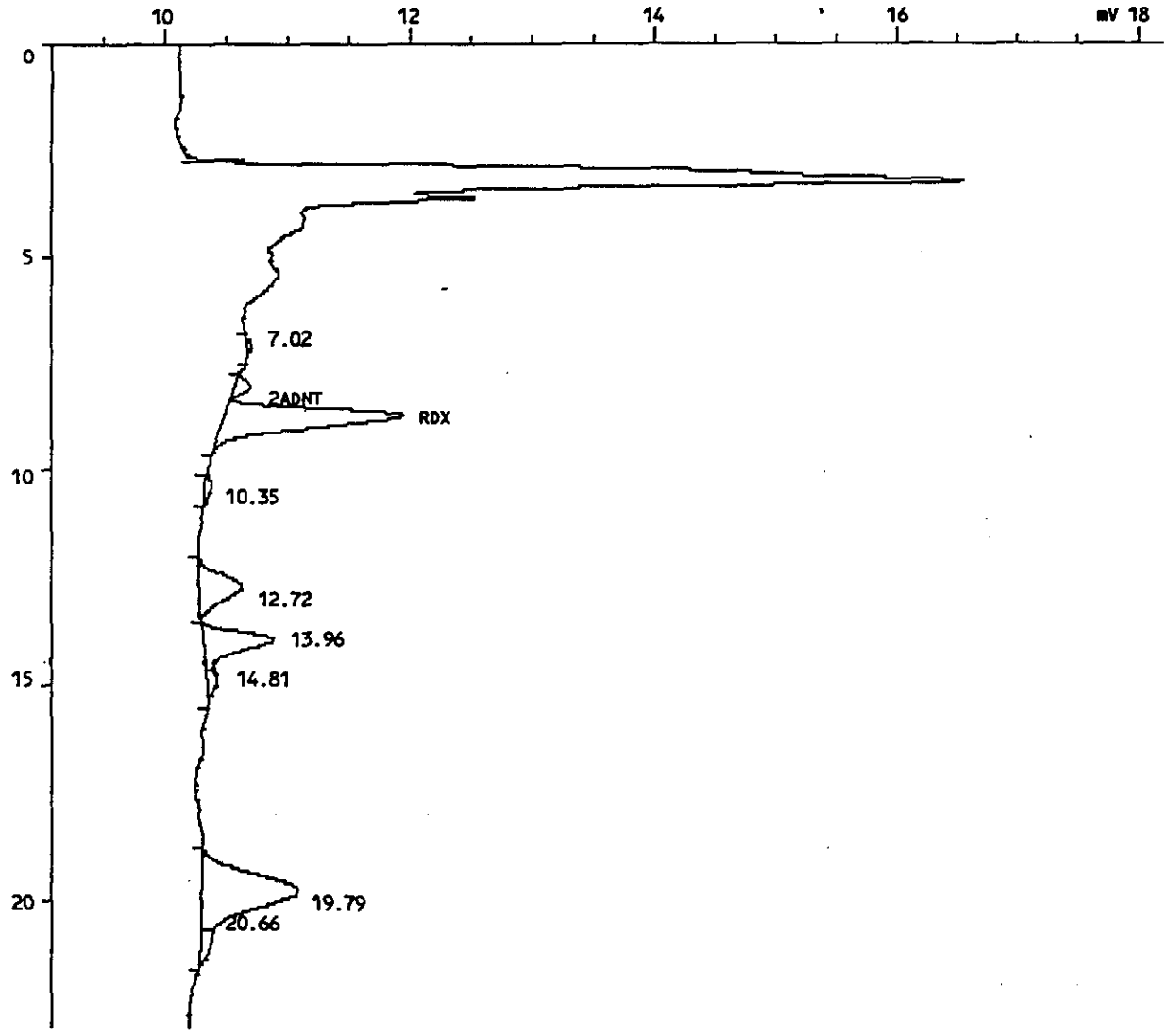
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.019	56	784	286.782	TNT
2	8.037	139	2791	1909.126	3,4DNT
5	12.720	348	14129	12222.662	HMX
Total		543	17705	14418.570	
Residual		3112	115091	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,6,1

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 07:39:18
Reported on 11-May-98 at 14:59:37



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,6,1

Acquired on 08-May-98 at 07:39:18
Modified on 11-May-82 at 14:53:22
Reported on 11-May-98 at 14:53:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.037	139	2791	1067.358	2ADNT
3	8.731	1460	45224	32889.867	RDX
Total		1599	48015	33957.227	
Residual		2056	84781	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-B1
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL			Lab Sample ID:	33847.04
Sample Amt: 2g	% Moisture	37.91		Date Received:	05/05/98
Extraction Volume:	10ml			Date Extracted:	05/05/98
Extraction Method:	SONC			Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N			Dilution Factor:	10.00

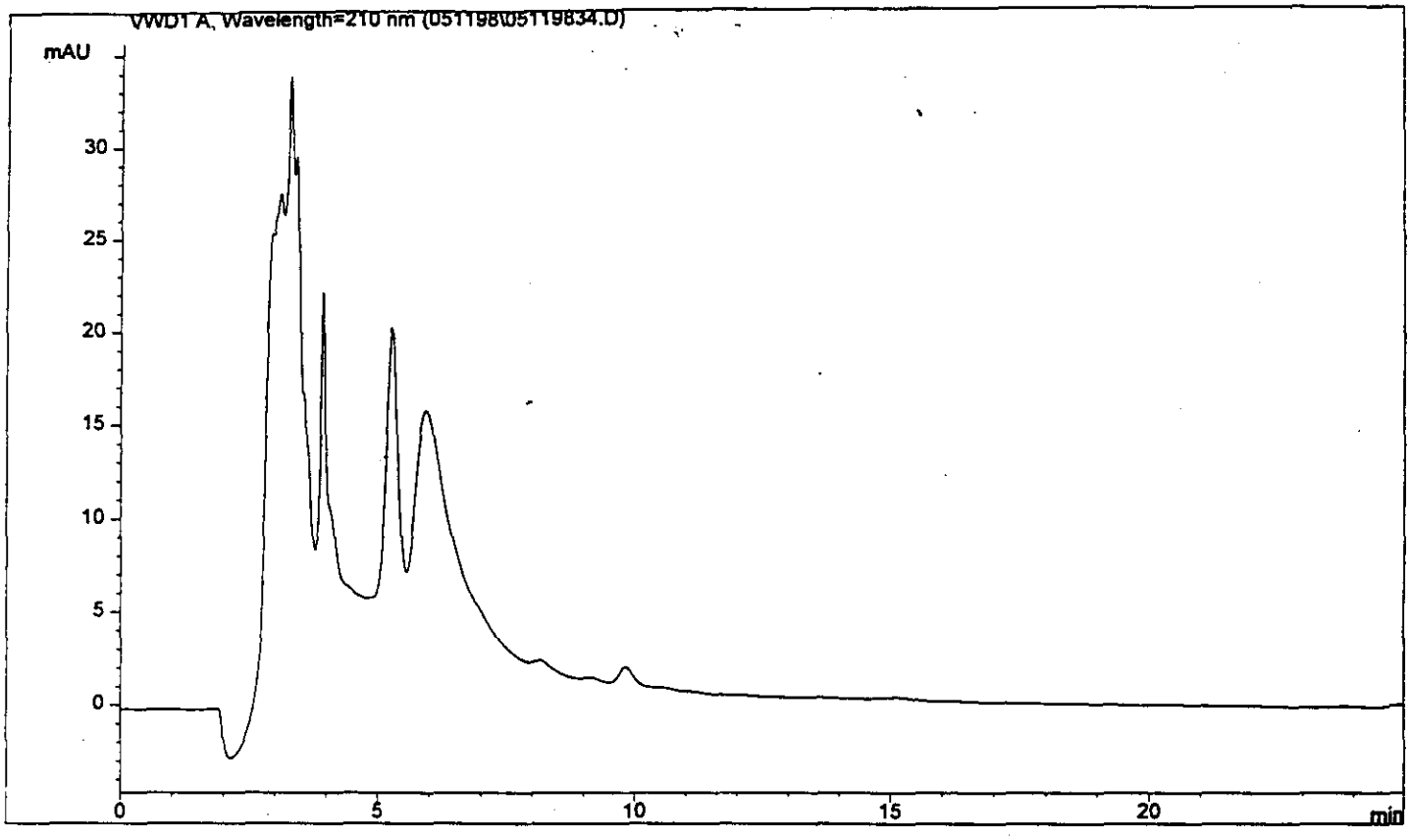
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 34
Sample Name	: 33847.04	Vial No.	: 34
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

042

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-B2
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:B&VWST-A SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.05

Sample Amt: 2g % Moisture 48.25 Date Received: 05/05/98

Extraction Volume: 20ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	30300	
121-82-4	RDX	91600	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1270	P
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

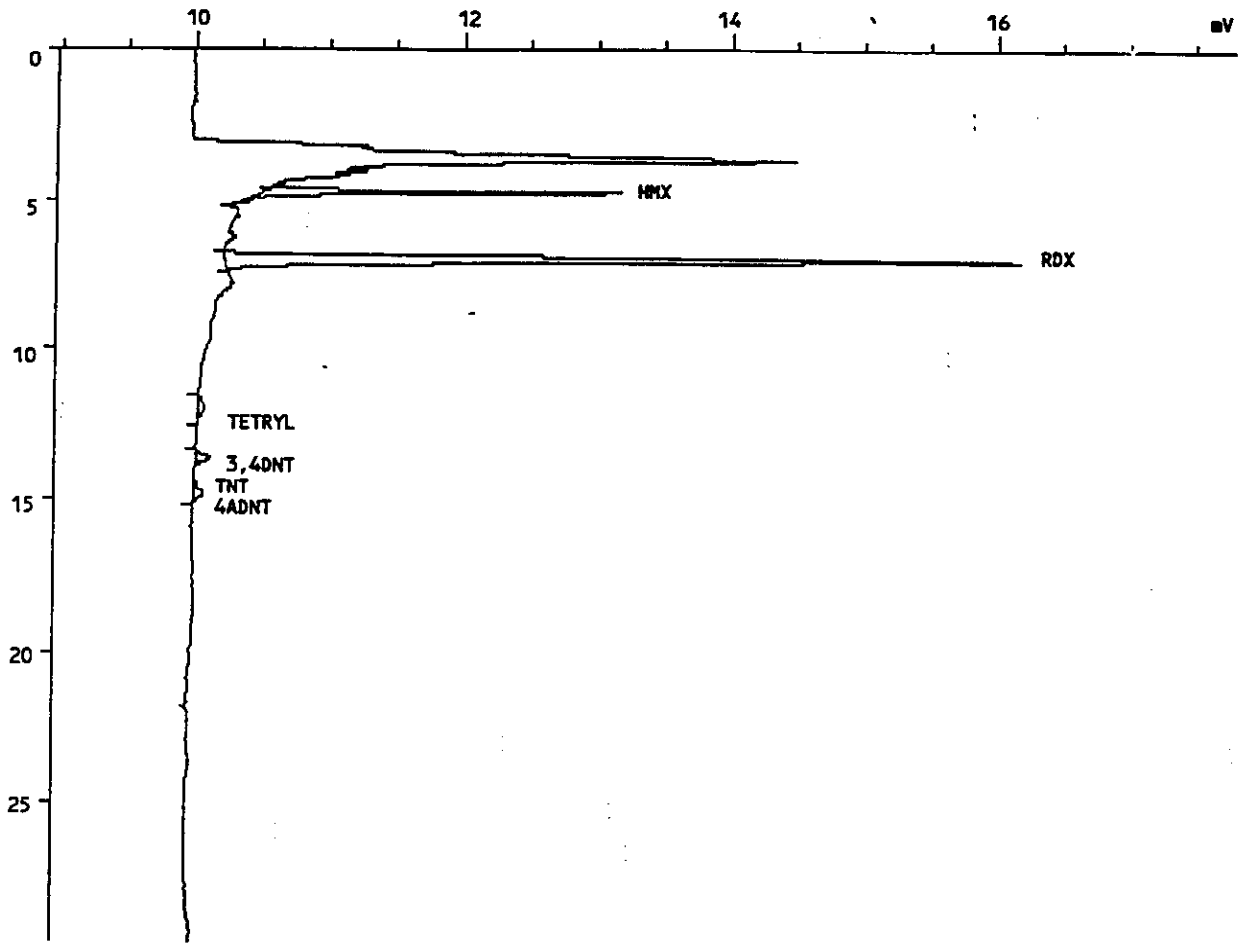
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,9,1

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 23:49:29
Reported on 11-May-98 at 11:56:27



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,9,1

Acquired on 08-May-98 at 23:49:29
Modified on 11-May-82 at 11:46:02
Reported on 11-May-98 at 11:46:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

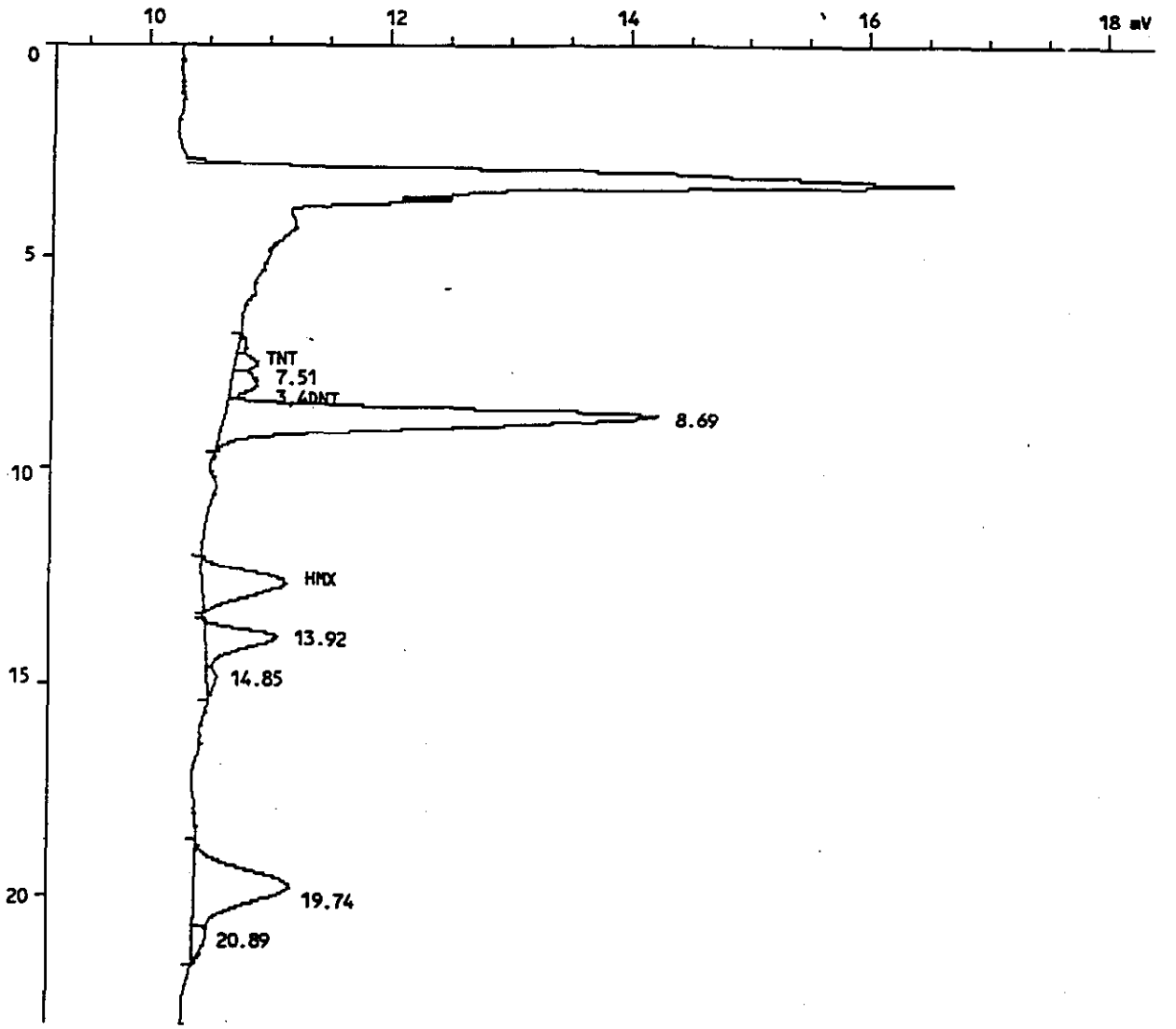
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.741	2683	20448	30338.766	HMX *
2	6.976	5946	77877	91620.117	RDX *
3	12.000	54	1413	1430.565	TETRYL
4	13.648	111	1871	1723.280	3,4DNT ?
5	14.443	22	282	145.503	TNT
6	14.821	81	1677	1272.743	4ADNT * ?
Total		8896	103569	126530.969	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,7,1

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 08:23:39
Reported on 11-May-98 at 14:31:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,7,1

Acquired on 08-May-98 at 08:23:39
Modified on 11-May-82 at 14:25:36
Reported on 11-May-98 at 14:25:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

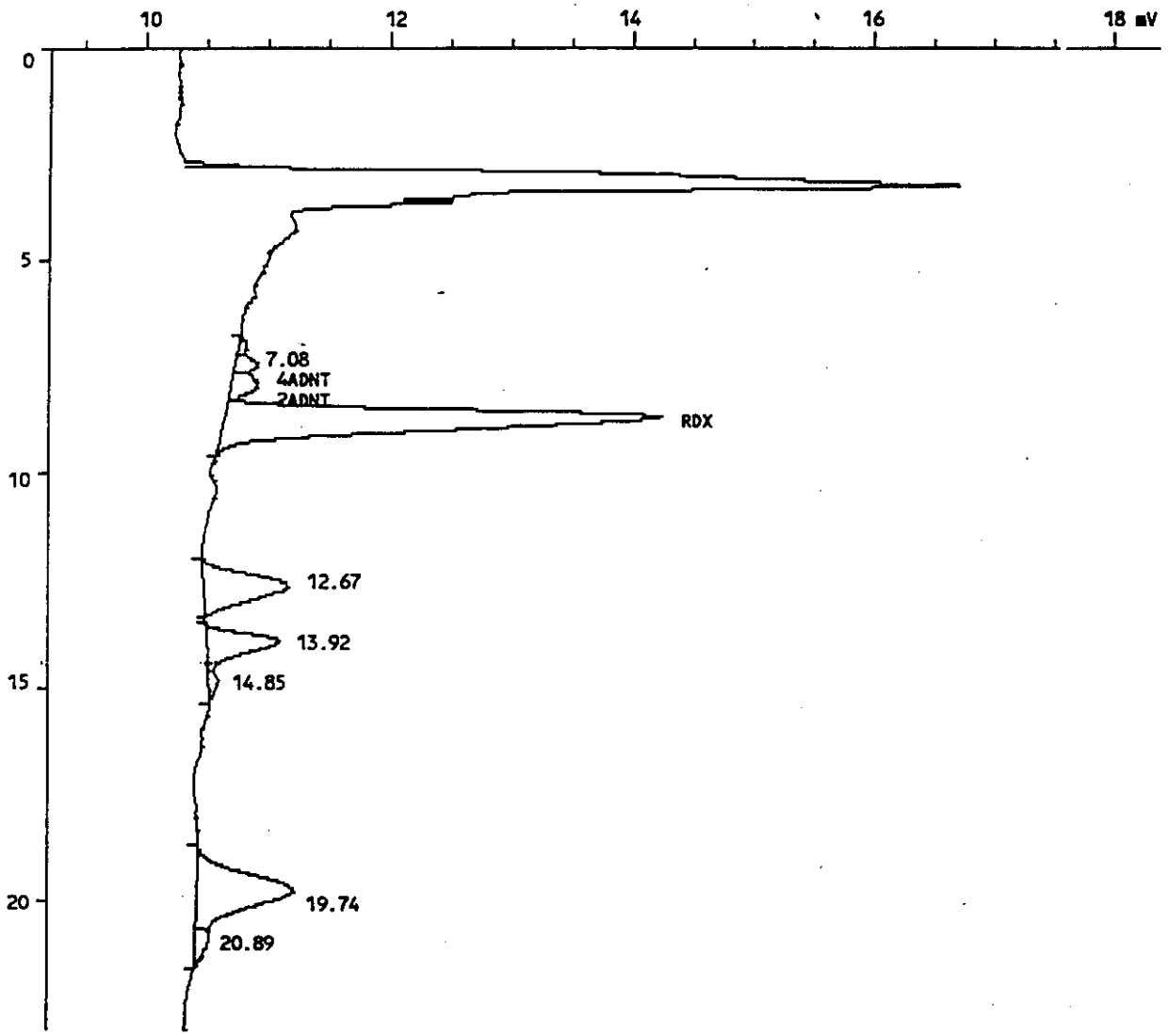
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.083	77	1283	469.154	TNT
3	7.973	223	6318	4321.163	3,4DNT
5	12.667	695	27905	24138.896	HMX
Total		995	35505	28929.213	
Residual		5415	184924	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,7,1

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 08:23:39
Reported on 11-May-98 at 15:00:03



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,7,1 .

Acquired on 08-May-98 at 08:23:39
Modified on 11-May-82 at 14:53:36
Reported on 11-May-98 at 14:53:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.515	192	3634	2277.047	4ADNT
3	7.973	223	6318	2415.885	2ADNT
4	8.688	3602	111444	81050.352	RDX
Total		4017	121396	85743.281	
Residual		2392	99033	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-B2
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL			Lab Sample ID:	33847.05
Sample Amt: 2g	% Moisture	48.25		Date Received:	05/05/98
Extraction Volume:	10ml			Date Extracted:	05/05/98
Extraction Method:	SONC			Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N			Dilution Factor:	10.00

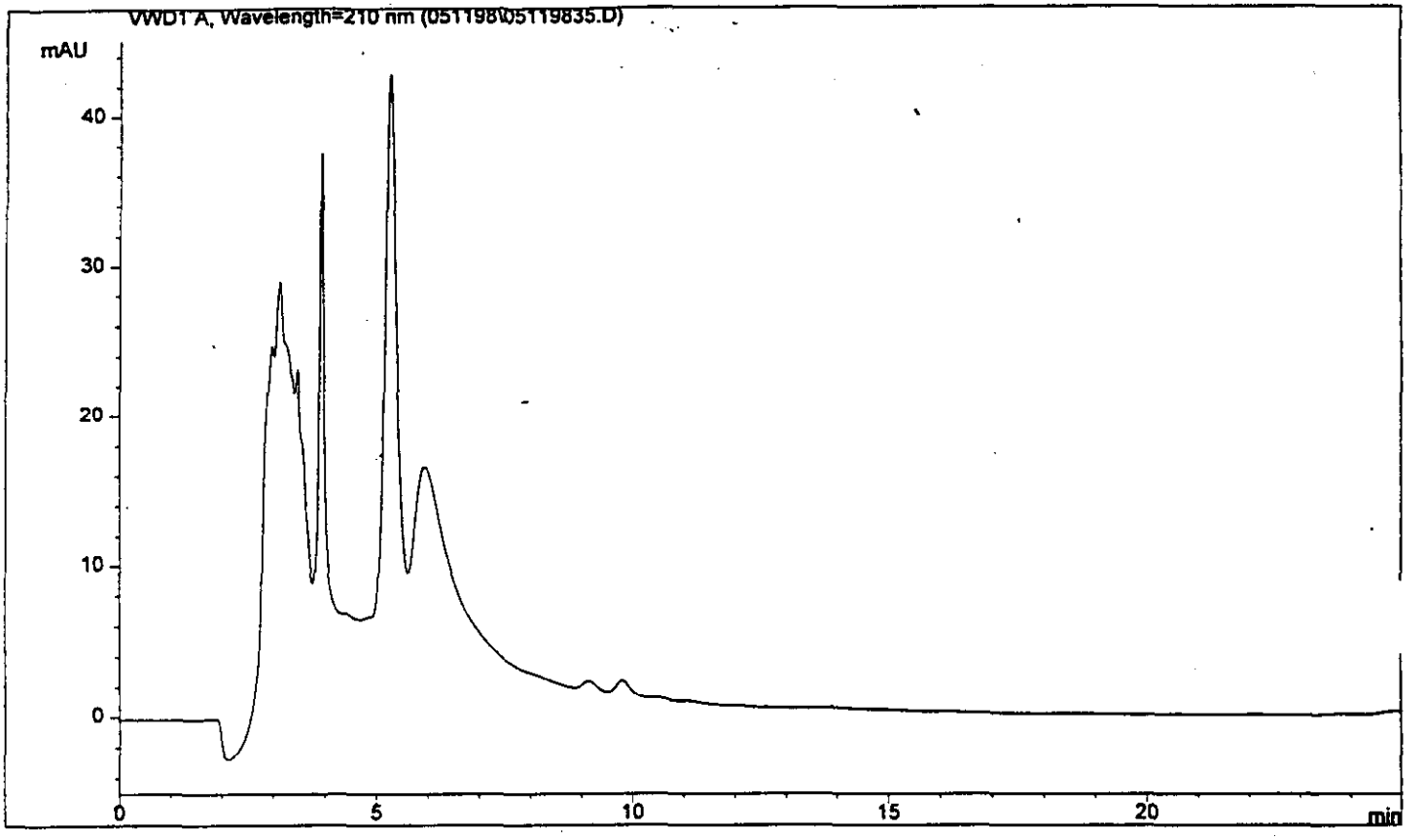
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 35
Sample Name	: 33847.05	Vial No.	: 35
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

057

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-B3
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.06

Sample Amt: 2g % Moisture 34.02 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	23500	
121-82-4	RDX	96700	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	416	J
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

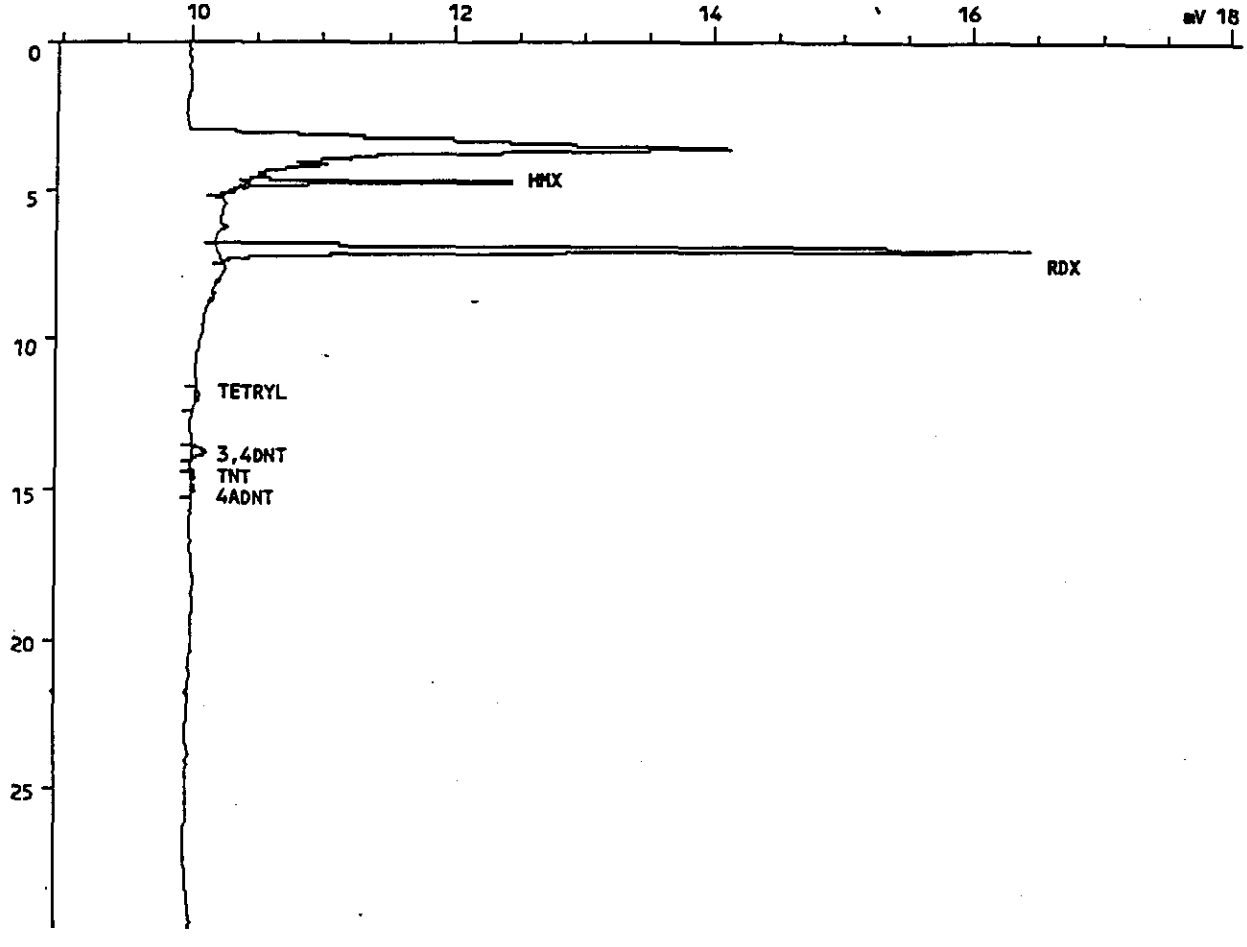
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,10,1

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 00:34:11
Reported on 11-May-98 at 11:56:54



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,10,1

Acquired on 09-May-98 at 00:34:11
Modified on 11-May-82 at 11:46:18
Reported on 11-May-98 at 11:46:17

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

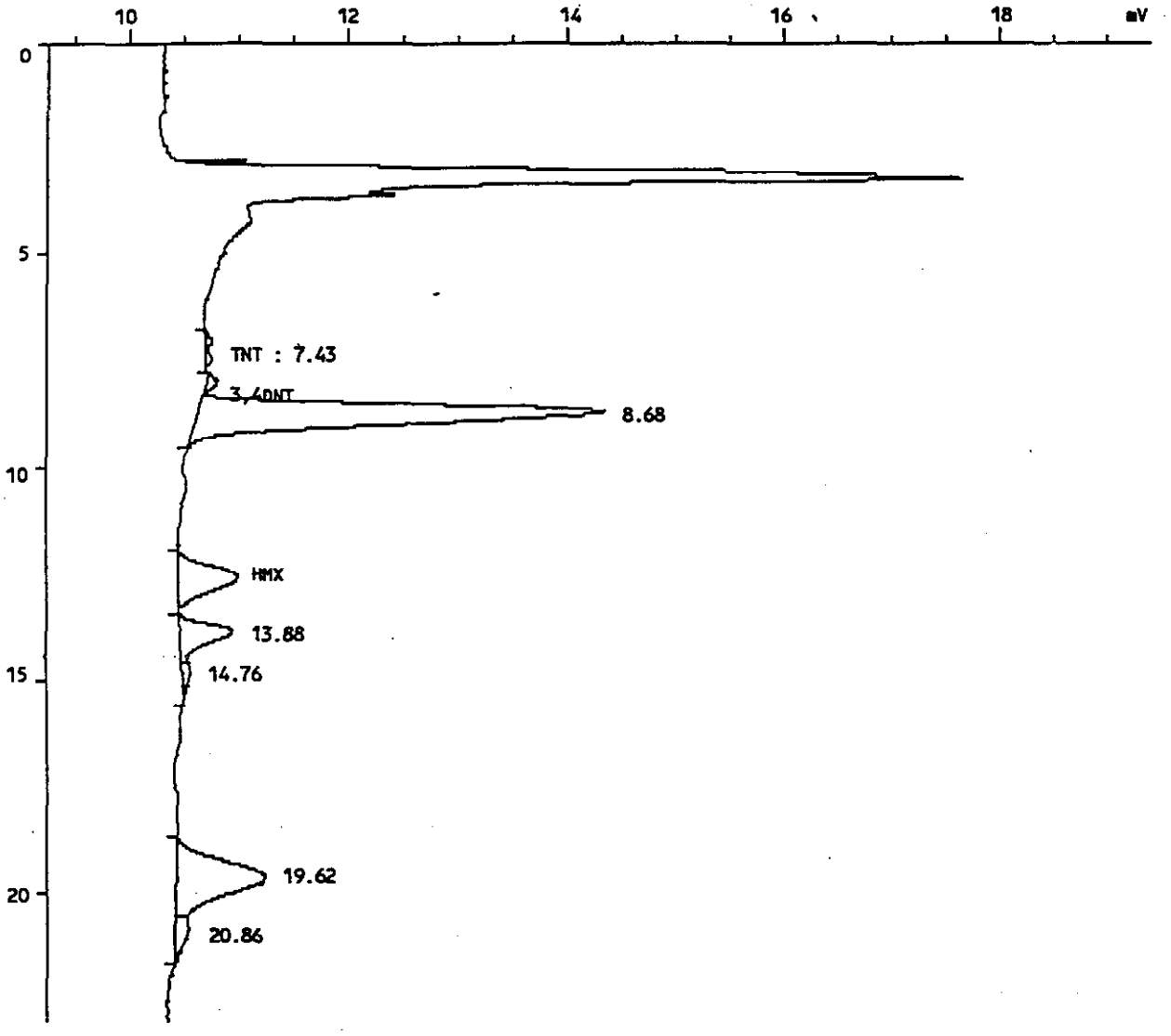
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.757	2056	15844	23507.035	HMX *
2	7.013	6235	82236	96748.820	RDX *
3	11.941	38	814	823.810	TETRYL
4	13.755	115	2077	1912.324	3,4DNT 15.6%
5	14.496	31	426	220.133	TNT
6	14.949	31	548	415.566	4ADNT *
Total		8507	101945	123627.703	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,8,1

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:08:00
Reported on 11-May-98 at 14:32:42



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,8,1

Acquired on 08-May-98 at 09:08:00
Modified on 11-May-82 at 14:25:50
Reported on 11-May-98 at 14:25:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

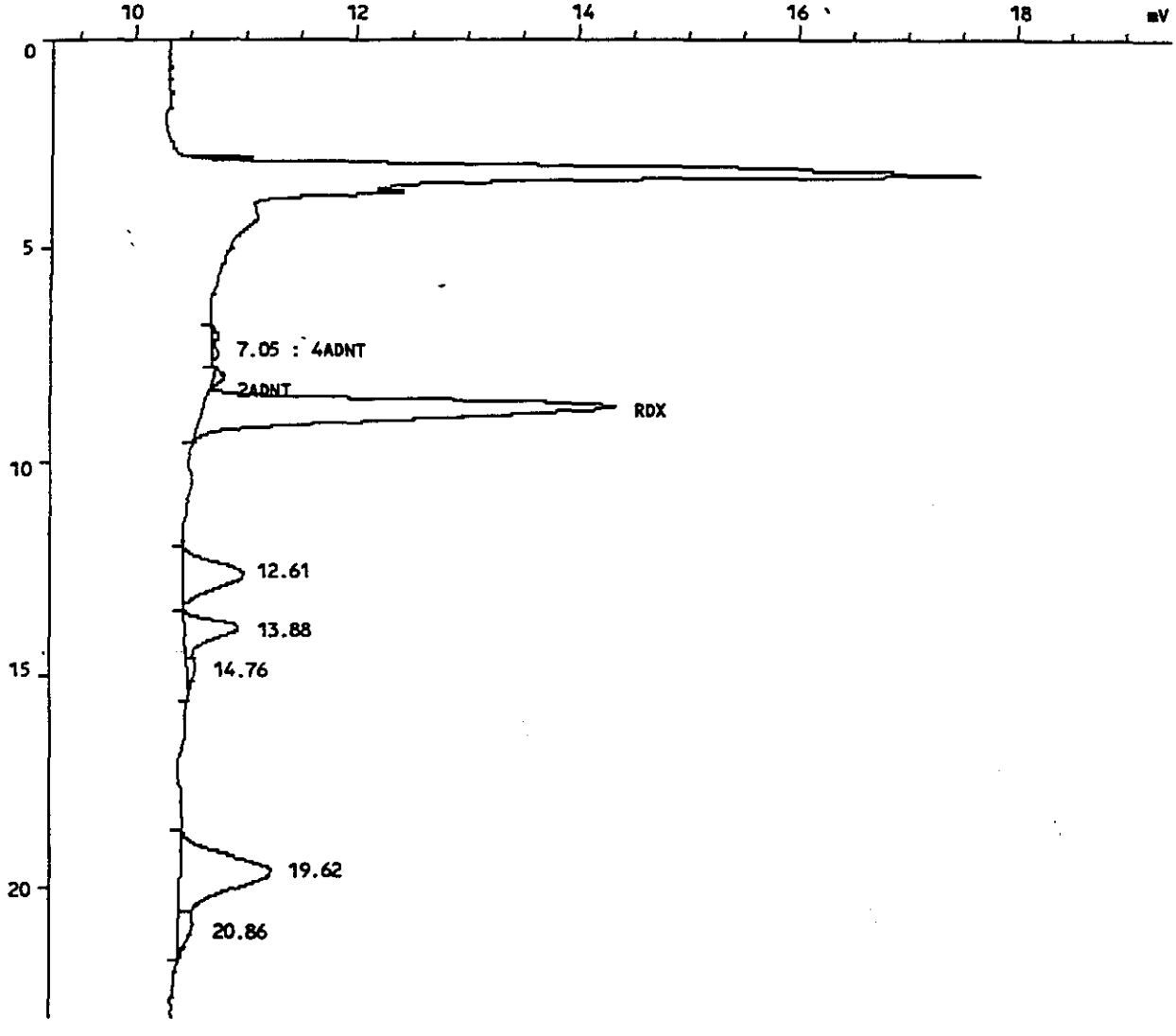
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	7.051	68	959	350.737	TNT
3	8.016	104	1772	1212.010	3,4DNT
5	12.613	548	22797	19720.676	HMX
Total		721	25528	21283.422	
Residual		5307	184551	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,8,1.

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:08:00
Reported on 11-May-98 at 15:00:28



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,8,1

Acquired on 08-May-98 at 09:08:00
Modified on 11-May-82 at 14:53:50
Reported on 11-May-98 at 14:53:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
2	7.429	55	825	516.980	4ADNT
3	8.016	104	1772	677.613	2ADNT
4	8.683	3717	114385	83188.891	RDX
Total		3877	116982	84383.484	
Residual		2152	93097	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-B3
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.06
Sample Amt: 2g	% Moisture 34.02	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

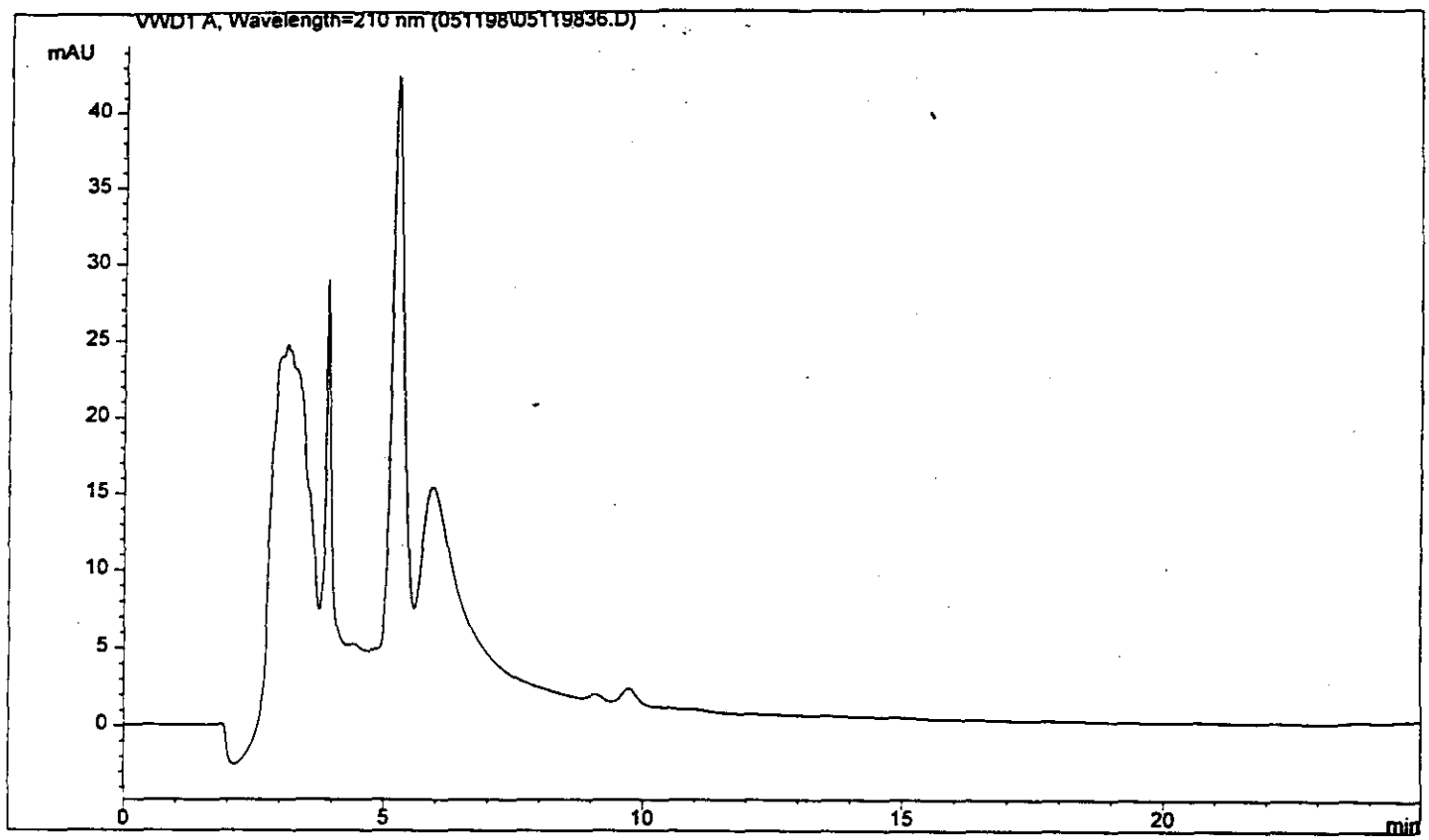
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 36
Sample Name	: 33847.06	Vial No.	: 36
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-Cl 10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.07

Sample Amt: 2g % Moisture 35.51 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	14100	
121-82-4	RDX	18800	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	628	JP
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

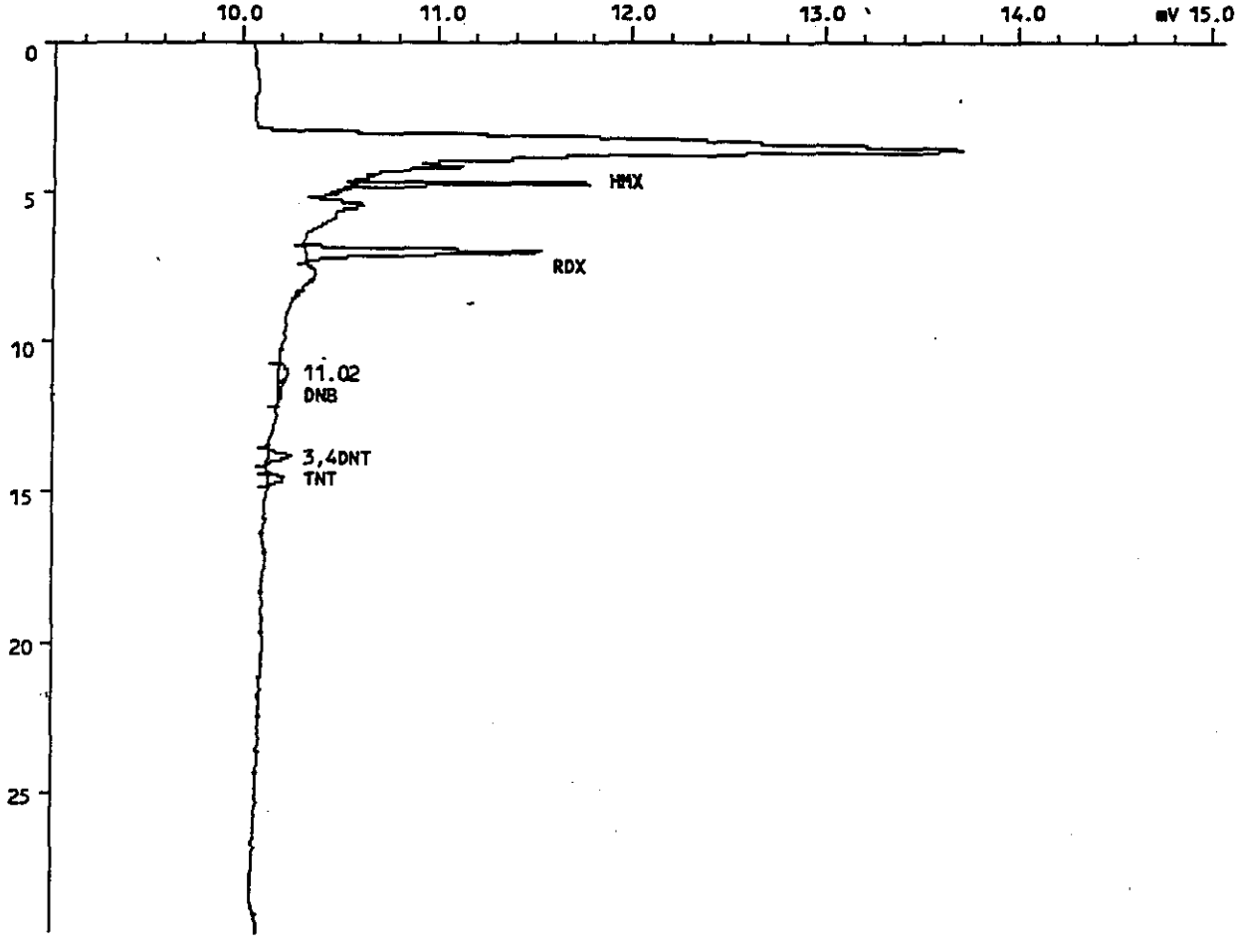
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,13,1

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 02:48:18
Reported on 11-May-98 at 11:58:13



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,13,1

Acquired on 09-May-98 at 02:48:18
Modified on 11-May-82 at 11:46:36
Reported on 11-May-98 at 11:46:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

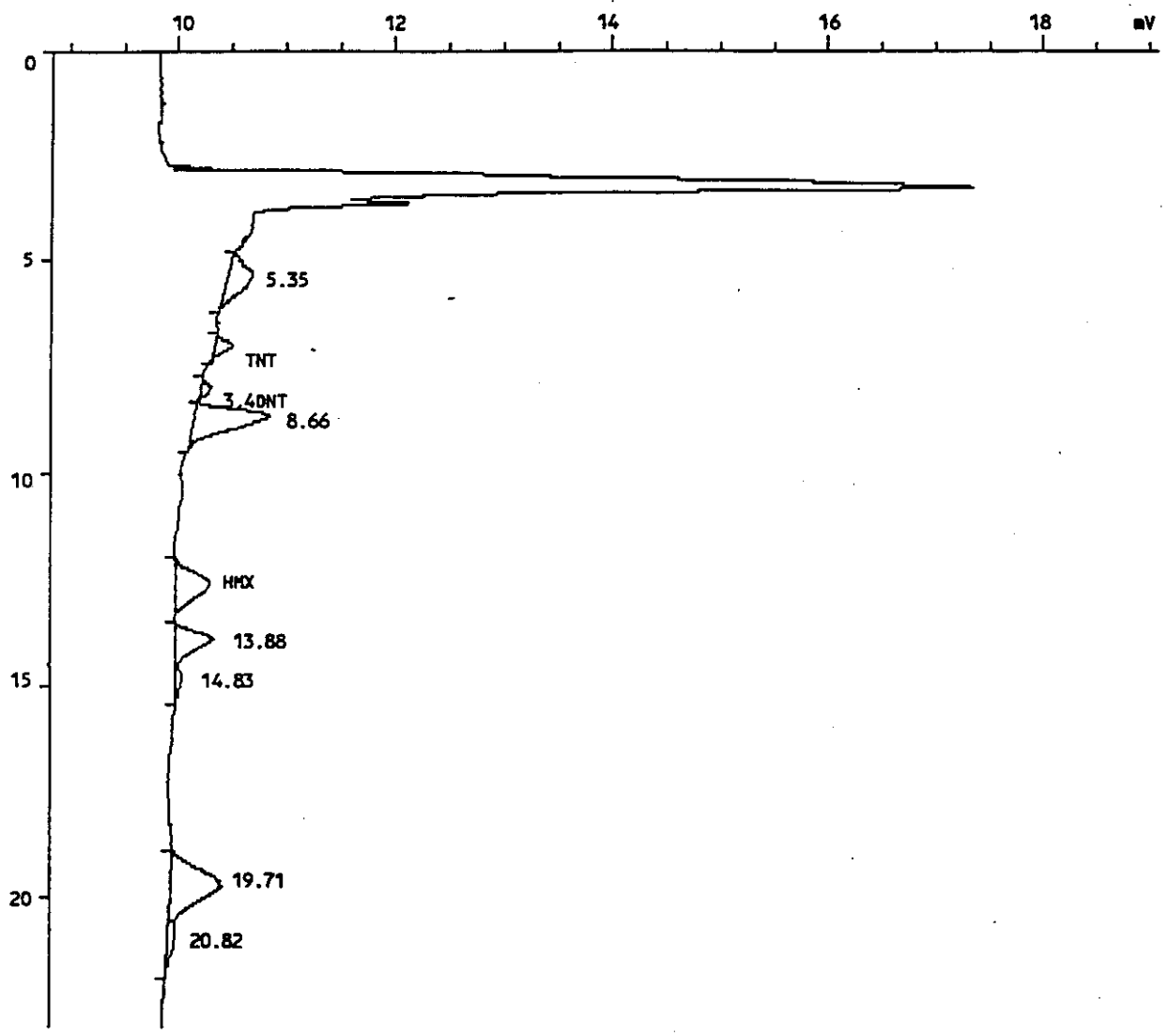
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.773	1234	9524	14129.949	HMX *
2	7.040	1204	15948	18762.100	RDX *
4	11.355	28	726	304.614	DNB
5	13.808	114	1855	1708.404	3,4DNT
6	14.565	79	1216	628.115	TNT * JP
Total		2659	29269	35533.180	
Residual		51	1287	1513.953	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,9,1 .

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:52:21
Reported on 11-May-98 at 14:33:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,9,1

Acquired on 08-May-98 at 09:52:21
Modified on 11-May-82 at 14:26:04
Reported on 11-May-98 at 14:26:01

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

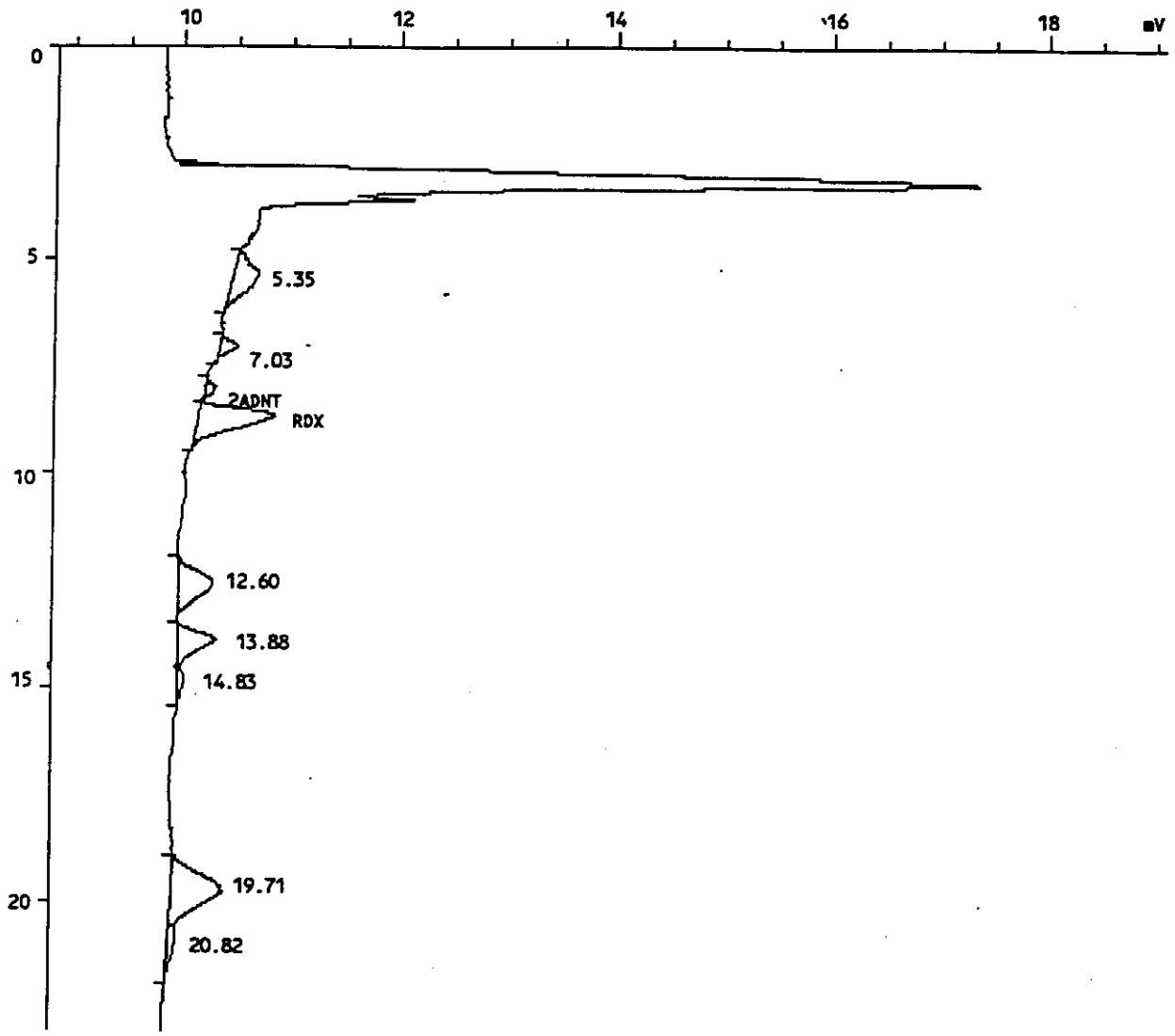
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
2	7.029	170	2940	1075.420	TNT
3	8.027	91	1475	1009.037	3,4DNT
5	12.597	326	13348	11546.859	HMX
Total		586	17764	13631.316	
Residual		1872	71284	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,9,1

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:52:21
Reported on 11-May-98 at 15:00:53



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,9,1

Acquired on 08-May-98 at 09:52:21
Modified on 11-May-82 at 14:54:06
Reported on 11-May-98 at 14:54:02

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
3	8.027	91	1475	564.134	2ADNT
4	8.661	697	21250	15454.579	RDX
Total		787	22725	16018.714	
Residual		1671	66322	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-C1	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.07	
Sample Amt: 2g	% Moisture	35.51	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N		Dilution Factor:	10.00	

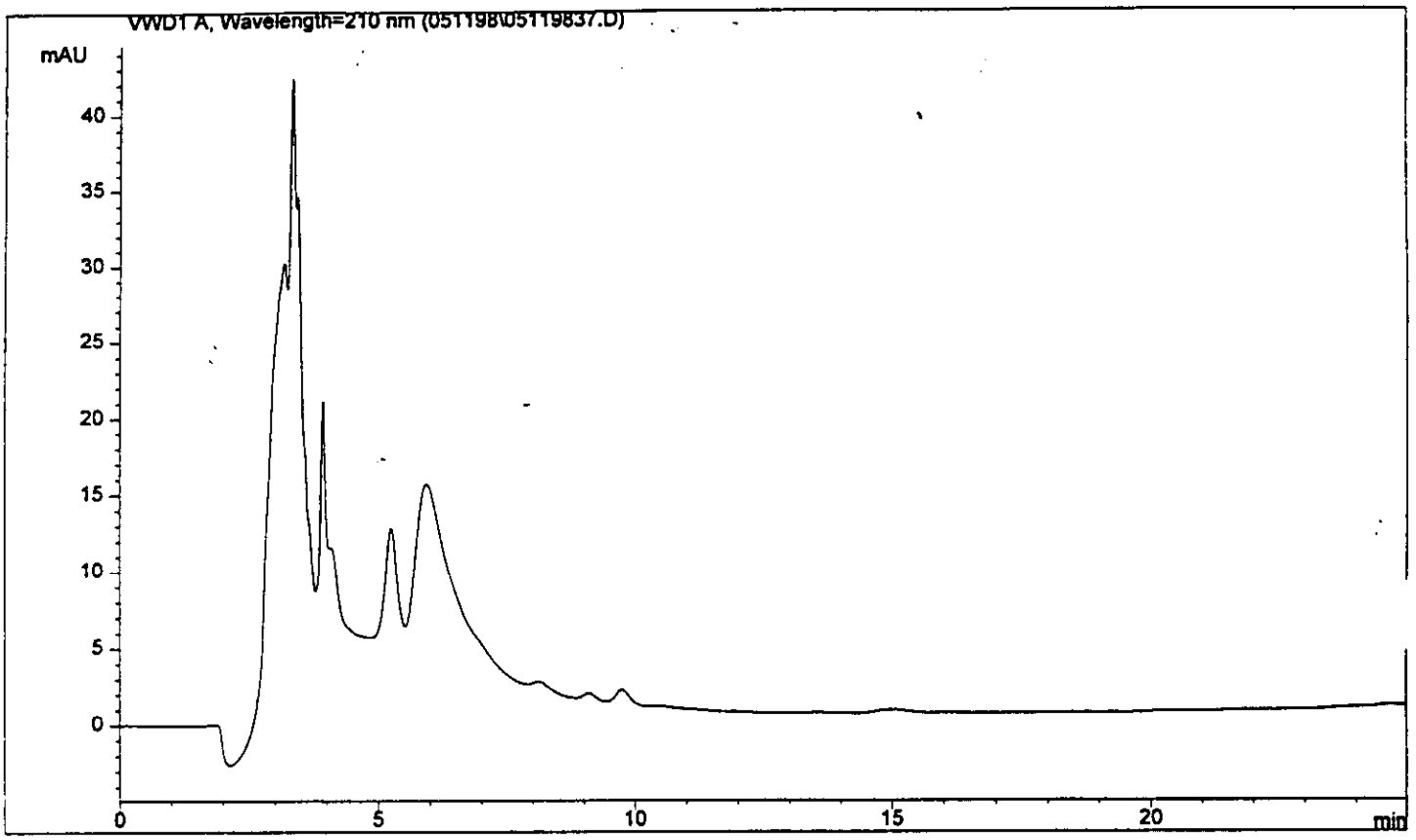
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
5-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 37
Sample Name	: 33847.07	Vial No.	: 37
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

075

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C2 10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.08

Sample Amt: 2g % Moisture 56.99 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	32300	
121-82-4	RDX	87200	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	19000	
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

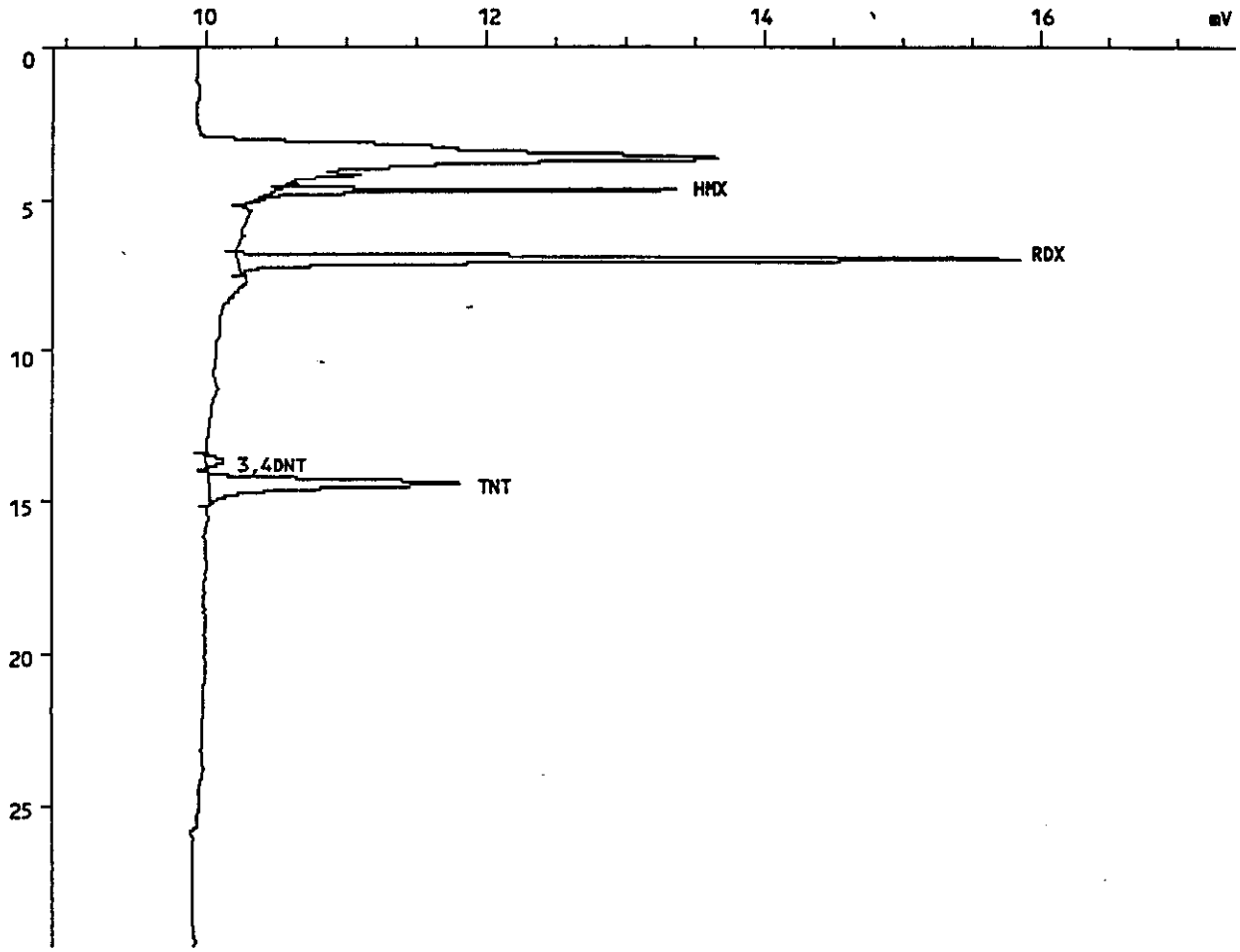
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,14,1

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 03:33:01
Reported on 11-May-98 at 11:58:38



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,14,1

Acquired on 09-May-98 at 03:33:01
Modified on 11-May-82 at 11:46:52
Reported on 11-May-98 at 11:46:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

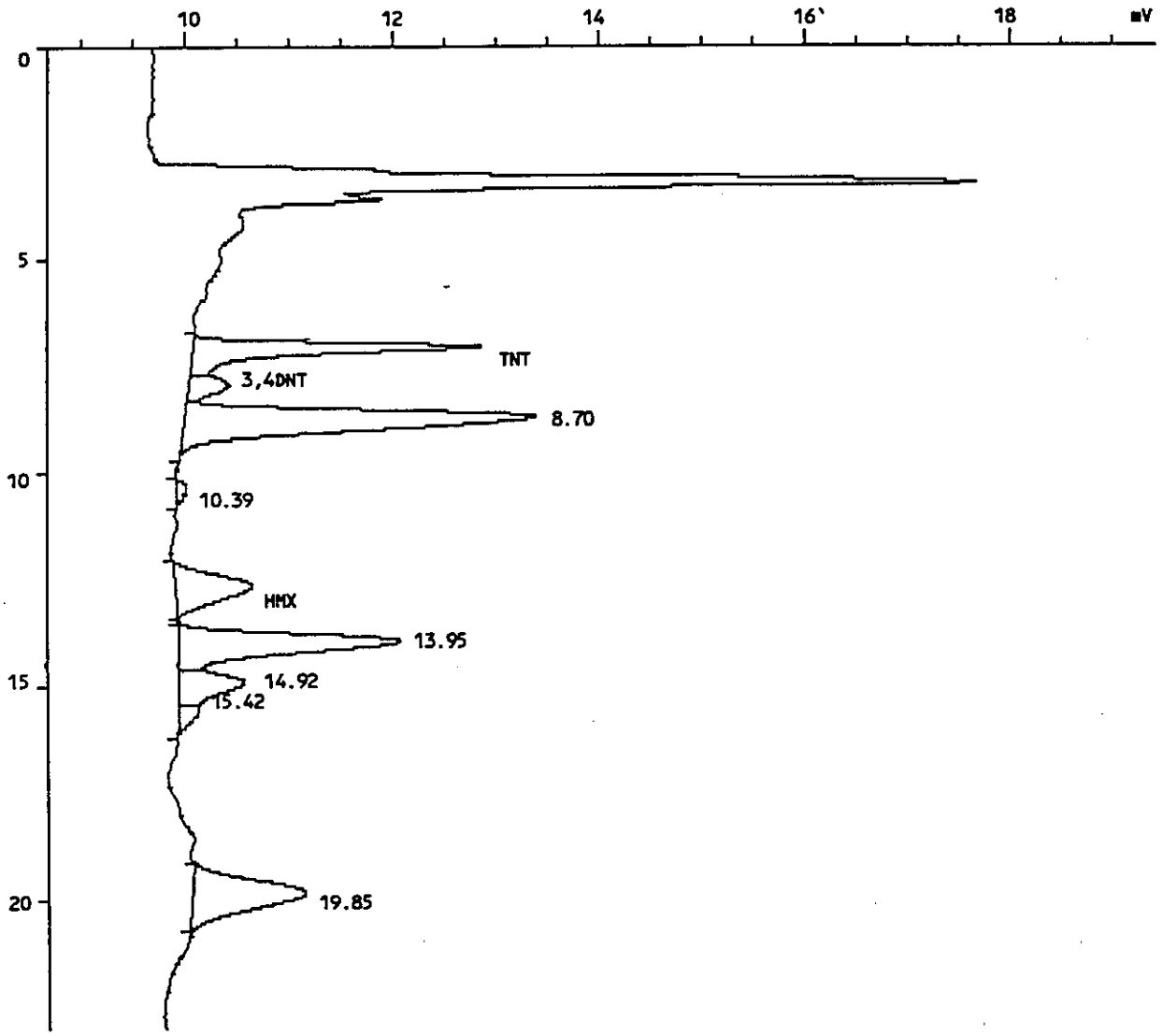
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.747	2880	21760	32285.330	HMX *
2	6.987	5602	74152	87237.117	RDX *
3	13.691	128	2262	2082.794	3,4DNT
4	14.459	1790	36706	18959.887	TNT *
Total		10401	134880	140565.125	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,12,1

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:05:25
Reported on 11-May-98 at 14:33:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,12,1

Acquired on 08-May-98 at 12:05:25
Modified on 11-May-82 at 14:26:20
Reported on 11-May-98 at 14:26:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 2

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

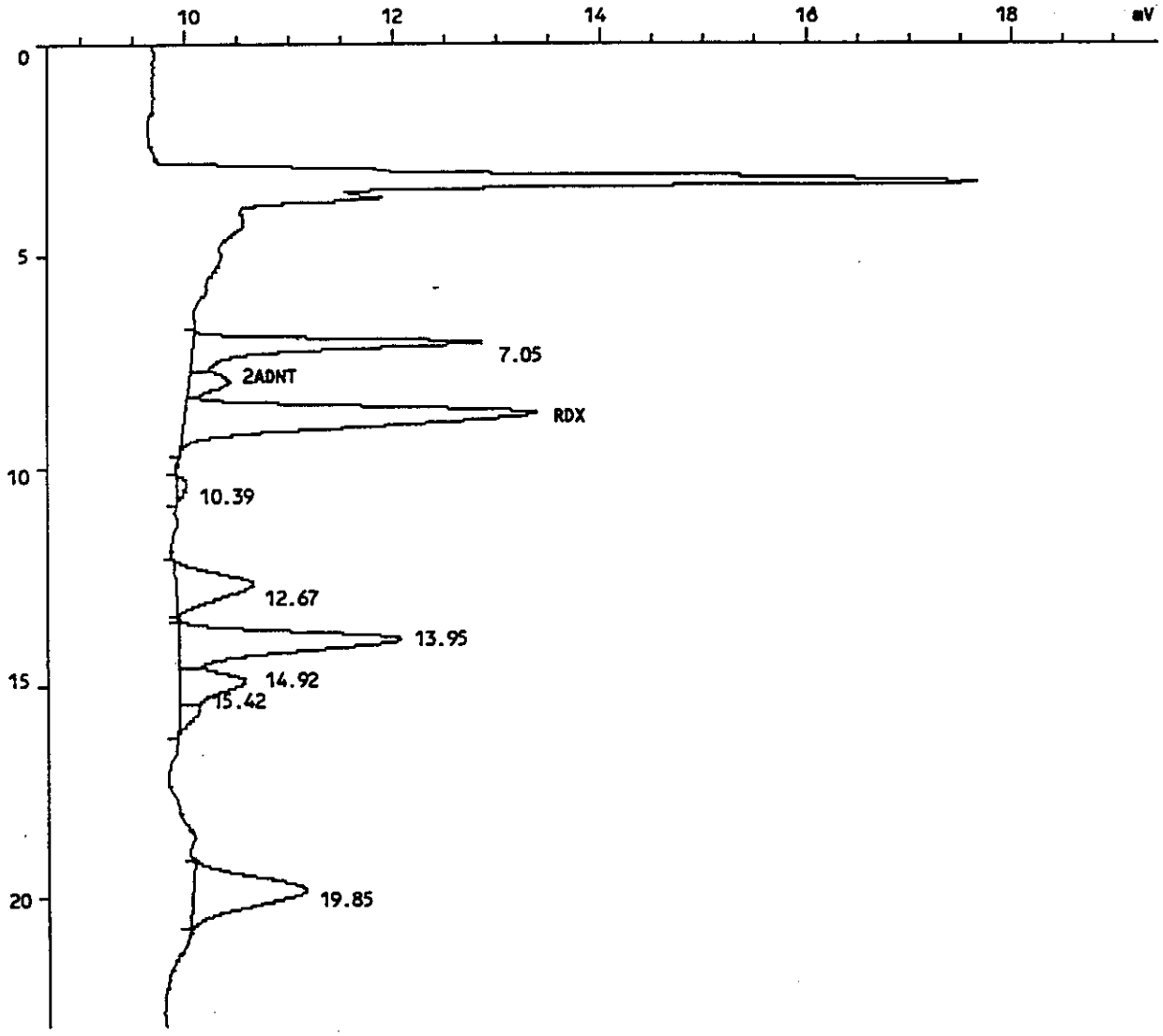
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.051	2774	51741	18925.186	TNT
2	7.947	394	10234	7000.030	3,4DNT
5	12.672	746	29869	25838.293	HMX
Total		3913	91845	51763.508	
Residual		7544	250867	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,12,1

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:05:25
Reported on 11-May-98 at 15:01:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,12,1

Acquired on 08-May-98 at 12:05:25
Modified on 11-May-82 at 14:54:20
Reported on 11-May-98 at 14:54:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 2

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.947	394	10234	3913.592	2ADNT
3	8.704	3373	105280	76567.234	RDX
Total		3767	115514	80480.828	
Residual		7690	227198	0.000	

81A

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-C2
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.08
Sample Amt: 2g	% Moisture 56.99	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

CONCENTRATION UNITS: (ug/L or ug/kg)

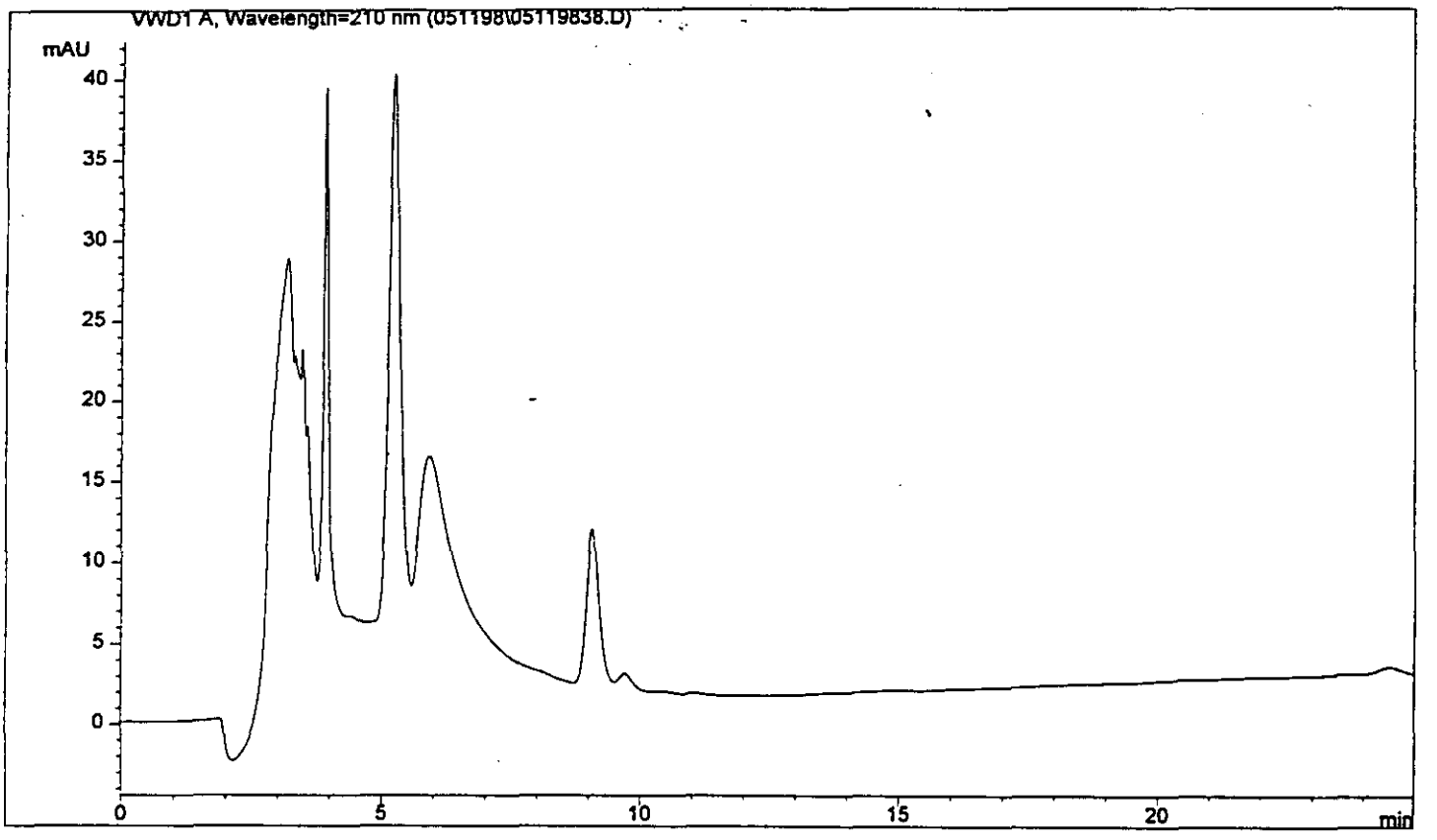
CAS NO.	COMPOUND	ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 38
Sample Name	: 33847.08	Vial No.	: 38
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C2
FD 10

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.09

Sample Amt: 2g % Moisture 32.74 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	33200	
121-82-4	RDX	94500	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	9470	J
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

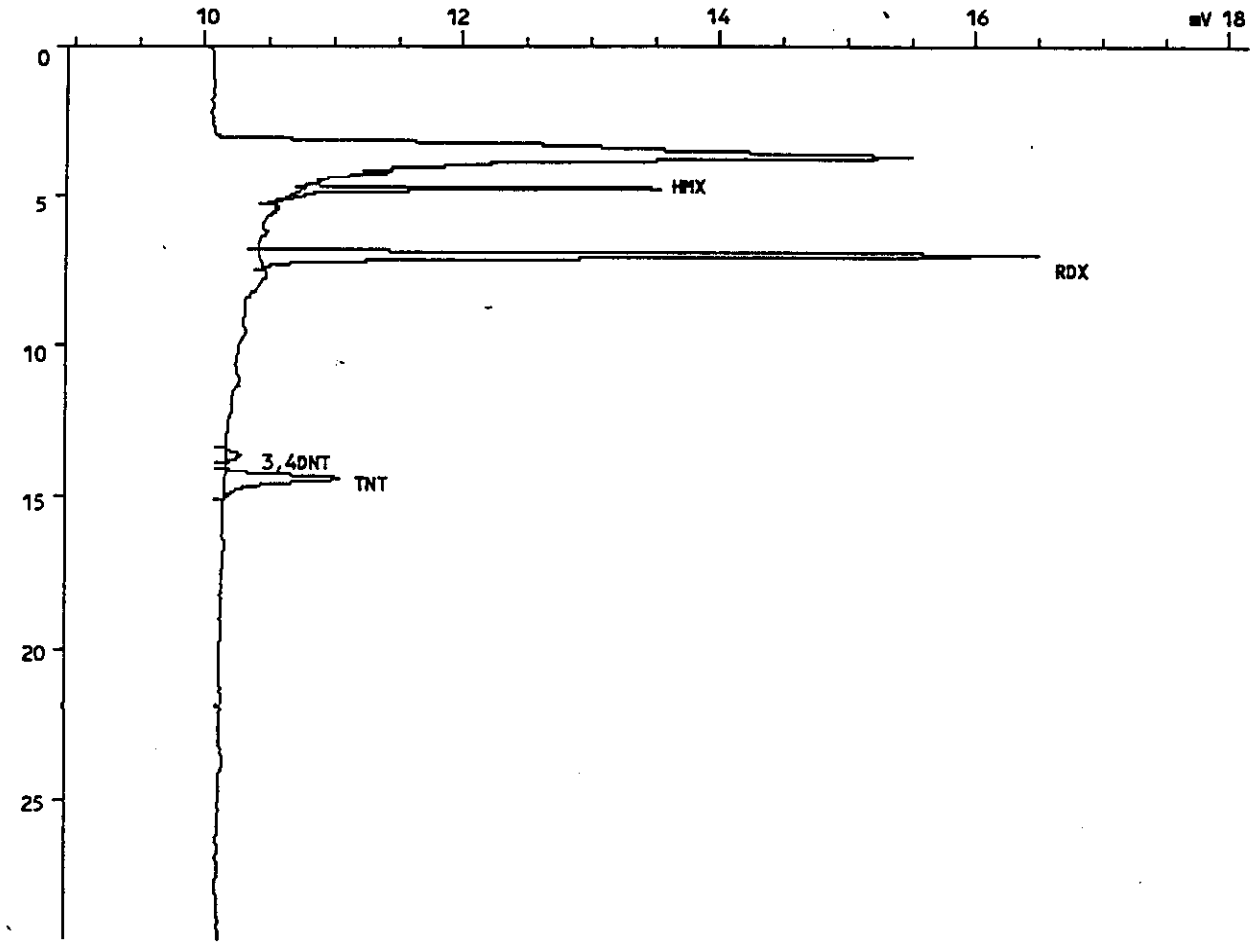
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,15,1

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 04:17:45
Reported on 11-May-98 at 11:59:05



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,15,1

Acquired on 09-May-98 at 04:17:45
Modified on 11-May-82 at 11:47:06
Reported on 11-May-98 at 11:47:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

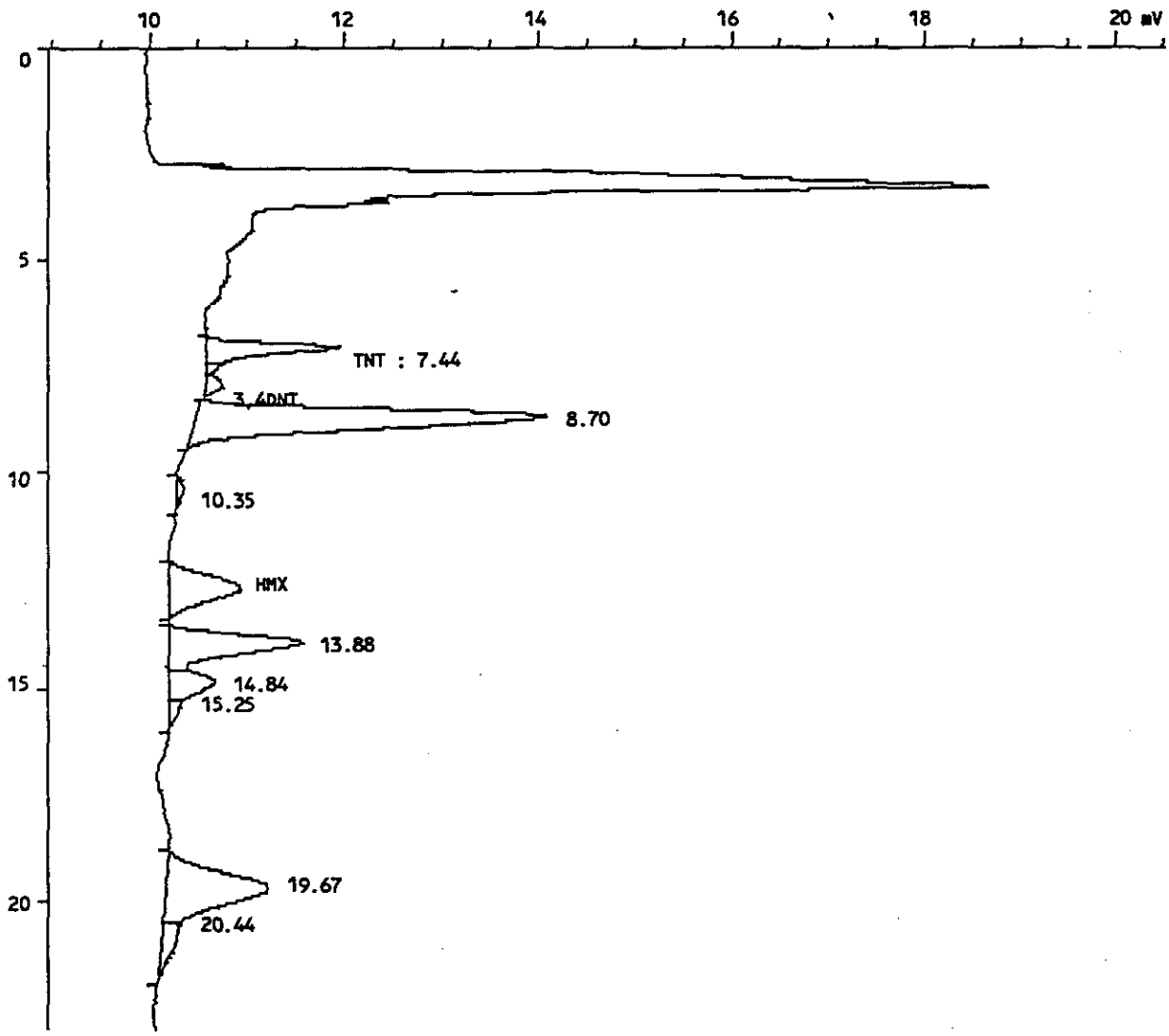
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.768	2820	22386	33213.660	HMX
2	7.013	6069	80362	94543.500	RDX *
3	13.659	119	1920	1767.843	3,4DNT
4	14.405	888	18333	9469.611	TNT * J
Total		9896	123001	138994.609	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,13,1

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:49:49
Reported on 11-May-98 at 14:34:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,13,1

Acquired on 08-May-98 at 12:49:49
Modified on 11-May-82 at 14:26:34
Reported on 11-May-98 at 14:26:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 3

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

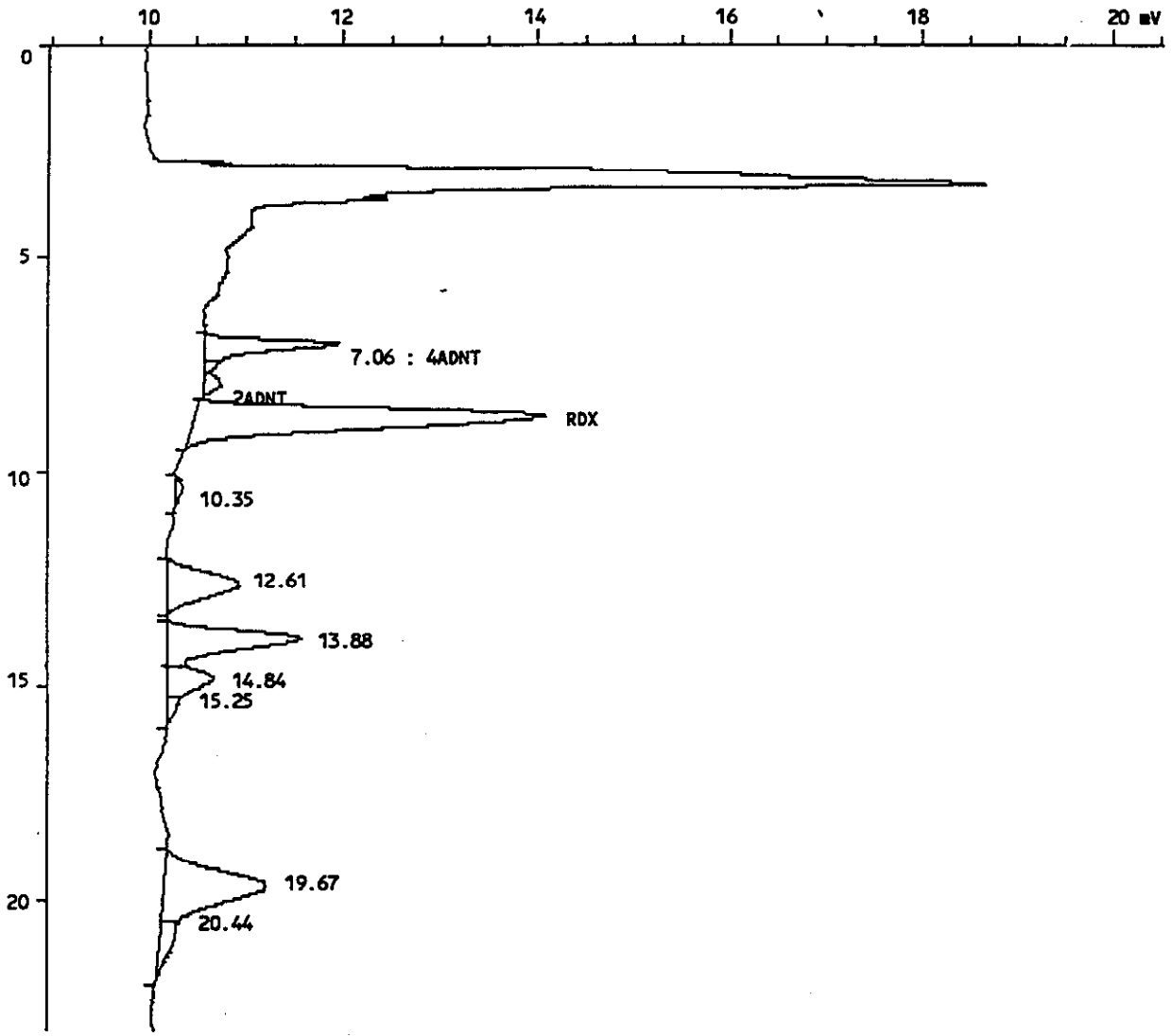
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.056	1367	23514	8600.457	TNT
3	7.984	177	3635	2486.094	3,4DNT
6	12.613	741	29678	25672.764	HMX
Total		2285	56826	36759.313	
Residual		7119	238480	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,13,1

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:49:49
Reported on 11-May-98 at 15:01:47



089

INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,13,1

Acquired on 08-May-98 at 12:49:49
Modified on 11-May-82 at 14:54:34
Reported on 11-May-98 at 14:54:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:1C0, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 3

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.440	157	1718	1076.471	4ADNT
3	7.984	177	3635	1389.931	2ADNT
4	8.699	3591	109340	79520.164	RDX
Total		3925	114693	81986.563	
Residual		5479	180613	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-C2FD
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water) SOIL		Lab Sample ID:	33847.09
Sample Amt: 2g	% Moisture 32.74	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

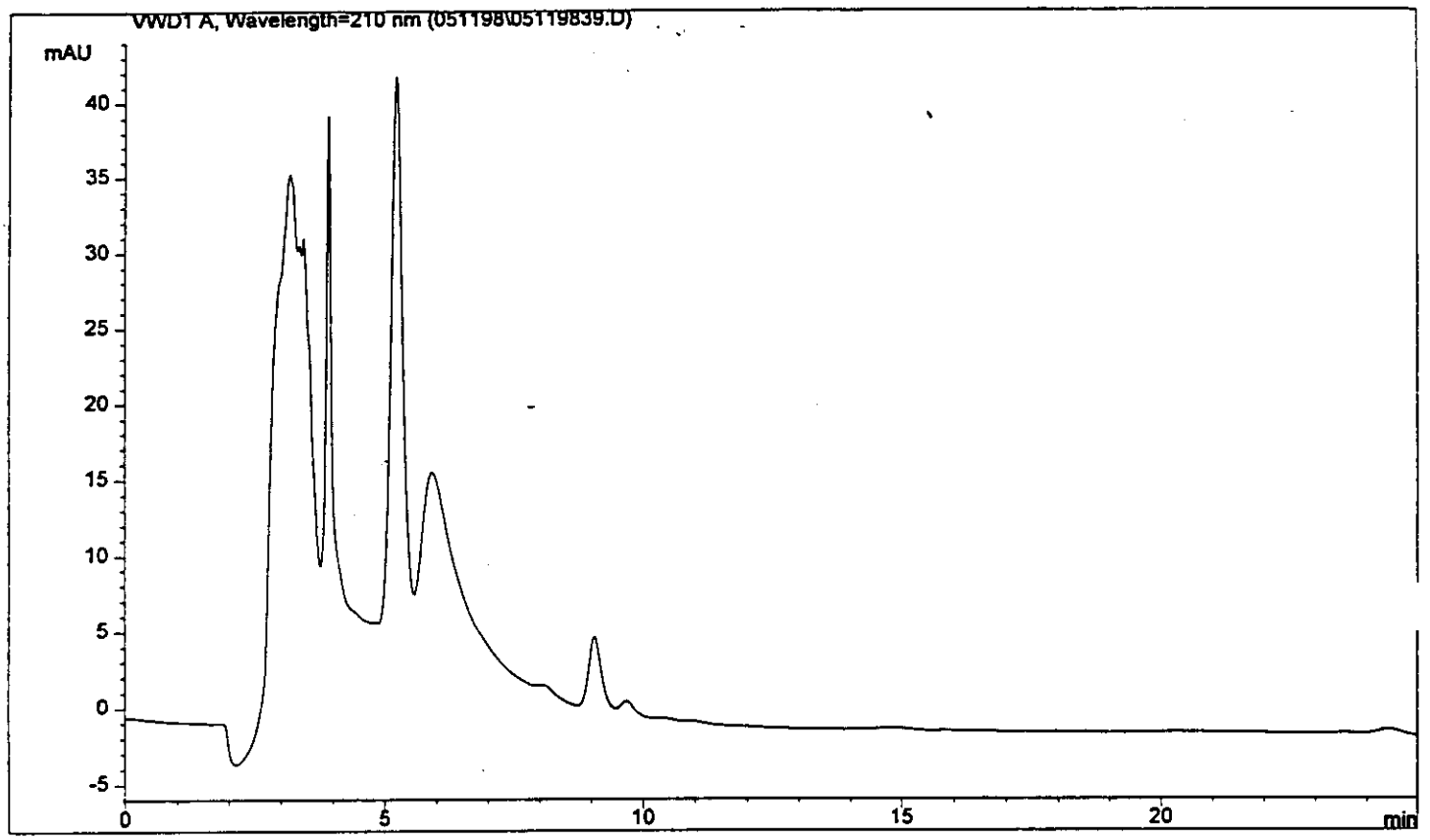
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 39
Sample Name	: 33847.09	Vial No.	: 39
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C3 10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.10

Sample Amt: 2g % Moisture 30.19 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	24700	
121-82-4	RDX	78900	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	2240	P
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

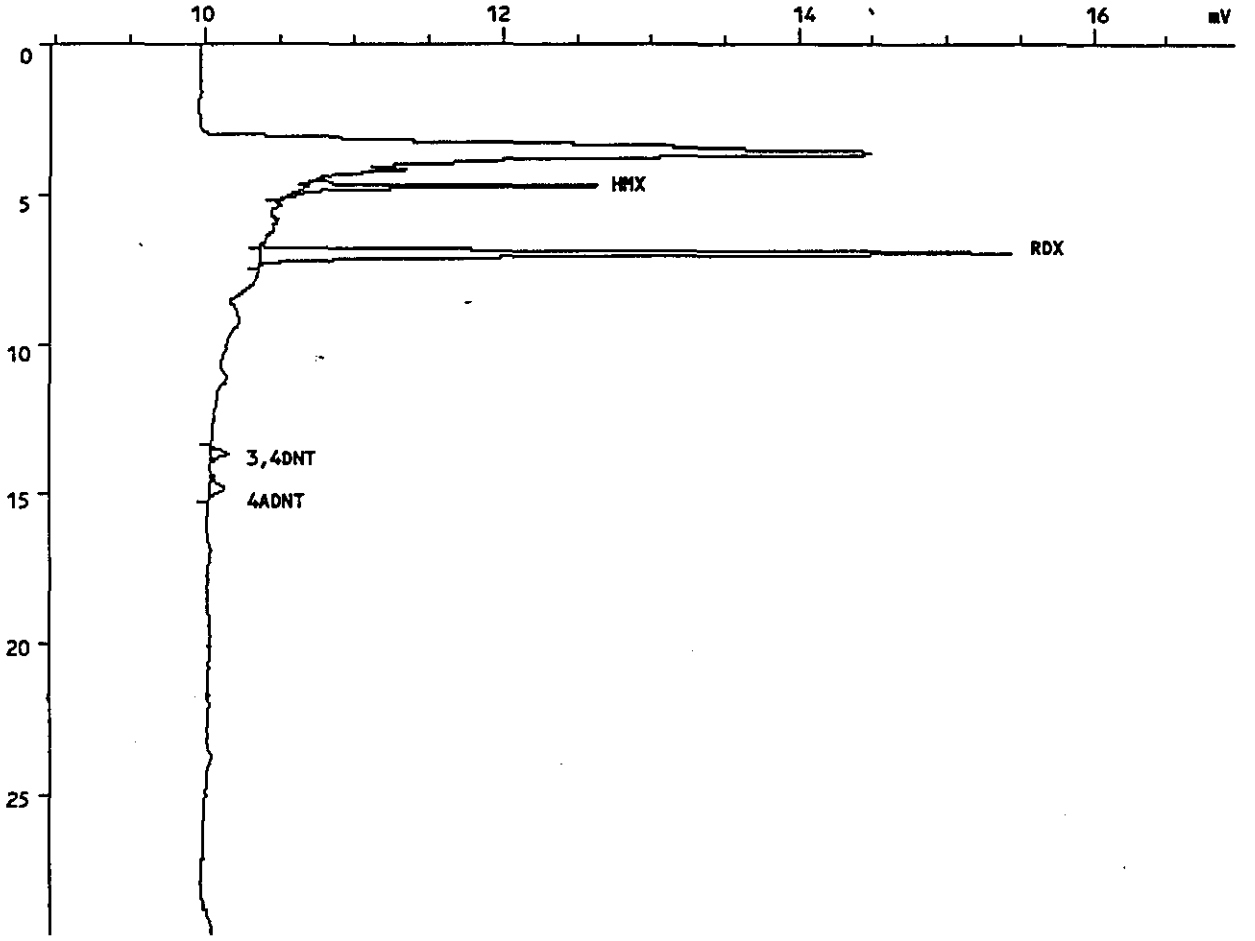
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,16,1

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 05:02:29
Reported on 11-May-98 at 11:59:29



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,16,1

Acquired on 09-May-98 at 05:02:29
Modified on 11-May-82 at 11:47:22
Reported on 11-May-98 at 11:47:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

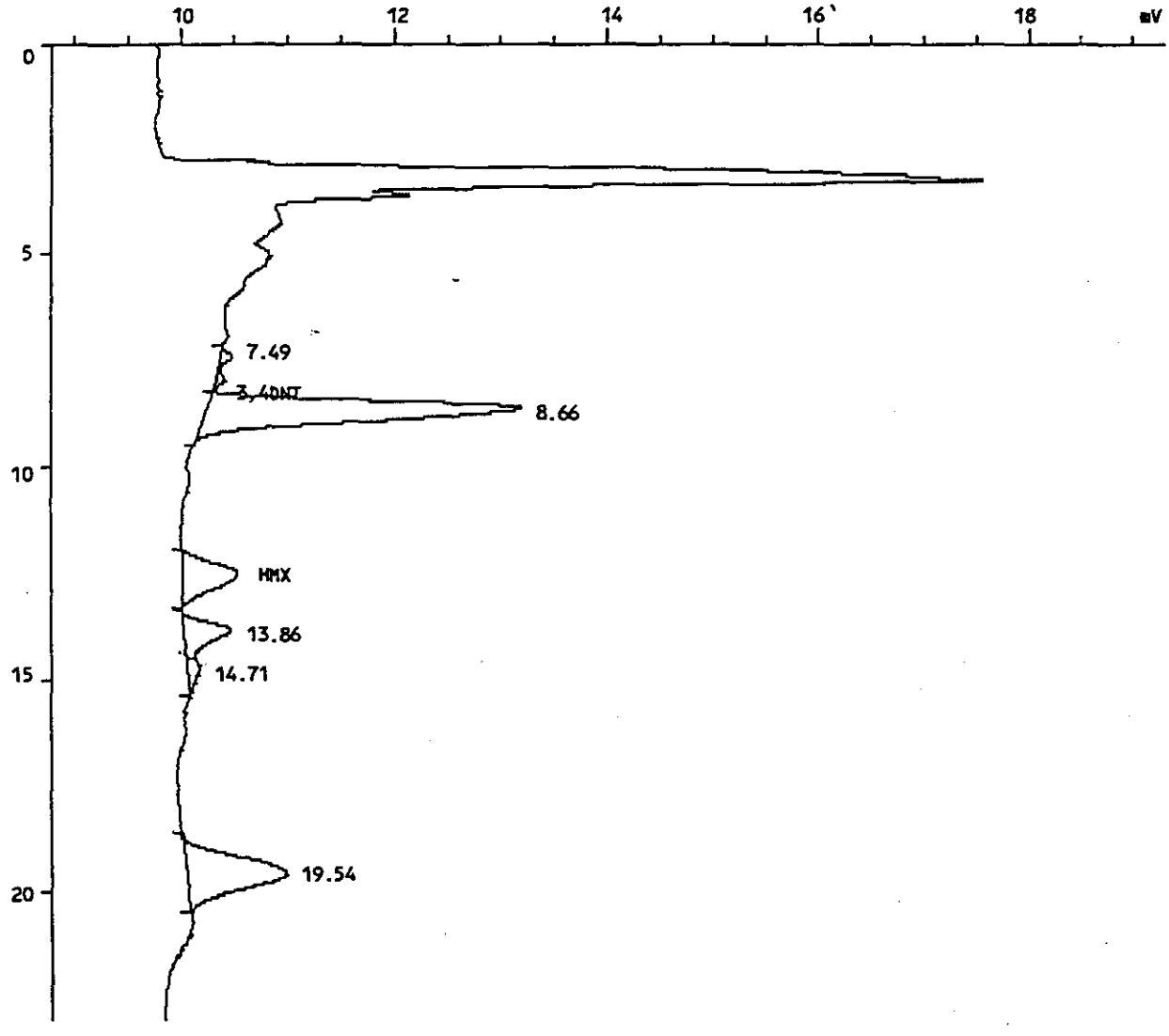
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.757	1982	16673	24737.051	HMX *
2	6.992	5065	67057	78890.945	RDX *
3	13.675	119	2038	1876.755	3,4DNT
4	14.821	110	2946	2235.546	4ADNT * P
Total		7275	88715	107740.305	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,14,1

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 13:34:13
Reported on 11-May-98 at 14:36:21



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,14,1.

Acquired on 08-May-98 at 13:34:13
Modified on 11-May-82 at 14:26:48
Reported on 11-May-98 at 14:26:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 4

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

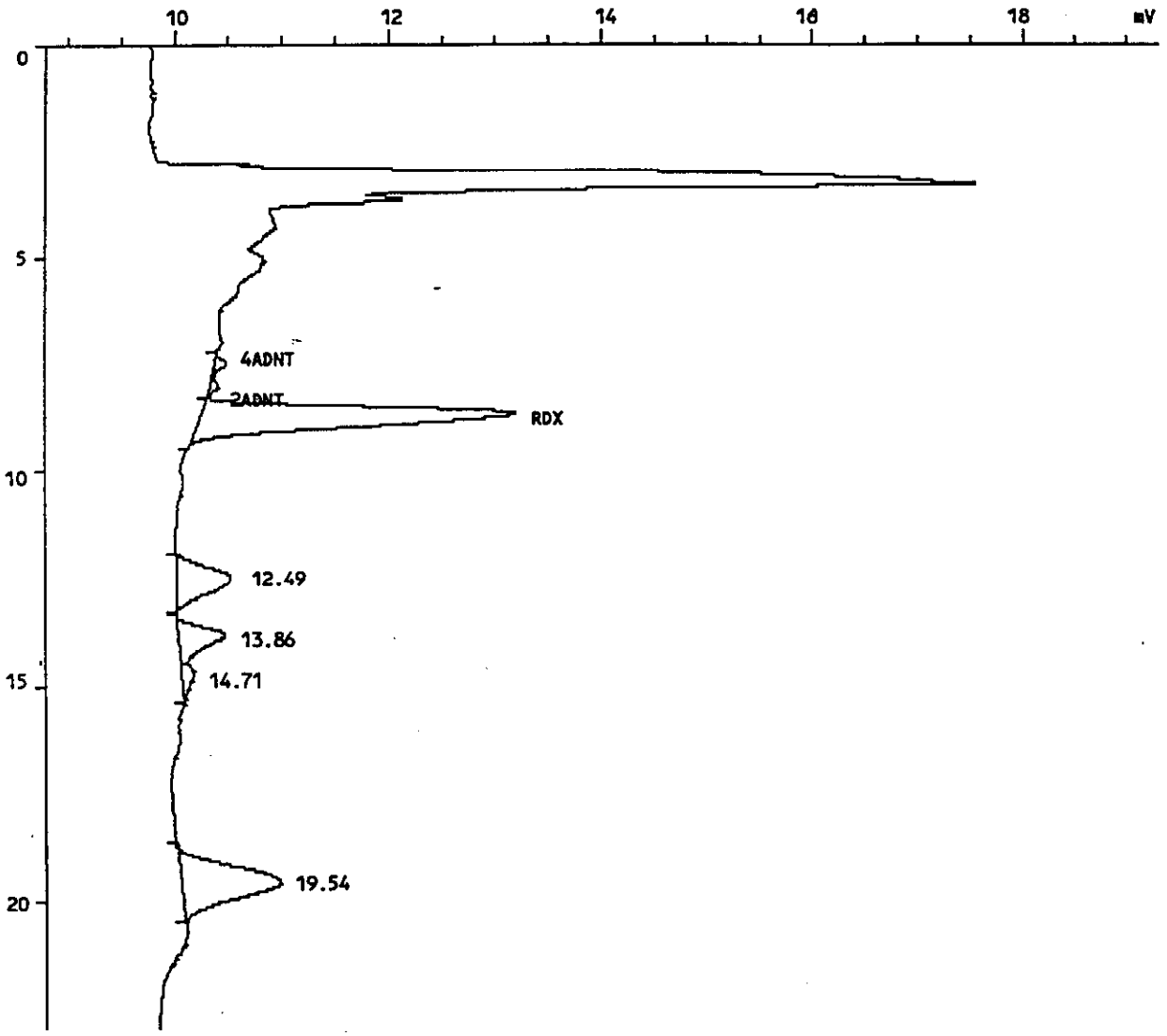
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.005	99	1680	1148.956	3,4DNT
4	12.491	516	21491	18590.607	HMX
Total		615	23171	19739.564	
Residual		4796	171037	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,14,1

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 13:34:13
Reported on 11-May-98 at 15:02:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,14,1

Acquired on 08-May-98 at 13:34:13
Modified on 11-May-82 at 14:54:48
Reported on 11-May-98 at 14:54:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 4

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

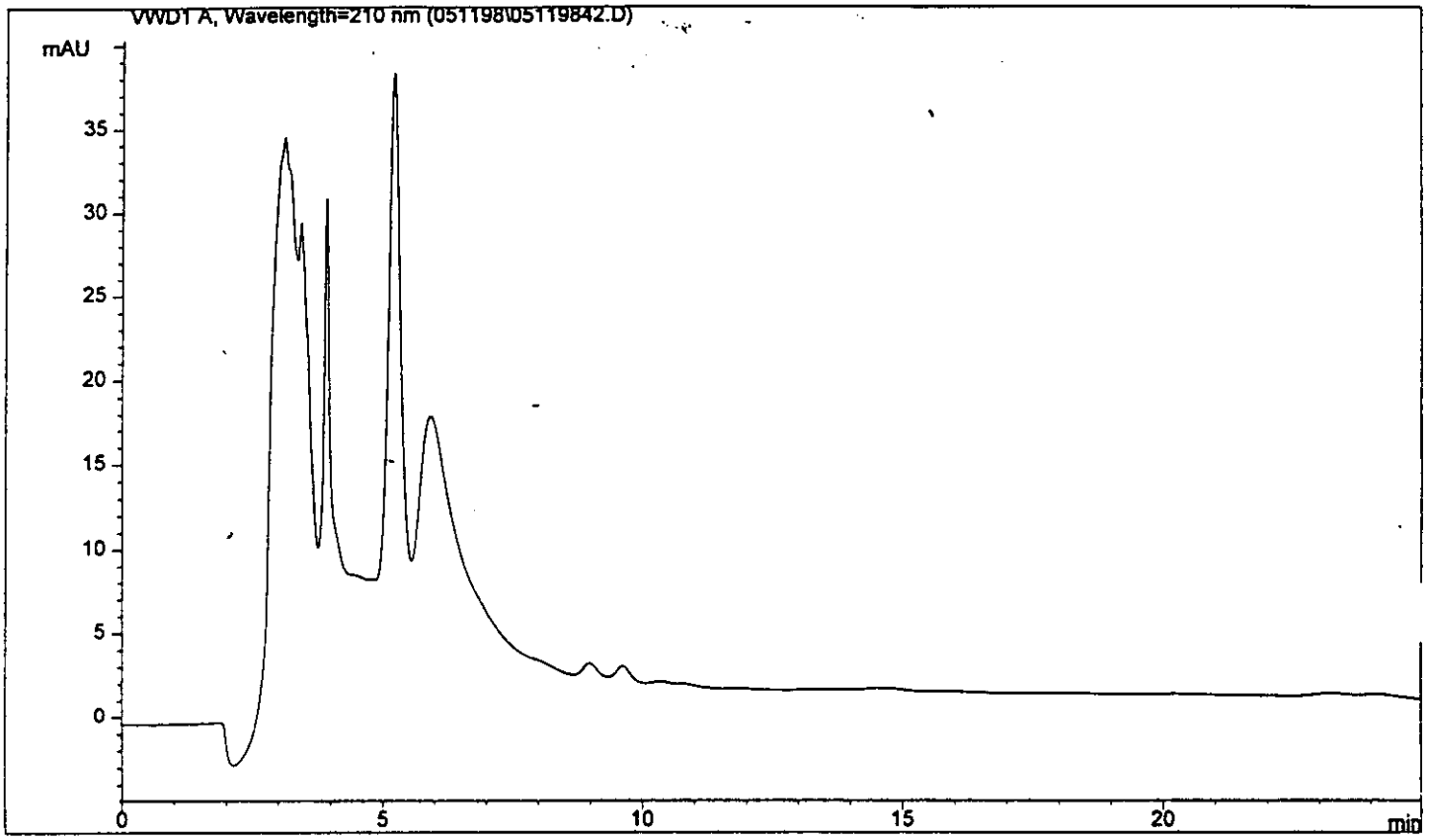
PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.488	125	2064	1293.314	4ADNT
2	8.005	99	1680	642.361	2ADNT
3	8.661	2954	90698	65962.117	RDX
Total		3179	94442	67897.789	
Residual		2012	85593	0.000	

Injection Date	: Tue, 12. May. 1998	Seq Line	: 42
Sample Name	: 33847.10	Vial No.	: 42
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-C3	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.10	
Sample Amt: 2g	% Moisture	30.19	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N		Dilution Factor:	10.00	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-D1 10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.11

Sample Amt: 2g % Moisture 29.44 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	11400	
121-82-4	RDX	16600	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

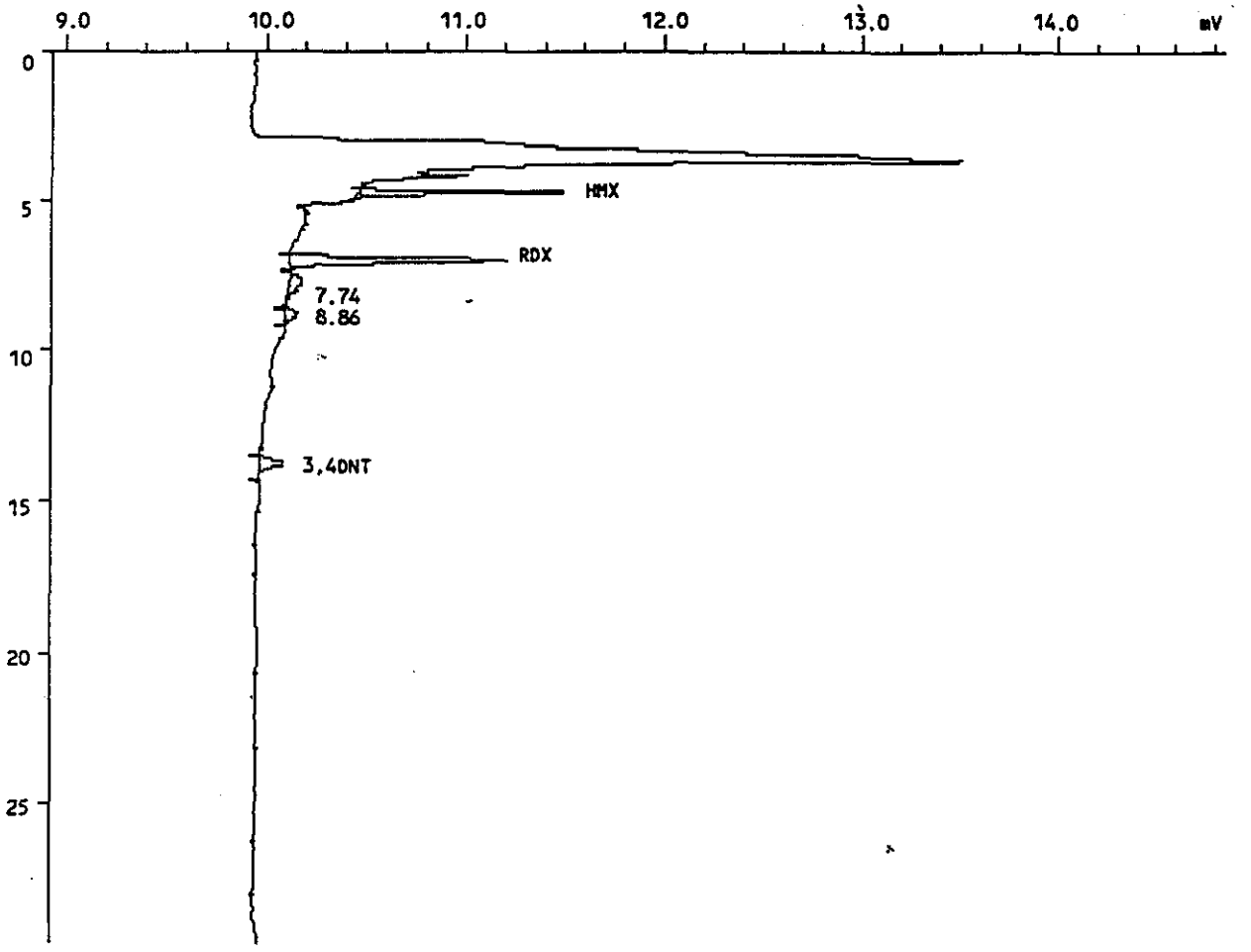
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,17,I

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 05:47:13
Reported on 11-May-98 at 15:48:36



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,17,1

Acquired on 09-May-98 at 05:47:13
Modified on 11-May-82 at 15:47:56
Reported on 11-May-98 at 15:48:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

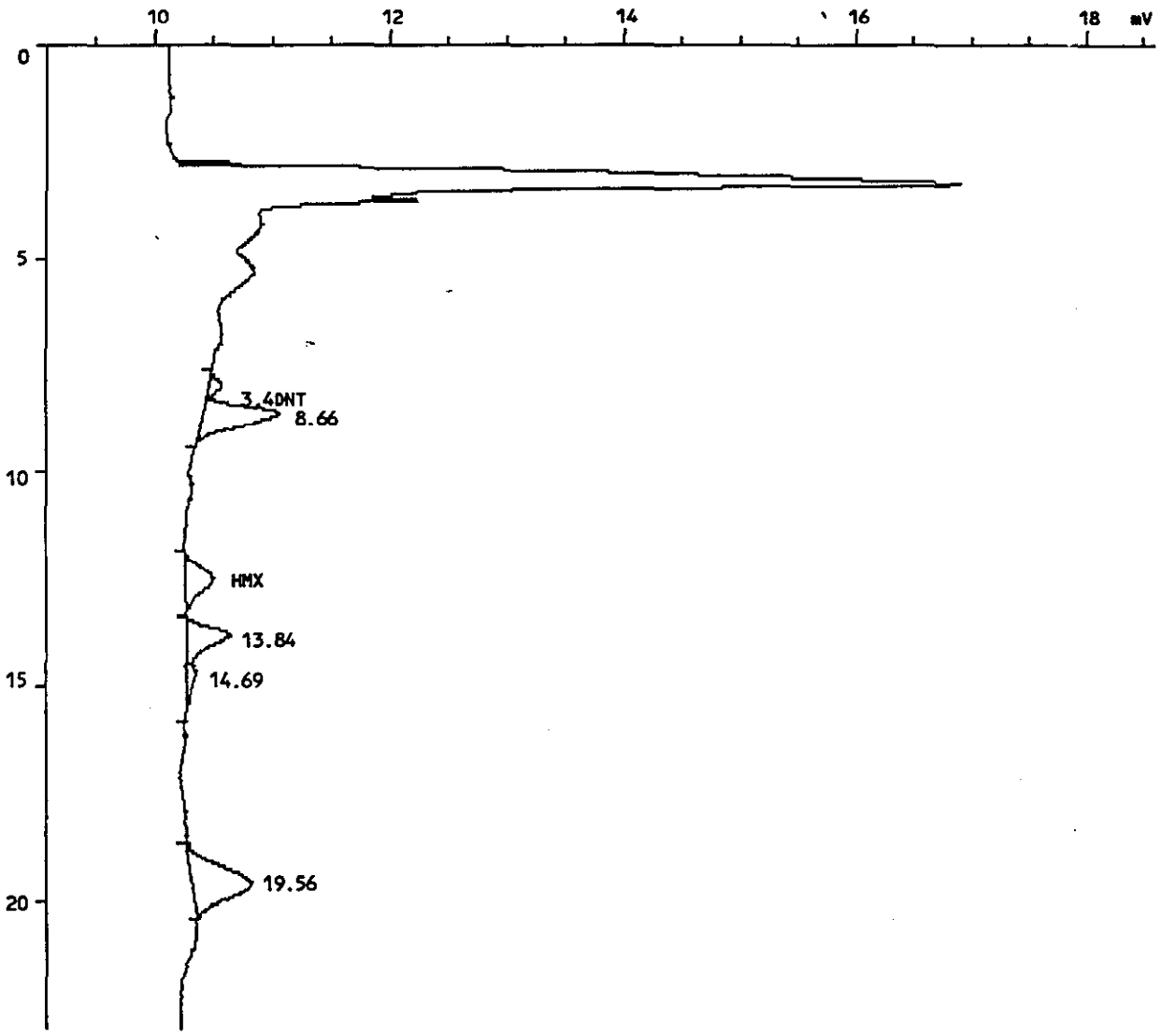
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.768	1037	7722	11456.431	HMX*
2	7.013	1092	14102	16590.836	RDX *
5	13.803	124	2234	2057.159	3,4DNT 165%
Total		2253	24058	30104.426	
Residual		136	3654	4298.747	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,15,1

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 14:18:37
Reported on 11-May-98 at 14:37:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,15,1

Acquired on 08-May-98 at 14:18:37
Modified on 11-May-82 at 14:27:02
Reported on 11-May-98 at 14:26:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 5

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

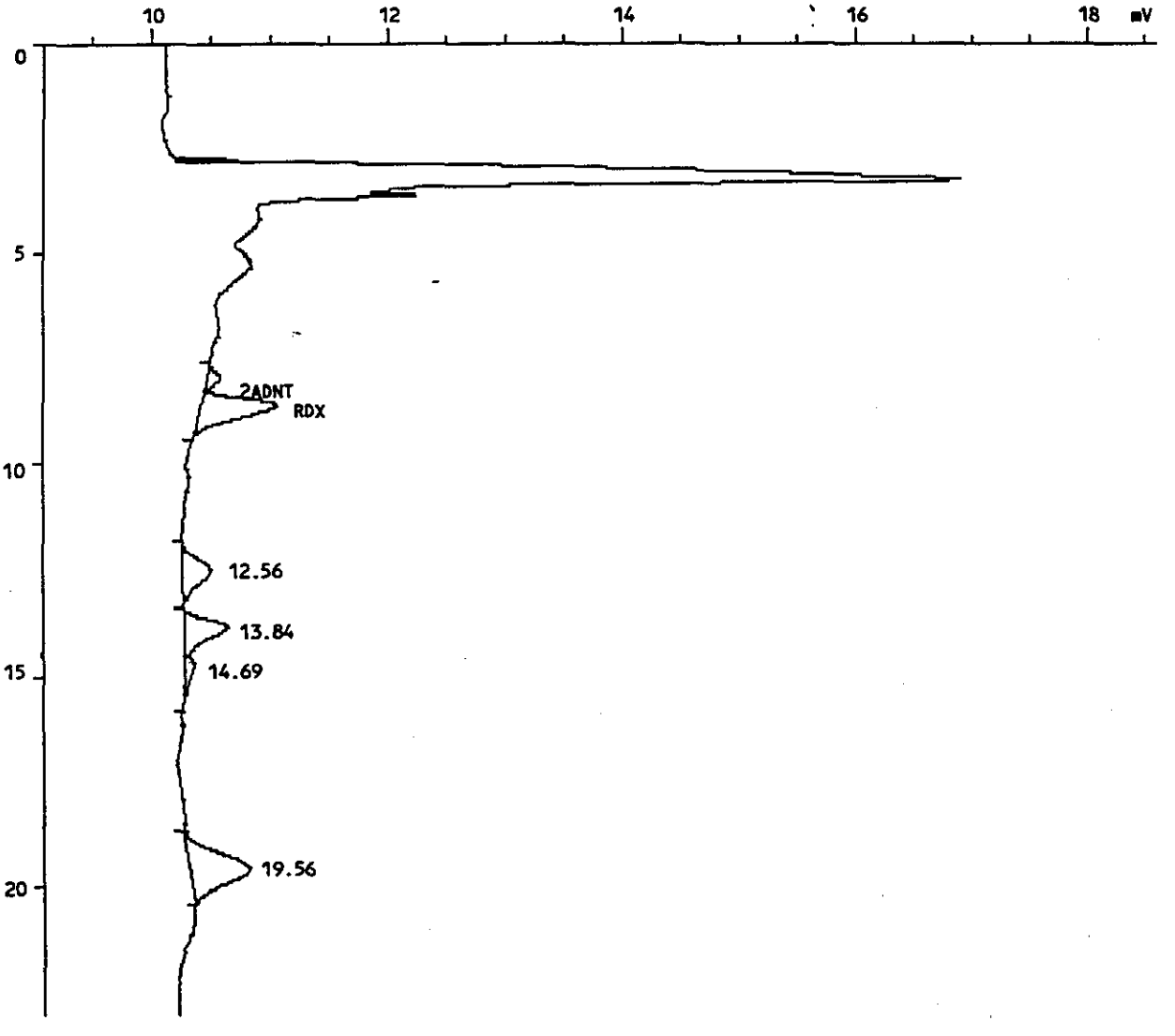
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.995	121	2244	1534.950	3,4DNT
3	12.560	242	9854	8523.852	HMX
Total		363	12098	10058.802	
Residual		1773	70232	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,15,1

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 14:18:37
Reported on 11-May-98 at 15:02:41



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,15,1

Acquired on 08-May-98 at 14:18:37
Modified on 11-May-82 at 14:55:04
Reported on 11-May-98 at 14:54:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 5

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.995	121	2244	858.163	2ADNT
2	8.656	656	20461	14880.564	RDX
Total		777	22705	15738.728	
Residual		1196	48754	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-D1
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.11
Sample Amt: 2g	% Moisture 29.44	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

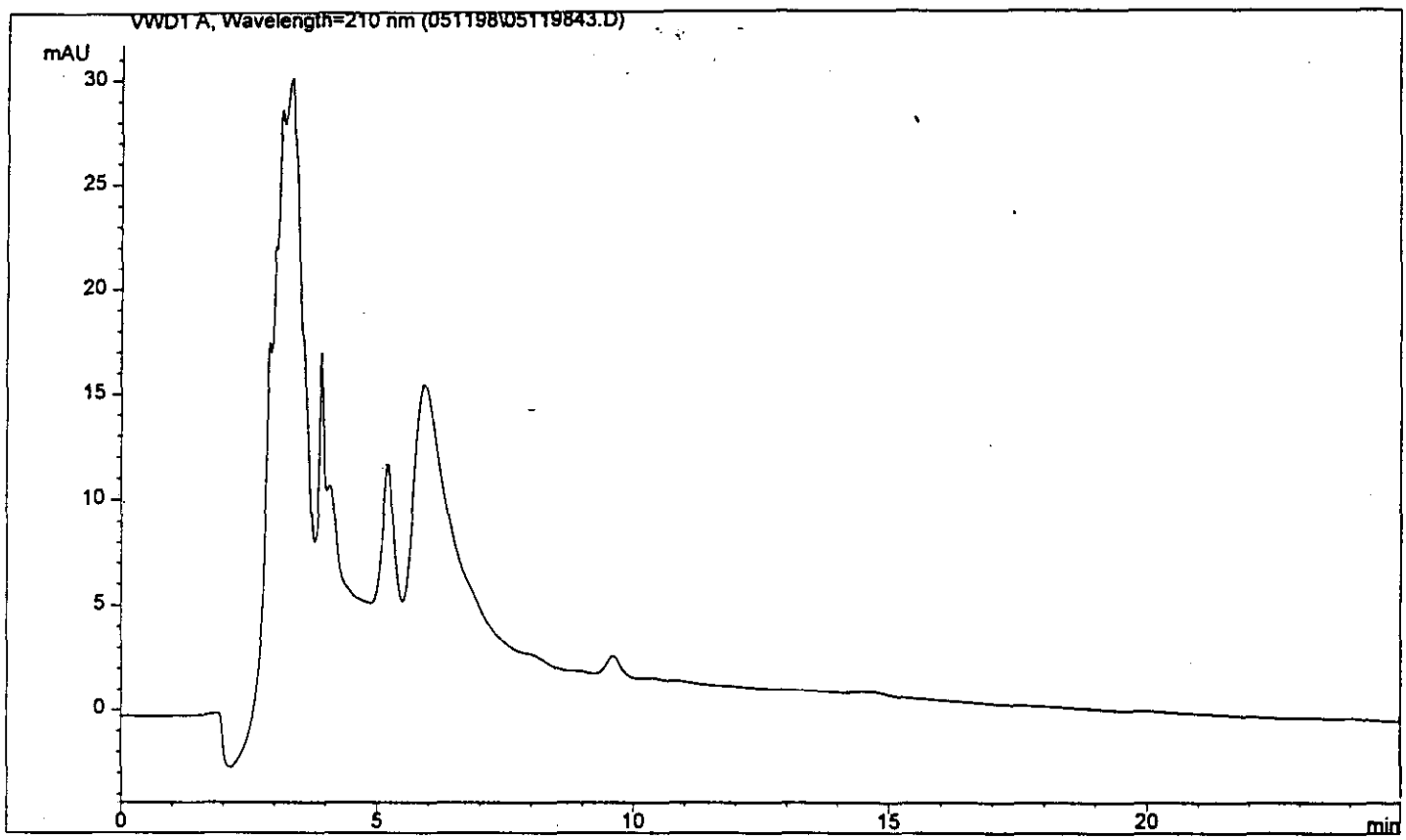
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 43
Sample Name	: 33847.11	Vial No.	: 43
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-D2
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.14

Sample Amt: 2g % Moisture 30.55 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	15700	
121-82-4	RDX	40300	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1330	P
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

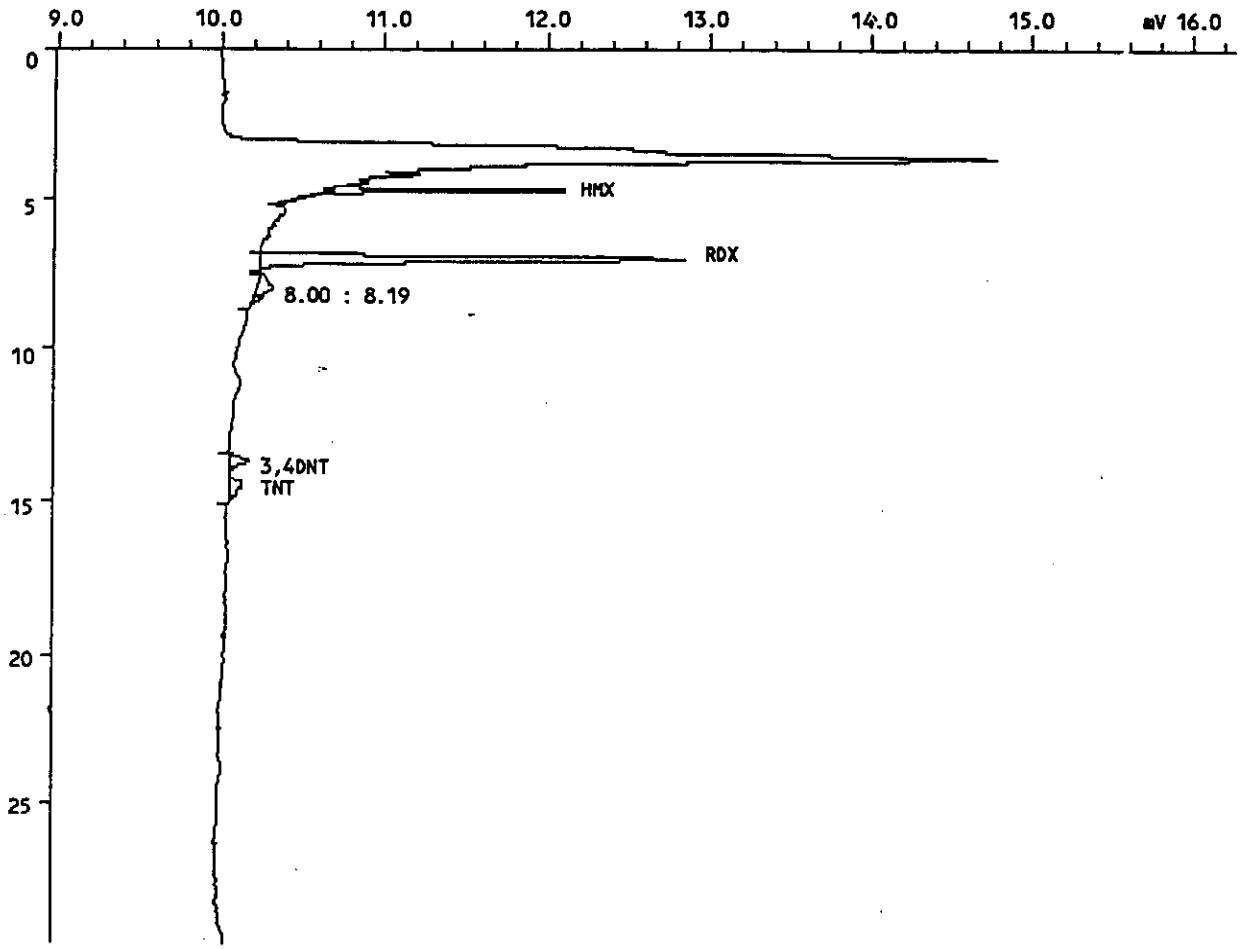
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,20,1

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 08:01:27
Reported on 11-May-98 at 12:01:14



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,20,1

Acquired on 09-May-98 at 08:01:27
Modified on 11-May-82 at 11:48:36
Reported on 11-May-98 at 11:48:34

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

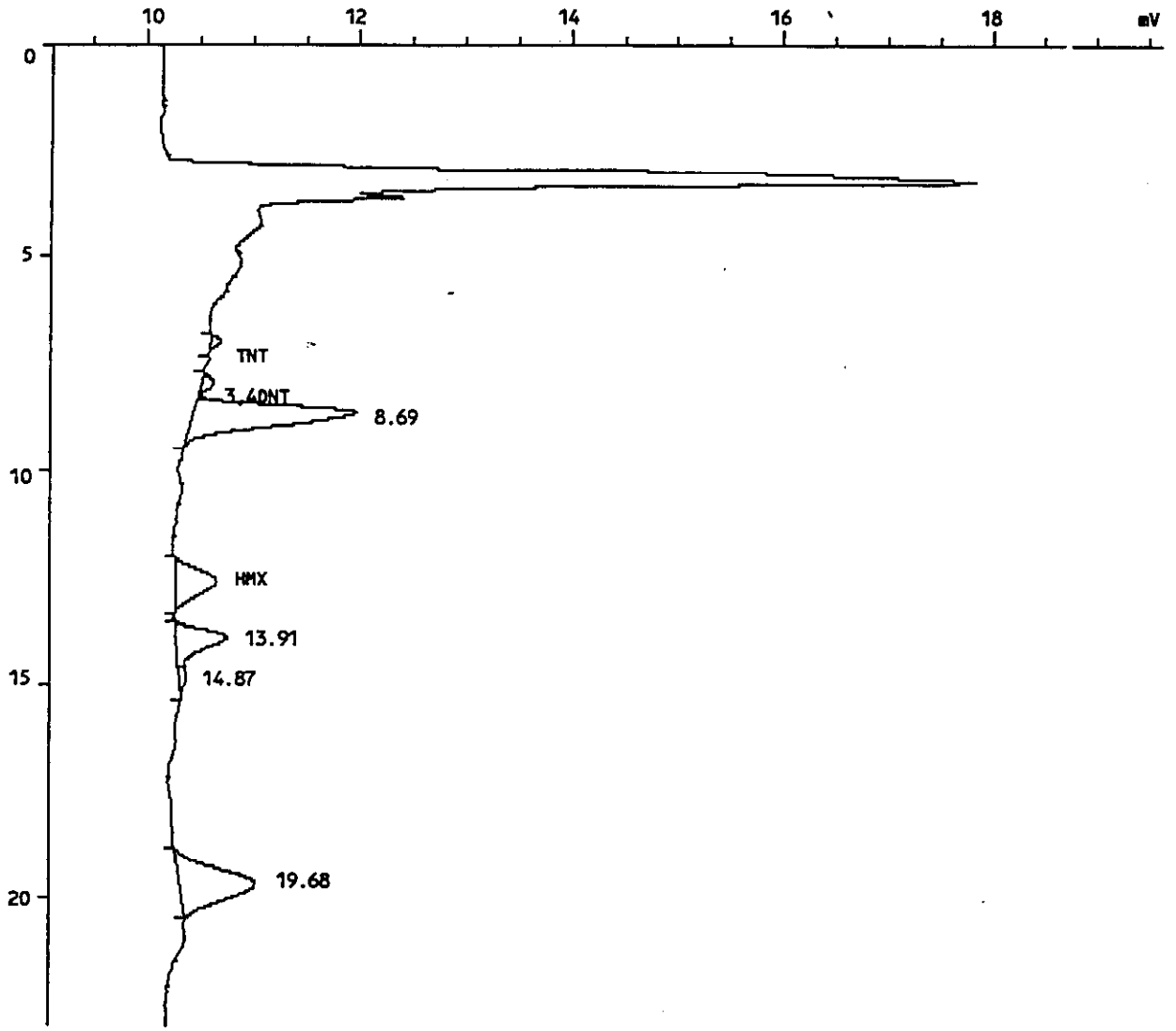
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.752	1488	10595	15719.321	HMX
2	6.997	2612	34239	40281.715	RDX
5	13.696	118	2212	2036.625	3,4DNT 101.25%
6	14.453	90	2573	1329.120	TNT
Total		4309	49619	59366.781	
Residual		183	4058	4774.308	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,16,1

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:03:01
Reported on 11-May-98 at 14:38:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,16,1

Acquired on 08-May-98 at 15:03:01
Modified on 11-May-82 at 14:27:16
Reported on 11-May-98 at 14:27:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 6

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

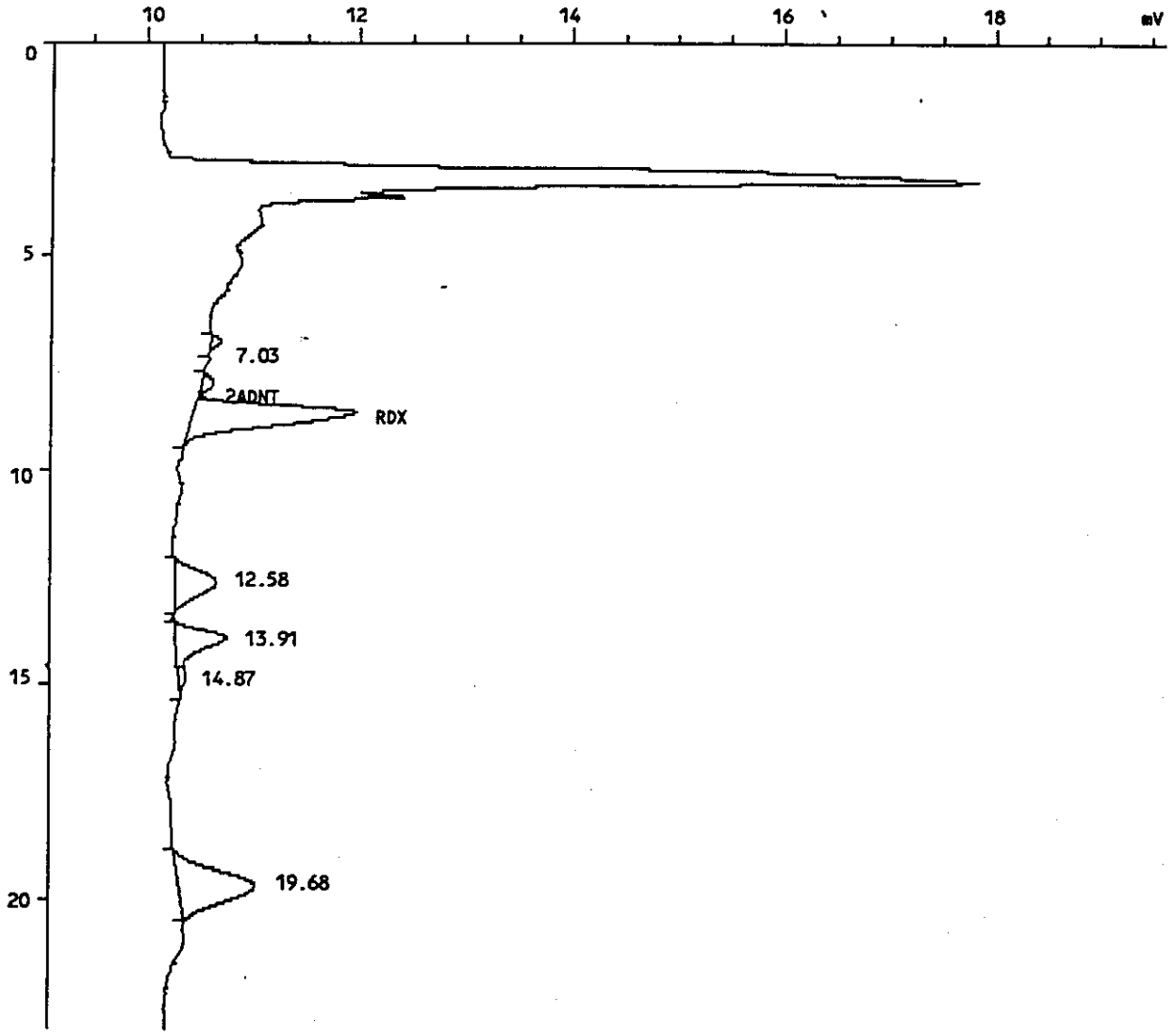
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.035	105	1476	539.886	TNT
2	8.000	128	2508	1715.723	3,4DNT
4	12.581	398	16171	13988.935	HMX
Total		631	20156	16244.543	
Residual		3027	112223	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,16,1

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:03:01
Reported on 11-May-98 at 15:03:07



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,16,1

Acquired on 08-May-98 at 15:03:01
Modified on 11-May-82 at 14:55:16
Reported on 11-May-98 at 14:55:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 6

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.000	128	2508	959.230	2ADNT
3	8.688	1527	47362	34445.059	RDX
Total		1655	49870	35404.289	
Residual		1782	69346	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-D2
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.14
Sample Amt: 2g	% Moisture 30.55	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

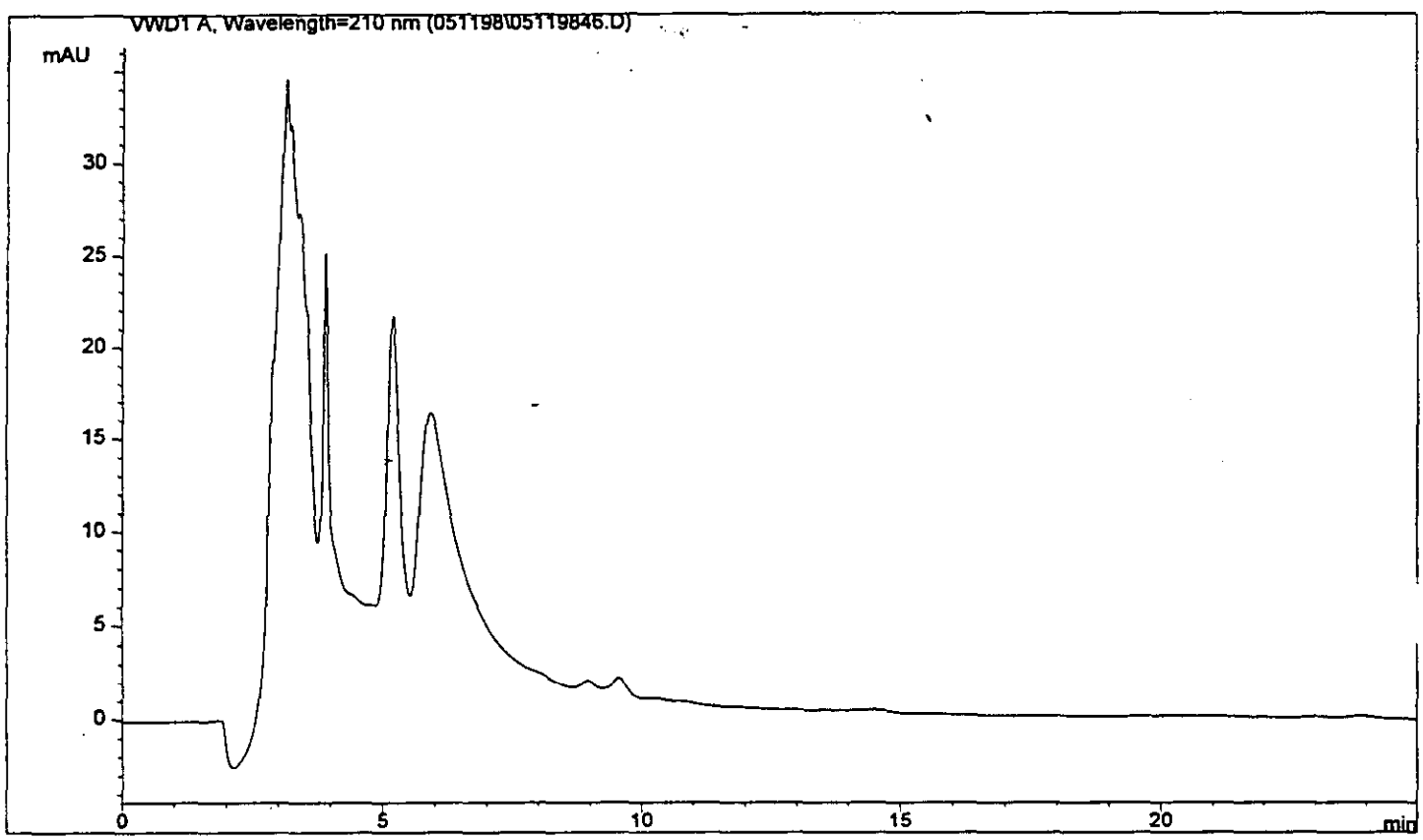
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 46
Sample Name	: 33847.14	Vial No.	: 46
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-D3
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.15

Sample Amt: 2g % Moisture 29.70 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	18900	
121-82-4	RDX	53900	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

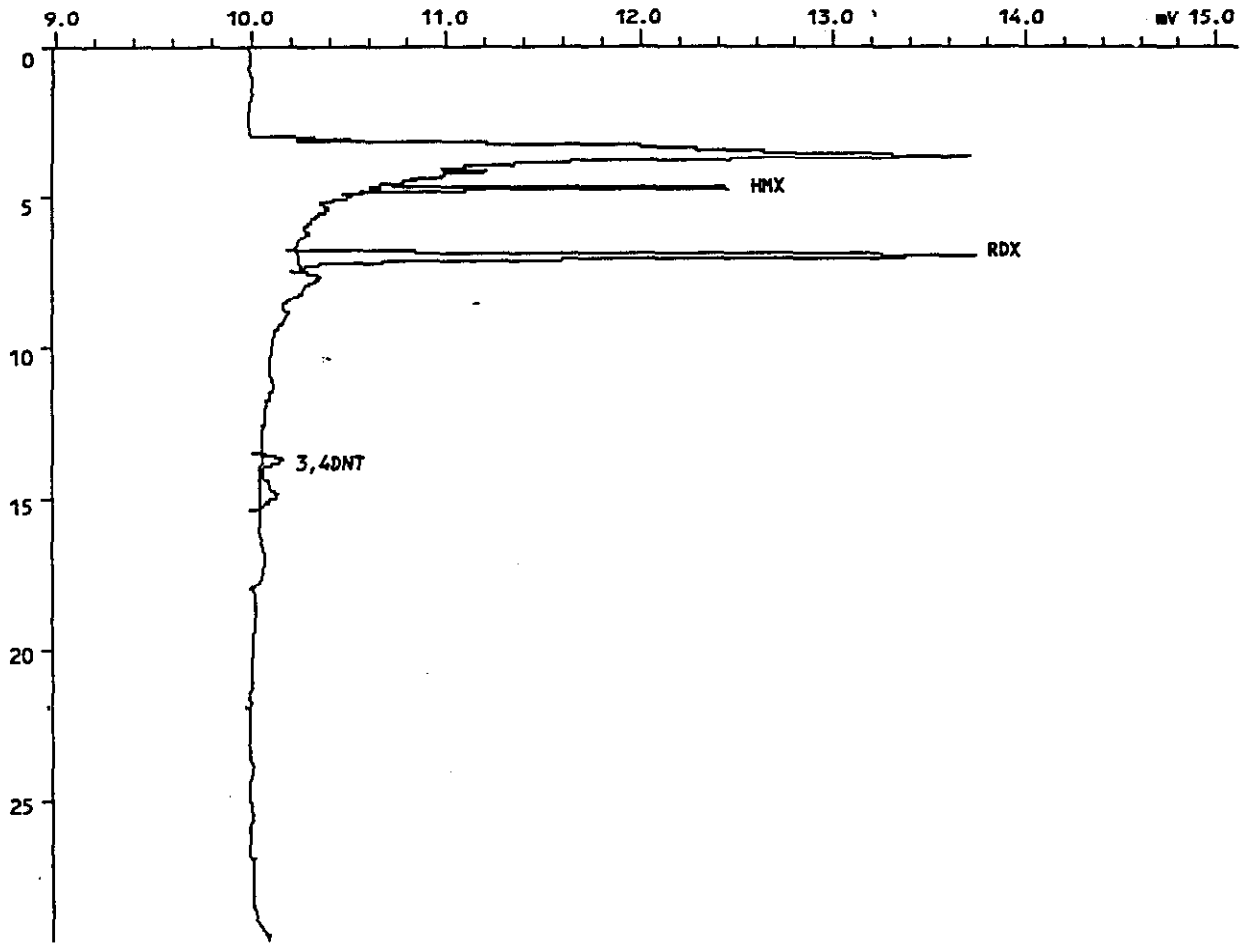
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,21,1

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 08:46:12
Reported on 11-May-98 at 12:01:40



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,21,1

Acquired on 09-May-98 at 08:46:12
Modified on 11-May-82 at 11:48:52
Reported on 11-May-98 at 15:04:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

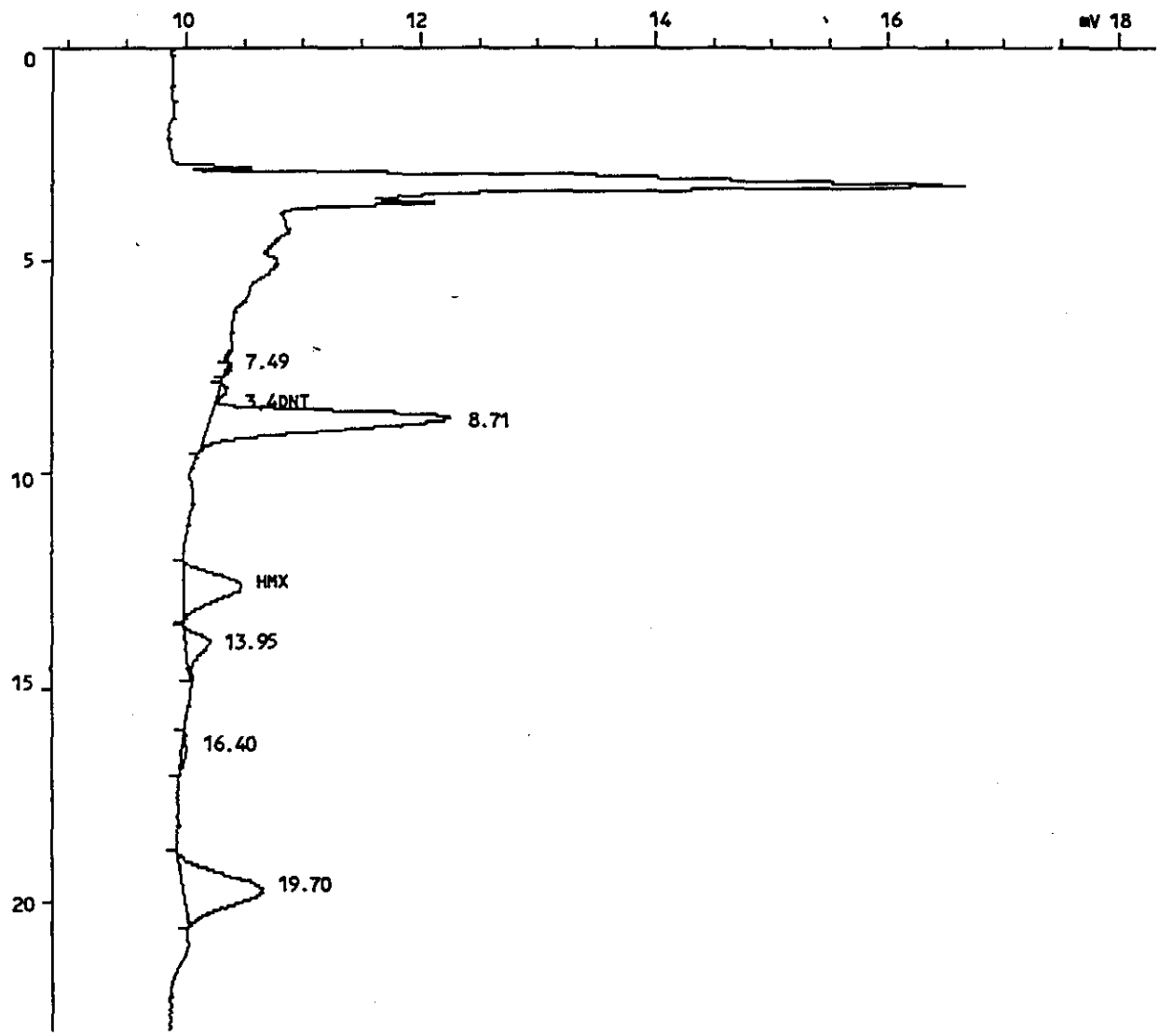
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.768	1855	12755	18924.773	HMX
2	7.008	3500	45815	53900.031	RDX
3	13.776	111	4715	4341.534	3,4DNT 211
Total		5467	63285	77166.336	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,17,1

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:47:25
Reported on 11-May-98 at 14:40:52



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,17,1

Acquired on 08-May-98 at 15:47:25
Modified on 11-May-82 at 14:27:30
Reported on 11-May-98 at 14:27:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 7

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

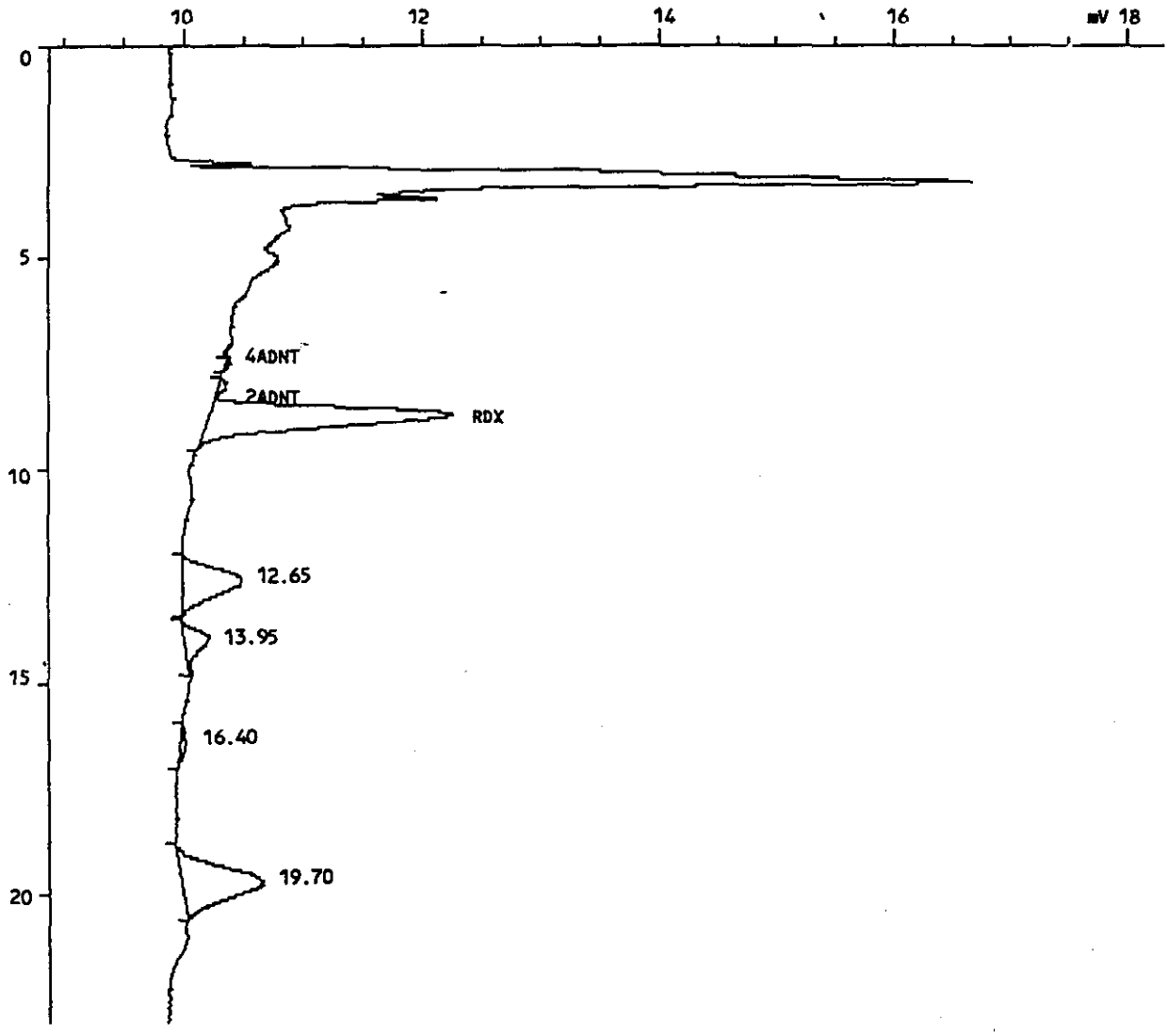
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.059	88	1399	956.572	3,4DNT
4	12.645	510	21770	18831.766	HMX
Total		598	23168	19788.338	
Residual		3261	118669	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,17,1

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:47:25
Reported on 11-May-98 at 15:03:34



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,17,1

Acquired on 08-May-98 at 15:47:25
Modified on 11-May-82 at 14:55:30
Reported on 11-May-98 at 14:55:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 7

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.488	52	574	359.794	4ADNT
2	8.059	88	1399	534.802	2ADNT
3	8.709	2073	64221	46706.098	RDX
Total		2213	66194	47600.695	
Residual		1460	63491	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

			EPA SAMPLE NO:
Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-D3
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.15
Sample Amt: 2g	% Moisture 29.7	Date Received:	05/05/98
Extraction Volume:	*10ml*	*Date Extracted:*	*05/05/98*
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

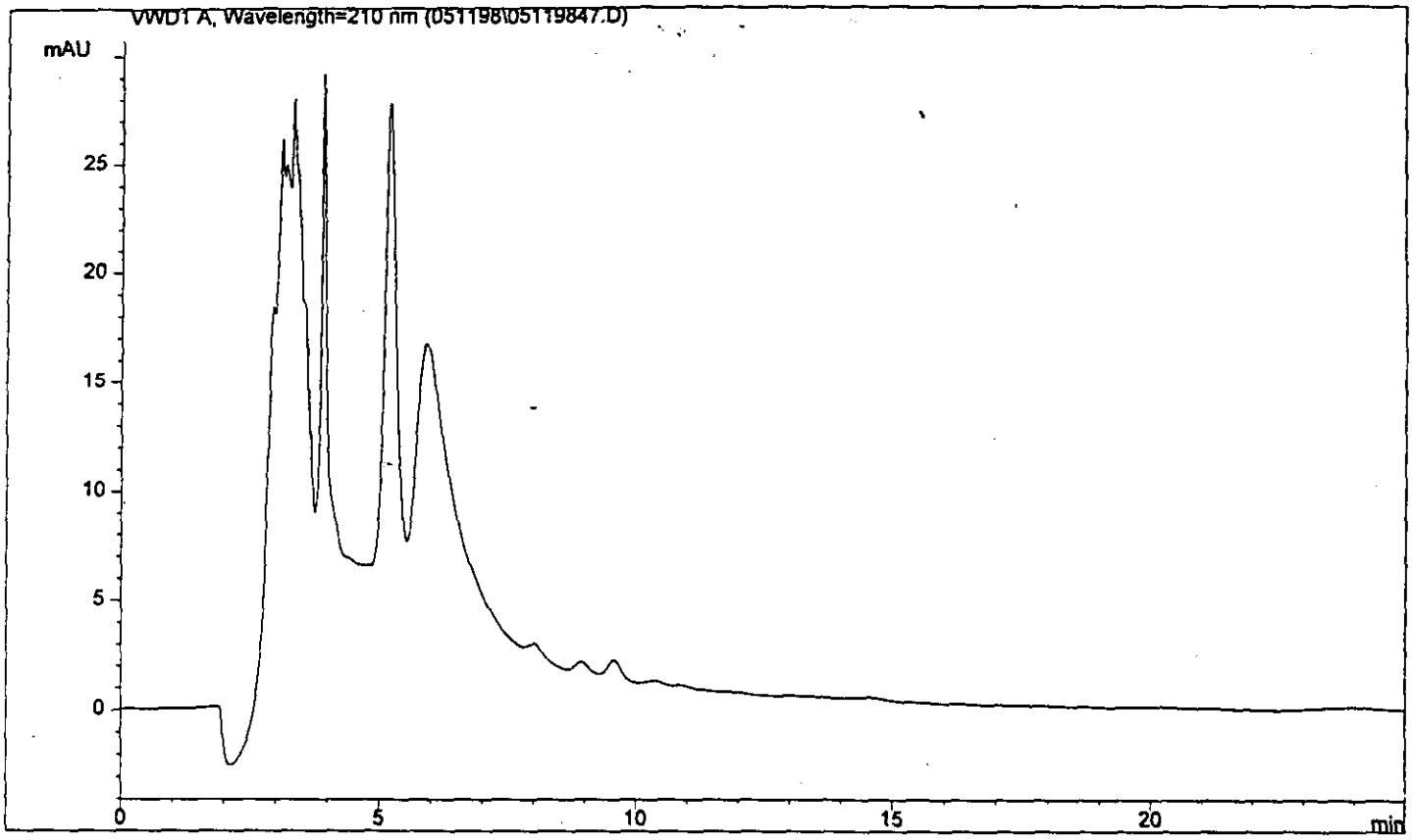
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 47
Sample Name	: 33847.15	Vial No.	: 47
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



==========
Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

==========
*** End of Report ***

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MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

BID-011

720 Park Blvd., PO Box 73
Boise, Idaho 83729
(208) 386-5000

Project No.: 4329-0009-007-35

Project Name: NSWC Crane Biofacility

Samplers: (Signature) Ryan Erwin

Sampler: (Print) Ryan Erwin

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	8330 Explosives	Remarks
Compost	CS A SL1	5/2/98	659	BIO N-30% DS-A1	✓		✓	FD At Ca
	CS A SL2		710	BIO N-30% DS-A2	✓		✓	
	CS A SL3		643	BIO-N-30% DS-A3	✓		✓	
	CS B SL1		732	BIO-N-30% DS-B1	✓		✓	
	CS B SL2		743	BIO-N-30% DS-B2	✓		✓	
	CS B SL3		719	BIO-N-30% DS-B3	✓		✓	
	CS C SL1		815	BIO-N-30% DS-C1	✓		✓	
	CS C SL2		806	BIO-N-30% DS-C2	✓		✓	
	CS C SL2		806	BIO-N-30% DS-C2-FD	✓		✓	
	CS C SL3		753	BIO-N-30% DS-C3	✓		✓	
	CS D SL1		831	BIO-N-30% DS-D1	✓		✓	
	CS D SL2		837	BIO-N-30% DS-D2	✓		✓	
	CS D SL3		821	BIO-N-30% DS-D3	✓		✓	
								South West Labs

Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company	Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company
Ryan Erwin	5/4/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: C. Miller	Date/Time 5-5-98 9:45	Total No. Samples This Shipping Container / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

APPENDIX M
CALIBRATION SUMMARIES FOR LAB ANALYSIS OF DAY 5 SAMPLES

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Calibration Summary for Analysis of Windrow N-30% Day 0 . . . . . 30 pages

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1

Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	3070	303	86593	341	228418	346	340786	344	463335	351
RDX	1396	331	45744	433	124796	452	188079	457	248447	452
TNB	3050	1010	65041	860	182698	927	272939	922	363472	923
DNB	1858	1147	47508	1170	127863	1211	191740	1211	258819	1221
TETRYL	1982	533	44411	478	117462	485	171726	472	243575	503
NB	2746	832	66098	802	178122	832	265900	826	354217	824
3,4-DNT	2743	540	67977	536	182412	553	269296	543	358172	543
TNT	2636	976	63145	934	172246	979	256164	970	345817	982
4ADNT	1791	759	37100	627	98571	640	148025	638	194088	630
2ADNT	2244	951	53734	908	146055	948	216916	935	288500	937
26DNT	2242	578	57637	593	156264	615	234025	616	311263	615
24DNT	2669	1131	71439	1207	193842	1259	290768	1253	387419	1258
2NT	1916	567	44975	532	120373	547	180571	547	240624	547
4NT	1361	403	38137	451	102223	465	154018	467	205469	467
T	1722	535	45121	561	121601	579	183845	585	244007	584

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1

Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	337	5.78	0.99990	348	0.000
RDX	425	12.56	0.99994	453	0.000
TNB	928	5.74	0.99990	922	0.000
DNB	1192	2.67	0.99996	1215	0.000
TETRYL	494	4.99	0.99896	491	0.000
NB	823	1.50	0.99996	825	0.000
3,4-DNT	543	1.14	0.99994	544	0.000
TNT	968	2.03	0.99993	977	0.000
DNT	659	8.54	0.99994	634	0.000
ADNT	936	1.83	0.99995	937	0.000
26DNT	603	2.86	0.99998	615	0.000
24DNT	1222	4.51	0.99997	1256	0.000
2NT	548	2.28	0.99998	547	0.000
4NT	450	6.10	0.99998	466	0.000
3NT	569	3.75	0.99997	583	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
ontinuing Cal Date : 05/08/1998
ontinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507A,14
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	229953	348	337	3.39	348	0.09
RDX	124511	451	425	6.18	453	0.39
TNB	183268	930	928	0.20	922	0.91
DNB	131003	1241	1192	4.09	1215	2.07
TETRYL	120634	498	494	0.88	491	1.50
NB	176942	827	823	0.44	825	0.21
3,4-DNT	178717	542	543	0.24	544	0.45
TNT	169034	960	968	0.82	977	1.73
4ADNT	101136	657	659	0.31	634	3.61
2ADNT	143365	931	936	0.51	937	0.67
26DNT	156086	615	603	1.84	615	0.07
24DNT	191569	1244	1222	1.84	1256	0.93
2NT	119804	545	548	0.62	547	0.39
4NT	101864	463	450	2.81	466	0.70
3NT	122477	583	569	2.53	583	0.00

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
ontinuing Cal Date : 05/09/1998
ontinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	228215	346	337	2.61	348	0.67
RDX	123552	448	425	5.36	453	1.16
TNB	181231	920	928	0.92	922	0.21
DNB	128876	1220	1192	2.40	1215	0.41
TETRYL	136918	566	494	14.50	491	15.20
NB	184501	862	823	4.73	825	4.49
3,4-DNT	186326	565	543	4.00	544	3.79
TNT	170667	970	968	0.14	977	0.78
4ADNT	104025	675	659	2.54	634	6.57
2ADNT	147126	955	936	2.10	937	1.94
26DNT	157948	622	603	3.06	615	1.12
24DNT	193059	1254	1222	2.63	1256	0.16
2NT	120256	547	548	0.24	547	0.02
4NT	102594	466	450	3.55	466	0.01
3NT	120331	573	569	0.73	583	1.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 4
ontinuing Cal Date : 05/09/1998
ontinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	229081	347	337	2.99	348	0.29
RDX	125006	453	425	6.60	453	0.01
TNB	183359	931	928	0.25	922	0.96
DNB	133044	1260	1192	5.71	1215	3.66
TETRYL	116442	481	494	2.63	491	2.03
NB	177880	831	823	0.97	825	0.74
3,4-DNT	180458	547	543	0.73	544	0.52
TNT	167126	950	968	1.94	977	2.84
4ADNT	101964	662	659	0.51	634	4.45
2ADNT	143532	932	936	0.39	937	0.55
26DNT	155952	614	603	1.75	615	0.16
24DNT	191408	1243	1222	1.75	1256	1.01
2NT	121220	551	548	0.56	547	0.78
4NT	103340	470	450	4.30	466	0.74
3NT	122184	582	569	2.28	583	0.24

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

5EX0507
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-06
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.76	4.74	4.75	4.76	4.77
RDX	7.03	6.95	6.97	7.02	7.03
TNB	9.52	9.41	9.42	9.48	9.50
DNB	11.52	11.44	11.44	11.49	11.55
TETRYL	11.94	11.81	11.79	11.87	11.94
NB	13.07	12.99	12.96	13.03	13.10
3,4-DNT	13.90	13.77	13.72	13.82	13.90
TNT	14.62	14.52	14.49	14.58	14.66
4ADNT	15.05	14.89	14.83	14.94	15.02
2ADNT	15.82	15.71	15.66	15.77	15.86
26DNT	16.98	16.85	16.78	16.90	17.01
24DNT	17.59	17.47	17.40	17.52	17.63
2NT	20.66	20.49	20.36	20.51	20.65
4NT	22.05	21.88	21.73	21.88	22.04
3NT	23.70	23.55	23.40	23.52	23.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	4.74	4.80	4.73	4.77	4.76
RDX	6.97	7.06	6.96	7.04	7.02
TNB	9.38	9.54	9.38	9.50	9.48
DNB	11.36	11.60	11.39	11.54	11.51
TETRYL	11.69	11.98	11.73	11.89	11.82
NB	12.86	13.14	12.89	13.08	13.04
3,4-DNT	13.62	13.95	13.64	13.87	13.81
TNT	14.42	14.69	14.41	14.60	14.56
4ADNT	14.80	15.09	14.80	15.01	14.94
2ADNT	15.65	15.91	15.63	15.82	15.76
26DNT	16.78	17.03	16.72	16.96	16.89
24DNT	17.41	17.65	17.35	17.59	17.52
2NT	20.42	20.69	20.32	20.65	20.53
4NT	21.81	22.11	21.73	22.05	21.93
3NT	23.46	23.76	23.38	23.70	23.58

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.76	0.020	0.060	4.70 - 4.82
RDX	7.01	0.039	0.116	6.89 - 7.12
NB	9.46	0.058	0.175	9.29 - 9.64
DNB	11.48	0.075	0.225	11.26 - 11.71
TETRYL	11.85	0.094	0.282	11.56 - 12.13
NB	13.02	0.090	0.271	12.75 - 13.29
3,4-DNT	13.80	0.113	0.338	13.46 - 14.14
TNT	14.55	0.095	0.285	14.27 - 14.84

DEX0507
page 2

4ADNT	14.94	0.107	0.320	14.62 - 15.26
2ADNT	15.76	0.096	0.288	15.47 - 16.05
26DNT	16.89	0.106	0.318	16.57 - 17.21
24DNT	17.51	0.104	0.312	17.20 - 17.82
2NT	20.53	0.132	0.397	20.13 - 20.92
4NT	21.92	0.139	0.417	21.50 - 22.34
3NT	23.57	0.133	0.400	23.17 - 23.97

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	11774	2560	61483	2673	147926	2573	293362	2551	609551	2650
26DNT	9203	1841	46266	1851	116327	1861	236585	1893	461912	1848
TNT	12139	2639	62673	2725	158324	2753	320719	2789	635846	2765
3,4DNT	9546	1364	49176	1405	123574	1498	251297	1523	500959	1518
TETRYL	10982	1220	61836	1374	113142	1006	220482	980	563813	1253
HMX	8061	1152	40242	1150	100568	1149	205329	1173	404648	1156

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	10361	2072	47515	1901	119475	1912	253954	2032	497380	1990
DNB	15729	3932	73645	3682	186650	3733	386757	3868	782901	3915
24DNT	16713	3343	81074	3243	204192	3267	420522	3364	841807	3367
4ADNT	16141	1754	77826	1692	192571	1675	384276	1671	723604	1573
2ADNT	26527	2653	130686	2614	335017	2680	686424	2746	1410899	2822
RDX	7609	1522	34589	1384	86243	1380	178769	1430	379035	1516

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

	Inj 1
Injection File Name Level 1 :	3CN0507,4
Injection File Name Level 2 :	3CN0507,5
Injection File Name Level 3 :	3CN0507,6
Injection File Name Level 4 :	3CN0507,7
Injection File Name Level 5 :	3CN0507,8

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2601	2.16	0.99979	2629	0.000
26DNT	1859	1.10	0.99991	1857	0.000
TNT	2734	2.12	0.99998	2768	0.000
3,4DNT	1462	4.96	0.99997	1517	0.000
TETRYL	1167	14.48	0.99214	1202	0.000
HMX	1156	0.87	0.99996	1159	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	1981	3.76	0.99984	1993	0.000
DNB	3826	2.93	0.99993	3896	0.000
24DNT	3317	1.74	0.99997	3361	0.000
4ADNT	1673	3.90	0.99949	1598	0.000
2ADNT	2703	3.04	0.99988	2800	0.000
RDX	1446	4.79	0.99946	1494	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	159008	2765	2601	6.31	2629	5.20
26DNT	129601	2074	1859	11.57	1857	11.67
TNT	173560	3018	2734	10.40	2768	9.03
3,4DNT	131830	1598	1462	9.33	1517	5.33
TETRYL	105159	935	1167	19.87	1202	22.21
HMX	98353	1124	1156	2.77	1159	3.02

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	124330	1989	1981	0.41	1993	0.21
DNB	194219	3884	3826	1.53	3896	0.29
24DNT	211842	3389	3317	2.19	3361	0.84
4ADNT	195294	1698	1673	1.51	1598	6.24
2ADNT	343065	2745	2703	1.54	2800	1.97
RDX	90000	1440	1446	0.44	1494	3.59

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162019	2818	2601	8.32	2629	7.20
26DNT	121706	1947	1859	4.77	1857	4.86
TNT	164689	2864	2734	4.76	2768	3.46
3,4DNT	129363	1568	1462	7.29	1517	3.36
TETRYL	142839	1270	1167	8.84	1202	5.66
HMX	104926	1199	1156	3.73	1159	3.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	133840	2141	1981	8.09	1993	7.42
DNB	207071	4141	3826	8.25	3896	6.30
24DNT	222696	3563	3317	7.43	3361	6.01
4ADNT	207103	1801	1673	7.65	1598	12.67
2ADNT	353952	2832	2703	4.77	2800	1.14
RDX	95434	1527	1446	5.58	1494	2.23

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162521	2826	2601	8.65	2629	7.53
26DNT	124518	1992	1859	7.20	1857	7.29
TNT	168918	2938	2734	7.45	2768	6.12
3,4DNT	131764	1597	1462	9.28	1517	5.27
TETRYL	139066	1236	1167	5.96	1202	2.87
HMX	106956	1222	1156	5.74	1159	5.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
ontinuing Cal Date : 05/08/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	125652	2010	1981	1.48	1993	0.85
DNB	204044	4081	3826	6.66	3896	4.75
24DNT	221543	3545	3317	6.87	3361	5.46
4ADNT	210697	1832	1673	9.52	1598	14.62
2ADNT	354957	2840	2703	5.06	2800	1.42
RDX	94423	1511	1446	4.46	1494	1.14

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.87	5.88	5.88	5.86	5.85
26DNT	6.50	6.52	6.51	6.49	6.48
TNT	7.01	7.03	7.03	7.00	6.99
3,4DNT	8.02	8.05	8.05	8.01	8.00
TETRYL	10.90	10.95	10.96	10.89	10.90
HMX	12.45	12.61	12.60	12.52	12.52

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	5.89	5.89	5.90
26DNT	6.54	6.54	6.57
TNT	7.05	7.05	7.07
3,4DNT	8.09	8.08	8.12
TETRYL	11.03	10.99	11.04
HMX	12.73	12.64	12.69

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.88	0.017	0.050	5.83 - 5.93
26DNT	6.52	0.029	0.088	6.43 - 6.61
TNT	7.03	0.026	0.079	6.95 - 7.11
3,4DNT	8.05	0.044	0.131	7.92 - 8.18
TETRYL	10.96	0.060	0.180	10.78 - 11.14
HMX	12.60	0.093	0.280	12.32 - 12.88

B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.24	5.24	5.24	5.22	5.22
DNB	5.79	5.80	5.78	5.77	5.77
24DNT	6.77	6.79	6.77	6.75	6.75
4ADNT	7.50	7.53	7.50	7.49	7.47
2ADNT	8.00	8.04	8.00	7.98	7.97
RDX	8.72	8.75	8.70	8.69	8.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.25	5.26	5.26
DNB	5.79	5.81	5.80
24DNT	6.79	6.80	6.80
4ADNT	7.53	7.55	7.54
2ADNT	8.03	8.06	8.04
RDX	8.74	8.76	8.74

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.24	0.016	0.047	5.20 - 5.29
DNB	5.79	0.016	0.047	5.74 - 5.83
24DNT	6.78	0.021	0.062	6.71 - 6.84
4ADNT	7.51	0.028	0.085	7.43 - 7.60
2ADNT	8.02	0.032	0.096	7.92 - 8.11
RDX	8.72	0.029	0.086	8.64 - 8.81

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.03863	3.31E0	49.5231	3.23E0	101.4	3.16E0	416.092	3.08E0	836.72	3.06E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.17E0	3.35	0.99999	3.06E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 1
ıtinuing Cal Date : 05/12/98
ɔntinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.2126	3.26E0	3.17E0	2.88	3.06E0	6.32

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 2
ıtinuing Cal Date : 05/12/98
tinuing Cal Level : 3
ınstrument ID : LC4
Column ID :
Injection File Name : 051198,30
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.473	3.12E0	3.17E0	1.39	3.06E0	1.90

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 3
tinuing Cal Date : 05/12/98
ontinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,40
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	100.77	3.18E0	3.17E0	0.27	3.06E0	3.62

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 4
tinuing Cal Date : 05/12/98
ntinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,48
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.247	3.16E0	3.17E0	0.20	3.06E0	3.14

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

'strument ID : LC4
olumn ID :
alibration Date : 05/11/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.57	12.61	12.59	12.61	12.61

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	12.83	12.68	12.44	12.38	12.73

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	~~11.57~~ 12.60	~~3.646~~ 0.130	10~~.938~~ 0.389	0~~.63 - 22.51~~ 12.21 - 12.99

APPENDIX N
RAW DATA DAY 10 FOR ENSYS
TEST KIT/LAB COMPARISON

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Raw Data of Windrow N-30% Day 10 . . . . . 116 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.01

Sample Amt: 2g % Moisture 27.49 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1340	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

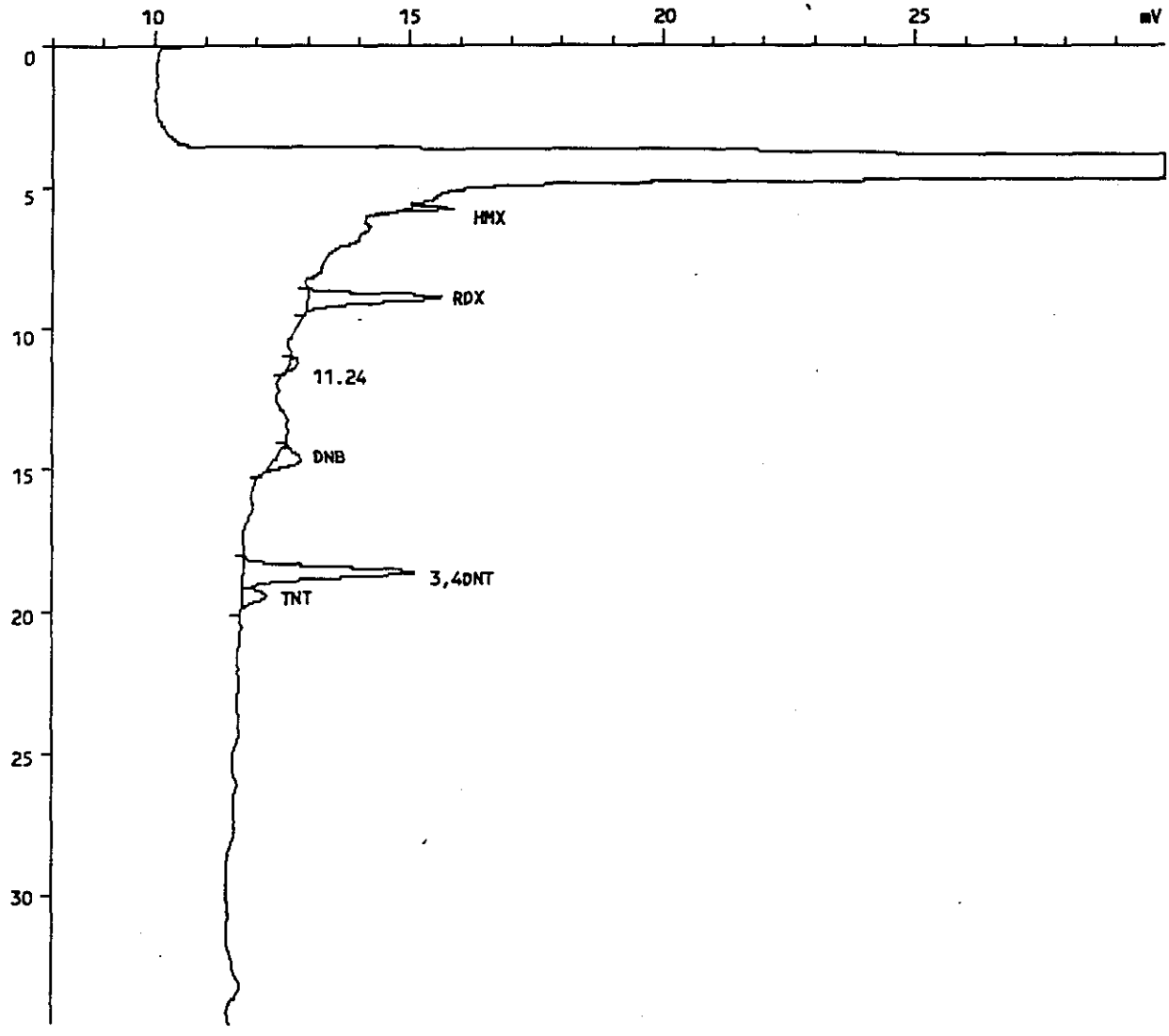
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,5,1

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 04:21:26
Reported on 05-Jun-98 at 12:02:34



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,5,1

Acquired on 19-May-98 at 04:21:26
Modified on 05-Jun-82 at 11:58:44
Reported on 05-Jun-98 at 11:58:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

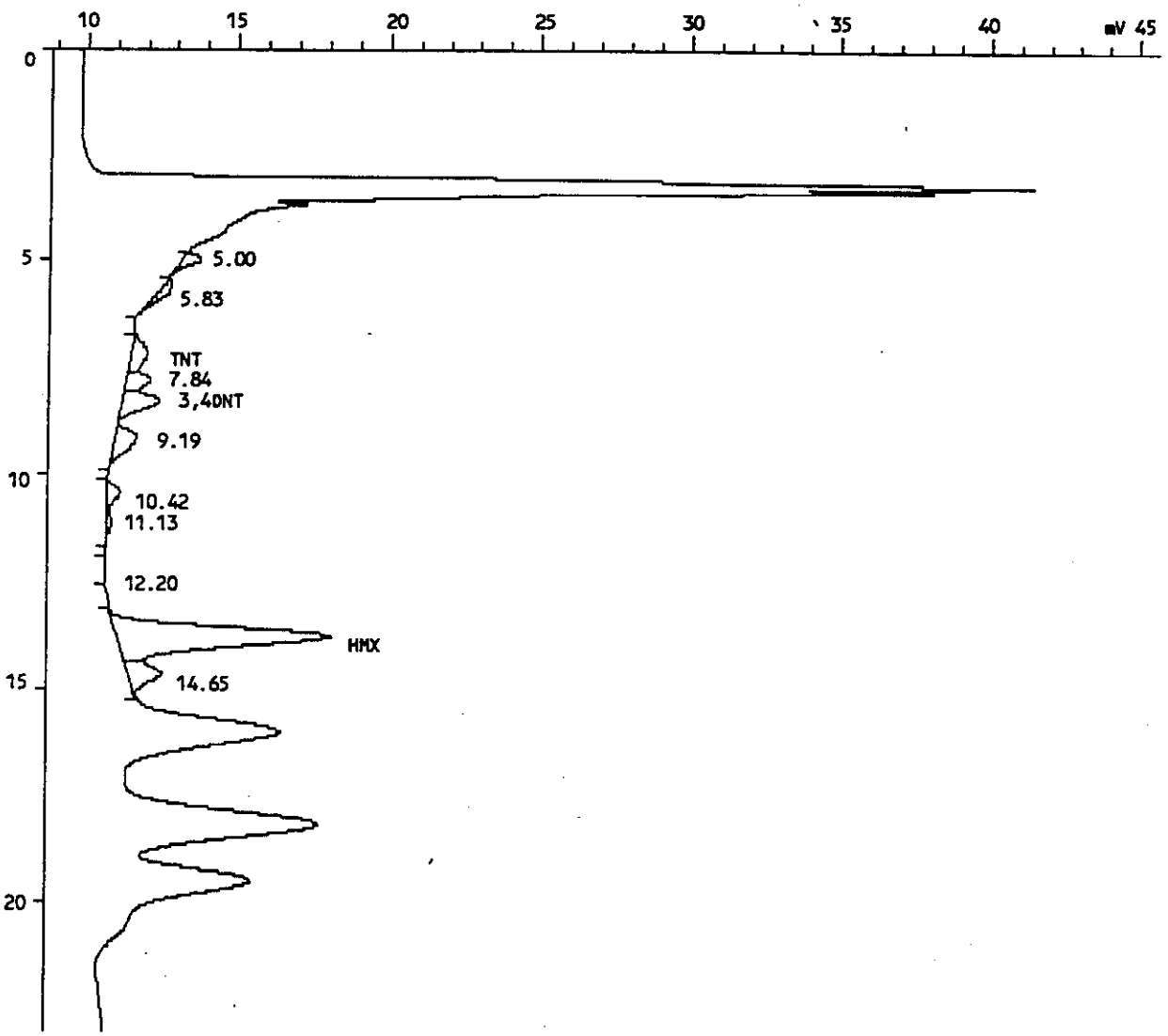
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.771	1028	9850	399.429	HMX
2	8.907	2649	57537	1339.932	RDX *
4	14.715	582	19724	145.650	DNB
5	18.576	3369	90325	1472.047	3,4DNT 74
6	19.429	506	13817	129.636	TNT
Total		8134	191252	3486.695	
Residual		204	4798	111.735	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,3,1

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 07:25:31
Reported on 04-Jun-98 at 12:41:12



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,3,1

Acquired on 30-May-98 at 07:25:31
Modified on 04-Jun-82 at 12:32:42
Reported on 04-Jun-98 at 12:32:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

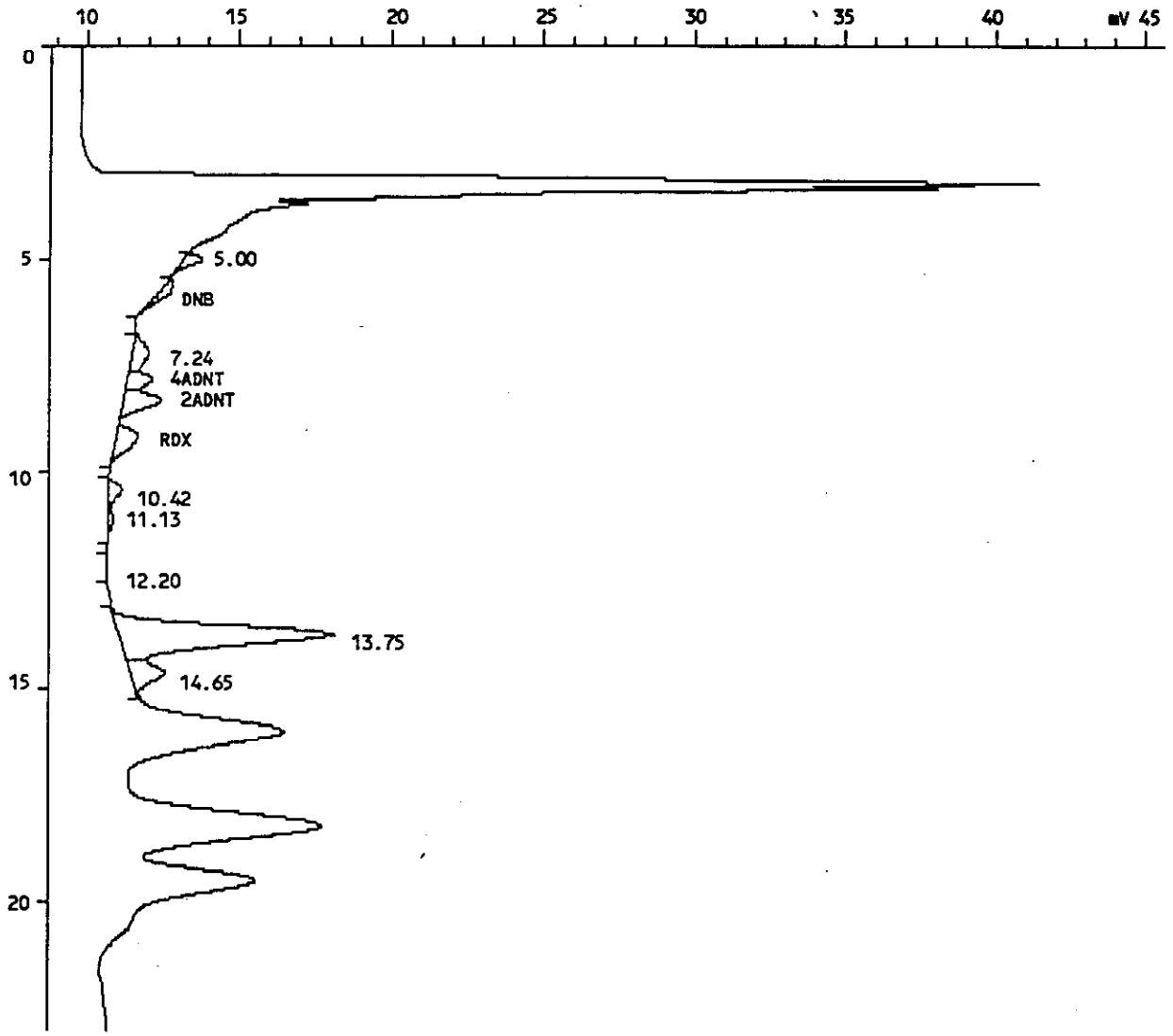
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.243	619	20889	736.295	TNT
5	8.309	1273	30692	2077.972	3,4DNT
10	13.749	7044	214776	18063.598	HMX
Total		8935	266357	20877.865	
Residual		4452	110023	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,3,1

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 07:25:31
Reported on 04-Jun-98 at 12:54:59



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,3,1

Acquired on 30-May-98 at 07:25:31
Modified on 04-Jun-82 at 12:48:44
Reported on 04-Jun-98 at 12:48:42

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.835	473	12853	293.845	DNB
4	7.840	818	17104	878.456	4ADNT
5	8.309	1273	30692	1051.084	2ADNT
6	9.189	755	23750	1414.506	RDX
Total		3318	84398	3637.891	
Residual		10068	291982	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.01

Sample Amt: 2g % Moisture 27.49 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	625	U

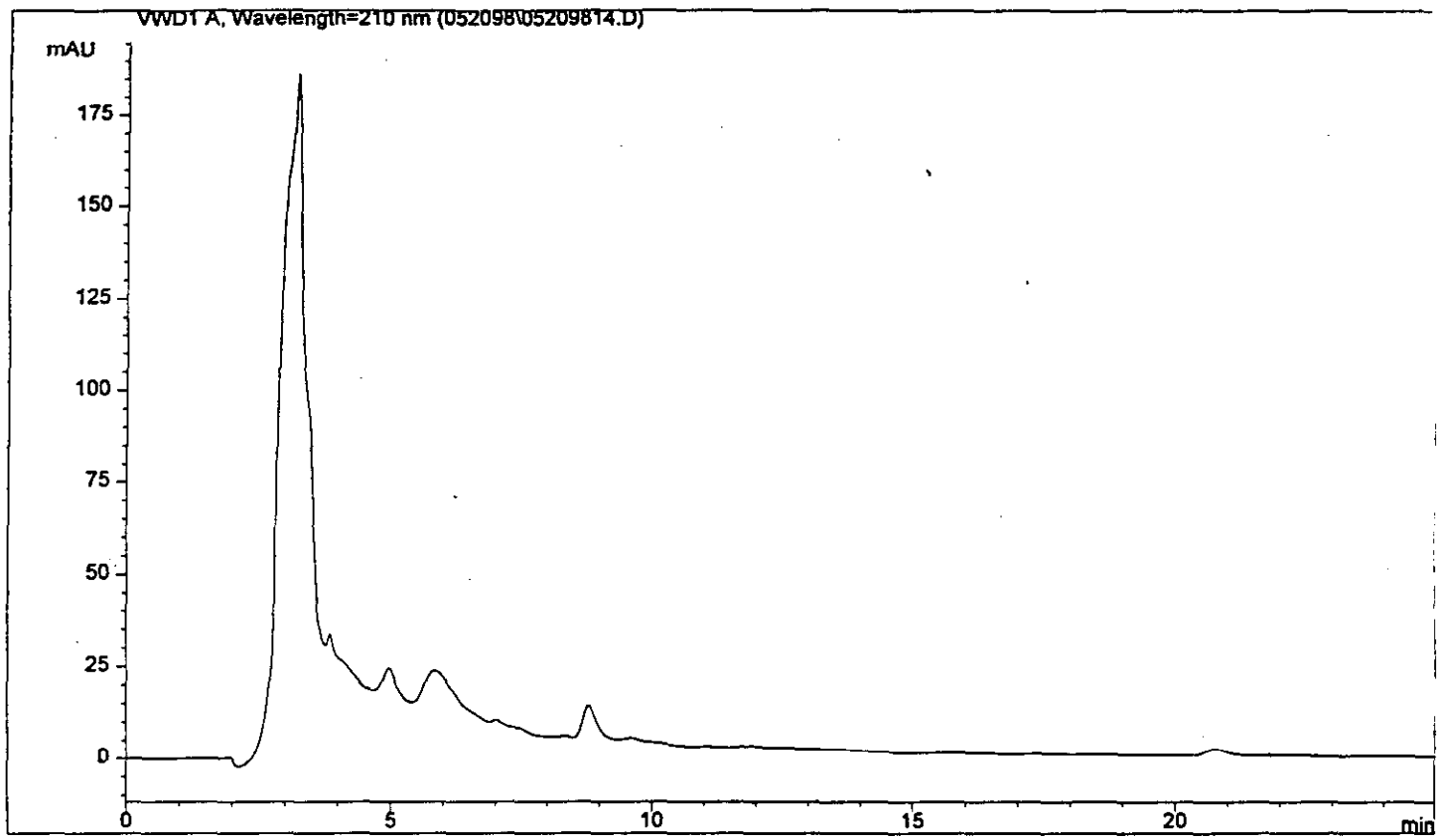
FORM I

Sample Name : 33910.01
Acq Operator : SS

Vial No. : 14
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2,000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

29

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.04

Sample Amt: 2g % Moisture 20.88 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2870	P
121-82-4	RDX	2330	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	2500	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

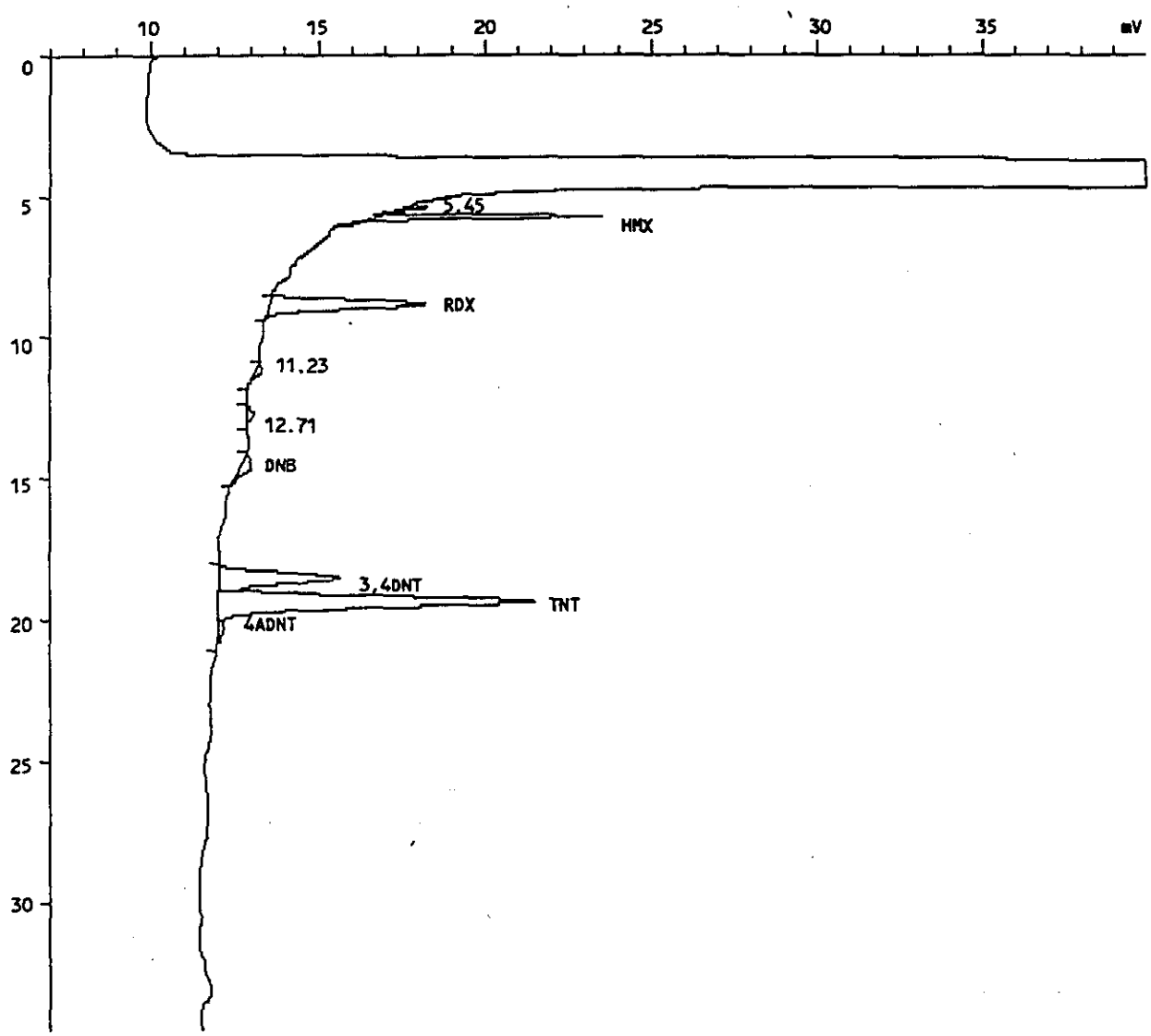
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,8,1

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 06:35:19
Reported on 05-Jun-98 at 12:07:45



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,8,1

Acquired on 19-May-98 at 06:35:19
Modified on 05-Jun-82 at 11:59:40
Reported on 05-Jun-98 at 11:59:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

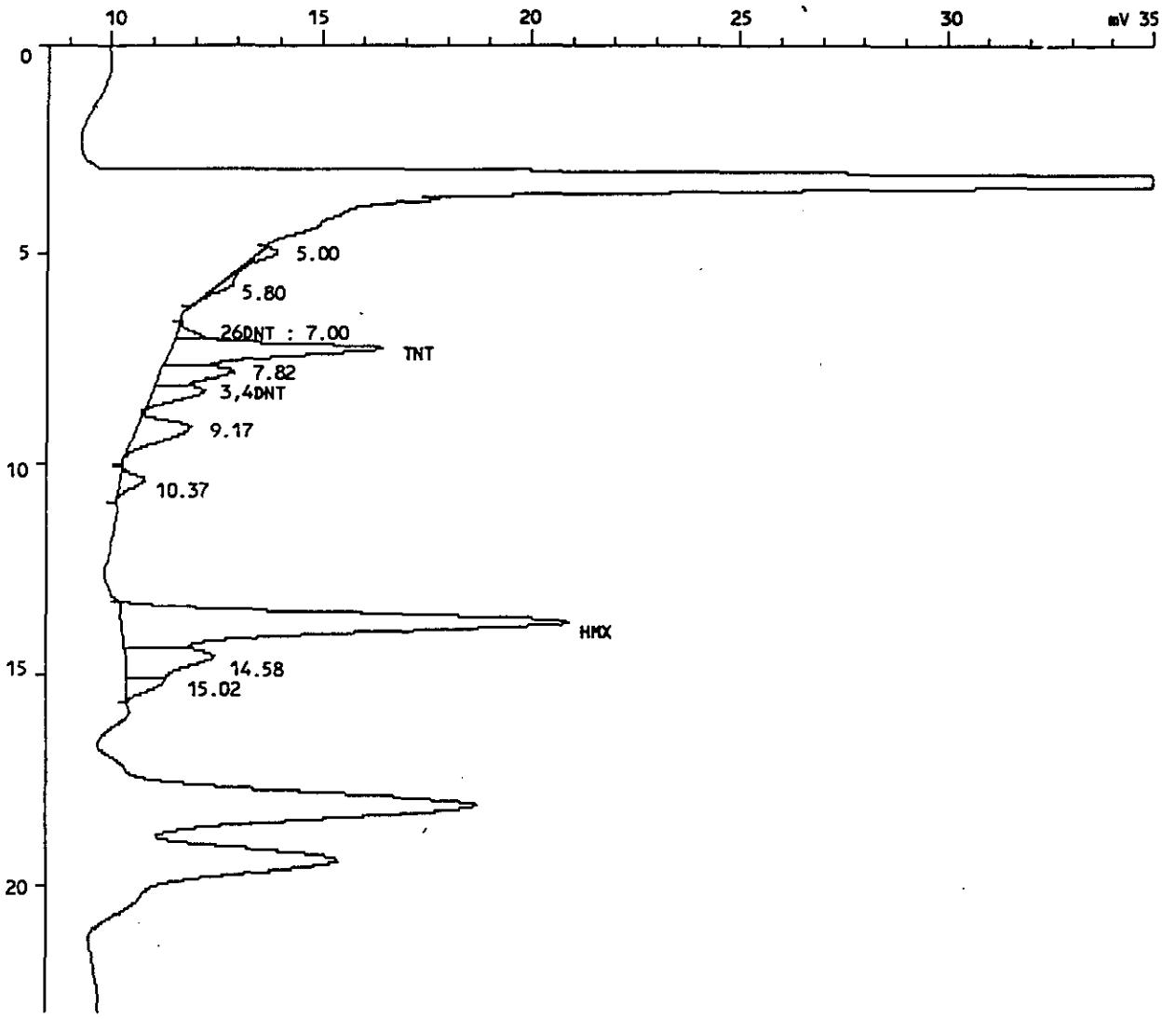
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.765	7091	70694	2866.736	HMX*P
3	8.885	4675	100151	2332.342	RDX*
6	14.688	404	14681	108.409	DNB
7	18.528	3658	98187	1600.184	3,4DNT SD
8	19.376	9473	266596	2501.367	TNT *P
9	20.320	180	6377	95.461	4ADNT
Total		25480	556685	9504.499	
Residual		1242	16887	393.278	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,4,1

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:09:52
Reported on 05-Jun-98 at 14:12:17



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,4,1

Acquired on 30-May-98 at 08:09:52
Modified on 05-Jun-82 at 14:11:12
Reported on 05-Jun-98 at 14:11:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 05-Jun-82 at 14:09:44
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

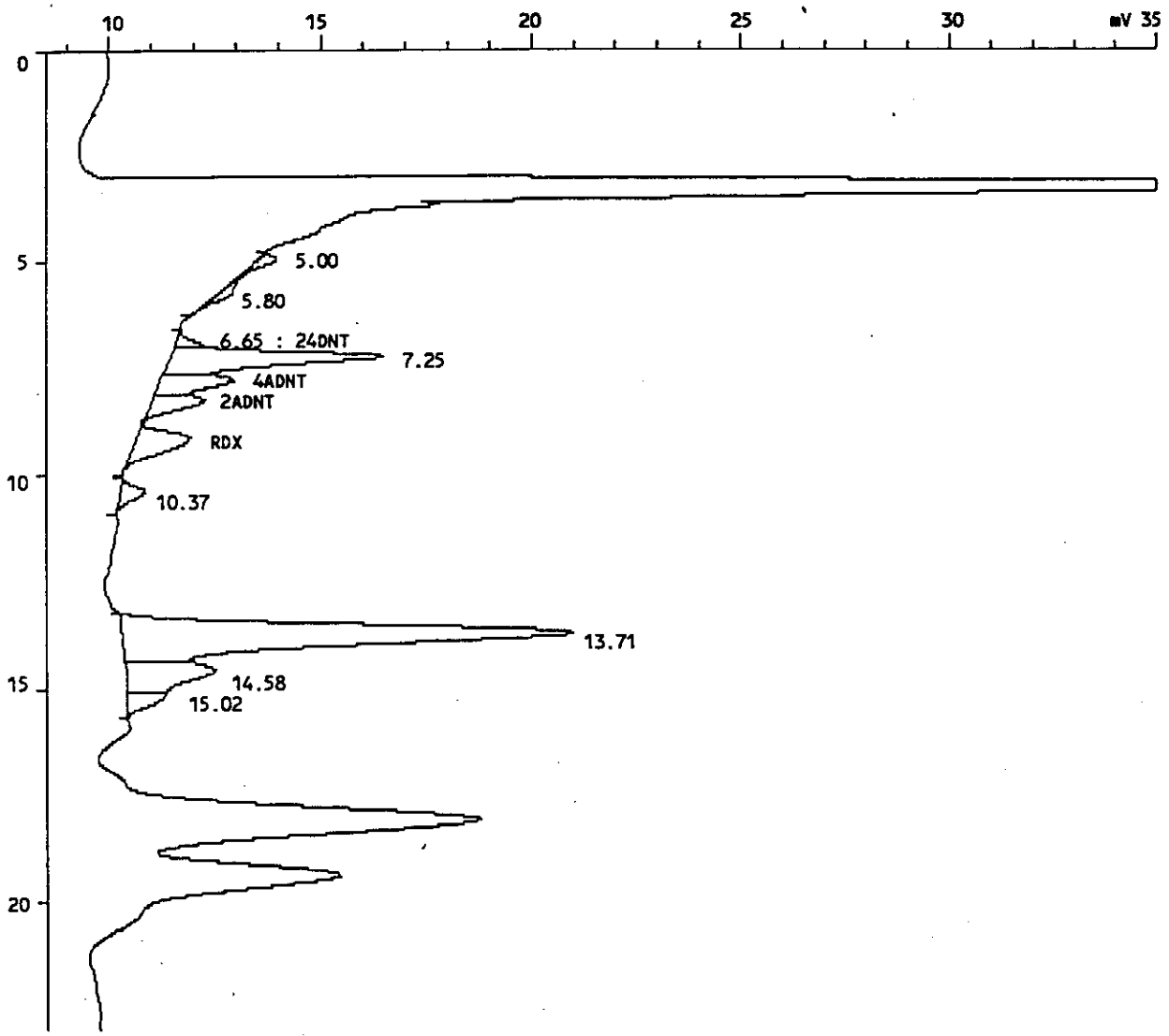
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.645	1	-60	-2.982	26DNT
5	7.248	5060	108560	3826.591	TNT
7	8.288	1259	28168	1907.117	3,4DNT
10	13.712	10650	337011	28344.043	HMX
Total		16970	473679	34074.770	
Residual		8388	206907	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,4,1

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:09:52
Reported on 05-Jun-98 at 14:13:14



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,4,1

Acquired on 30-May-98 at 08:09:52
Modified on 05-Jun-82 at 14:12:48
Reported on 05-Jun-98 at 14:12:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 13:10:50
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.003	744	6972	181.898	24DNT
6	7.819	1760	37024	1901.578	4ADNT
7	8.288	1259	28168	964.662	2ADNT
8	9.173	1277	39700	2364.508	RDX
Total		5039	111864	5412.646	
Residual		20319	568722	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.04

Sample Amt: 2g % Moisture 20.88 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

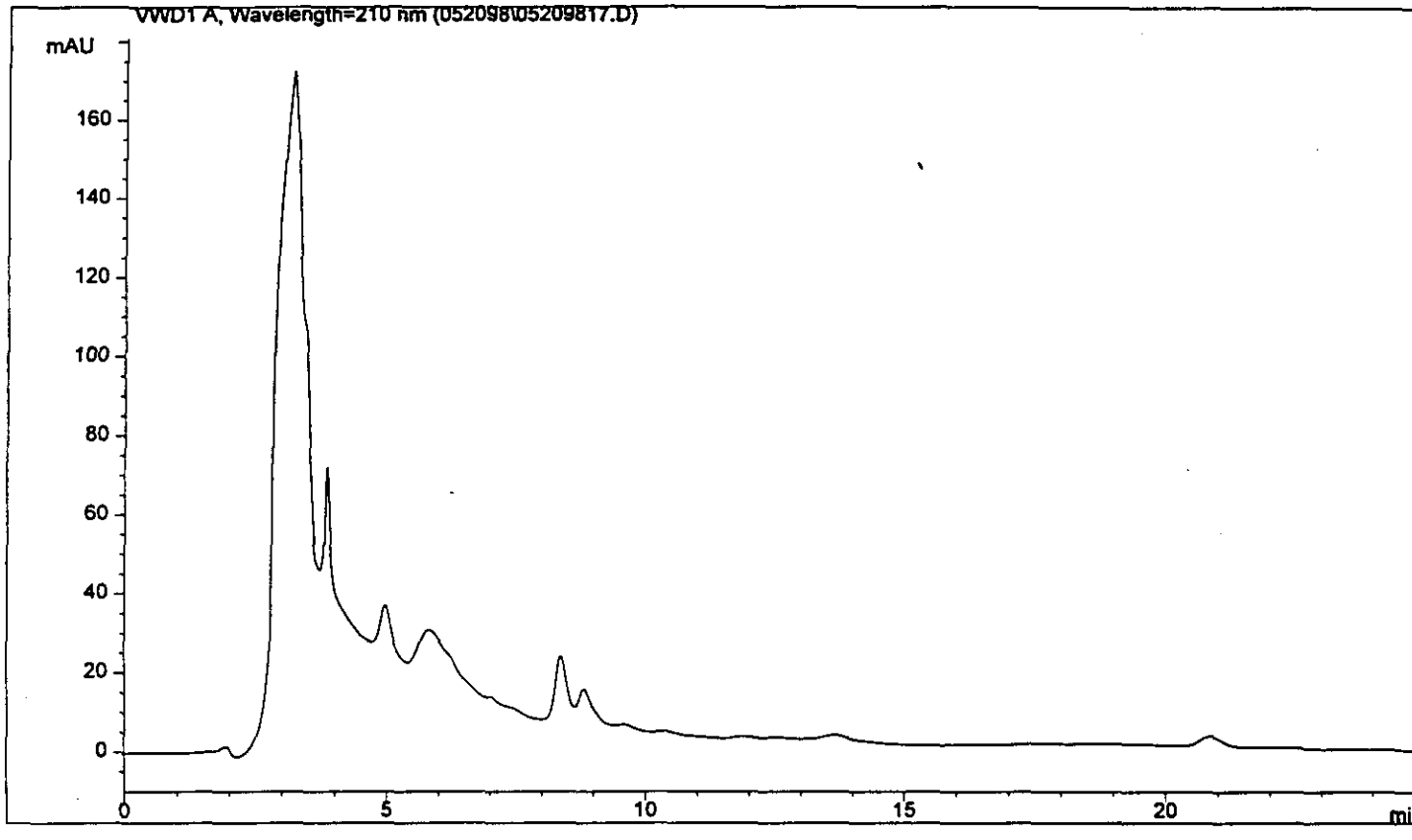
FORM I

Sample Name : 33910.04
Acq Operator : SS

Vial No. : 17
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.05

Sample Amt: 2g % Moisture 23.70 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	3240	P
121-82-4	RDX	3700	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	397	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
21-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

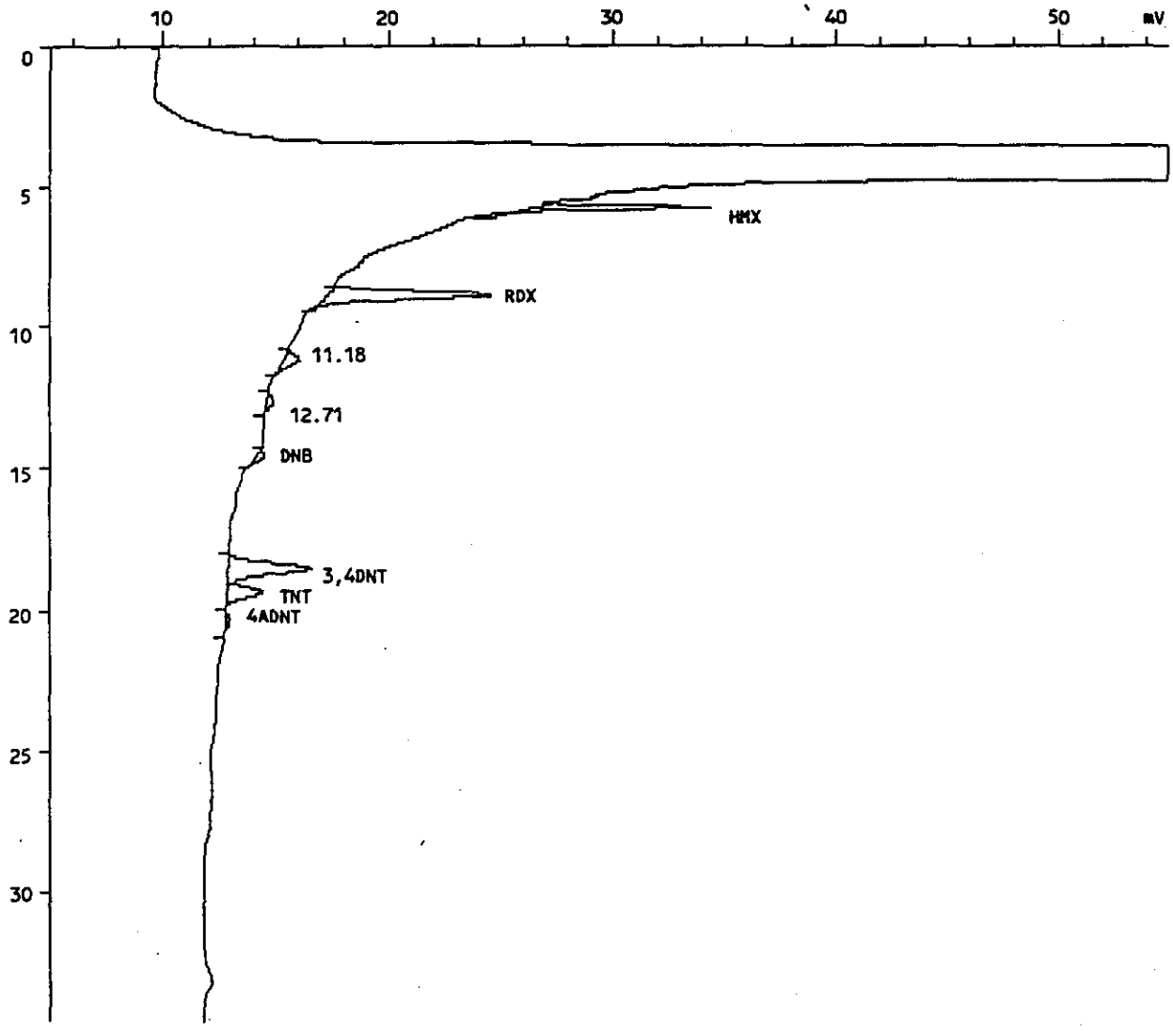
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,9,1

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 07:19:56
Reported on 05-Jun-98 at 12:03:28



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,9,1

Acquired on 19-May-98 at 07:19:56
Modified on 05-Jun-82 at 11:59:56
Reported on 05-Jun-98 at 11:59:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

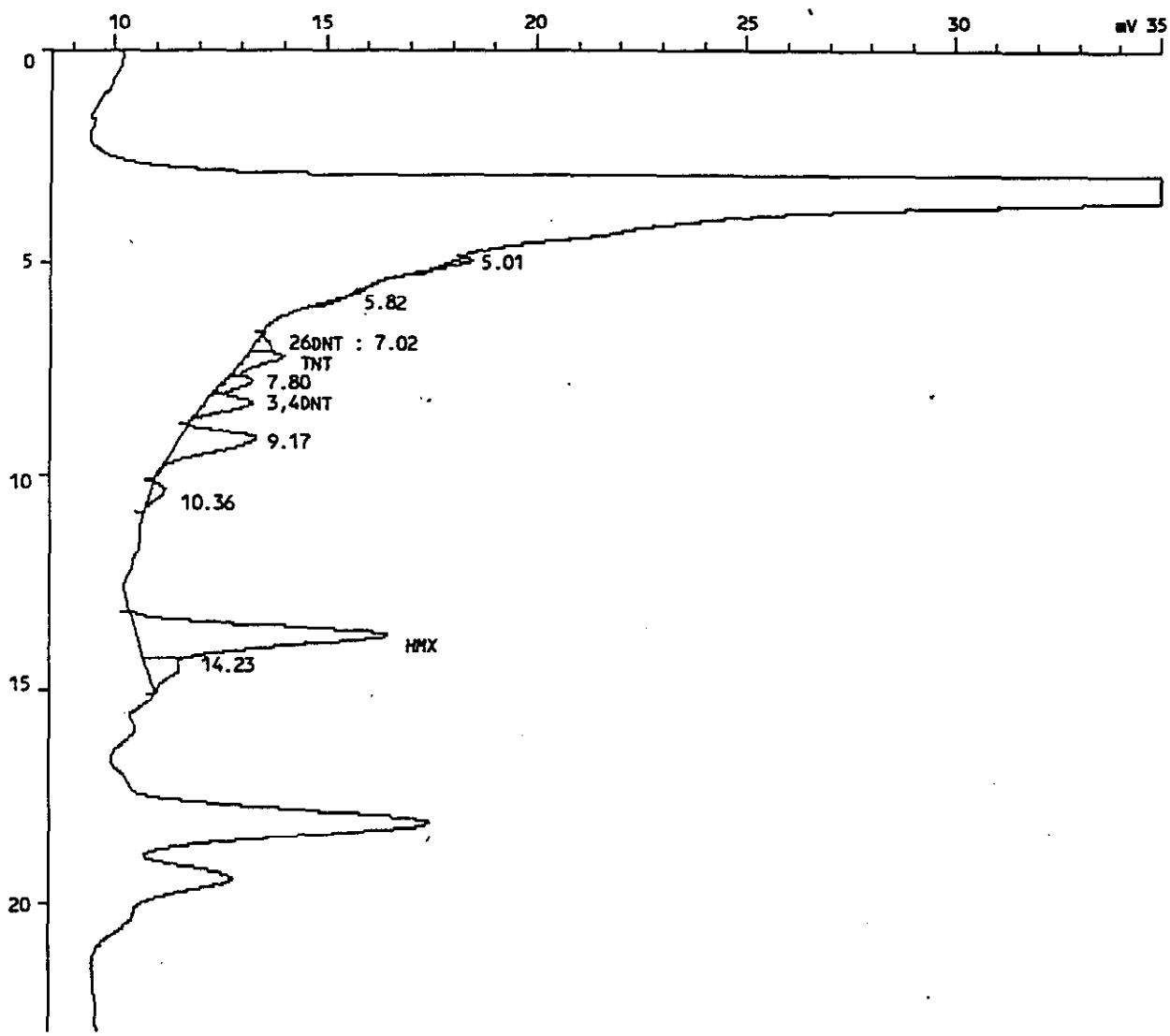
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.760	8188	79778	3235.127	HMX * P
2	8.885	7388	158692	3695.679	RDX *
5	14.683	315	6892	50.890	DNB
6	18.528	3670	99784	1626.202	3,4DNT gl
7	19.376	1588	42348	397.331	TNT * P
8	20.325	226	6631	99.273	4ADNT
Total		21375	394125	9104.503	
Residual		1057	28283	658.674	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,5,1

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:54:13
Reported on 05-Jun-98 at 14:17:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,5,1

Acquired on 30-May-98 at 08:54:13
Modified on 05-Jun-82 at 14:17:24
Reported on 05-Jun-98 at 14:17:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 05-Jun-82 at 14:09:44
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

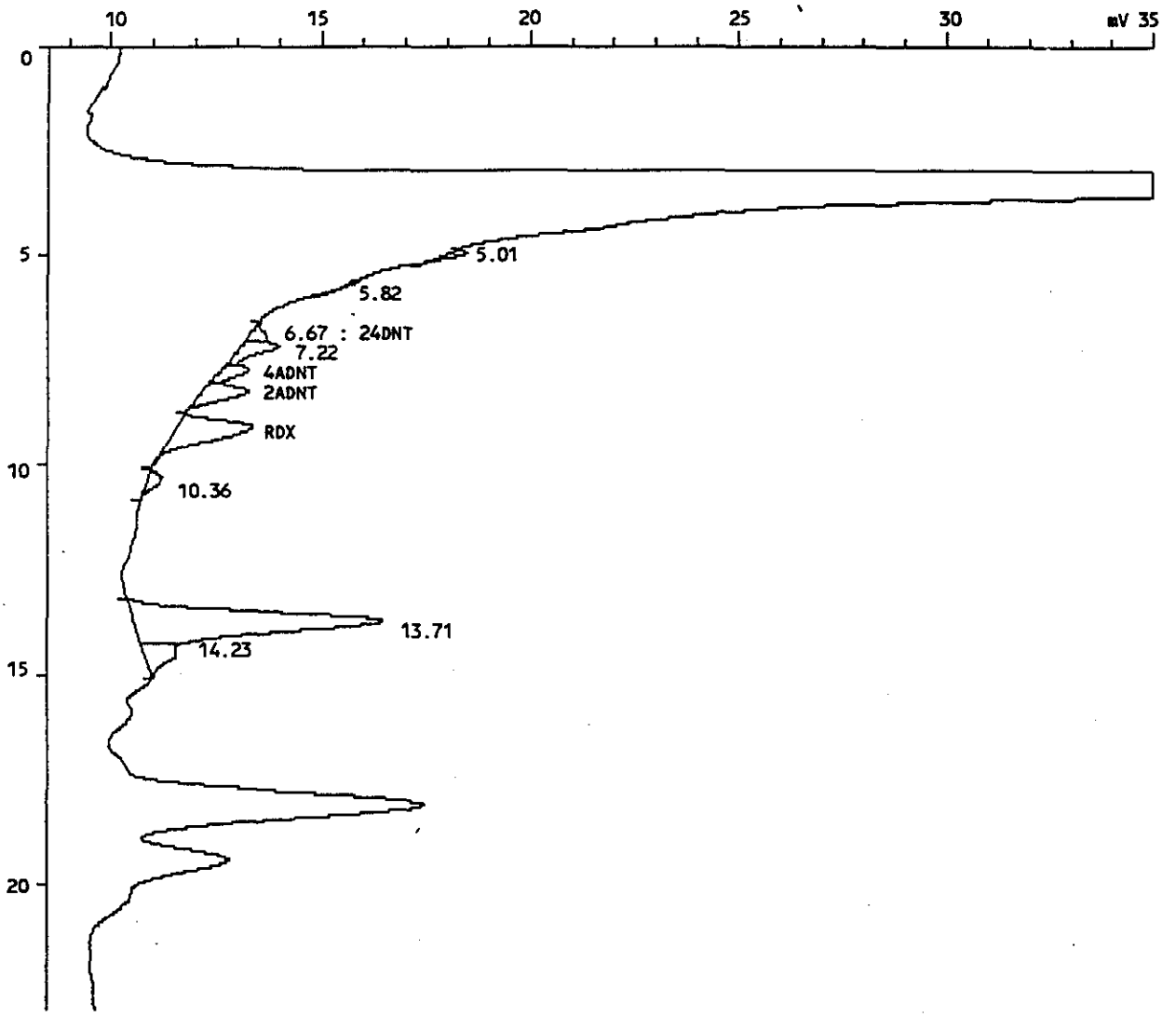
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.667	12	-3	-0.156	26DNT
5	7.216	981	21562	760.015	TNT
7	8.293	1137	25680	1738.692	3,4DNT
10	13.707	5942	192036	16151.068	HMX
Total		8072	239275	18649.619	
Residual		5315	120419	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,5,1

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:54:13
Reported on 05-Jun-98 at 14:16:55



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,5,1

Acquired on 30-May-98 at 08:54:13
Modified on 05-Jun-82 at 14:16:34
Reported on 05-Jun-98 at 14:16:34

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 13:10:50
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.024	500	6425	167.630	24DNT
6	7.803	739	14080	723.145	4ADNT
7	8.293	1137	25680	879.469	2ADNT
8	9.173	1858	57798	3442.422	RDX
Total		4234	103984	5212.667	
Residual		9153	255710	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.05

Sample Amt: 2g % Moisture 23.70 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	625	U

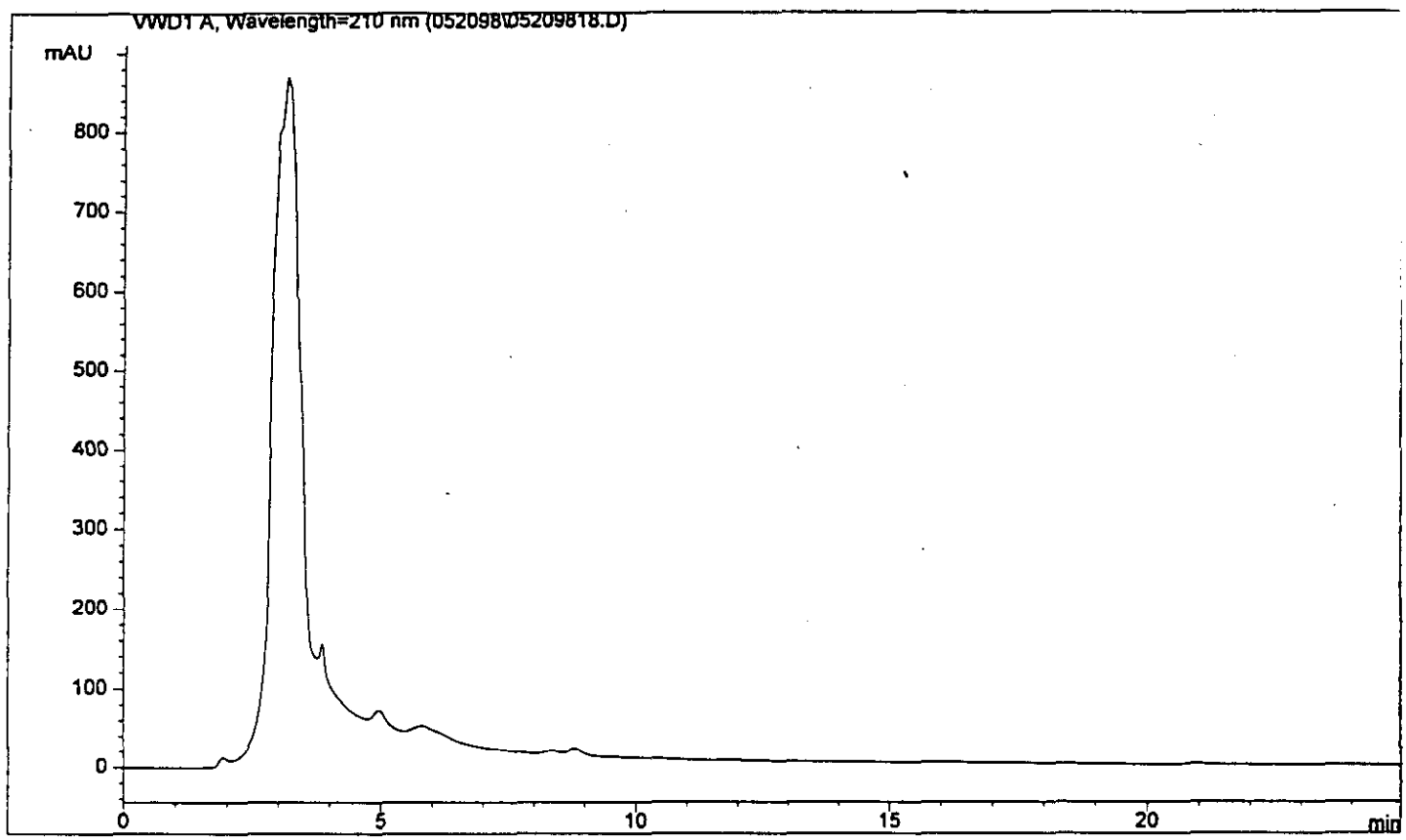
FORM I

Sample Name : 33910.05
Acq Operator : SS

Vial No. : 18
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.06

Sample Amt: 2g % Moisture 27.52 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	710	J
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

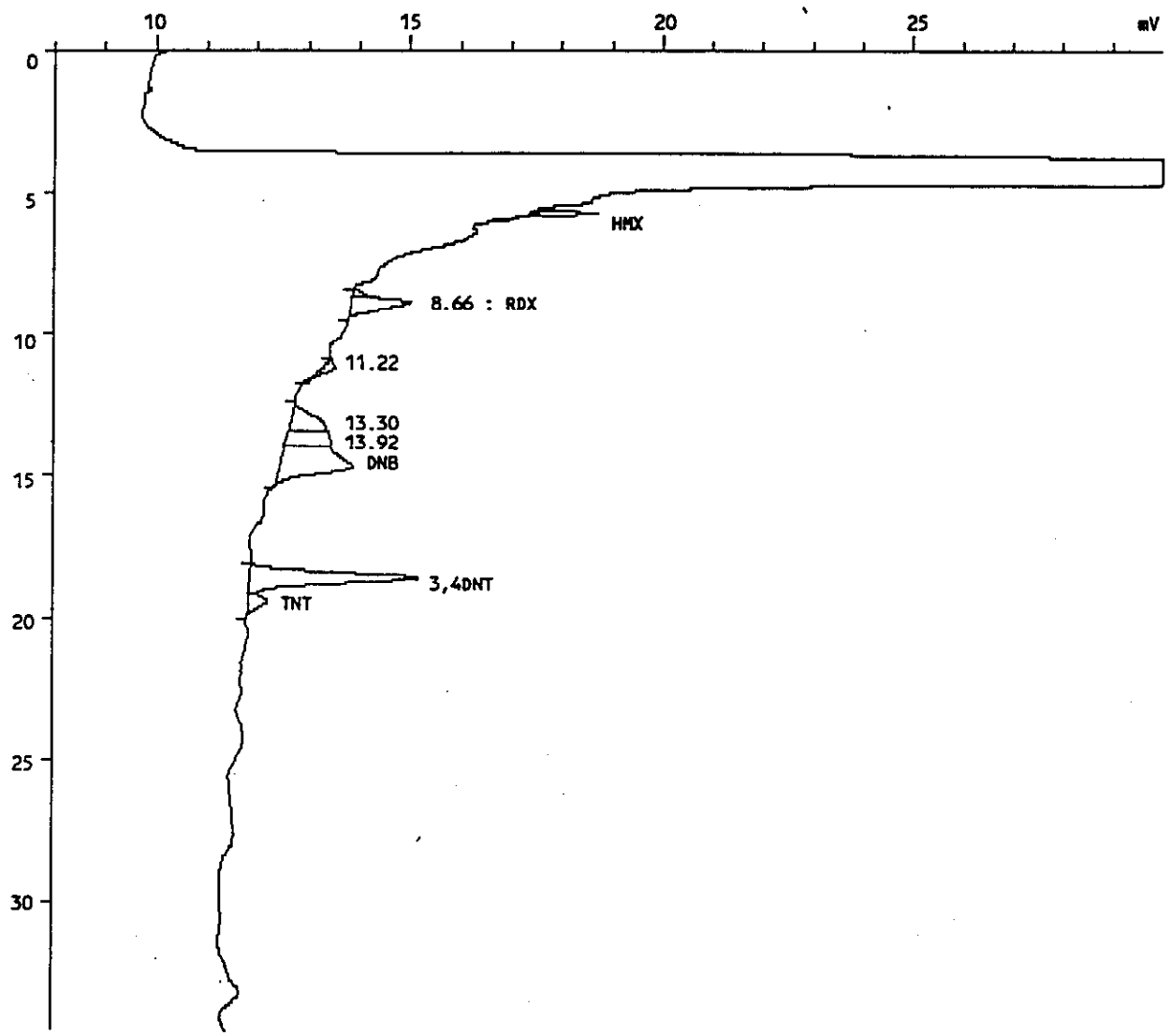
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,10,1

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 08:04:34
Reported on 05-Jun-98 at 12:01:08



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,10,1

Acquired on 19-May-98 at 08:04:34
Modified on 05-Jun-82 at 12:00:14
Reported on 05-Jun-98 at 12:00:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

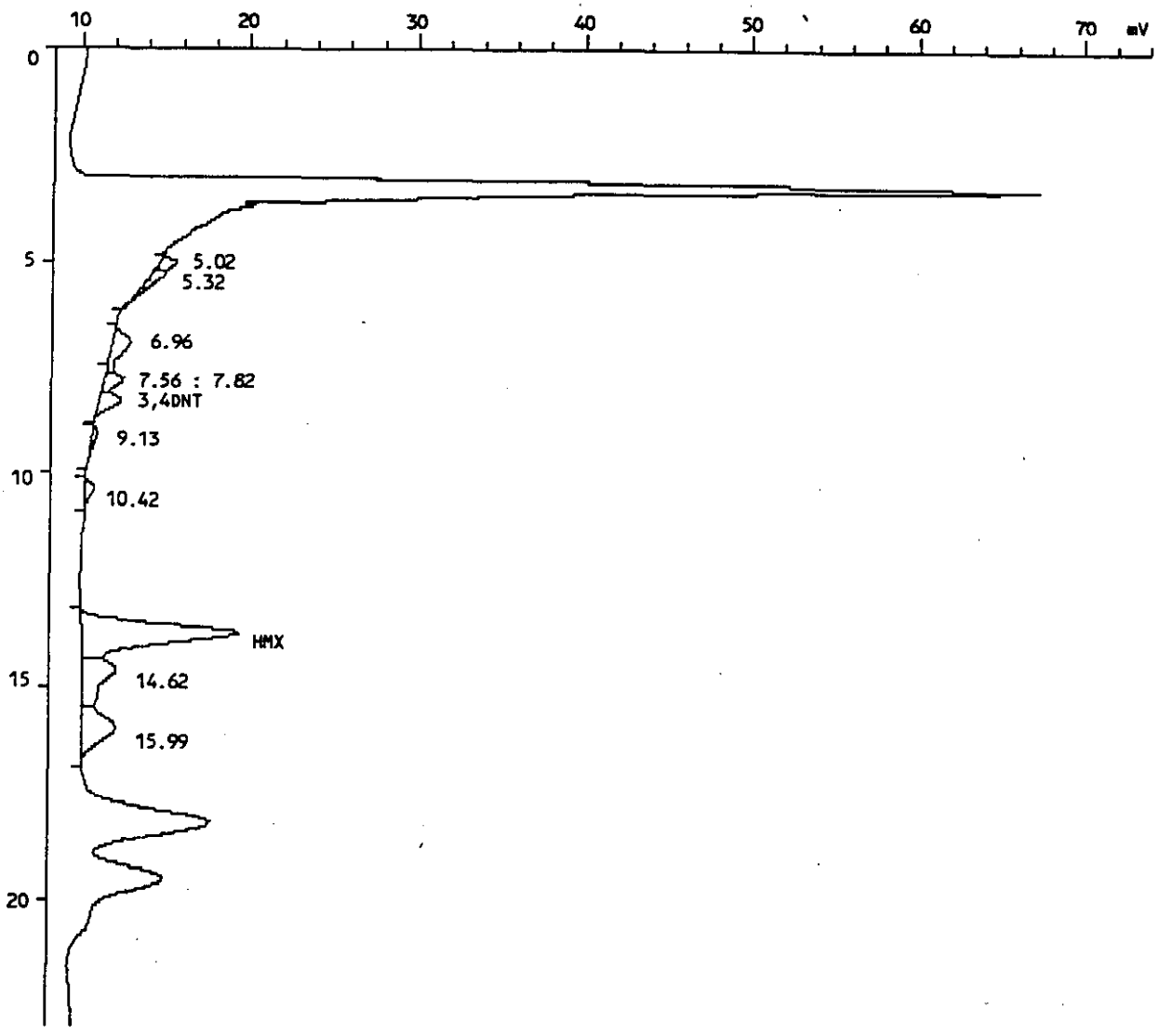
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.771	1517	13059	529.544	HMX
3	8.912	1174	30470	709.603	RDX *J
7	14.693	1463	79394	586.276	DNB
8	18.576	3312	89836	1464.086	3,4DNT J3
9	19.445	389	11184	104.937	TNT
Total		7856	223943	3394.447	
Residual		2286	65157	1571.890	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,6,1

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 09:38:34
Reported on 04-Jun-98 at 13:16:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,6,1

Acquired on 30-May-98 at 09:38:34
Modified on 04-Jun-82 at 13:16:12
Reported on 04-Jun-98 at 13:16:18

ANALYSIS INFORMATION

Analysis ID.....: EXP,`GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 13:15:48
Method file.....: LCCN Last modified on 04-Jun-82 at 13:15:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

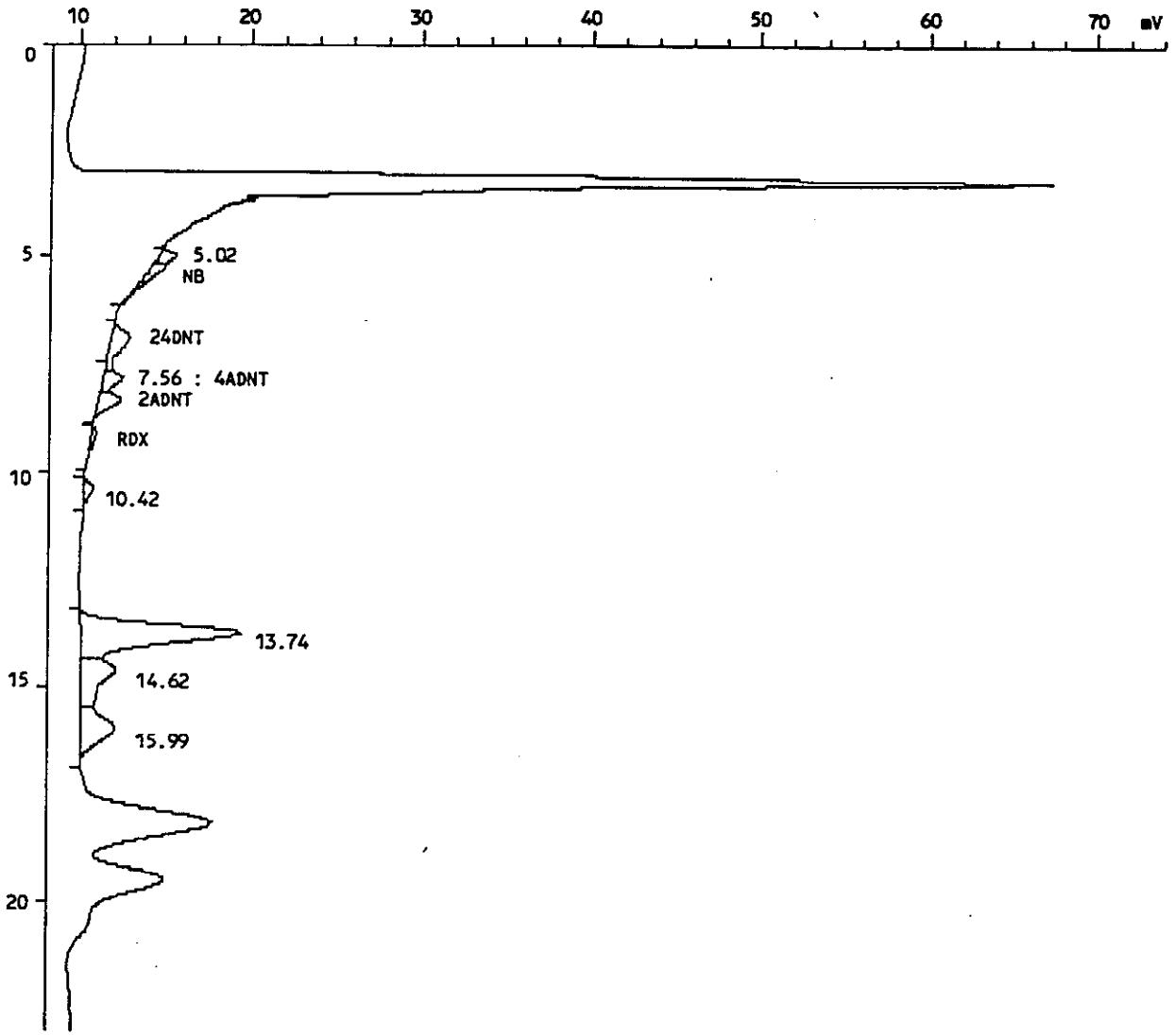
Peak	RT mins	Hght uV	'Area uVs	ug/Kg	Peak name
6	8.315	1329	30693	2078.039	3,4DNT
9	13.744	9342	290534	24435.133	HMX
Total		10671	321226	26513.172	
Residual		9908	313871	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,6,1

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 09:38:34
Reported on 04-Jun-98 at 13:05:05



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,6,1

Acquired on 30-May-98 at 09:38:34
Modified on 04-Jun-82 at 13:11:26
Reported on 04-Jun-98 at 13:13:10

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 13:10:50
Method file.....: LCCN Last modified on 04-Jun-82 at 13:01:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.317	954	26336	1263.115	NB
3	6.960	1084	35224	918.967	24DNT
5	7.824	1184	24400	1253.212	4ADNT
6	8.315	1329	30693	1051.118	2ADNT
7	9.125	322	9782	582.596	RDX
Total		4872	126434	5069.008	
Residual		15707	508663	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.06

Sample Amt: 2g % Moisture 27.52 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

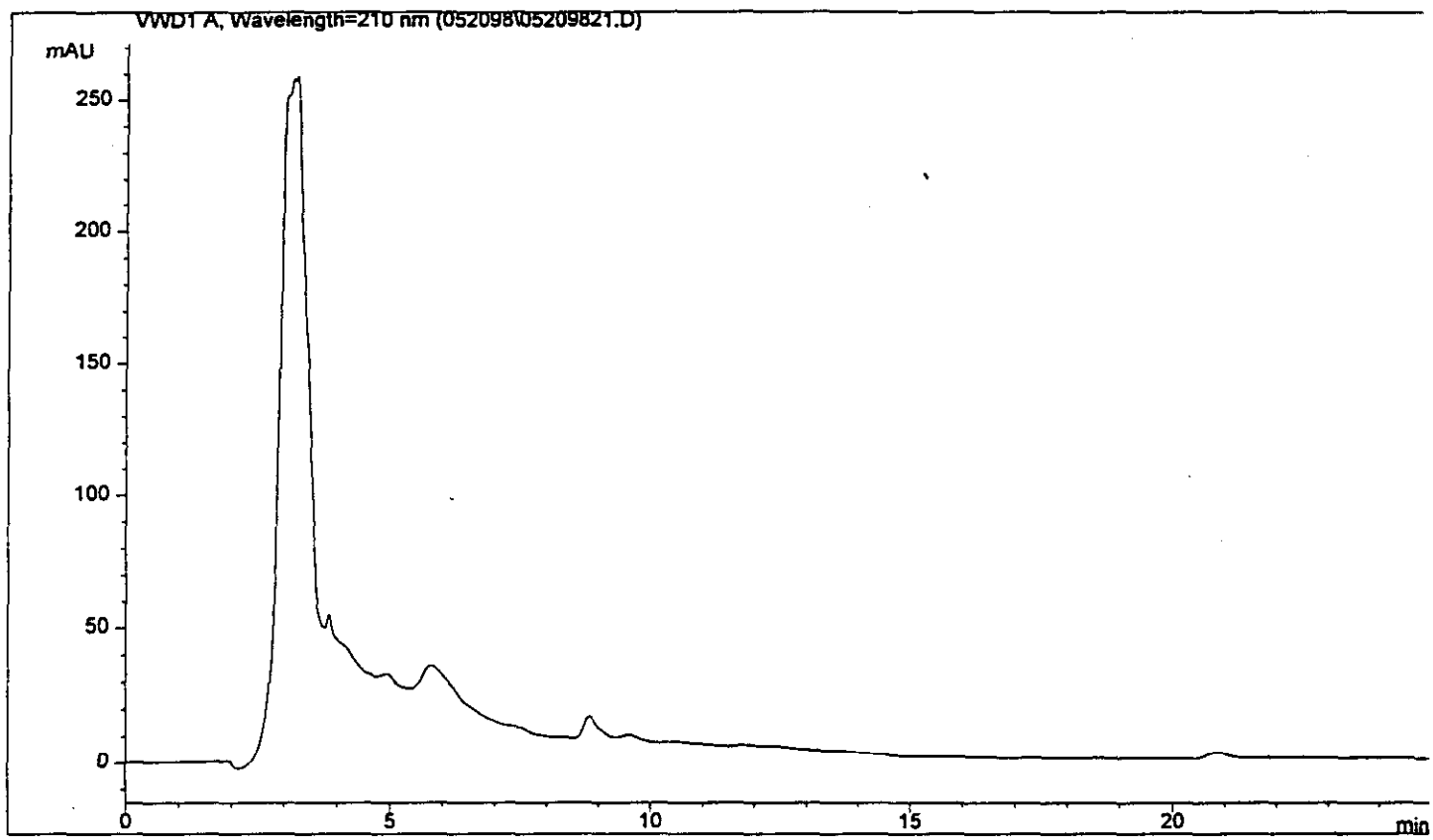
FORM I

Sample Name : 33910.06
Acq Operator : SS

Vial No. : 21
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2,000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.07

Sample Amt: 2g % Moisture 24.28 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	3120	P
121-82-4	RDX	4570	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

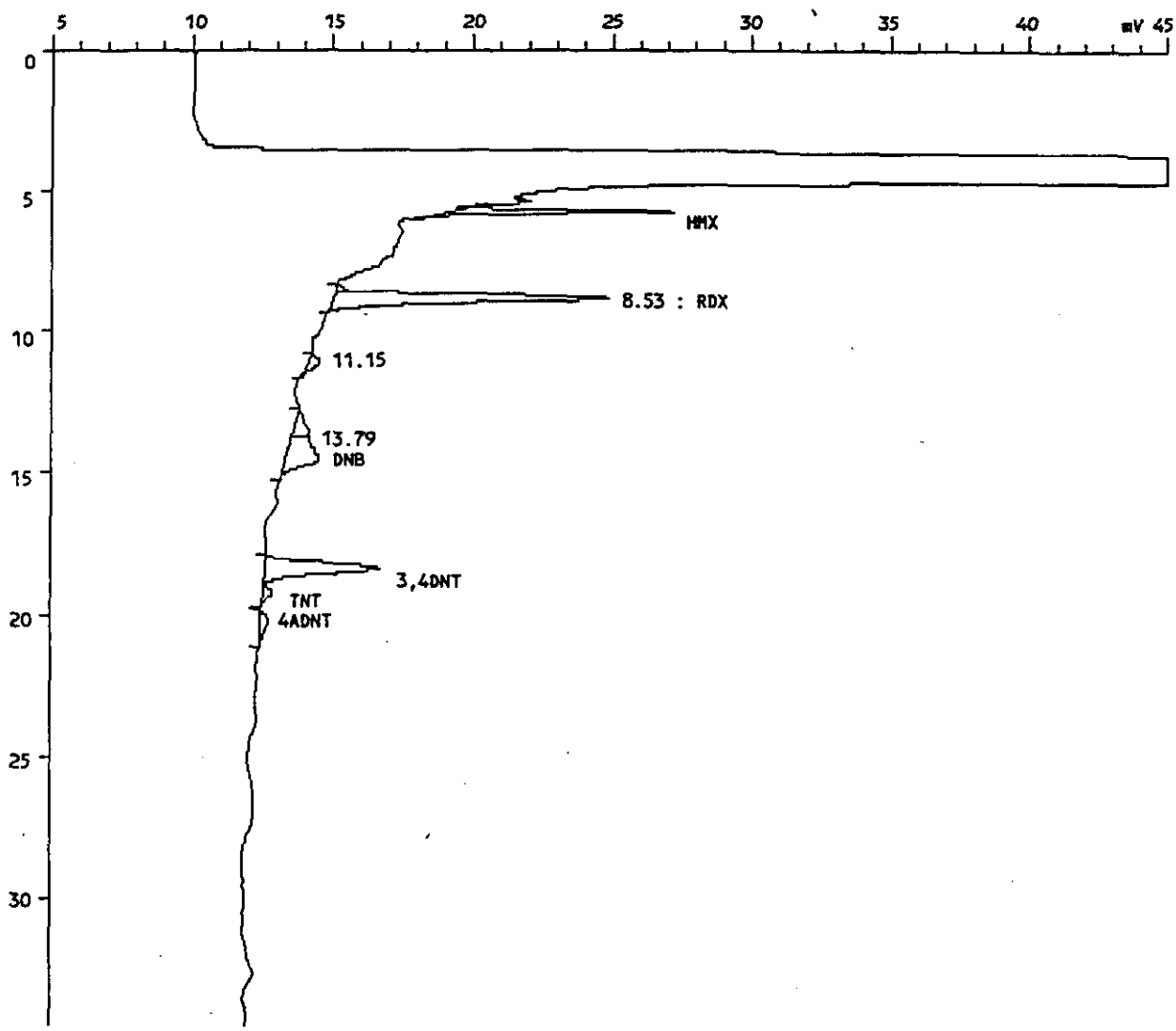
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,1,1

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 01:42:24
Reported on 05-Jun-98 at 12:41:03



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,1,1

Acquired on 20-May-98 at 01:42:24
Modified on 05-Jun-82 at 12:22:20
Reported on 05-Jun-98 at 12:22:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

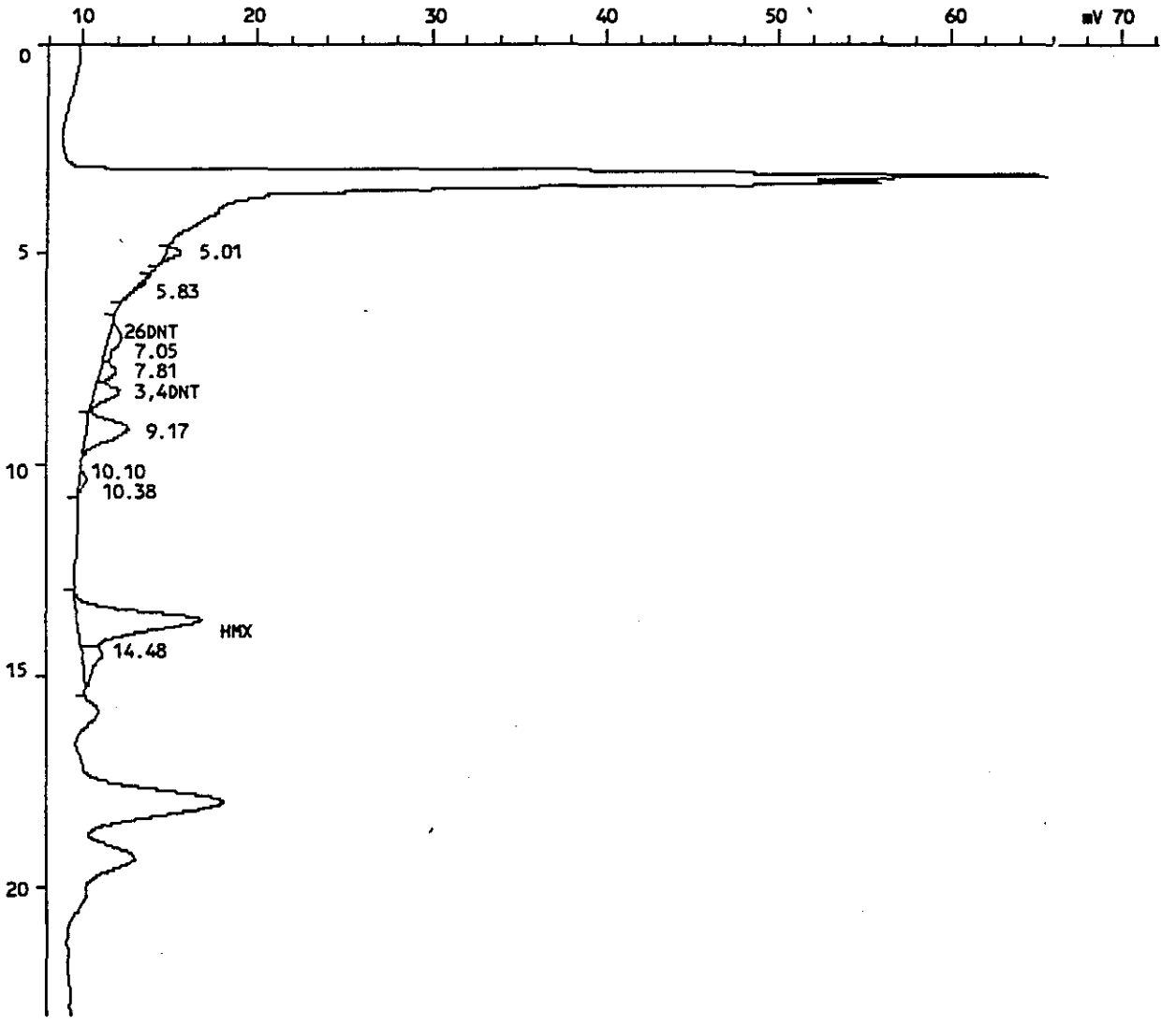
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.744	8191	76768	3118.127	HMX *?
3	8.827	9853	195608	4572.418	RDX *
6	14.576	1221	63262	481.889	DNB
7	18.336	4051	103530	1710.117	3,4DNT Slo
8	19.243	324	7804	73.933	TNT
9	20.139	266	11416	171.097	4ADNT
Total		23906	458389	10127.581	
Residual		1471	37159	917.152	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,7,1

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 10:22:55
Reported on 04-Jun-98 at 12:43:02



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,7,1

Acquired on 30-May-98 at 10:22:55
Modified on 04-Jun-82 at 12:33:40
Reported on 04-Jun-98 at 12:33:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

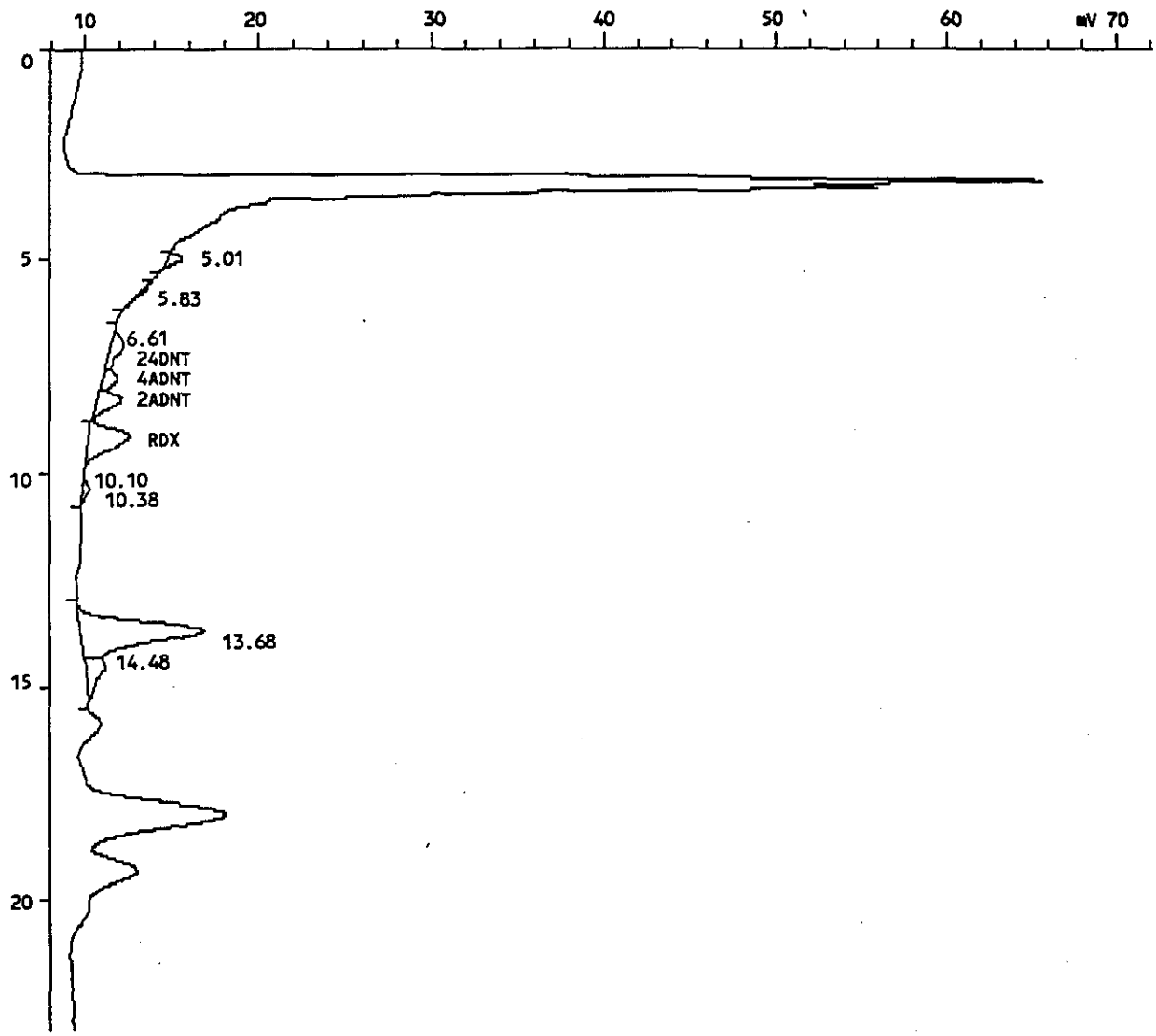
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.608	41	173	8.563	26DNT
6	8.293	1402	33902	2295.321	3,4DNT
10	13.680	7153	235548	19810.592	HMX
Total		8596	269623	22114.477	
Residual		7125	197874	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,7,1

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 10:22:55
Reported on 04-Jun-98 at 12:56:31



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,7,1

Acquired on 30-May-98 at 10:22:55
Modified on 04-Jun-82 at 12:49:44
Reported on 04-Jun-98 at 12:49:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.045	768	28151	734.449	24DNT
5	7.808	964	20795	1068.036	4ADNT
6	8.293	1402	33902	1161.024	2ADNT
7	9.168	2388	76904	4580.317	RDX
Total		5522	159752	7543.826	
Residual		10199	307745	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.07

Sample Amt: 2g % Moisture 24.28 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		625	U

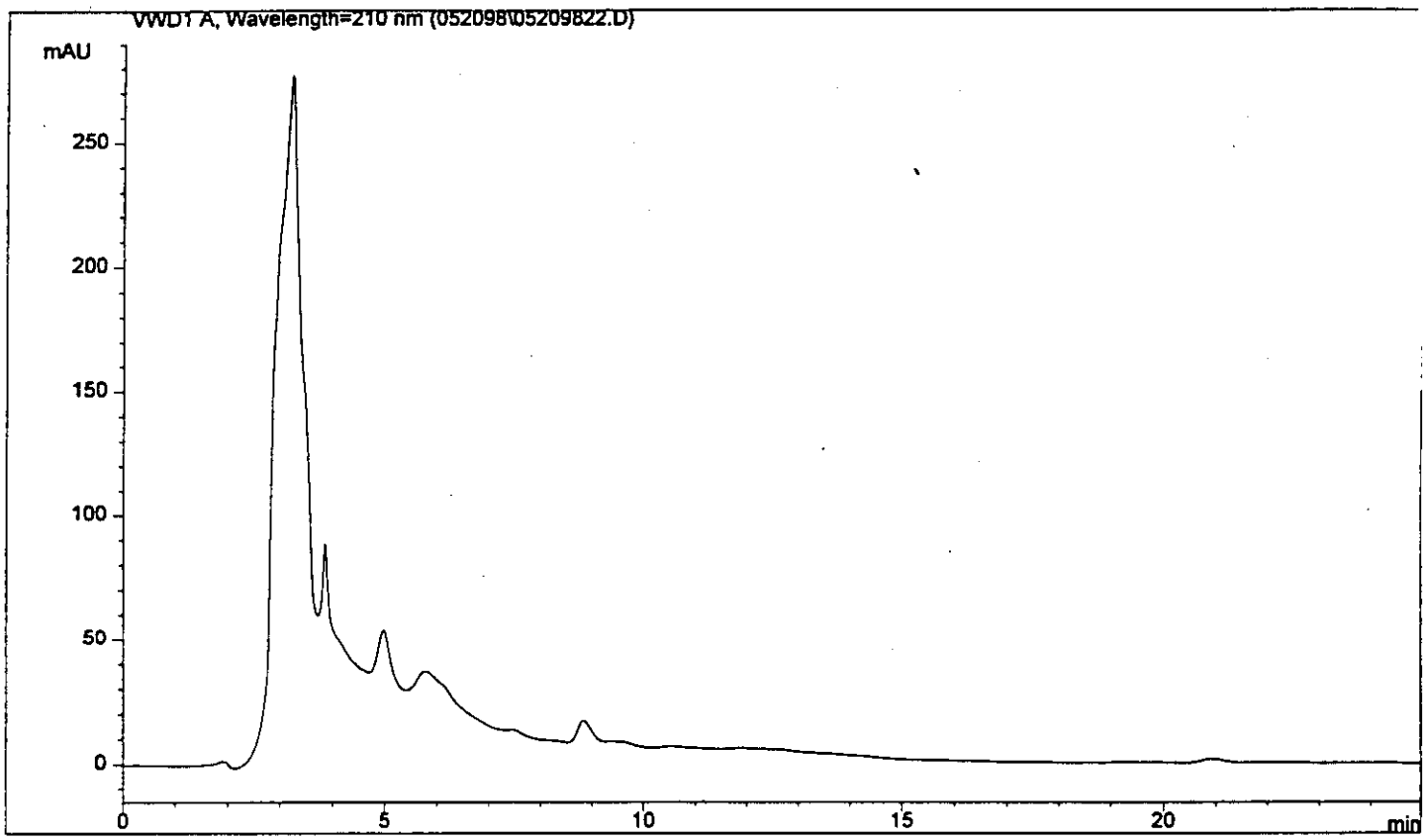
FORM I

Sample Name : 33910.07
Acq Operator : SS

Vial No. : 22
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.08

Sample Amt: 2g % Moisture 23.34 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	857	J
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

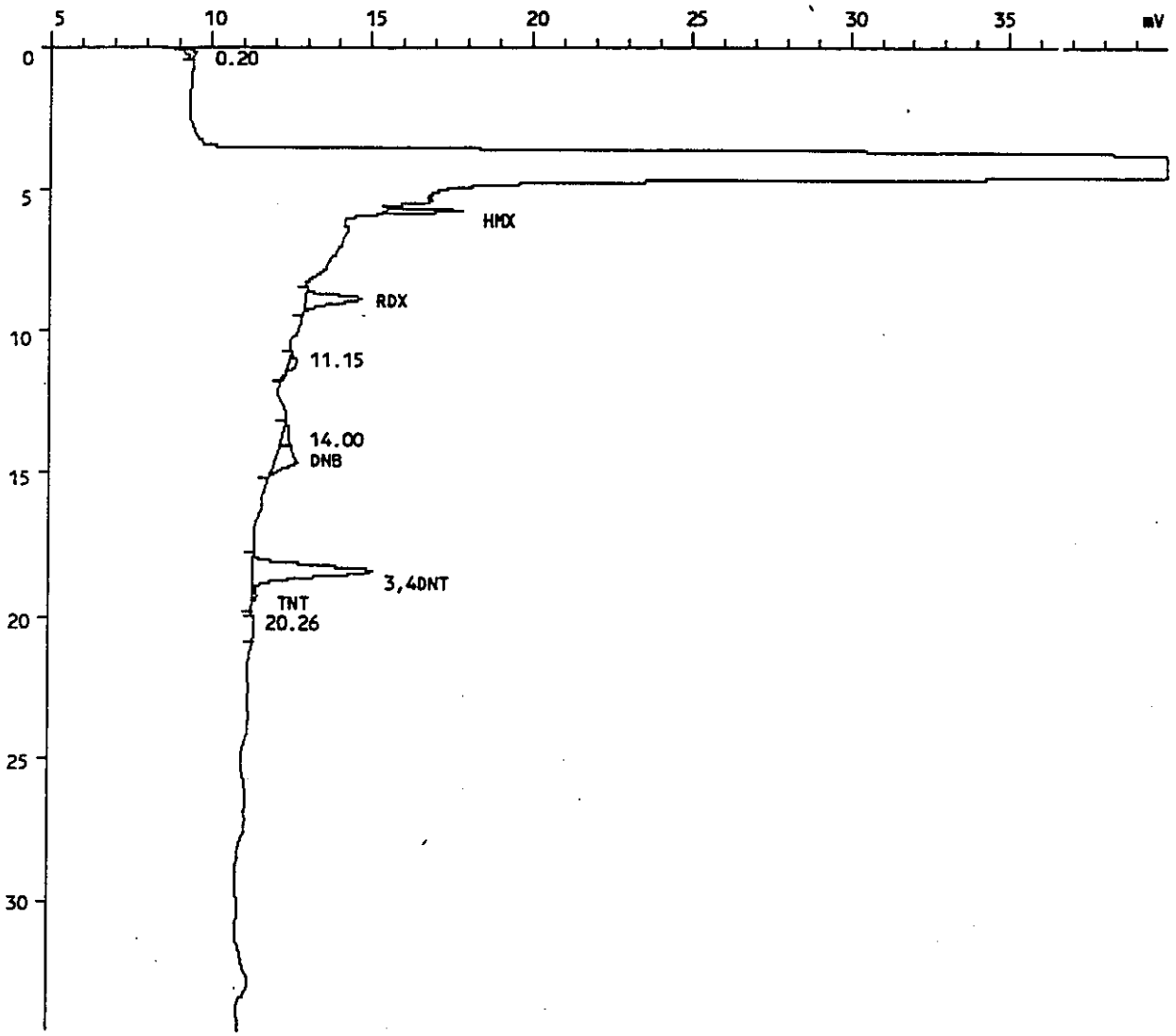
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,2,1

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 02:27:01
Reported on 05-Jun-98 at 12:24:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,2,1

Acquired on 20-May-98 at 02:27:01
Modified on 05-Jun-82 at 12:22:04
Reported on 05-Jun-98 at 14:24:22

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 05-Jun-82 at 14:23:36
Method file.....: EXPLOS Last modified on 05-Jun-82 at 13:48:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

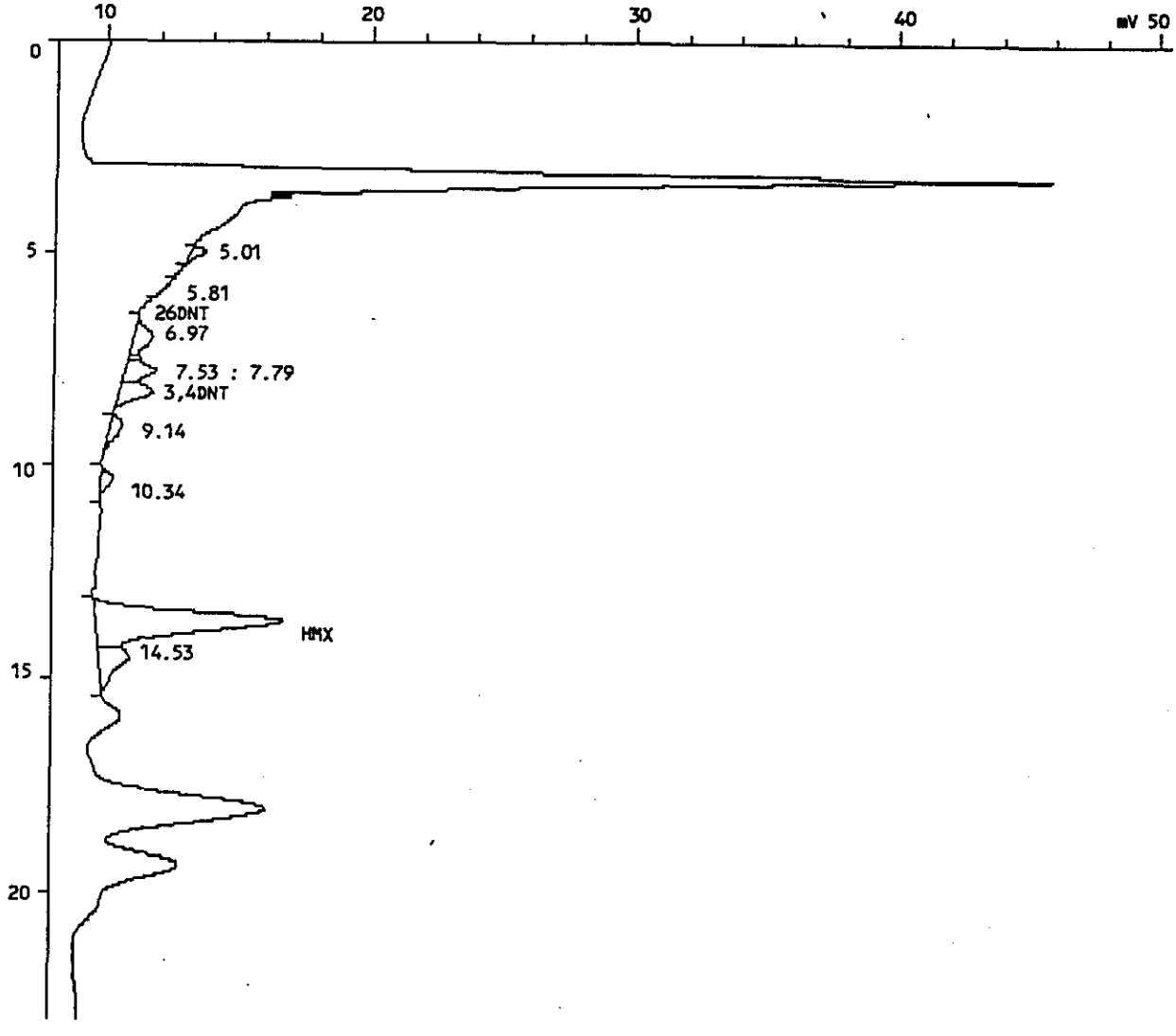
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.760	2508	21440	870.829	HMX
3	8.859	1721	36684	857.494	RDX *J
6	14.635	729	32043	244.082	DNB
7	18.389	3669	97324	1607.592	3,4DNT SD
8	19.269	147	3213	30.434	TNT
Total		8774	190703	3610.430	
Residual		1019	23528	516.139	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,8,1

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 11:07:17
Reported on 04-Jun-98 at 12:43:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,8,1

Acquired on 30-May-98 at 11:07:17
Modified on 04-Jun-82 at 12:33:54
Reported on 04-Jun-98 at 12:33:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

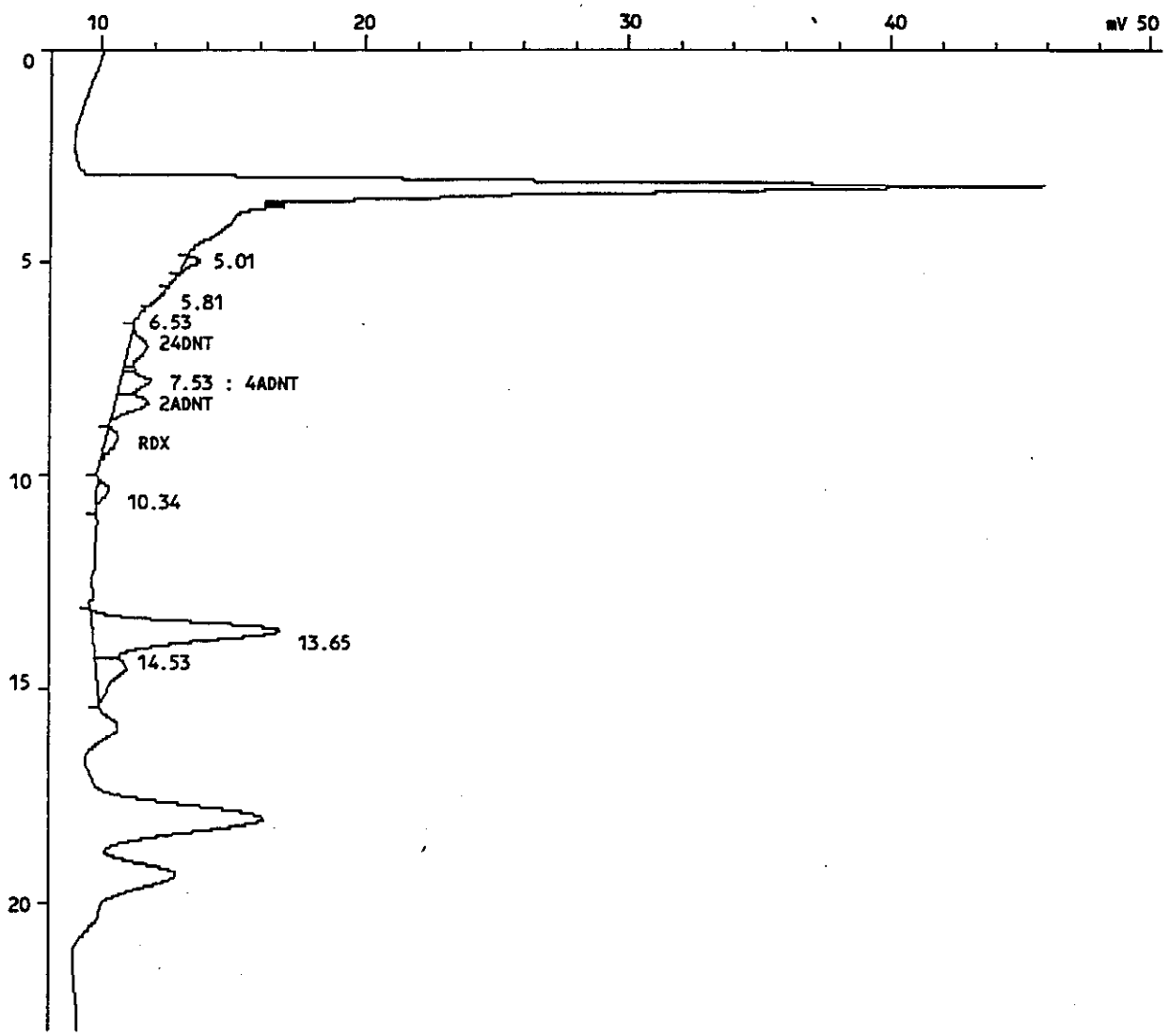
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.528	11	23	1.154	26DNT
7	8.267	1312	31896	2159.495	3,4DNT
11	13.653	7111	227279	19115.123	HMX
Total		8434	259198	21275.771	
Residual		5203	132345	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,8,1

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
INST ID: IN1D, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:1DD,UV

Acquired on 30-May-98 at 11:07:17
Reported on 04-Jun-98 at 12:56:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,8,1

Acquired on 30-May-98 at 11:07:17
Modified on 04-Jun-82 at 12:50:00
Reported on 04-Jun-98 at 12:49:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	6.971	728	23228	605.996	24DNT
6	7.792	1166	25992	1334.978	4ADNT
7	8.267	1312	31896	1092.320	2ADNT
8	9.136	475	15892	946.524	RDX
Total		3680	97008	3979.819	
Residual		9956	294535	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.08

Sample Amt: 2g % Moisture 23.34 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

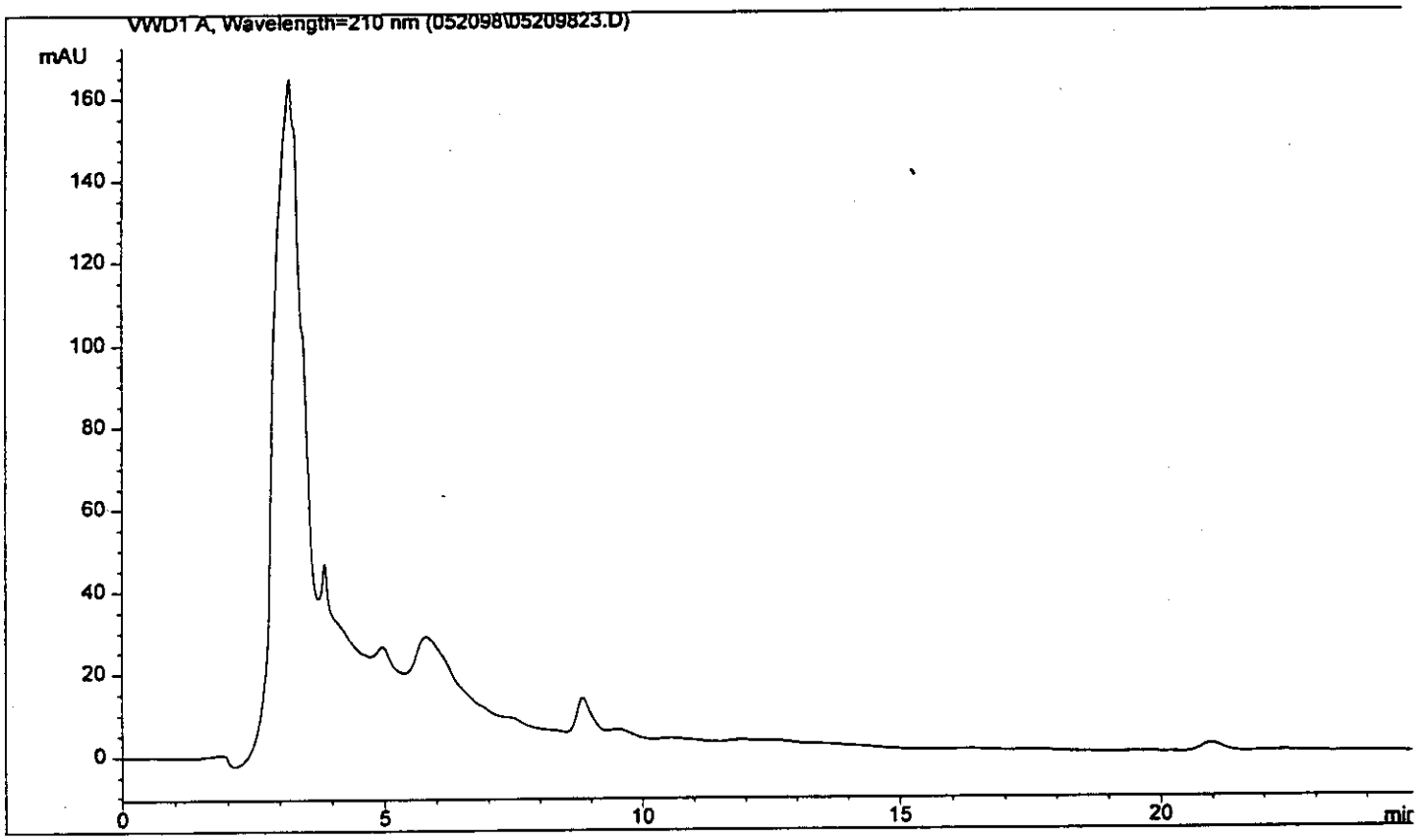
FORM I

Sample Name : 33910.08
Acq Operator : SS

Vial No. : 23
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3 FD

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.09

Sample Amt: 2g % Moisture 24.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	3030	P
121-82-4	RDX	4820	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	568	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

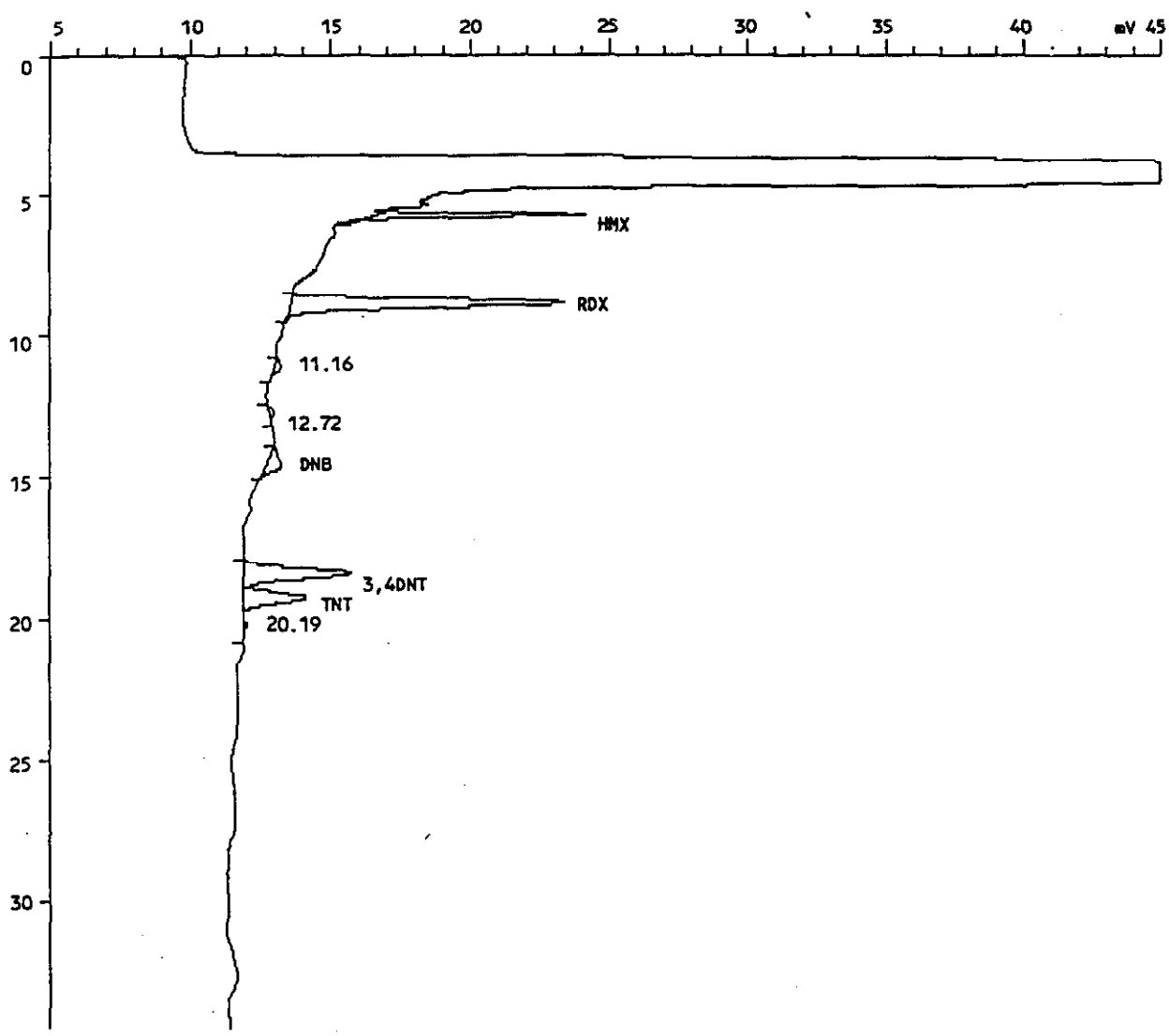
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,3,1

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 03:11:39
Reported on 05-Jun-98 at 12:24:56



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,3,1

Acquired on 20-May-98 at 03:11:39
Modified on 05-Jun-82 at 12:21:48
Reported on 05-Jun-98 at 12:21:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

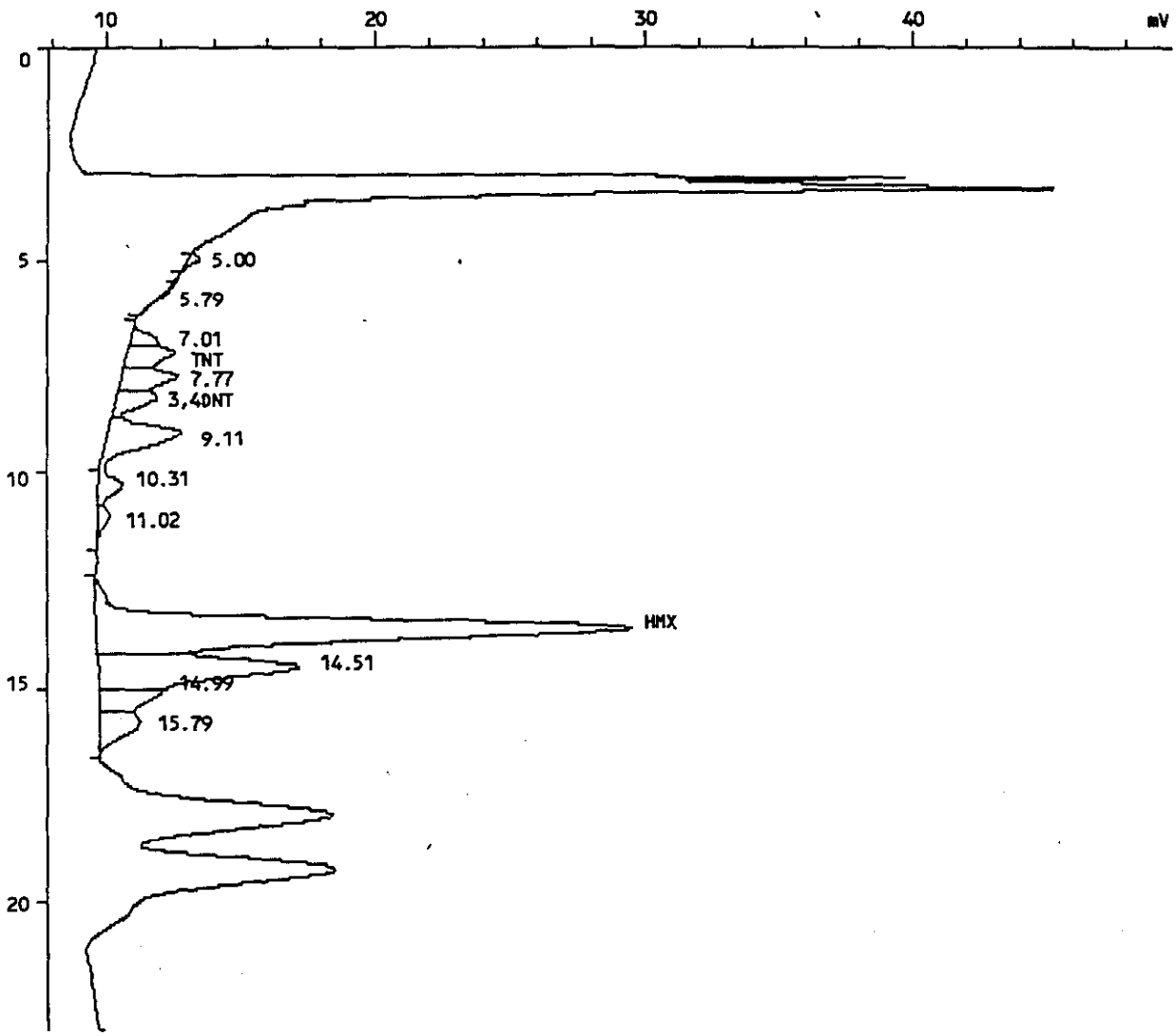
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.755	7760	74566	3028.686	HMX *P
2	8.848	9866	206434	4825.478	RDX *
5	14.645	568	20759	158.125	DNB
6	18.389	3816	101408	1675.066	3,4DNT S4
7	19.253	2268	59999	568.388	TNT *P
Total		24278	463166	10255.742	
Residual		562	14573	284.690	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,9,1

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
INST ID: IN1D, COL. TYPE: LC-CN, ID: LC-CN-D9, INJ:1DD,UV

Acquired on 30-May-98 at 11:51:38
Reported on 04-Jun-98 at 12:43:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,9,1

Acquired on 30-May-98 at 11:51:38
Modified on 04-Jun-82 at 12:34:10
Reported on 04-Jun-98 at 12:34:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

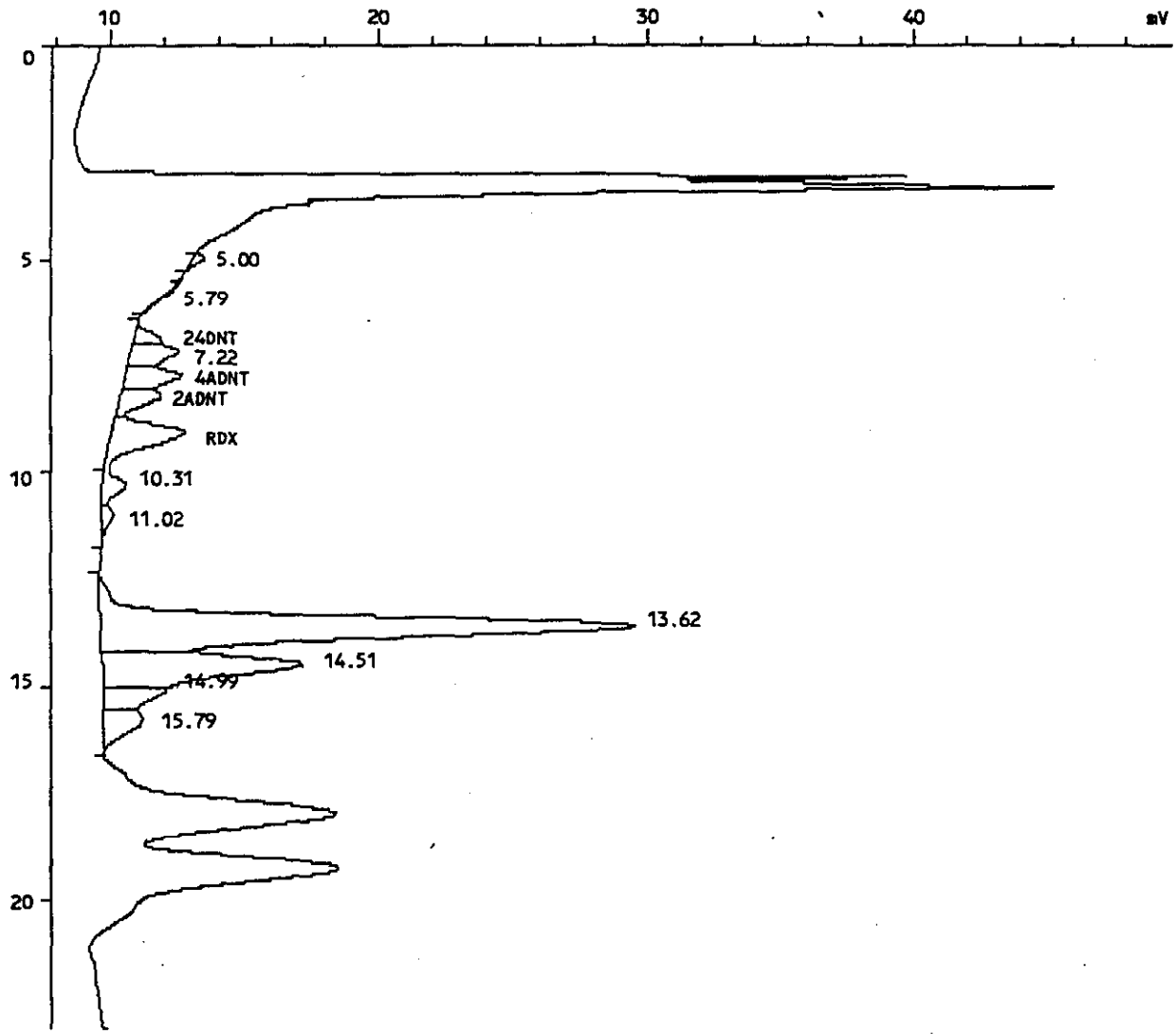
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.221	1826	46602	1642.651	TNT
6	8.235	1543	40890	2768.428	3,4DNT
10	13.616	19893	650518	54711.320	HMX
Total		23262	738009	59122.398	
Residual		19610	591812	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,9,1

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 11:51:38
Reported on 04-Jun-98 at 12:57:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,9,1

Acquired on 30-May-98 at 11:51:38
Modified on 04-Jun-82 at 12:50:14
Reported on 04-Jun-98 at 12:50:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.013	1133	18727	488.578	24DNT
5	7.771	2133	50355	2586.310	4ADNT
6	8.235	1543	40890	1400.332	2ADNT
7	9.115	2767	99940	5952.348	RDX
Total		7577	209912	10427.566	
Residual		35295	1119909	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.09

Sample Amt: 2g % Moisture 24.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN----------	625		U

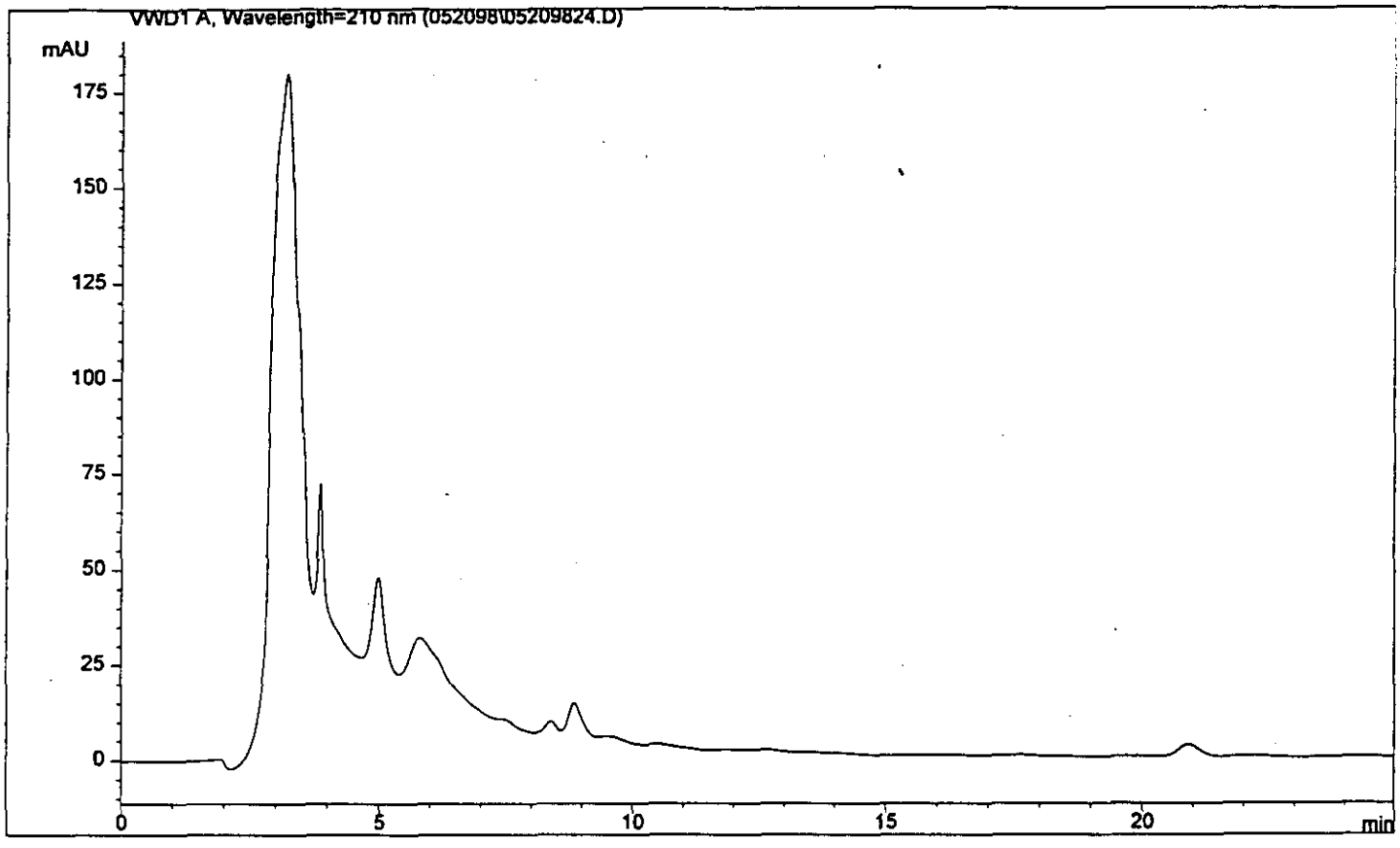
FORM I

Sample Name : 33910.09
Acq Operator : SS

Vial No. : 24
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.10

Sample Amt: 2g % Moisture 27.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

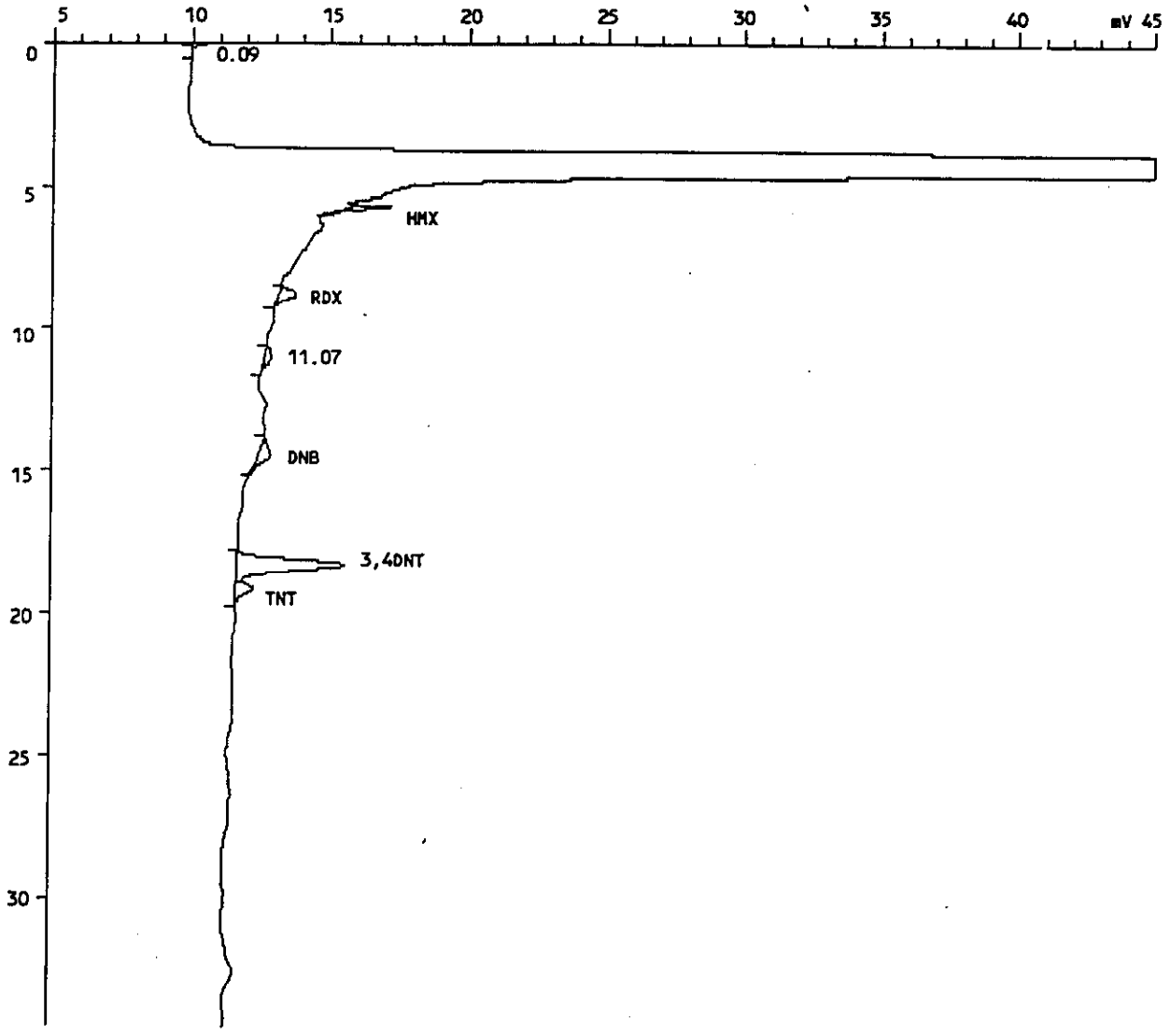
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,4,1

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 03:56:16
Reported on 05-Jun-98 at 13:11:09



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,4,1

Acquired on 20-May-98 at 03:56:16
Modified on 05-Jun-82 at 12:21:32
Reported on 05-Jun-98 at 12:21:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

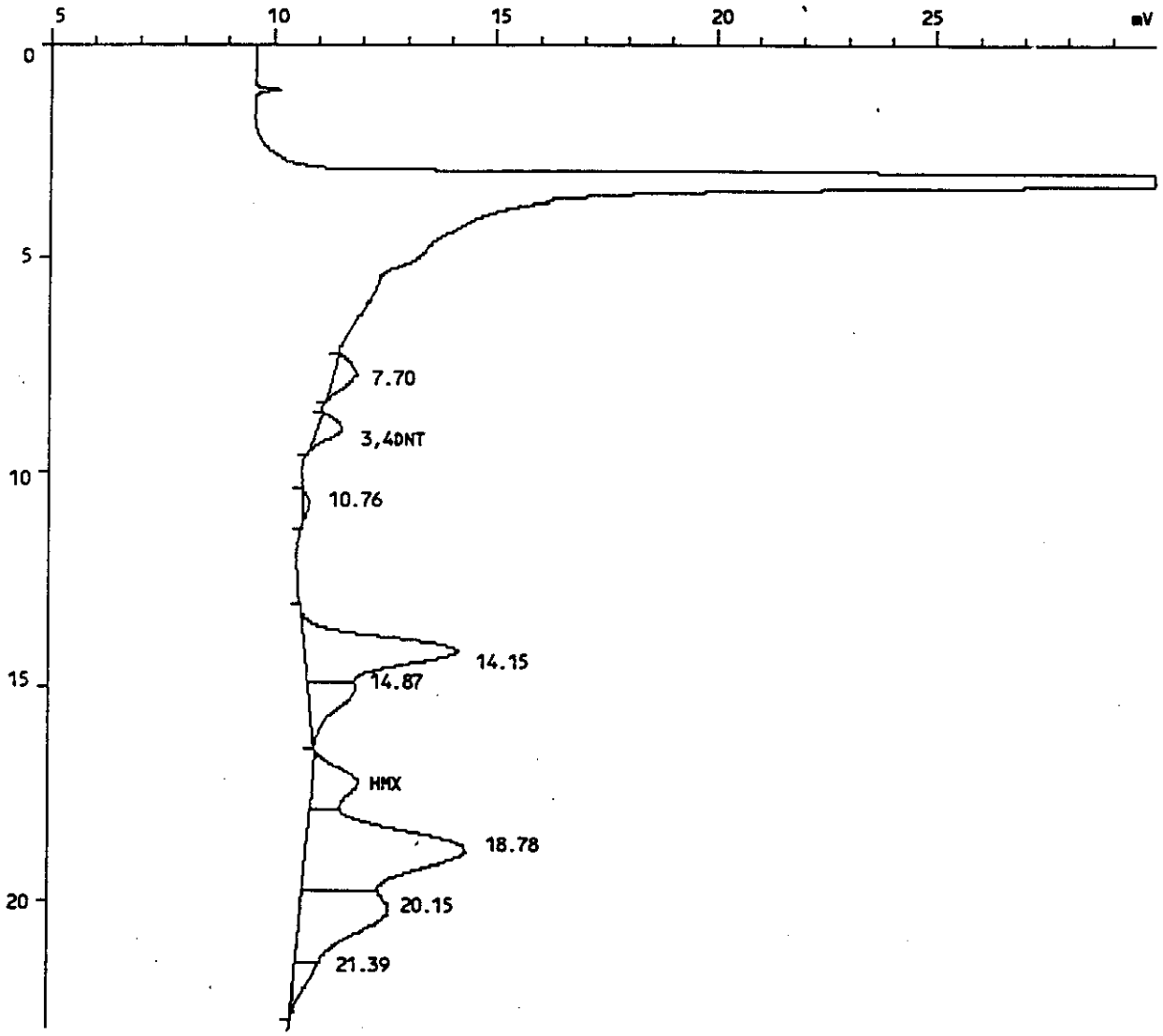
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.739	1753	16263	660.551	HMX
3	8.827	670	15207	355.470	RDX
5	14.565	487	19364	147.498	DNB
6	18.272	3841	104310	1722.997	3,4DNT
7	19.152	637	16864	159.757	TNT
Total		7388	172007	3046.272	
Residual		776	13282	310.480	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,2,1

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:10:47
Reported on 05-Jun-98 at 13:37:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,2,1

Acquired on 05-Jun-98 at 00:10:47
Modified on 05-Jun-82 at 13:33:12
Reported on 05-Jun-98 at 13:33:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

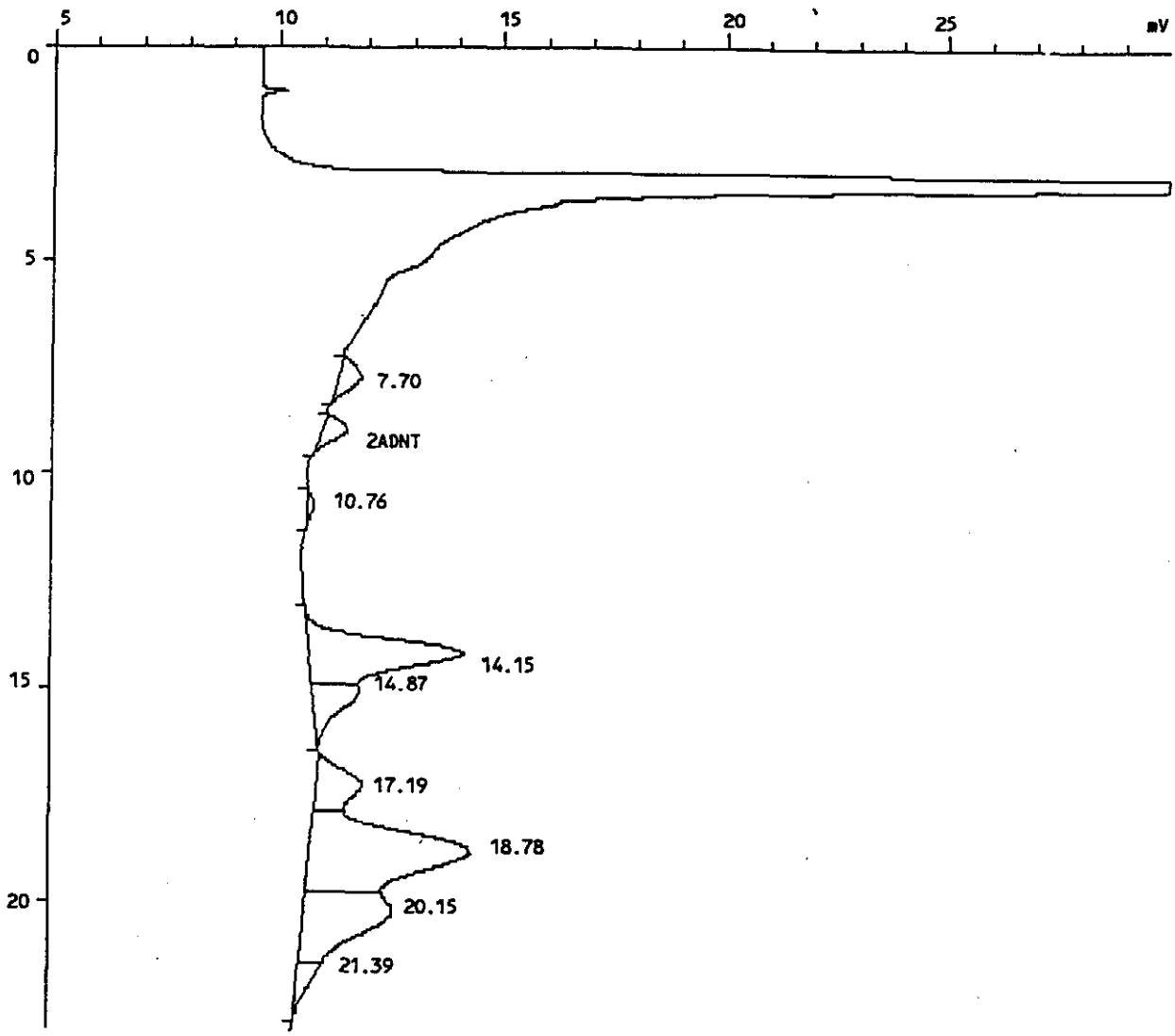
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.040	575	18208	1378.314	3,4DNT
6	17.195	1028	52781	5806.484	HMX
Total		1603	70988	7184.799	
Residual		11258	659640	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,2,1

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:10:47
Reported on 05-Jun-98 at 13:42:37



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,2,1

Acquired on 05-Jun-98 at 00:10:47
Modified on 05-Jun-82 at 13:38:30
Reported on 05-Jun-98 at 13:38:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 13:32:56
Method file.....: LCCN Last modified on 05-Jun-82 at 13:38:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.040	575	18208	743.165	2ADNT
Total		575	18208	743.165	
Residual		12286	712421	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C1

ab Name: SWL-TULSA Contract:

ab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.10

Sample Amt: 2g % Moisture 27.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

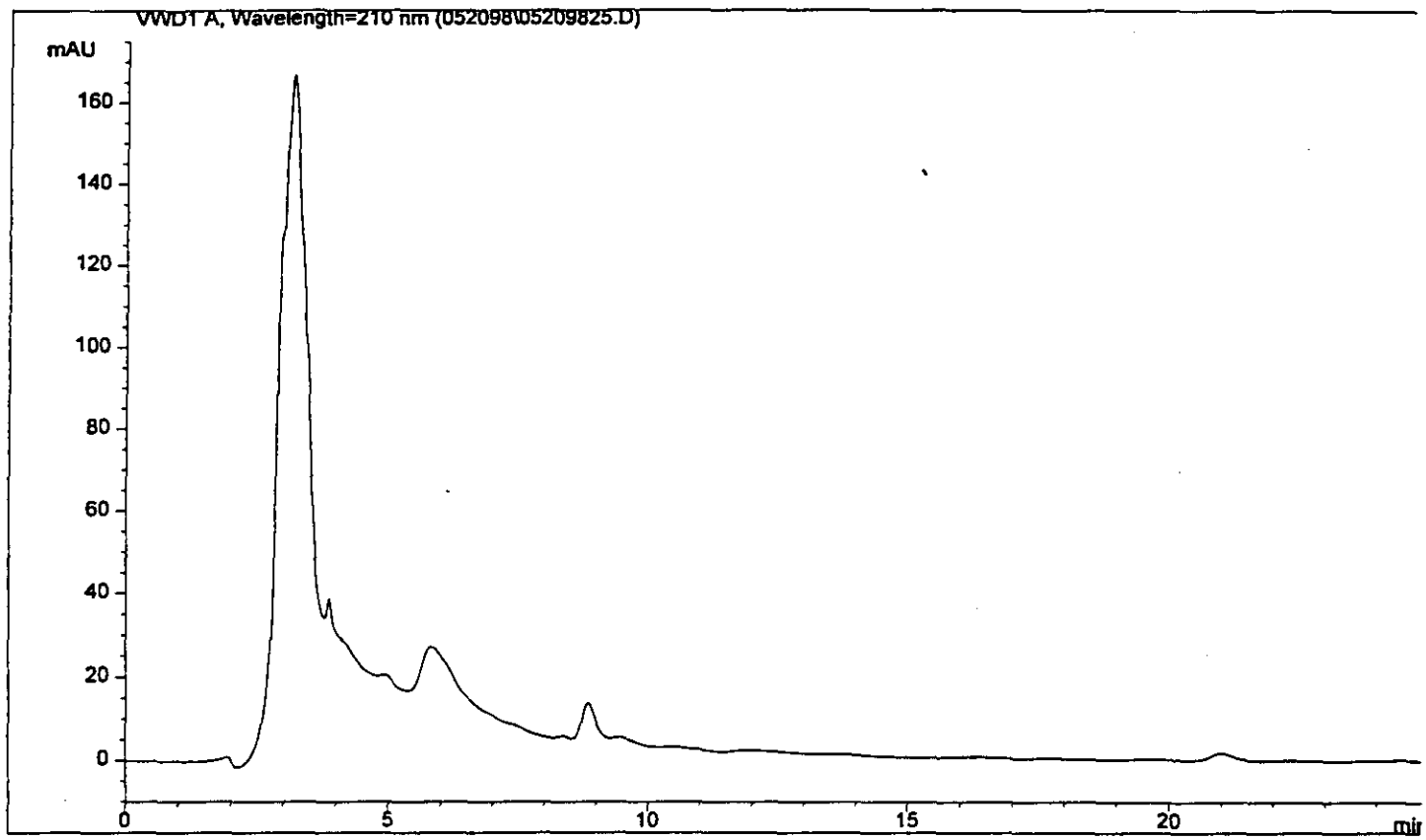
FORM I

Sample Name : 33910.10
Acq Operator : SS

Vial No. : 25
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.11

Sample Amt: 2g % Moisture 21.11 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2570	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

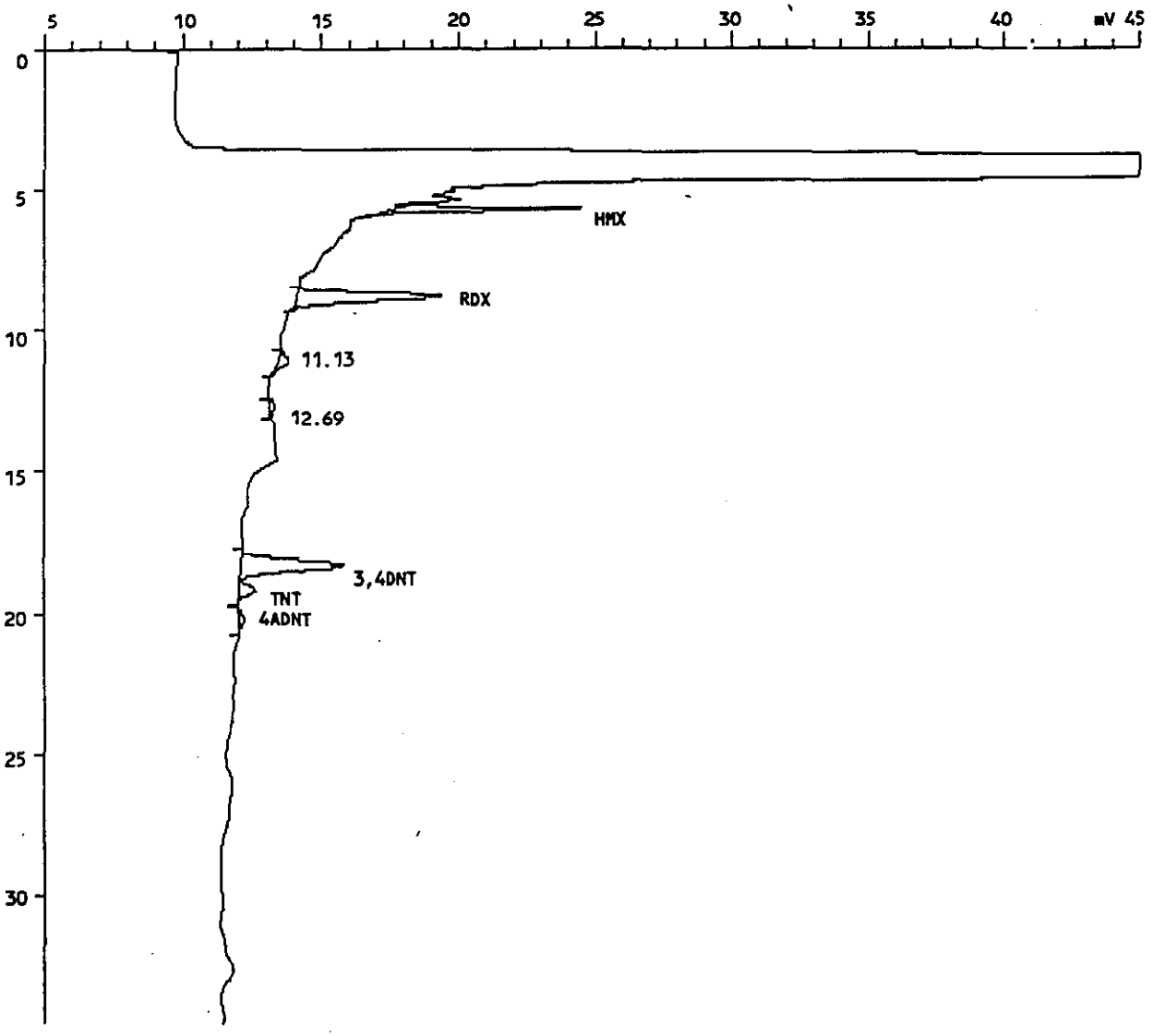
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,5,1

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 04:40:54
Reported on 05-Jun-98 at 13:11:34



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,5,1

Acquired on 20-May-98 at 04:40:54
Modified on 05-Jun-82 at 12:21:16
Reported on 05-Jun-98 at 12:21:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

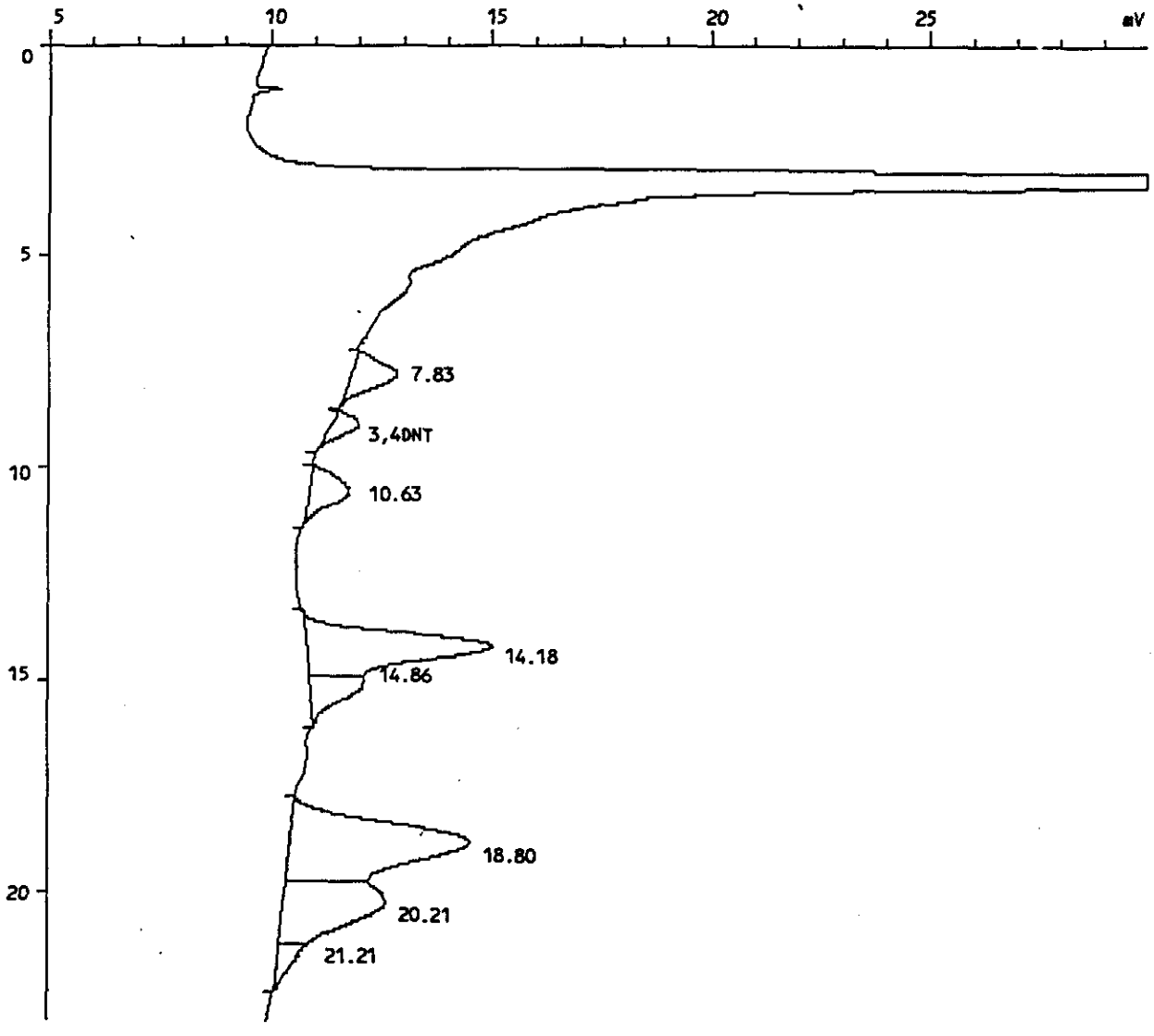
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.739	6997	67426	2738.662	HMX
2	8.821	5232	109988	2571.016	RDX *
5	18.331	3736	99952	1651.015	3,4DNT SJ
6	19.205	621	14994	142.044	TNT
7	20.139	221	7627	114.316	4ADNT
Total		16808	299988	7217.053	
Residual		576	15471	361.632	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,3,1

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:55:08
Reported on 05-Jun-98 at 13:37:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,3,1

Acquired on 05-Jun-98 at 00:55:08
Modified on 05-Jun-82 at 13:33:24
Reported on 05-Jun-98 at 13:33:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

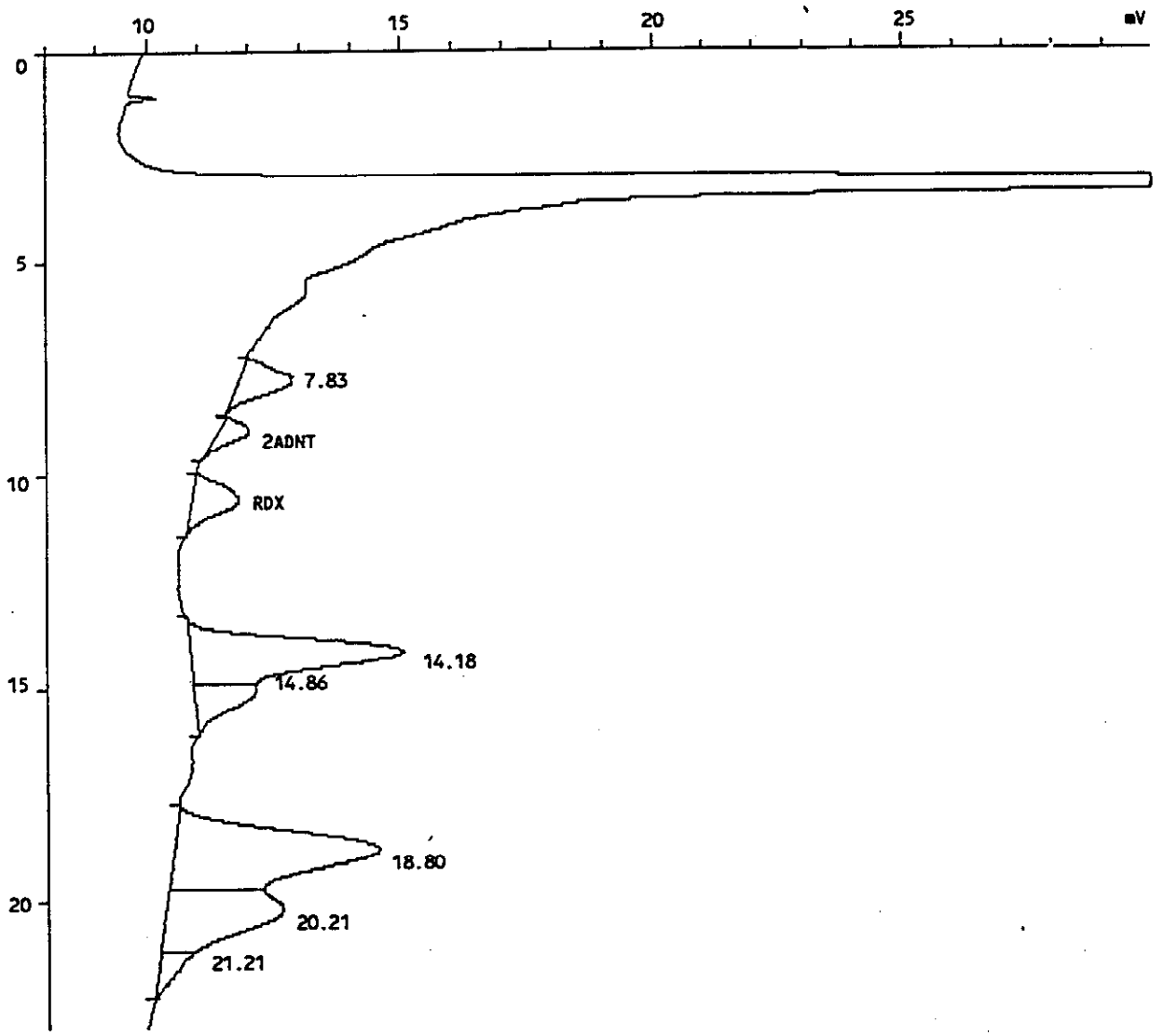
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.035	636	20092	1521.005	3,4DNT
Total		636	20092	1521.005	
Residual		14542	791037	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,3,1

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:55:08
Reported on 05-Jun-98 at 15:35:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,3,1

Acquired on 05-Jun-98 at 00:55:08
Modified on 05-Jun-82 at 15:18:06
Reported on 05-Jun-98 at 15:18:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 15:18:04
Method file.....: LCCN Last modified on 05-Jun-82 at 15:17:06
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.035	636	20092	820.101	2ADNT
3	10.629	902	40536	3344.580	RDX
Total		1539	60629	4164.681	
Residual		13640	750501	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.11

Sample Amt: 2g % Moisture 21.11 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

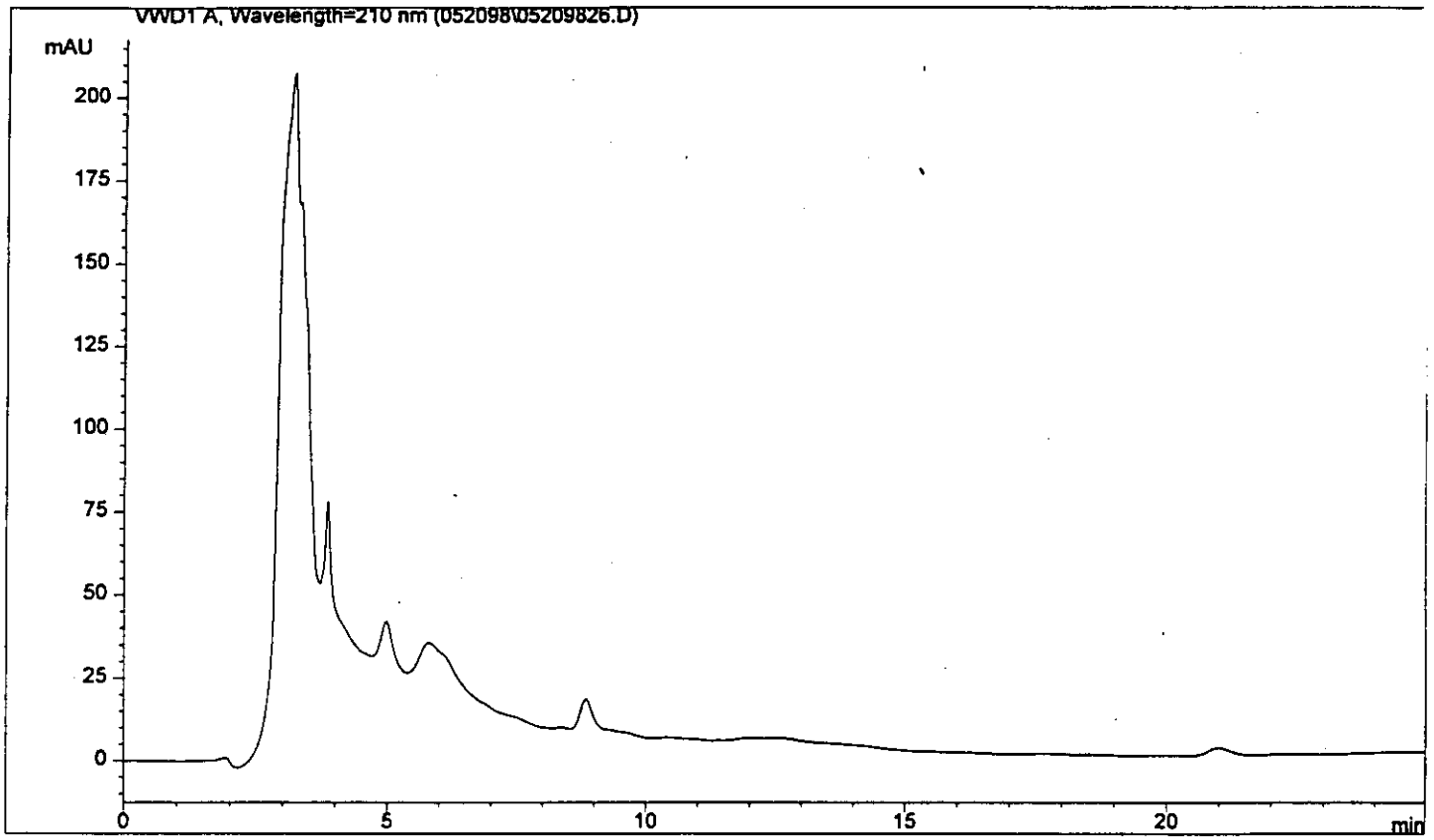
FORM I

Sample Name : 33910.11
Acq Operator : SS

Vial No. : 26
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN

Totals: 0.00000

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*** End of Report ***

100

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-10-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.12

Sample Amt: 2g % Moisture 21.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2790	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

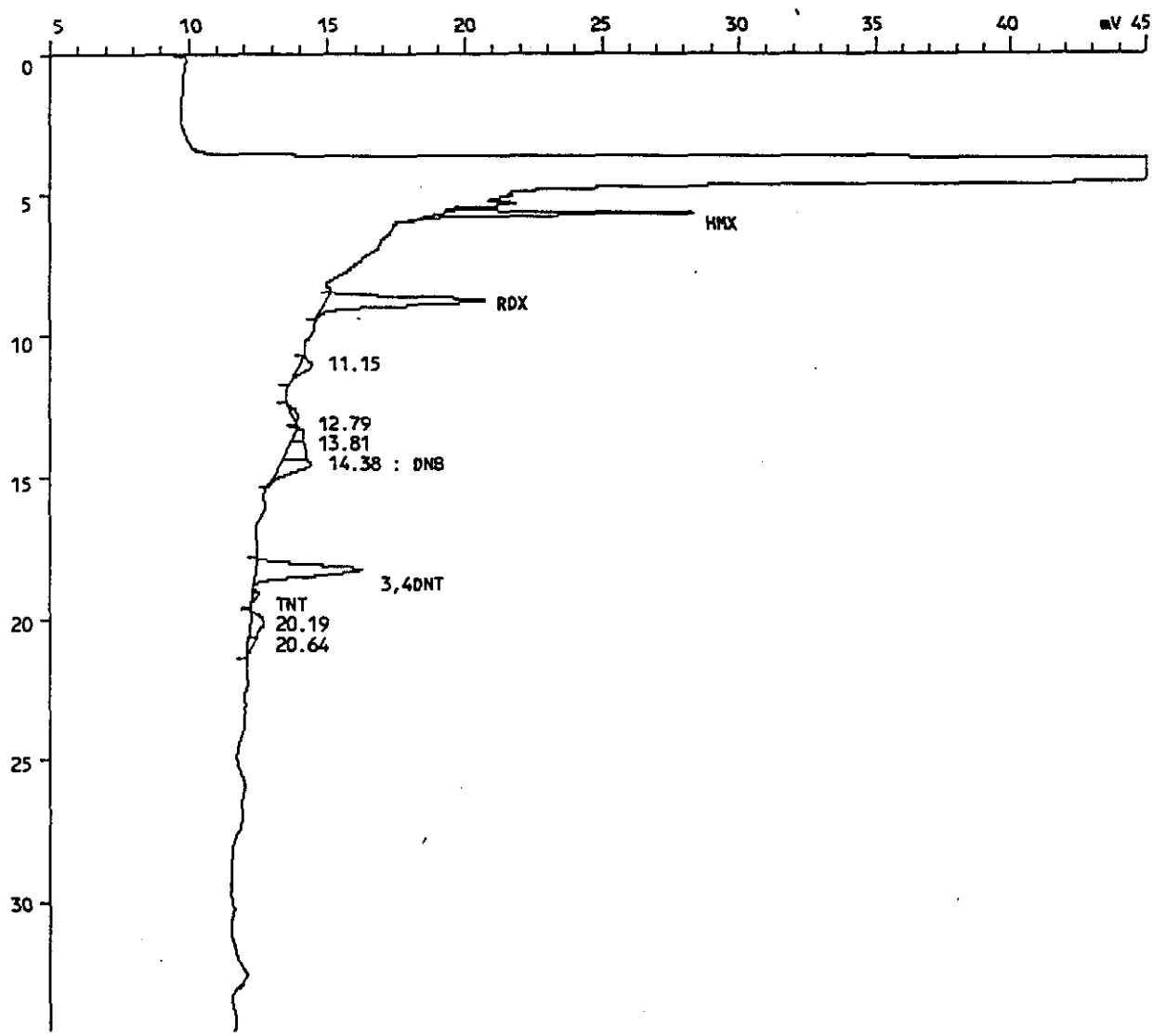
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,6,1

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 05:25:31
Reported on 05-Jun-98 at 13:10:44



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,6,1

Acquired on 20-May-98 at 05:25:31
Modified on 05-Jun-82 at 12:21:00
Reported on 05-Jun-98 at 12:21:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

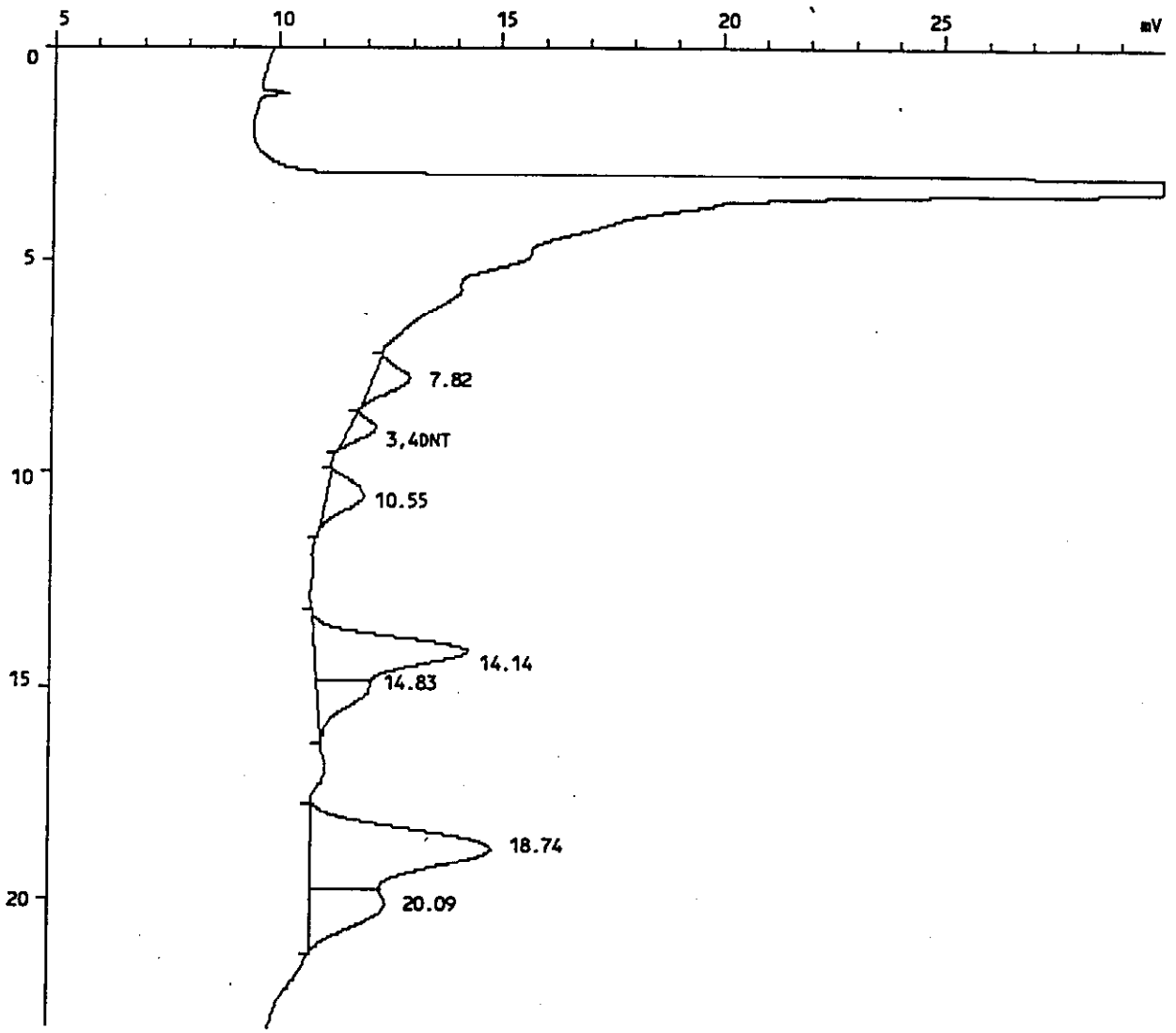
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.744	9433	90464	3674.417	HMX
2	8.832	5775	119545	2794.408	RDX *
7	14.651	1129	36570	278.566	DNB
8	18.352	3814	98693	1630.209	3,4DNT SZ
9	19.227	232	5035	47.697	TNT
Total		20384	350307	8425.296	
Residual		2857	79522	1498.317	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,4,1

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 01:39:29
Reported on 05-Jun-98 at 13:36:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,4,1

Acquired on 05-Jun-98 at 01:39:29
Modified on 05-Jun-82 at 13:33:36
Reported on 05-Jun-98 at 13:33:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

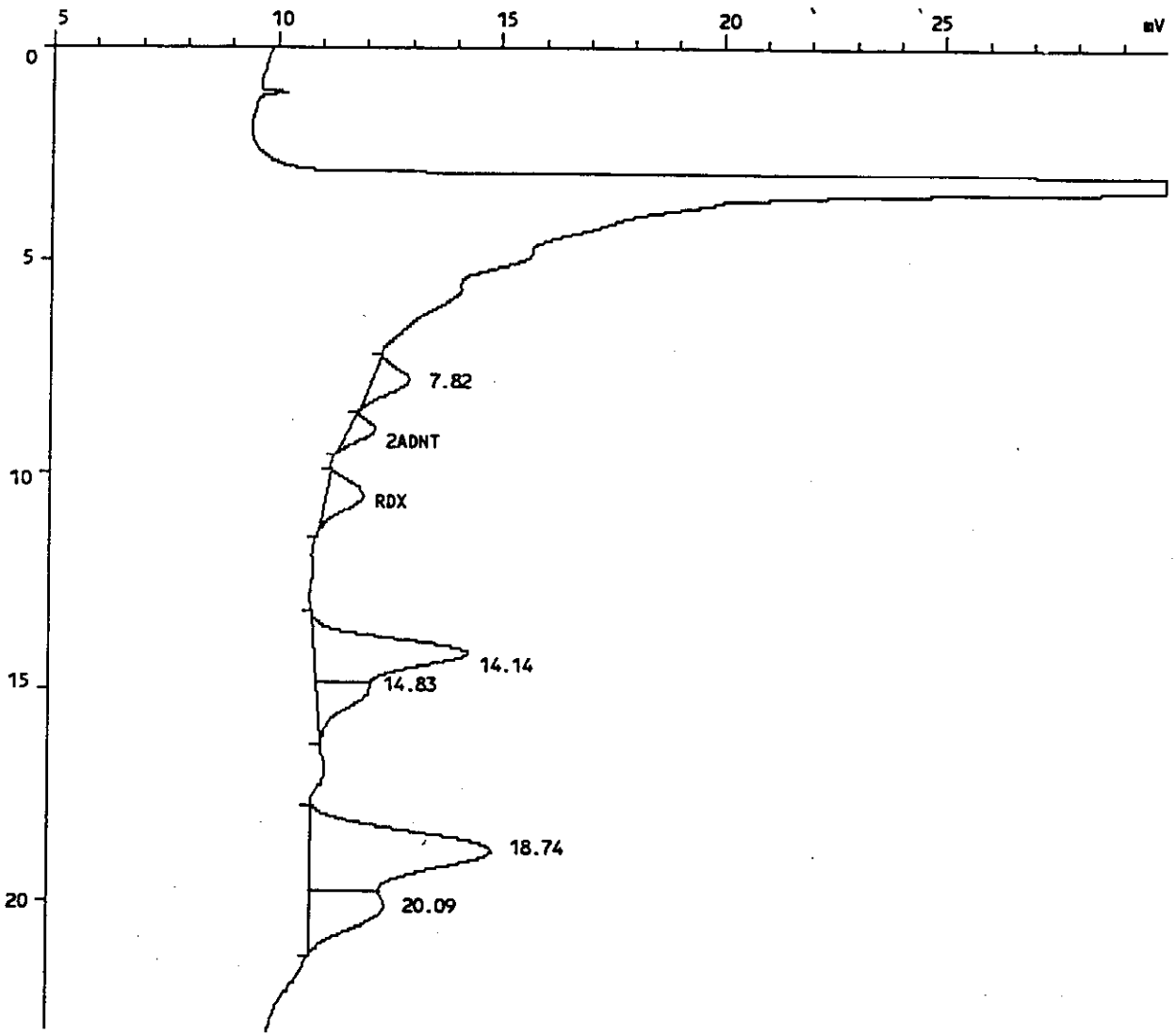
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.019	610	18819	1424.591	3,4DNT
Total		610	18819	1424.591	
Residual		12049	654562	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,4,1

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 01:39:29
Reported on 05-Jun-98 at 13:41:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,4,1

Acquired on 05-Jun-98 at 01:39:29
Modified on 05-Jun-82 at 13:38:54
Reported on 05-Jun-98 at 13:38:54

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 13:32:56
Method file.....: LCCN Last modified on 05-Jun-82 at 13:38:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.019	610	18819	768.116	2ADNT
3	10.549	845	36833	3039.043	RDX
Total		1456	55652	3807.159	
Residual		11204	617729	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.12

Sample Amt: 2g % Moisture 21.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

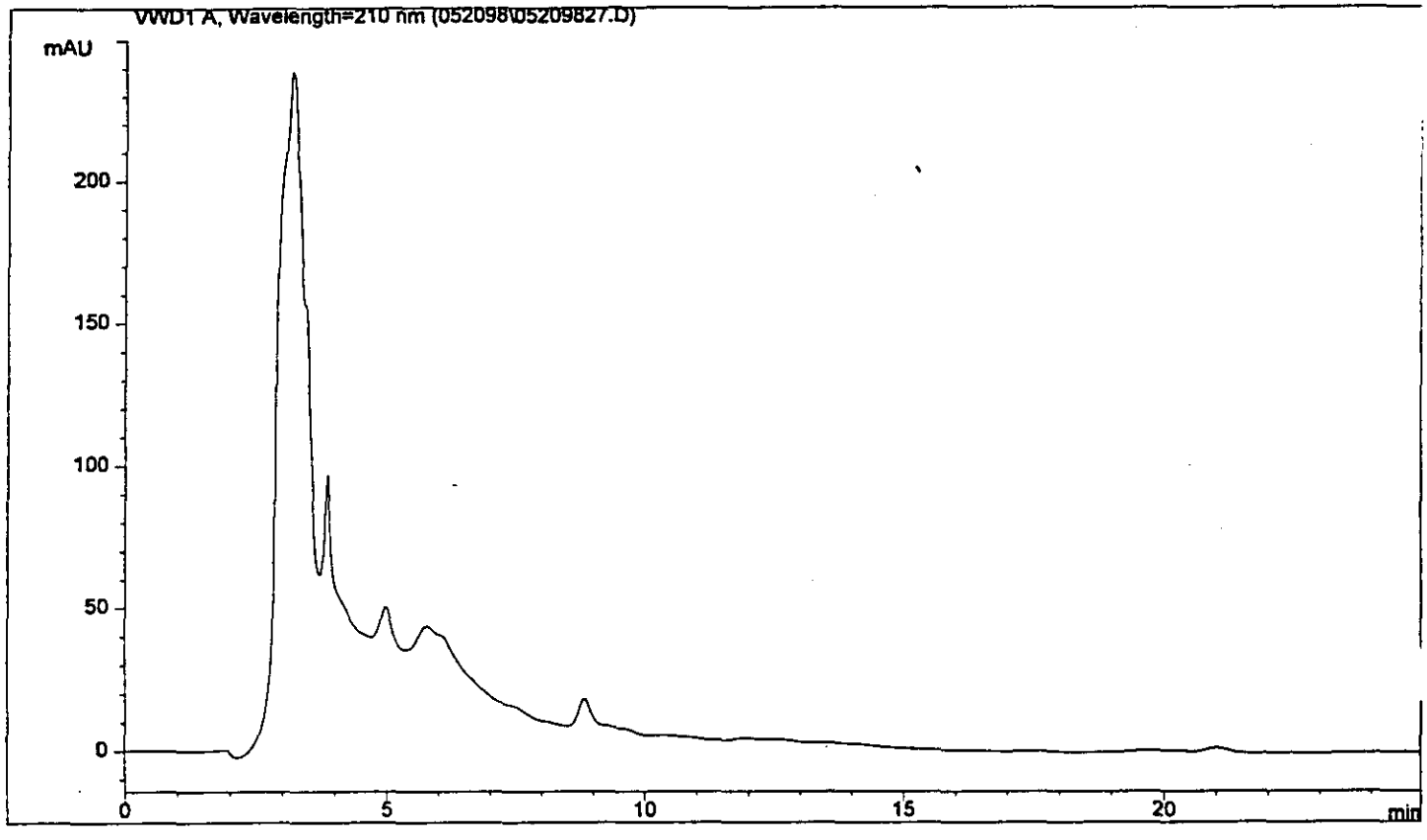
FORM I

Sample Name : 33910.12
Acq Operator : SS

Vial No. : 27
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D1
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.13

Sample Amt: 2g % Moisture 29.47 Date Received: 05/09/98

Extraction Volume: 20ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	11000	U
121-82-4	RDX	112000	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	44500	P
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

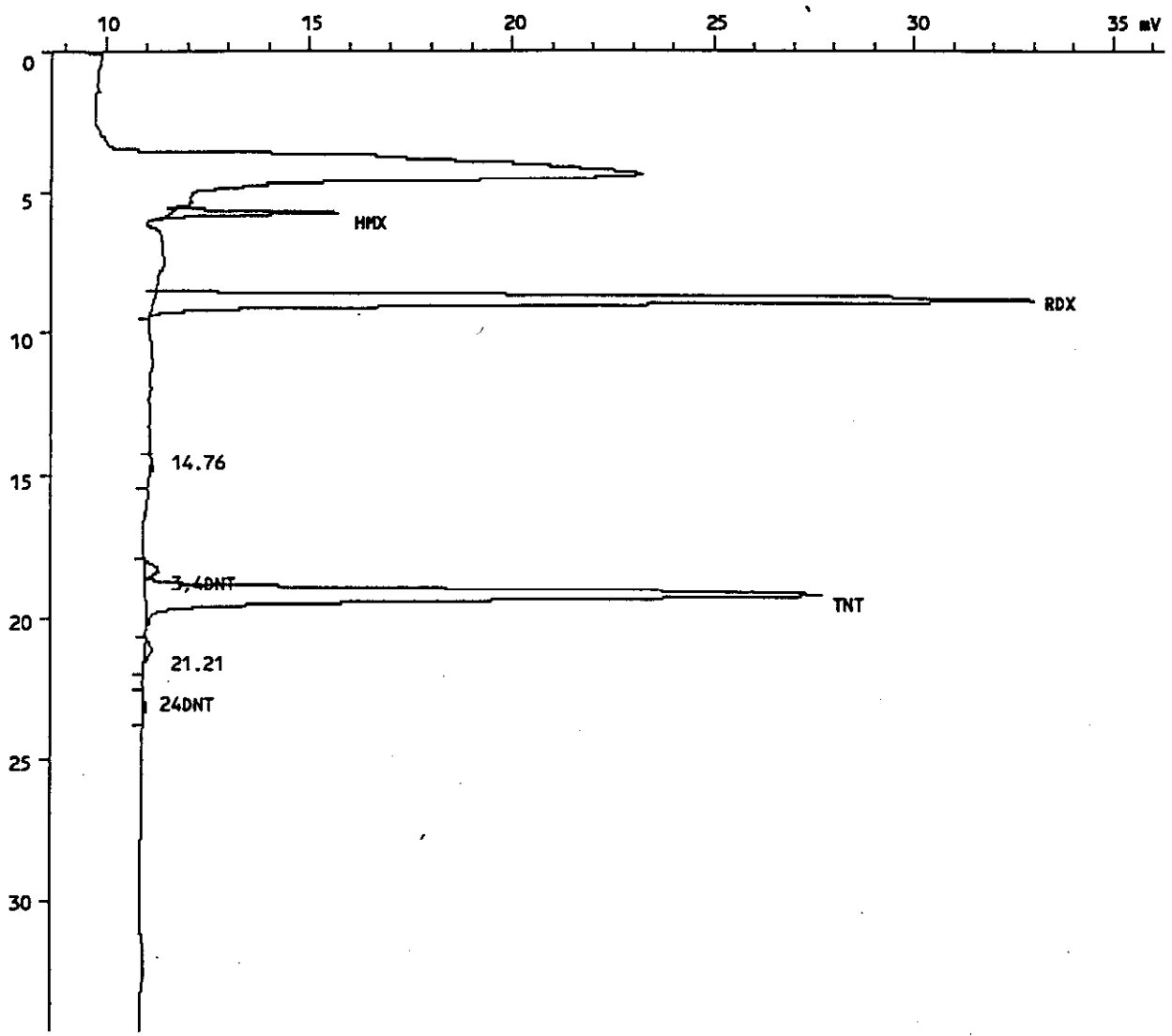
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,7,1

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 06:10:09
Reported on 05-Jun-98 at 13:12:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,7,1

Acquired on 20-May-98 at 06:10:09
Modified on 05-Jun-82 at 12:20:44
Reported on 05-Jun-98 at 12:20:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.755	4210	42012	17064.020	HMX
2	8.837	21817	479905	112179.781	RDX *
4	18.325	353	8623	1424.422	3,4DNT
5	19.200	16734	469397	44467.301	TNT * P
7	23.200	87	3138	239.275	24DNT
Total		43202	1003075	175374.797	
Residual		269	8786	1198.895	

INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,5,1

Acquired on 05-Jun-98 at 02:23:51
Modified on 05-Jun-82 at 13:33:48
Reported on 05-Jun-98 at 13:33:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

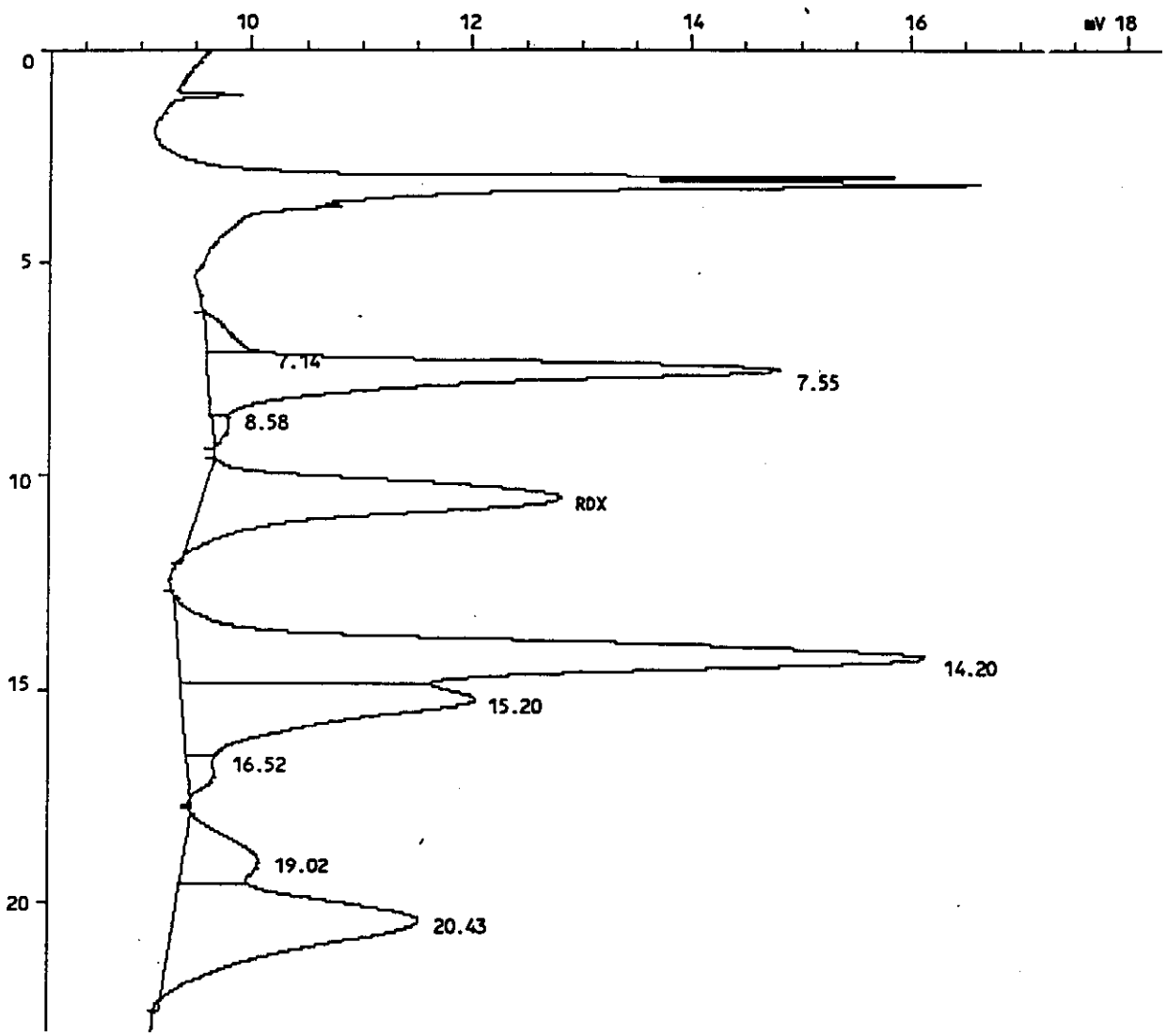
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.547	5214	183318	74671.102	TNT
Total		5214	183318	74671.102	
Residual		16594	906924	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,5,1

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 02:23:51
Reported on 05-Jun-98 at 13:40:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,5,1

Acquired on 05-Jun-98 at 02:23:51
Modified on 05-Jun-82 at 13:39:08
Reported on 05-Jun-98 at 13:39:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 13:32:56
Method file.....: LCCN Last modified on 05-Jun-82 at 13:38:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	10.544	3271	172553	142370.141	RDX
Total		3271	172553	142370.141	
Residual		18537	917689	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.13

Sample Amt: 2g % Moisture 29.47 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

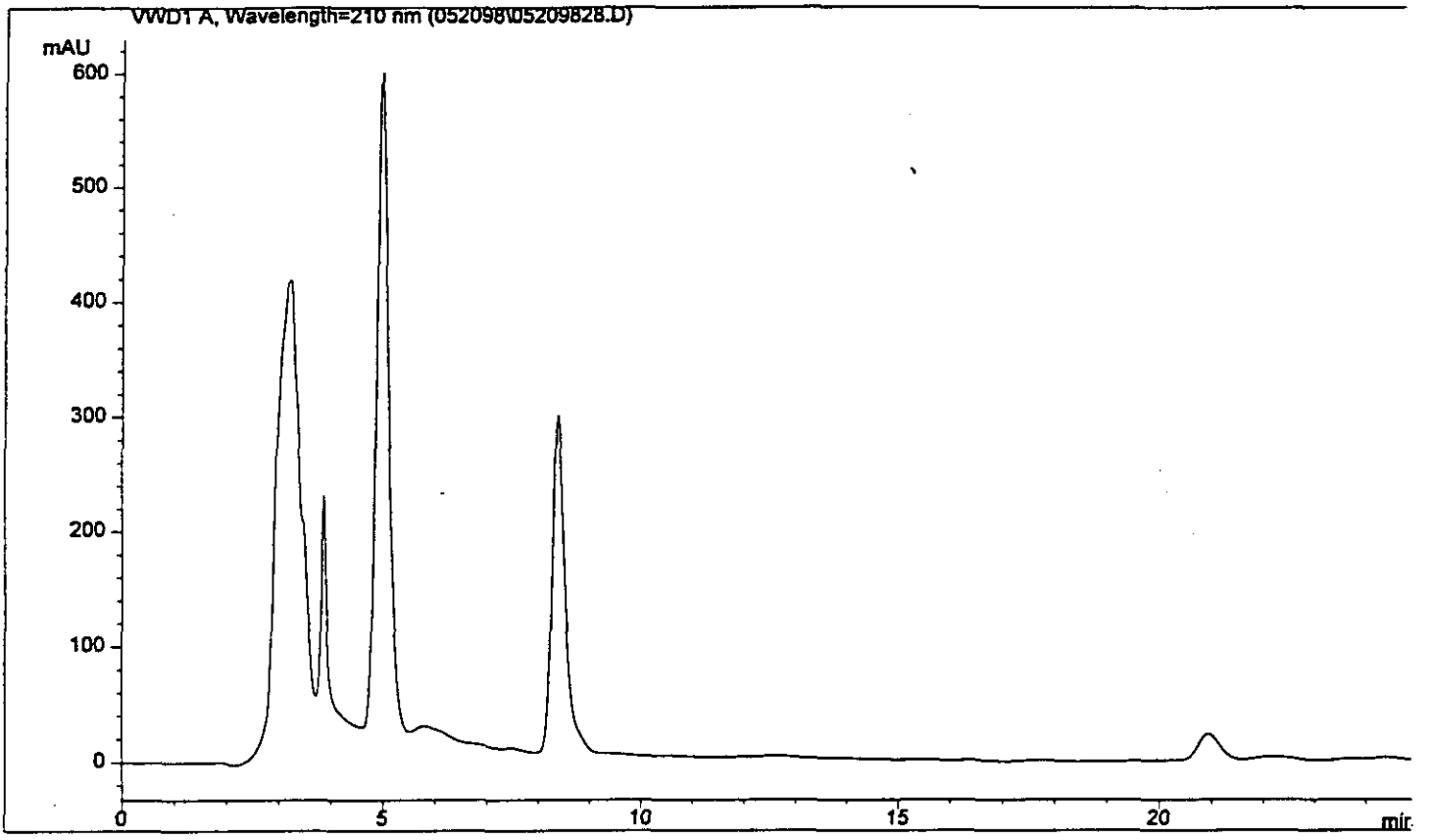
FORM I

Sample Name : 33910.13
Acq Operator : SS

Vial No. : 28
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



==========

Customized Report: extstd.frp

==========

Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

==========

*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.14

Sample Amt: 2g % Moisture 22.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2780	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

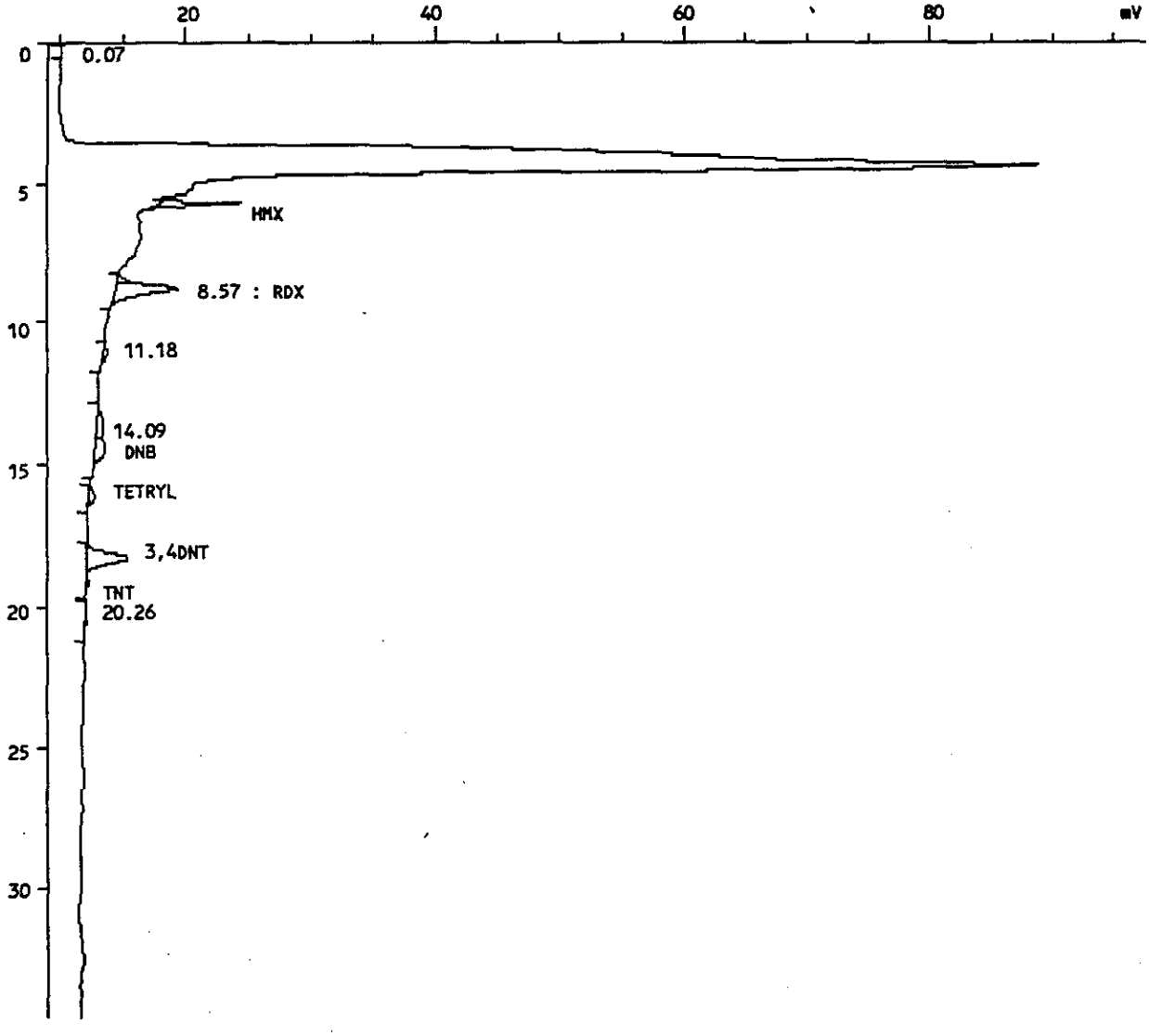
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,8,1

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 06:54:47
Reported on 08-Jun-98 at 09:54:06



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,8,1

Acquired on 20-May-98 at 06:54:47
Modified on 05-Jun-82 at 12:20:28
Reported on 05-Jun-98 at 12:20:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

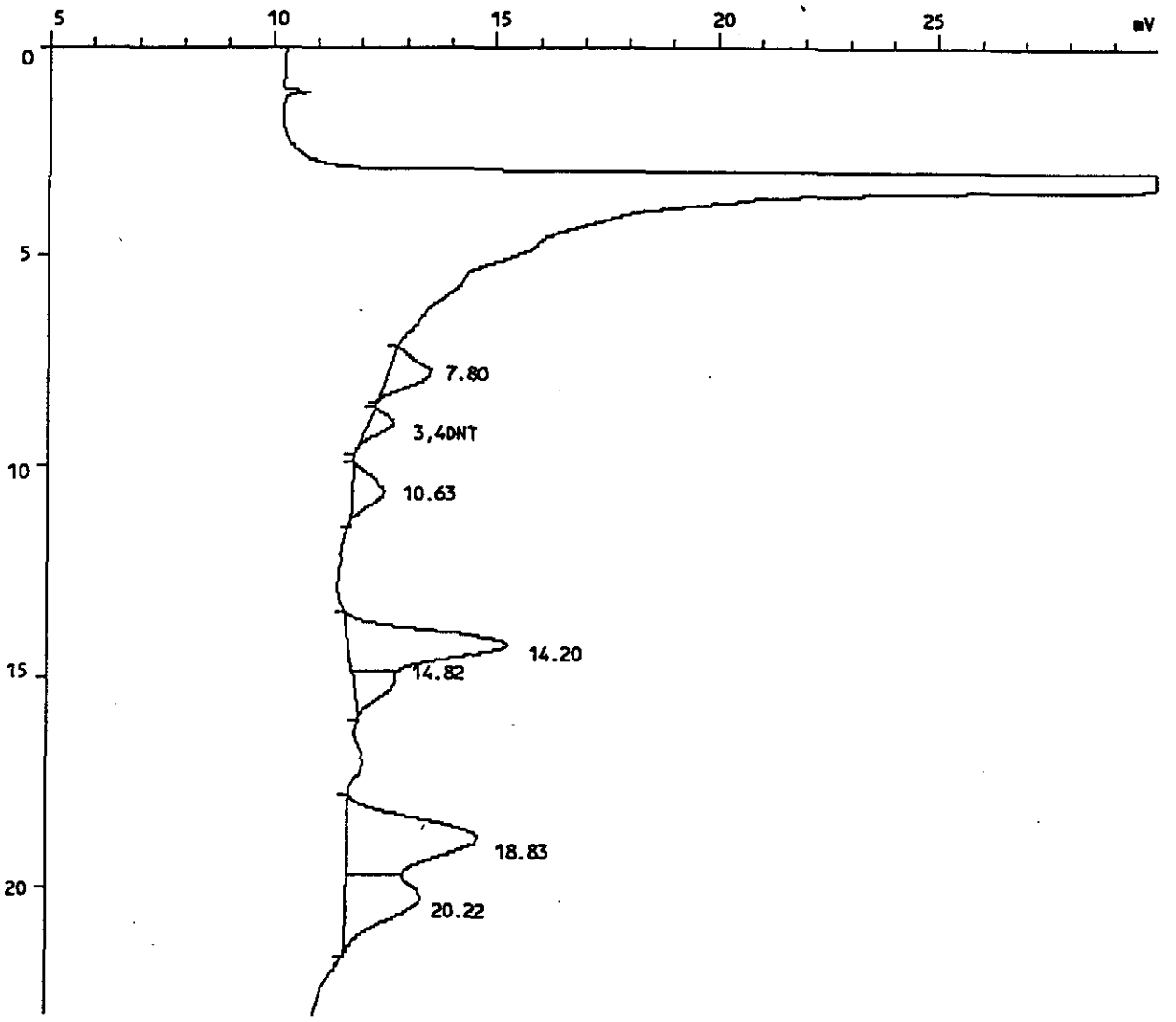
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.733	6576	57679	2342.764	HMX
4	8.832	4988	119063	2783.145	RDX*
7	14.608	895	40766	310.525	DNB
8	16.149	508	13679	235.351	TETRYL
9	18.320	3287	83848	1385.004	3,4DNT
10	19.211	216	4485	42.485	TNT
Total		16469	319519	7099.273	
Residual		2655	62463	1511.926	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,6,1

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:08:12
Reported on 05-Jun-98 at 13:35:35



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,6,1

Acquired on 05-Jun-98 at 03:08:12
Modified on 05-Jun-82 at 13:34:02
Reported on 05-Jun-98 at 13:34:01

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

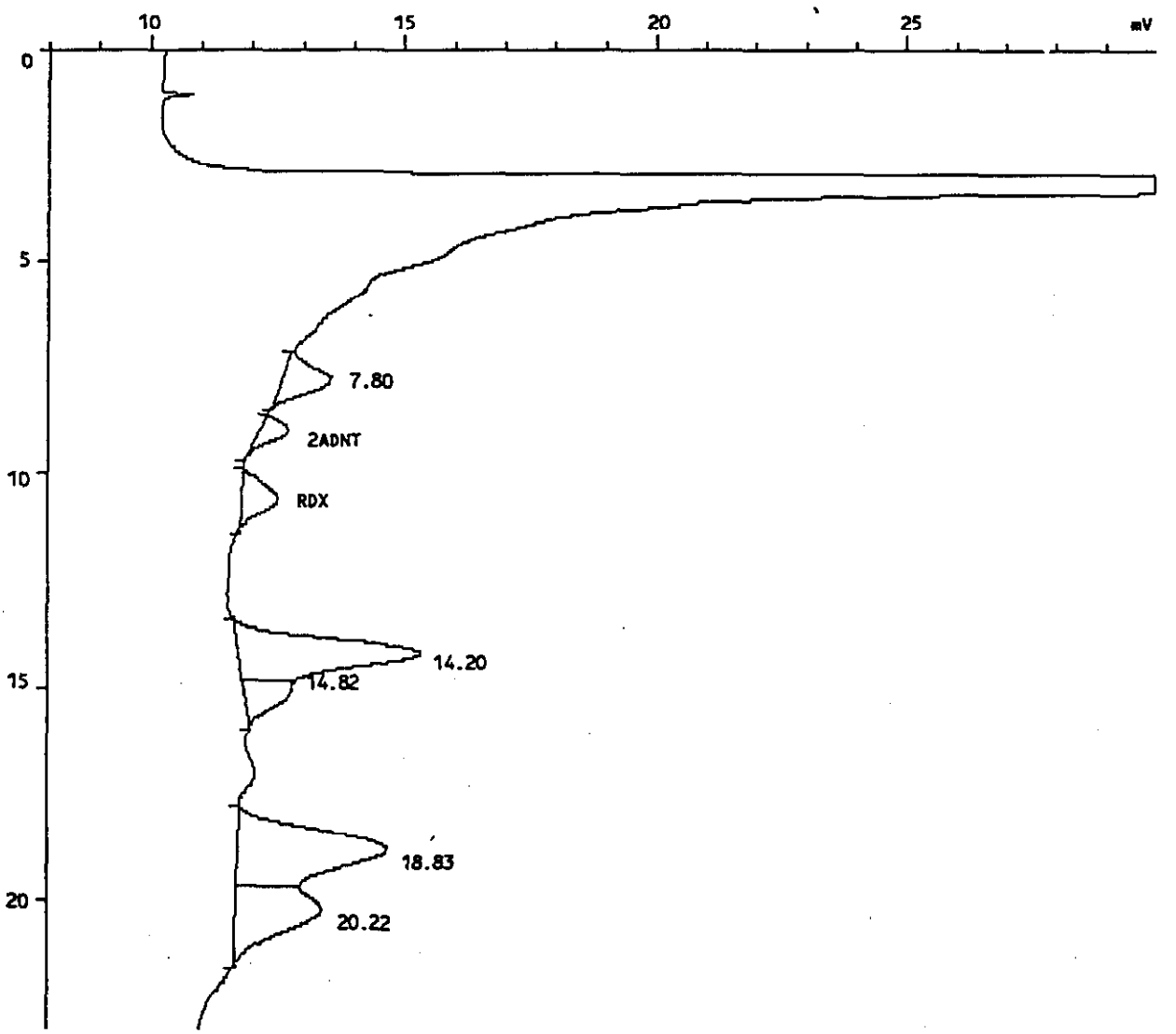
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.045	593	19278	1459.342	3,4DNT
Total		593	19278	1459.342	
Residual		10966	579418	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,6,1

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:08:12
Reported on 05-Jun-98 at 15:28:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,6,1

Acquired on 05-Jun-98 at 03:08:12
Modified on 05-Jun-82 at 15:27:04
Reported on 05-Jun-98 at 15:27:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 15:18:04
Method file.....: LCCN Last modified on 05-Jun-82 at 15:19:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.045	593	19278	786.853	2ADNT
3	10.629	727	31893	2631.430	RDX
Total		1319	51171	3418.284	
Residual		10239	547525	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.14

Sample Amt: 2g % Moisture 22.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

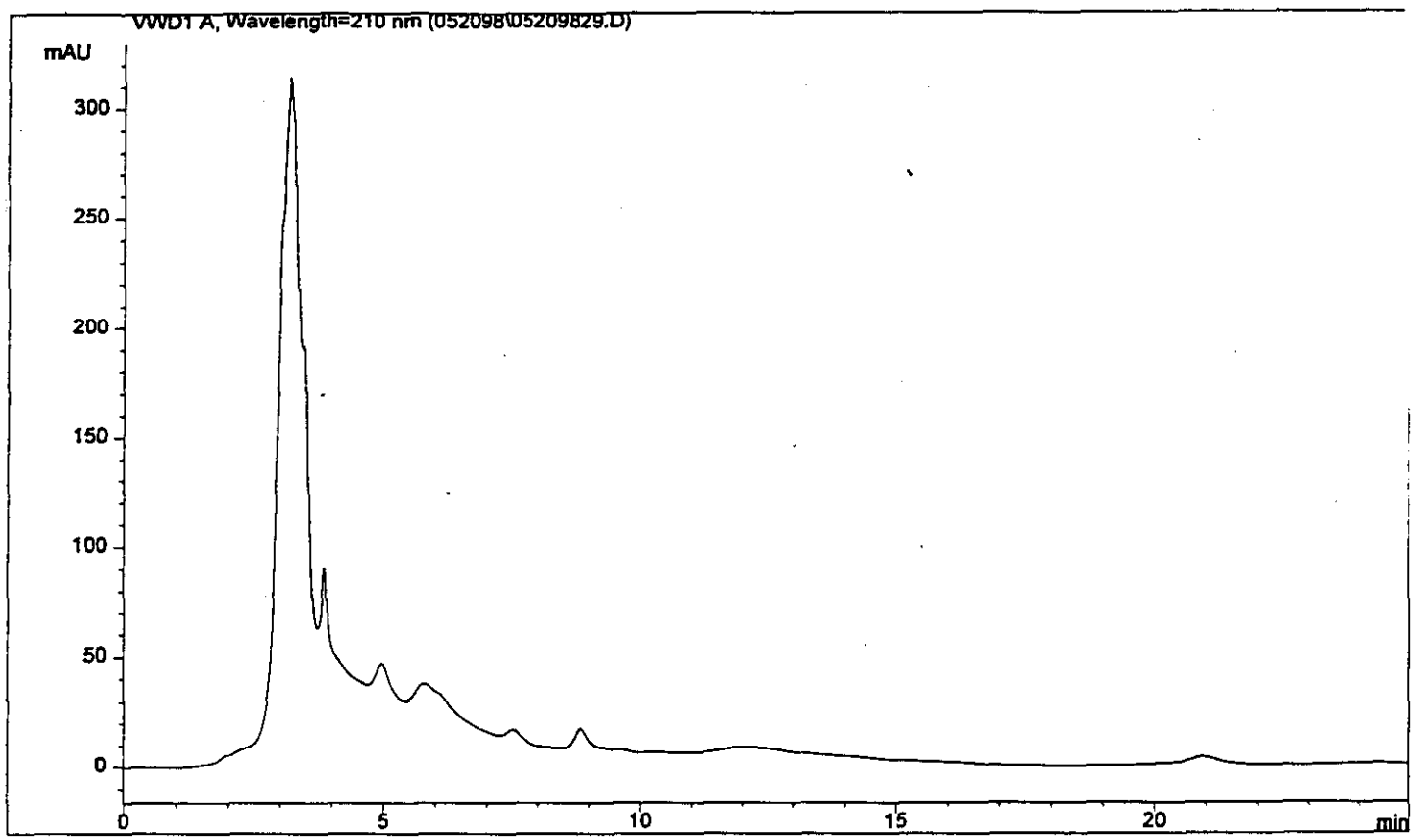
FORM I

Sample Name : 33910.14
Acq Operator : SS

Vial No. : 29
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



==========

Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.15

Sample Amt: 2g % Moisture 24.86 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1090	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

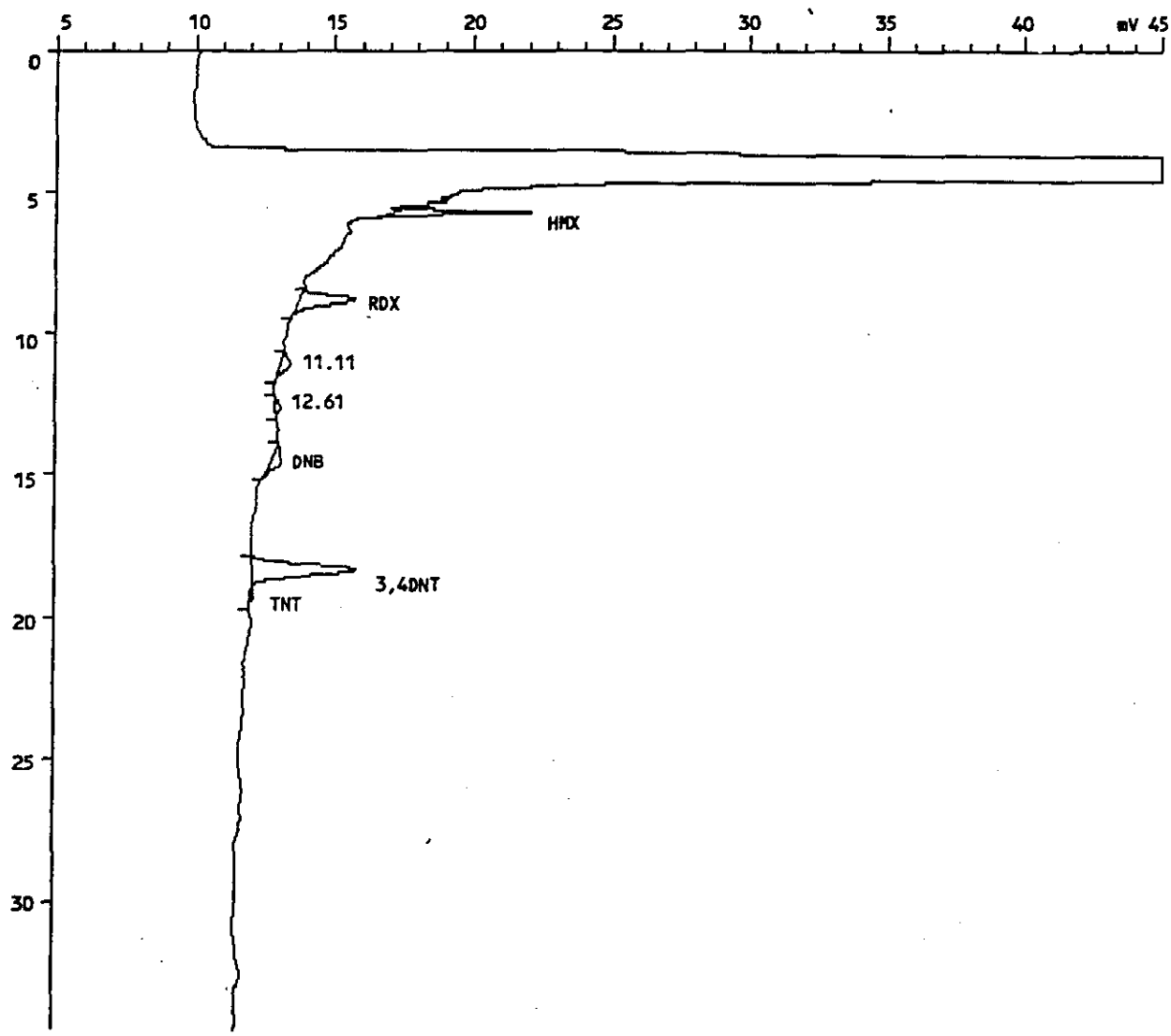
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,9,1

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 07:39:24
Reported on 05-Jun-98 at 13:12:52



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,9,1

Acquired on 20-May-98 at 07:39:24
Modified on 05-Jun-82 at 12:20:12
Reported on 05-Jun-98 at 12:20:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

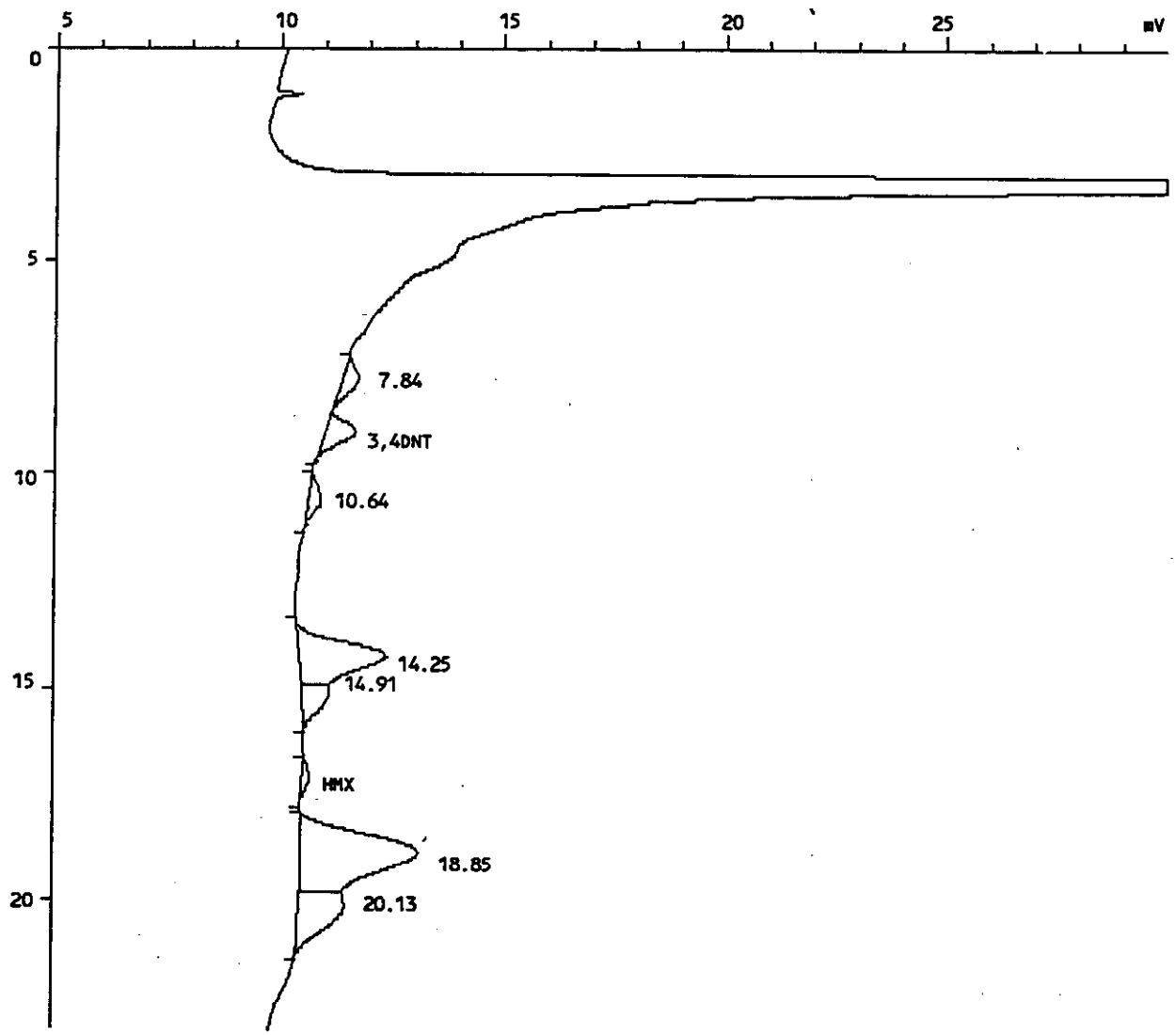
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.728	5190	47123	1914.015	HMX
2	8.811	2013	46728	1092.283	RDX *
5	14.613	421	16003	121.899	DNB
6	18.299	3764	101653	1679.103	3,4DNT
7	19.205	170	3832	36.304	TNT
Total		11559	215339	4843.604	
Residual		603	17495	408.959	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,7,1

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:52:33
Reported on 05-Jun-98 at 13:35:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,7,1

Acquired on 05-Jun-98 at 03:52:33
Modified on 05-Jun-82 at 13:34:14
Reported on 05-Jun-98 at 13:34:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

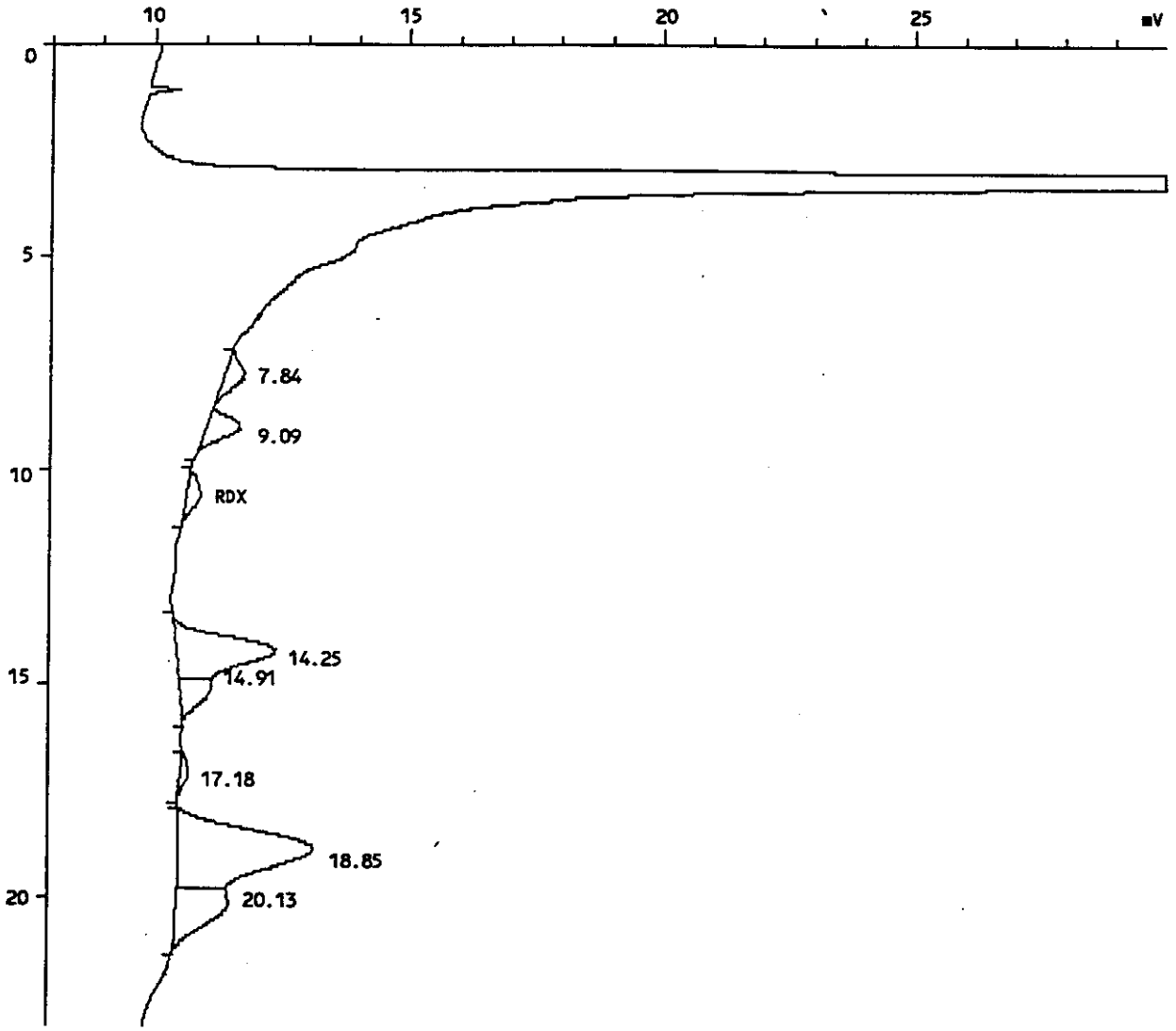
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.088	697	23921	1810.789	3,4DNT
6	17.179	167	6144	675.892	HMX
Total		864	30064	2486.681	
Residual		7041	382560	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,7,1

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:52:33
Reported on 05-Jun-98 at 15:29:55



1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D3

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.15

Sample Amt: 2g % Moisture 24.86 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.15

Sample Amt: 2g % Moisture 24.86 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

FORM I

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

BIO-013

Project No.: 4324-CX09-07-35

Project Name: NSWC Crane Bio Facility

Samplers: (Signature)

Sampler: (Print) Ryan H. Erwin

Analysis Required: 8330 Explosive

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	Remarks
Compost	CS A SL 1	5/7/98	1050	BIO-N-30%-10-A1		✓	ms/msD
	2		1038	BIO-N-30%-10-A2			
	3		1100	BIO-N-30%-10-A3			30%
	B 1		1125	BIO-N-30%-10-B1			Day 10
	2		1136	BIO-N-30%-10-B2			
	3		1110	BIO-N-30%-10-B3			CS=cross
	3		1110	BIO-N-30%-10-B3-FD			section
	C 1		1201	BIO-N-30%-10-C1			
	2		1148	BIO-N-30%-10-C2			SL=sample
	3		1204	BIO-N-30%-10-C3			location
	D 1		1222	BIO-N-30%-10-B1			
	2		1212	BIO-N-30%-10-D2			
	3		1230	BIO-N-30%-10-D3			
liquid	rinse blank		1242	BIO-RB050798			
							Southwest Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: J. Hudson	Date/Time 5/9/98 10:00	Total No. Samples This Shipping Container / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

S 1 #s: 2307, 2308

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APPENDIX O
CALIBRATION SUMMARIES FOR LAB ANALYSIS OF DAY 10 SAMPLES

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Calibration Summary for Analysis of Windrow N-30% Day 0 . . . . . 51 pages

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

	Inj 1
Injection File Name Level 1	: 2EX0518,4
Injection File Name Level 2	: 2EX0518,5
Injection File Name Level 3	: 2EX0518,6
Injection File Name Level 4	: 2EX0518,7
Injection File Name Level 5	: 2EX0518,8

Calibration Date : 05/18/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	11246	1109	352388	1387	801205	1214	1185906	1198	1660663	1258
RDX	9141	2166	244304	2313	565085	2047	849304	2061	1181337	2148
TNB	12529	4149	354551	4690	817705	4151	1217371	4113	1694717	4301
DNB	11460	7074	299205	7370	672308	6367	1010260	6378	1413566	6668
TETRYL	10914	2934	305486	3285	691509	2857	1023288	2811	1406052	2905
NB	16868	5112	485520	5892	1106697	5171	1656761	5145	2322612	5401
3,4-DNT	15294	3011	427015	3368	974840	2954	1454554	2933	2029900	3076
TNT	13853	5131	395206	5846	905559	5145	1355911	5136	1896508	5388
4ADNT	7748	3283	217080	3667	495288	3216	738866	3185	1031022	3347
2ADNT	12390	5250	348599	5888	797606	5179	1192364	5140	1671675	5428
26DNT	10184	2625	276001	2840	629227	2477	937761	2468	1296556	2562
24DNT	15294	6481	427764	7226	989369	6424	1474953	6358	2075355	6738
NT	8917	2638	266640	3152	612321	2783	909636	2756	1265916	2877
T	8158	2414	254705	3011	582596	2648	863707	2617	1209166	2748
NT	11057	3434	340691	4237	780533	3717	1147914	3656	1615487	3865

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0518,4
Injection File Name Level 2 : 2EX0518,5
Injection File Name Level 3 : 2EX0518,6
Injection File Name Level 4 : 2EX0518,7
Injection File Name Level 5 : 2EX0518,8

Calibration Date : 05/18/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1233	8.25	0.99892	1237	0.000
RDX	2147	4.96	0.99913	2113	0.000
TNB	4281	5.61	0.99910	4234	0.000
DNB	6771	6.52	0.99893	6559	0.000
TETRYL	2958	6.36	0.99925	2879	0.000
NB	5344	6.11	0.99894	5307	0.000
3,4-DNT	3068	5.75	0.99897	3024	0.000
NT	5329	5.79	0.99897	5292	0.000
ADNT	3340	5.79	0.99892	3289	0.000
2ADNT	5377	5.70	0.99879	5320	0.000
26DNT	2594	5.84	0.99917	2529	0.000
24DNT	6645	5.34	0.99875	6595	0.000
2NT	2841	6.80	0.99914	2835	0.000
4NT	2688	8.10	0.99896	2702	0.000
3NT	3782	7.89	0.99876	3792	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/18/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/19/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0518A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	772303	1170	1233	5.12	1237	5.43
RDX	547798	1985	2147	7.57	2113	6.05
TNB	786562	3993	4281	6.73	4234	5.70
DNB	661114	6261	6771	7.54	6559	4.55
TETRYL	661930	2735	2958	7.55	2879	5.00
NB	1065763	4980	5344	6.81	5307	6.15
3,4-DNT	945855	2866	3068	6.58	3024	5.21
TNT	877293	4985	5329	6.47	5292	5.80
4ADNT	484602	3147	3340	5.78	3289	4.32
2ADNT	768839	4992	5377	7.15	5320	6.15
26DNT	615096	2422	2594	6.66	2529	4.25
24DNT	946930	6149	6645	7.47	6595	6.77
2NT	584093	2655	2841	6.56	2835	6.35
4NT	554612	2521	2688	6.20	2702	6.70
NT	740434	3526	3782	6.77	3792	7.02

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

2EX05
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
Column ID : CARB-07
Calibration Date : 05/18/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.78	5.76	5.77	5.77	5.77
RDX	8.89	8.85	8.88	8.86	8.87
TNB	12.09	12.05	12.09	12.05	12.07
DNB	14.78	14.74	14.78	14.75	14.76
TETRYL	16.19	16.17	16.22	16.18	16.20
NB	16.78	16.77	16.82	16.78	16.80
3,4-DNT	18.52	18.47	18.53	18.49	18.50
TNT	19.36	19.33	19.39	19.36	19.37
4ADNT	20.19	20.18	20.26	20.23	20.25
2ADNT	21.23	21.22	21.29	21.26	21.28
26DNT	22.65	22.59	22.66	22.63	22.64
24DNT	23.32	23.31	23.38	23.34	23.35
2NT	27.56	27.53	27.60	27.57	27.57
4NT	29.48	29.46	29.53	29.49	29.48
3NT	31.78	31.77	31.84	31.82	31.81

COMPONENT NAME	RT Cont CAl
HMX	5.78
RDX	8.89
TNB	12.09
DNB	14.79
TETRYL	16.24
NB	16.83
3,4-DNT	18.54
TNT	19.40
4ADNT	20.32
2ADNT	21.35
26DNT	22.68
24DNT	23.40
2NT	27.61
4NT	29.54
3NT	31.86

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.77	0.006	0.019	5.75 - 5.79
RDX	8.87	0.017	0.052	8.82 - 8.92
TNB	12.07	0.016	0.047	12.02 - 12.12
DNB	14.77	0.021	0.064	14.70 - 14.83
TETRYL	16.20	0.026	0.077	16.12 - 16.27
NB	16.80	0.023	0.068	16.73 - 16.86
3,4-DNT	18.51	0.027	0.080	18.43 - 18.59
TNT	19.37	0.024	0.072	19.30 - 19.44

2EX05
page 2

4ADNT	20.24	0.053	0.158	20.08 - 20.39
2ADNT	21.27	0.048	0.145	21.13 - 21.42
26DNT	22.64	0.029	0.088	22.55 - 22.73
24DNT	23.35	0.035	0.105	23.25 - 23.46
2NT	27.57	0.030	0.090	27.48 - 27.66
4NT	29.50	0.030	0.089	29.41 - 29.58
3NT	31.81	0.035	0.106	31.70 - 31.92

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0519,4
Injection File Name Level 2 : 2EX0519,5
Injection File Name Level 3 : 2EX0519,6
Injection File Name Level 4 : 2EX0519,7
Injection File Name Level 5 : 2EX0519,8

Calibration Date : 05/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	12105	1194	347230	1367	808135	1224	1114131	1125	1642152	1244
RDX	9524	2257	245537	2325	562830	2039	800366	1943	1173121	2133
TNB	12593	4170	352151	4658	815464	4139	1137255	3842	1690090	4290
DNB	10460	6457	294399	7251	688197	6517	943789	5958	1407455	6639
TETRYL	10789	2900	297215	3196	696238	2877	967125	2657	1404578	2902
NB	17281	5237	474976	5764	1115294	5212	1539077	4780	2303360	5357
3,4-DNT	15186	2989	420106	3313	988290	2995	1369810	2762	2030712	3077
TNT	14352	5316	389159	5757	912535	5185	1262862	4784	1883603	5351
4ADNT	8150	3453	214126	3617	504132	3274	698066	3009	1025303	3329
2ADNT	12254	5192	342972	5793	804521	5224	1113542	4800	1658713	5385
26DNT	9557	2463	273580	2815	637860	2511	885721	2331	1298900	2567
24DNT	15556	6592	424201	7166	990717	6433	1374684	5925	2055048	6672
2NT	8894	2631	264018	3121	610972	2777	848914	2572	1256356	2855
[illegible]	8149	2411	254772	3011	587611	2671	817627	2478	1209605	2749
[illegible]	10950	3401	335840	4177	777481	3702	1080458	3441	1600631	3829

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0519,4
Injection File Name Level 2 : 2EX0519,5
Injection File Name Level 3 : 2EX0519,6
Injection File Name Level 4 : 2EX0519,7
Injection File Name Level 5 : 2EX0519,8

Calibration Date : 05/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1231	7.18	0.99693	1211	0.000
RDX	2139	7.28	0.99731	2070	0.000
TNB	4220	7.00	0.99649	4151	0.000
DNB	6564	7.06	0.99655	6445	0.000
TETRYL	2906	6.59	0.99751	2835	0.000
NB	5270	6.69	0.99634	5184	0.000
3,4-DNT	3027	6.55	0.99666	2982	0.000
T	5278	6.62	0.99645	5178	0.000
4ADNT	3336	6.76	0.99696	3237	0.000
2ADNT	5279	6.80	0.99626	5207	0.000
26DNT	2537	7.01	0.99716	2498	0.000
24DNT	6558	6.82	0.99605	6440	0.000
2NT	2791	7.73	0.99677	2771	0.000
4NT	2664	8.94	0.99677	2668	0.000
3NT	3710	8.53	0.99664	3710	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
ıtinuing Calibration #: 1
.tinuing Cal Date : 05/20/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0519A.10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	795131	1205	1231	2.13	1211	0.48
RDX	564683	2046	2139	4.37	2070	1.18
TNB	813988	4132	4220	2.08	4151	0.46
DNB	682881	6467	6564	1.49	6445	0.34
TETRYL	677305	2799	2906	3.70	2835	1.28
NB	1108068	5178	5270	1.74	5184	0.12
3,4-DNT	979861	2969	3027	1.91	2982	0.42
TNT	907664	5157	5278	2.30	5178	0.40
4ADNT	501652	3257	3336	2.36	3237	0.65
2ADNT	796606	5173	5279	2.01	5207	0.66
26DNT	637537	2510	2537	1.08	2498	0.49
24DNT	981973	6376	6558	2.76	6440	0.99
2NT	603600	2744	2791	1.71	2771	0.97
'NT	581335	2642	2664	0.81	2668	0.94
NT	770979	3671	3710	1.04	3710	1.04

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN12
Column ID : CARB-07
Calibration Date : 05/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.74	5.73	5.74	5.73	5.73
RDX	8.85	8.78	8.80	8.78	8.79
TNB	12.01	11.95	11.98	11.95	11.95
DNB	14.64	14.59	14.64	14.61	14.61
TETRYL	16.06	15.98	16.04	16.00	16.01
NB	16.69	16.60	16.65	16.61	16.60
3,4-DNT	18.36	18.24	18.30	18.25	18.25
TNT	19.25	19.13	19.18	19.14	19.14
4ADNT	20.07	19.93	20.01	19.98	19.98
2ADNT	21.09	20.97	21.04	21.01	21.01
26DNT	22.46	22.32	22.38	22.35	22.34
24DNT	23.16	23.03	23.10	23.06	23.06
2NT	27.35	27.16	27.24	27.20	27.20
4NT	29.23	29.05	29.13	29.08	29.08
3NT	31.57	31.34	31.42	31.38	31.38

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.72	5.73	5.73	5.74	5.76
RDX	8.78	8.78	8.78	8.80	8.76
TNB	11.94	11.95	11.95	11.97	11.94
DNB	14.59	14.59	14.59	14.62	14.57
TETRYL	15.99	15.97	15.97	16.01	15.96
NB	16.58	16.60	16.60	16.63	16.58
3,4-DNT	18.24	18.22	18.23	18.28	18.20
TNT	19.10	19.12	19.12	19.17	19.11
4ADNT	19.99	19.88	19.89	19.95	19.85
2ADNT	21.02	20.90	20.92	20.98	20.86
26DNT	22.32	22.29	22.30	22.37	22.27
24DNT	23.04	23.00	23.01	23.07	22.97
2NT	27.15	27.15	27.15	27.24	27.13
4NT	29.02	29.01	29.02	29.12	28.98
3NT	31.32	31.30	31.31	31.43	31.28

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.74	0.014	0.041	5.70 - 5.78
DX	8.80	0.026	0.077	8.72 - 8.88
NB	11.97	0.032	0.097	11.88 - 12.07
DNB	14.62	0.036	0.108	14.51 - 14.73
TETRYL	16.02	0.047	0.141	15.88 - 16.16
NB	16.63	0.046	0.137	16.50 - 16.77
3,4-DNT	18.28	0.056	0.167	18.11 - 18.45
TNT	19.17	0.056	0.168	19.00 - 19.34

4ADNT	19.97	0.068	0.203	19.77 - 20.18
2ADNT	21.00	0.070	0.210	20.79 - 21.21
26DNT	22.36	0.066	0.197	22.17 - 22.56
24DNT	23.07	0.066	0.197	22.88 - 23.27
2NT	27.23	0.079	0.238	26.99 - 27.46
T	29.10	0.086	0.259	28.84 - 29.36
T	31.41	0.096	0.288	31.12 - 31.69

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	052098,4
Injection File Name Level 2 :	052098,5
Injection File Name Level 3 :	052098,6
Injection File Name Level 4 :	052098,7
Injection File Name Level 5 :	052098,8

Calibration Date : 05/20/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.4615	3.10E0	55.7692	2.87E0	112.632	2.84E0	443.835	2.88E0	876.241	2.92E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	052098,4
Injection File Name Level 2 :	052098,5
Injection File Name Level 3 :	052098,6
Injection File Name Level 4 :	052098,7
Injection File Name Level 5 :	052098,8

Calibration Date : 05/20/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	2.92E0	3.46	0.99998	2.91E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/20/98
Continuing Calibration #: 1
tinuing Cal Date : 05/20/98
tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052098,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.626	3.15E0	2.92E0	7.76	2.91E0	8.10

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/20/98
Continuing Calibration #: 2
Continuing Cal Date : 05/21/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052098,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	112.159	2.85E0	2.92E0	2.36	2.91E0	2.05

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/20/98
Continuing Calibration #: 3
tinuing Cal Date : 05/21/98
tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052098,31
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	126.825	2.52E0	2.92E0	13.65	2.91E0	13.38

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
lumn ID :
Calibration Date : 05/20/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.16	11.15	11.18	11.16	11.17

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
PETN	11.21	11.29	11.31	11.31

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.21	0.067	0.202	11.01 - 11.42

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5E0512W,4
Injection File Name Level 2 : 5E0512W,5
Injection File Name Level 3 : 5E0512W,6
Injection File Name Level 4 : 5E0512W,7
Injection File Name Level 5 : 5E0512W,8

Calibration Date : 05/12/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	408	319	1149	361	55502	349	110662	348	229287	361
RDX	564	542	1620	623	56839	437	115086	443	233817	451
TNB	495	688	1477	821	84157	939	173569	970	353259	987
DNB	452	1189	1019	1061	62400	1311	126919	1336	259635	1367
TETRYL	524	582	1174	519	62073	549	128132	567	259661	577
NB	594	874	1212	713	77182	908	160635	945	332308	977
3,4-DNT	636	497	1279	397	82587	516	165832	518	338359	529
TNT	644	1006	1411	882	85730	1072	180052	1125	373615	1168
4ADNT	470	470	1357	538	75752	606	163077	652	338934	678
2ADNT	386	689	1141	815	58136	831	122928	878	251677	899
26DNT	436	454	1280	533	71827	625	149974	652	306446	666
24DNT	558	996	1307	934	82162	1174	171355	1224	344611	1231
2NT	647	578	1323	473	77724	536	158021	545	325546	561
T	385	481	723	362	43585	436	90665	453	187940	470
T	479	599	812	406	61741	650	120794	636	240634	6

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1
Injection File Name Level 1 : 5E0512W,4
Injection File Name Level 2 : 5E0512W,5
Injection File Name Level 3 : 5E0512W,6
Injection File Name Level 4 : 5E0512W,7
Injection File Name Level 5 : 5E0512W,8

Calibration Date : 05/12/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	348	4.96	0.99984	358	0.000
RDX	499	16.31	0.99992	449	0.000
TNB	881	14.31	0.99991	981	0.000
DNB	1253	10.08	0.99991	1358	0.000
TETRYL	559	4.55	0.99991	574	0.000
NB	883	11.65	0.99976	968	0.000
3,4-DNT	491	10.97	0.99995	526	0.000
TNT	1051	10.66	0.99969	1155	0.000
DNT	589	14.43	0.99956	670	0.000
DNT	822	9.95	0.99979	892	0.000
26DNT	586	15.37	0.99986	662	0.000
24DNT	1112	12.37	0.99994	1227	0.000
2NT	538	7.46	0.99986	557	0.000
4NT	440	10.74	0.99974	465	0.000
3NT	585	17.39	0.99997	635	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/12/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/13/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0512W.17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	55917	352	348	1.19	350	1.67
RDX	57588	443	499	11.28	449	1.36
TNB	86528	966	881	9.65	981	1.59
DNB	62269	1308	1253	4.41	1358	3.68
TETRYL	59758	529	559	5.40	574	7.84
NB	79021	930	883	5.24	968	3.98
TNT	89161	1115	1051	6.09	1155	3.54
4ADNT	80250	642	589	9.01	670	4.18
2ADNT	60309	862	822	4.77	892	3.40
26DNT	73897	643	586	9.64	662	2.88
24DNT	84408	1206	1112	8.47	1227	1.71
2NT	77790	536	538	0.37	557	3.70
4NT	44306	443	440	0.61	465	4.77
3NT	58913	620	585	6.05	635	2.27

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 05/12/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.97	4.95	4.93	4.94	4.93
RDX	7.87	7.81	7.72	7.71	7.71
TNB	10.36	10.41	10.28	10.28	10.28
DNB	12.70	12.85	12.65	12.66	12.64
TETRYL	13.84	14.01	13.75	13.77	13.72
NB	14.32	14.47	14.29	14.30	14.26
3,4-DNT	15.79	16.08	15.81	15.81	15.71
TNT	16.24	16.43	16.20	16.21	16.11
4ADNT	17.34	17.56	17.33	17.35	17.21
2ADNT	18.32	18.60	18.40	18.41	18.24
26DNT	18.94	19.25	19.01	19.01	18.82
24DNT	19.74	19.98	19.78	19.79	19.57
2NT	22.72	23.08	22.95	22.97	22.63
4NT	24.34	24.74	24.57	24.60	24.21
3NT	26.33	26.59	26.46	26.51	26.08

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.91	4.92
RDX	7.67	7.67
TNB	10.22	10.24
DNB	12.58	12.57
TETRYL	13.62	13.56
NB	14.20	14.19
3,4-DNT	15.61	15.61
TNT	16.04	16.02
4ADNT	17.14	17.07
2ADNT	18.16	18.09
26DNT	18.77	18.77
24DNT	19.52	19.52
2NT	22.58	22.67
4NT	24.16	24.27
3NT	26.01	26.15

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.94	0.019	0.058	4.88 - 4.99
RDX	7.74	0.075	0.225	7.51 - 7.96
NB	10.30	0.068	0.203	10.09 - 10.50
DNB	12.66	0.094	0.282	12.38 - 12.95
TETRYL	13.75	0.147	0.441	13.31 - 14.19
NB	14.29	0.093	0.280	14.01 - 14.57
3,4-DNT	15.80	0.157	0.470	15.33 - 16.27
TNT	16.18	0.138	0.414	15.76 - 16.59

4ADNT	17.28	0.163	0.489	16.79 - 17.77
2ADNT	18.31	0.174	0.521	17.79 - 18.83
26DNT	18.94	0.173	0.519	18.42 - 19.46
24DNT	19.70	0.173	0.520	19.18 - 20.22
2NT	22.80	0.196	0.589	22.21 - 23.39
4NT	24.41	0.222	0.665	23.75 - 25.08
3NT	26.30	0.229	0.687	25.62 - 26.99

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVES CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	051398W,65
Injection File Name Level 2 :	051398W,66
Injection File Name Level 3 :	051398W,67
Injection File Name Level 4 :	051398W,68
Injection File Name Level 5 :	051398W,69

Calibration Date : 05/15/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.24562	3.20E0	49.1293	3.26E0	97.2485	3.29E0	404.725	3.16E0	824.092	3.11E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVES CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	051398W,65
Injection File Name Level 2 :	051398W,66
Injection File Name Level 3 :	051398W,67
Injection File Name Level 4 :	051398W,68
Injection File Name Level 5 :	051398W,69

Calibration Date : 05/15/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.20E0	2.29	0.99995	3.12E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/15/98
Continuing Calibration #: 1
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051398W,70
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	114.511	2.79E0	3.20E0	12.77	3.12E0	10.43

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/15/98
Continuing Calibration #: 2
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051398W,79
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	106.199	3.01E0	3.20E0	5.95	3.12E0	3.42

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVES CALIBRATION - METHOD SW846-8330

ıjection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVES CALIBRATION - METHOD SW846-8330

ıstrument ID : LC4
ɔolumn ID :
Calibration Date : 05/15/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	13.00	12.98	12.95	12.93	12.93

COMPONENT NAME	RT Cont CA1	RT Cont CA2
PETN	12.90	12.90

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.94	0.036	0.109	12.83 - 13.05

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
olumn ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0530,4
Injection File Name Level 2 : 3CN0530,5
Injection File Name Level 3 : 3CN0530,6
Injection File Name Level 4 : 3CN0530,7
Injection File Name Level 5 : 3CN0530,8

Calibration Date : 05/29/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	13064	2840	63715	2770	154093	2680	315083	2740	630615	2742
26DNT	9915	1983	50643	2026	126166	2019	253552	2028	507265	2029
TNT	12268	2667	64814	2818	164805	2866	334664	2910	672185	2923
3,4DNT	7644	1092	50314	1438	131310	1592	267771	1623	541200	1640
TETRYL	10476	1164	53705	1193	109485	973	230973	1027	484309	1076
HMX	7494	1071	41613	1189	105128	1201	215530	1232	438774	1254

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0530,9
Injection File Name Level 2 : 3CN0530,10
Injection File Name Level 3 : 3CN0530,11
Injection File Name Level 4 : 3CN0530,12
Injection File Name Level 5 : 3CN0530,13

Calibration Date : 05/29/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	10781	2156	52282	2091	133965	2143	266222	2130	476603	1906
DNB	20503	5126	85806	4290	215360	4307	421304	4213	786512	3933
24DNT	21662	4332	96614	3865	239710	3835	465040	3720	852846	3411
4ADNT	18163	1974	92081	2002	229889	1999	450570	1959	829340	1803
2ADNT	28376	2838	149187	2984	372429	2979	737510	2950	1425624	2851
RDX	9641	1928	43674	1747	99321	1589	200976	1608	380516	1522

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
olumn ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0530,9
Injection File Name Level 2 : 3CN0530,10
Injection File Name Level 3 : 3CN0530,11
Injection File Name Level 4 : 3CN0530,12
Injection File Name Level 5 : 3CN0530,13

Calibration Date : 05/29/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	2085	4.94	0.99809	1966	0.000
DNB	4374	10.21	0.99932	4011	0.000
24DNT	3833	8.66	0.99886	3500	0.000
4ADNT	1947	4.25	0.99892	1846	0.000
2ADNT	2920	2.42	0.99982	2878	0.000
RDX	1679	9.63	0.99964	1544	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0530,4
Injection File Name Level 2 : 3CN0530,5
Injection File Name Level 3 : 3CN0530,6
Injection File Name Level 4 : 3CN0530,7
Injection File Name Level 5 : 3CN0530,8

Calibration Date : 05/29/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2754	2.11	0.99998	2739	0.000
26DNT	2017	0.96	1.00000	2028	0.000
TNT	2837	3.65	0.99999	2917	0.000
3,4DNT	1477	15.54	0.99997	1633	0.000
TETRYL	1087	8.48	0.99924	1064	0.000
HMX	1189	5.97	0.99995	1247	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
ntinuing Calibration #: 1
ntinuing Cal Date : 05/30/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0530A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	143165	2490	2754	9.60	2739	9.09
26DNT	122105	1954	2017	3.14	2028	3.68
TNT	163872	2850	2837	0.46	2917	2.29
3,4DNT	137011	1661	1477	12.45	1633	1.70
TETRYL	90239	802	1087	26.19	1064	24.59
HMX	109720	1254	1189	5.44	1247	0.59

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
inuing Calibration #: 1
inuing Cal Date : 05/30/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0530A.11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	127964	2047	2085	1.82	1966	4.14
DNB	202994	4060	4374	7.18	4011	1.23
24DNT	223641	3578	3833	6.64	3500	2.25
4ADNT	215319	1872	1947	3.85	1846	1.43
2ADNT	361534	2892	2920	0.96	2878	0.51
RDX	94072	1505	1679	10.35	1544	2.53

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

3CN053
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.nstrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/29/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.05	6.04	6.05	6.05	6.04
26DNT	6.66	6.60	6.63	6.63	6.62
TNT	7.25	7.22	7.24	7.24	7.23
3,4DNT	8.30	8.24	8.28	8.29	8.28
TETRYL	11.52	11.46	11.50	11.52	11.49
HMX	13.70	13.66	13.72	13.76	13.72

COMPONENT NAME	RT Cont CA1
TNB	6.05
26DNT	6.64
TNT	7.24
3,4DNT	8.29
TETRYL	11.46
X	13.64

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.05	0.005	0.015	6.03 - 6.07
26DNT	6.63	0.018	0.053	6.58 - 6.68
TNT	7.23	0.011	0.033	7.20 - 7.27
3,4DNT	8.28	0.021	0.063	8.22 - 8.34
TETRYL	11.49	0.027	0.081	11.41 - 11.57
HMX	13.70	0.042	0.127	13.57 - 13.83

3CN0530
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/29/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.32	5.32	5.33	5.33	5.31
DNB	5.93	5.93	5.94	5.93	5.91
24DNT	6.93	6.95	6.95	6.94	6.92
4ADNT	7.65	7.69	7.71	7.70	7.66
2ADNT	8.25	8.27	8.28	8.27	8.23
RDX	9.19	9.18	9.19	9.19	9.16

COMPONENT NAME	RT Cont CA1
NB	5.31
DNB	5.90
24DNT	6.90
4ADNT	7.63
2ADNT	8.20
X	9.08

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.32	0.010	0.030	5.29 - 5.35
DNB	5.92	0.013	0.039	5.88 - 5.96
24DNT	6.93	0.019	0.057	6.87 - 6.99
4ADNT	7.67	0.029	0.087	7.59 - 7.76
2ADNT	8.25	0.029	0.088	8.16 - 8.34
RDX	9.17	0.043	0.129	9.04 - 9.29

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
:strument ID: IN10
lumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0604,4
Injection File Name Level 2 : 3CN0604,5
Injection File Name Level 3 : 3CN0604,6
Injection File Name Level 4 : 3CN0604,7
Injection File Name Level 5 : 3CN0604,8

Calibration Date : 06/04/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	10055	2186	52031	2262	134917	2346	276826	2407	561816	2443
26DNT	7501	1500	39155	1566	109851	1758	220696	1766	445288	1781
TNT	9359	2035	51494	2239	151983	2643	306098	2662	620727	2699
3,4DNT	8141	1163	40925	1169	115535	1400	233161	1413	481787	1460
TETRYL	10436	1160	53999	1200	130712	1162	273130	1214	540817	1202
HMX	5957	851	29043	830	81081	927	167690	958	343125	980

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0604,9
Injection File Name Level 2 : 3CN0604,10
Injection File Name Level 3 : 3CN0604,11
Injection File Name Level 4 : 3CN0604,12
Injection File Name Level 5 : 3CN0604,13

Calibration Date : 06/04/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	6470	1294	39646	1586	113929	1823	198552	1588	414673	1659
DNB	10784	2696	61041	3052	170871	3417	311000	3110	644154	3221
24DNT	13096	2619	70001	2800	185279	2964	344032	2752	705992	2824
4ADNT	13255	1441	70577	1534	180303	1568	344873	1499	705062	1533
2ADNT	25371	2537	128654	2573	301700	2414	588348	2353	1186752	2374
RDX	2774	555	31086	1243	81115	1298	153434	1227	300378	1202

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

	Inj 1
Injection File Name Level 1 :	3CN0604,4
Injection File Name Level 2 :	3CN0604,5
Injection File Name Level 3 :	3CN0604,6
Injection File Name Level 4 :	3CN0604,7
Injection File Name Level 5 :	3CN0604,8

Calibration Date : 06/04/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2329	4.52	0.99995	2430	0.000
26DNT	1674	7.83	0.99996	1776	0.000
TNT	2455	12.24	0.99992	2686	0.000
3,4DNT	1321	10.84	0.99981	1447	0.000
TETRYL	1187	2.10	0.99993	1202	0.000
HMX	909	7.27	0.99988	973	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
`strument ID: IN10
lumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0604,9
Injection File Name Level 2 : 3CN0604,10
Injection File Name Level 3 : 3CN0604,11
Injection File Name Level 4 : 3CN0604,12
Injection File Name Level 5 : 3CN0604,13

Calibration Date : 06/04/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	1590	12.04	0.99915	1654	0.000
DNB	3099	8.55	0.99958	3209	0.000
24DNT	2792	4.47	0.99976	2817	0.000
4ADNT	1515	3.17	0.99989	1528	0.000
2ADNT	2450	4.04	0.99995	2373	0.000
RDX	1105	28.02	0.99959	1212	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/04/1998
`tinuing Calibration #: 1
.tinuing Cal Date : 06/05/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0604A,8
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	141126	2454	2329	5.39	2430	0.99
26DNT	115205	1843	1674	10.10	1776	3.81
TNT	160055	2784	2455	13.36	2686	3.62
3,4DNT	120503	1461	1321	10.56	1447	0.98
TETRYL	119380	1061	1187	10.63	1202	11.74
HMX	84040	960	909	5.64	973	1.27

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/04/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/05/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0604B,1
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	112926	1807	1590	13.64	1654	9.25
DNB	170160	3403	3099	9.81	3209	6.05
24DNT	186033	2977	2792	6.61	2817	5.65
4ADNT	182361	1586	1515	4.67	1528	3.76
2ADNT	304100	2433	2450	0.71	2373	2.50
RDX	82414	1319	1105	19.33	1212	8.83

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

3CN060
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.strument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/04/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.23	6.19	6.21	6.23	6.21
26DNT	6.88	6.82	6.85	6.89	6.86
TNT	7.56	7.51	7.51	7.54	7.51
3,4DNT	9.07	9.01	9.00	9.04	9.01
TETRYL	12.89	12.85	12.86	12.93	12.90
HMX	17.18	17.06	17.06	17.16	17.14

COMPONENT NAME	RT Cont CAl
TNB	6.21
26DNT	6.88
TNT	7.51
3,4DNT	9.00
TETRYL	12.86
'X	16.97

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.21	0.016	0.047	6.17 - 6.26
26DNT	6.86	0.025	0.076	6.79 - 6.94
TNT	7.52	0.023	0.070	7.45 - 7.59
3,4DNT	9.02	0.030	0.089	8.93 - 9.11
TETRYL	12.88	0.031	0.092	12.79 - 12.98
HMX	17.10	0.080	0.239	16.86 - 17.33

3CN0604
BSTD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.strument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/04/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.39	5.40	5.39	5.39	5.38
DNB	6.12	6.14	6.14	6.12	6.11
24DNT	7.28	7.29	7.28	7.26	7.25
4ADNT	8.21	8.21	8.24	8.21	8.20
2ADNT	8.98	9.03	9.02	8.99	8.99
RDX	10.49	10.54	10.53	10.50	10.50

COMPONENT NAME	RT Cont CA1
NB	5.39
DNB	6.14
24DNT	7.29
4ADNT	8.24
2ADNT	9.01
X	10.52

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.39	0.007	0.022	5.37 - 5.41
DNB	6.13	0.011	0.034	6.09 - 6.16
24DNT	7.27	0.015	0.045	7.23 - 7.32
4ADNT	8.22	0.018	0.054	8.16 - 8.27
2ADNT	9.00	0.020	0.060	8.94 - 9.06
RDX	10.51	0.020	0.059	10.46 - 10.57

APPENDIX P
RAW DATA DAY 60 FOR ENSYS
TEST KIT/LAB COMPARISON

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Raw Data of Windrow N-30% Day 60 . . . . . 123 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.01

Sample Amt: 2g % Moisture 11.94 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2290	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	695	
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

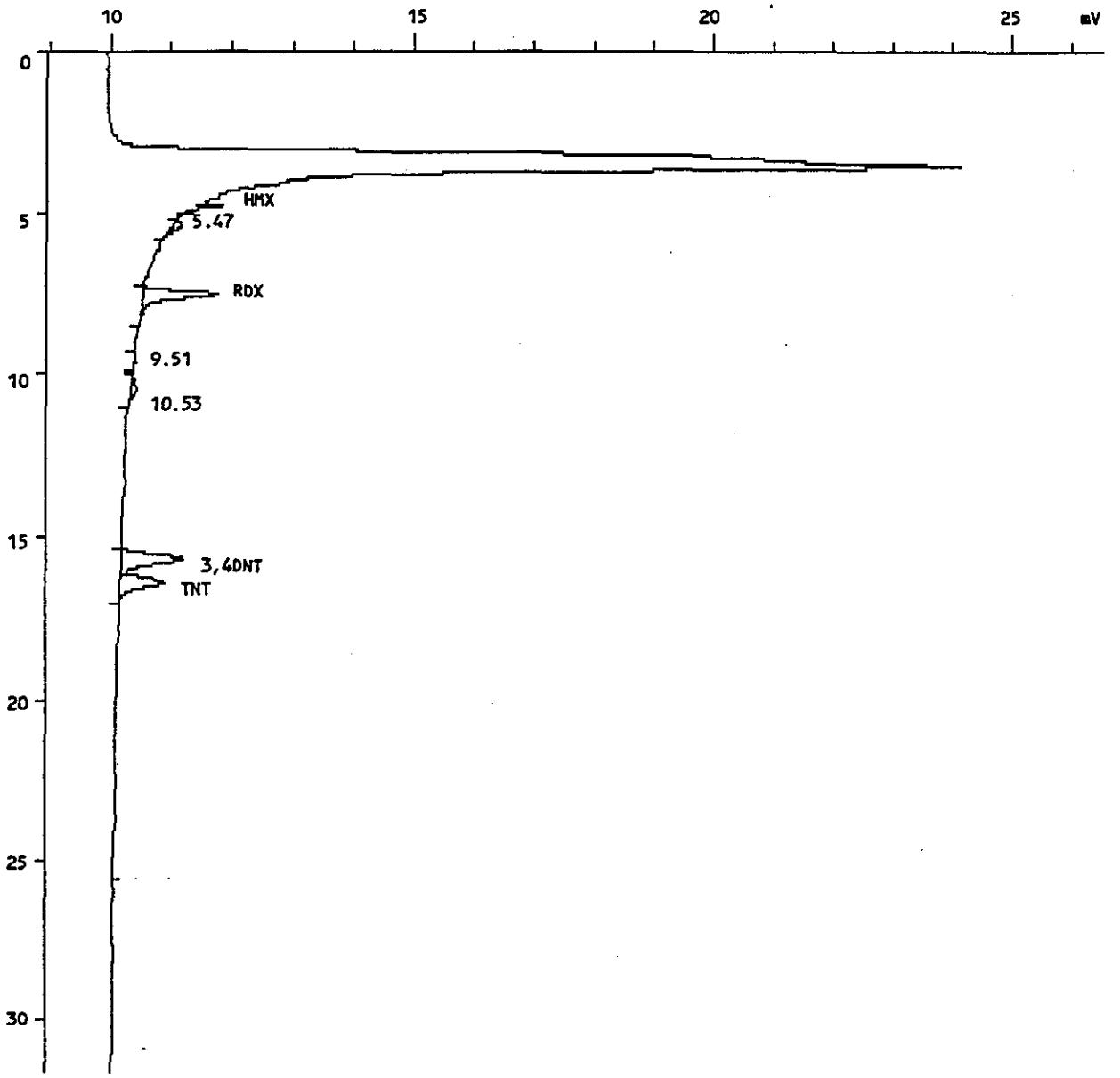
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,5,1

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 04:09:35
Reported on 01-Jul-98 at 15:25:48



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,5,1

Acquired on 01-Jul-98 at 04:09:35
Modified on 01-Jul-82 at 15:14:44
Reported on 01-Jul-98 at 15:14:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

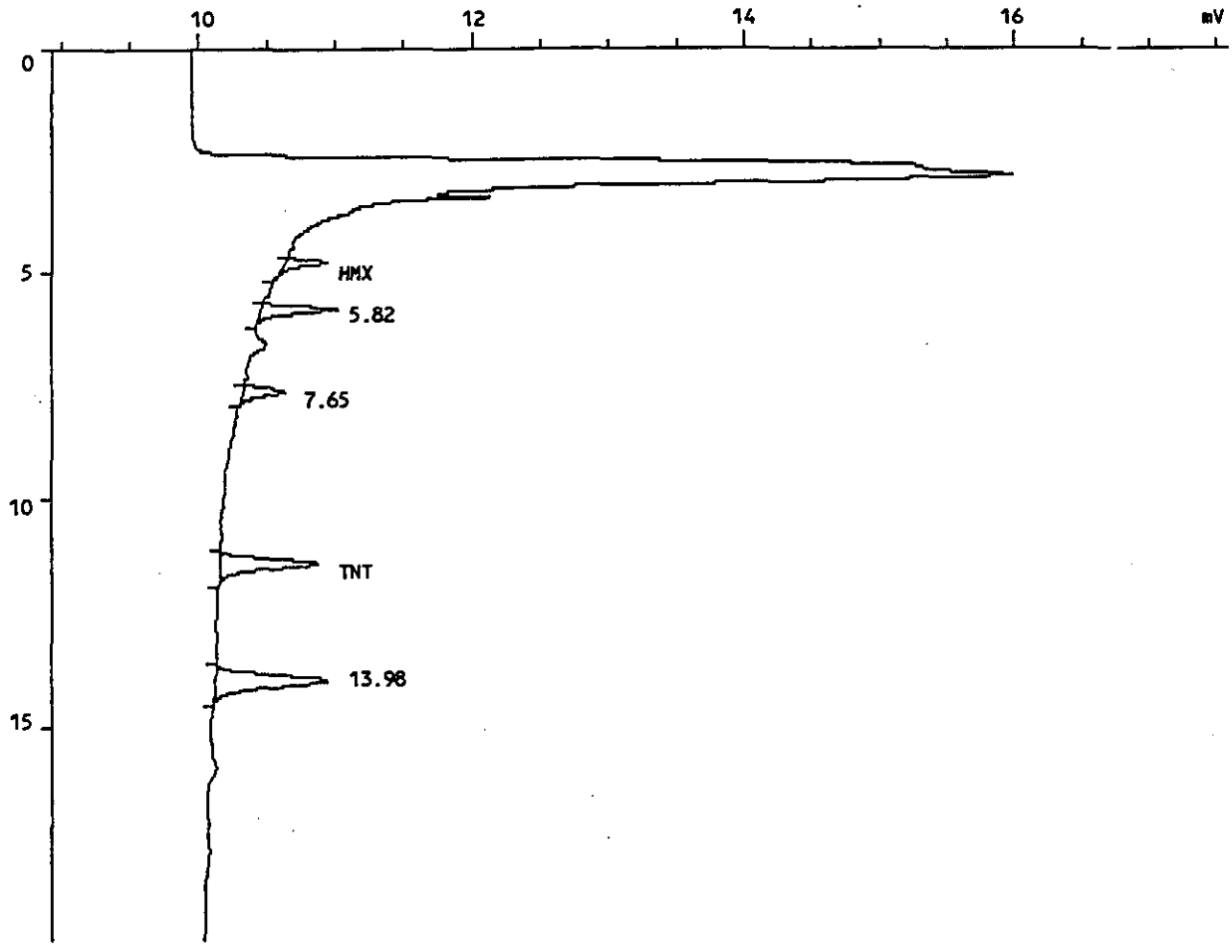
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.837	412	2860	372.361	HMX
3	7.536	1230	21673	2286.223	RDX * P
6	15.680	1027	21746	1701.584	3,4DNT 85
7	16.395	734	16198	695.211	TNT *
Total		3403	62478	5055.379	
Residual		293	6020	706.813	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,3,1

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:23:54
Reported on 20-Jul-98 at 10:35:26



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,3,1

Acquired on 17-Jul-98 at 02:23:54
Modified on 20-Jul-82 at 10:27:34
Reported on 20-Jul-98 at 10:27:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:24:30
Method file.....: LCCN Last modified on 20-Jul-82 at 10:07:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

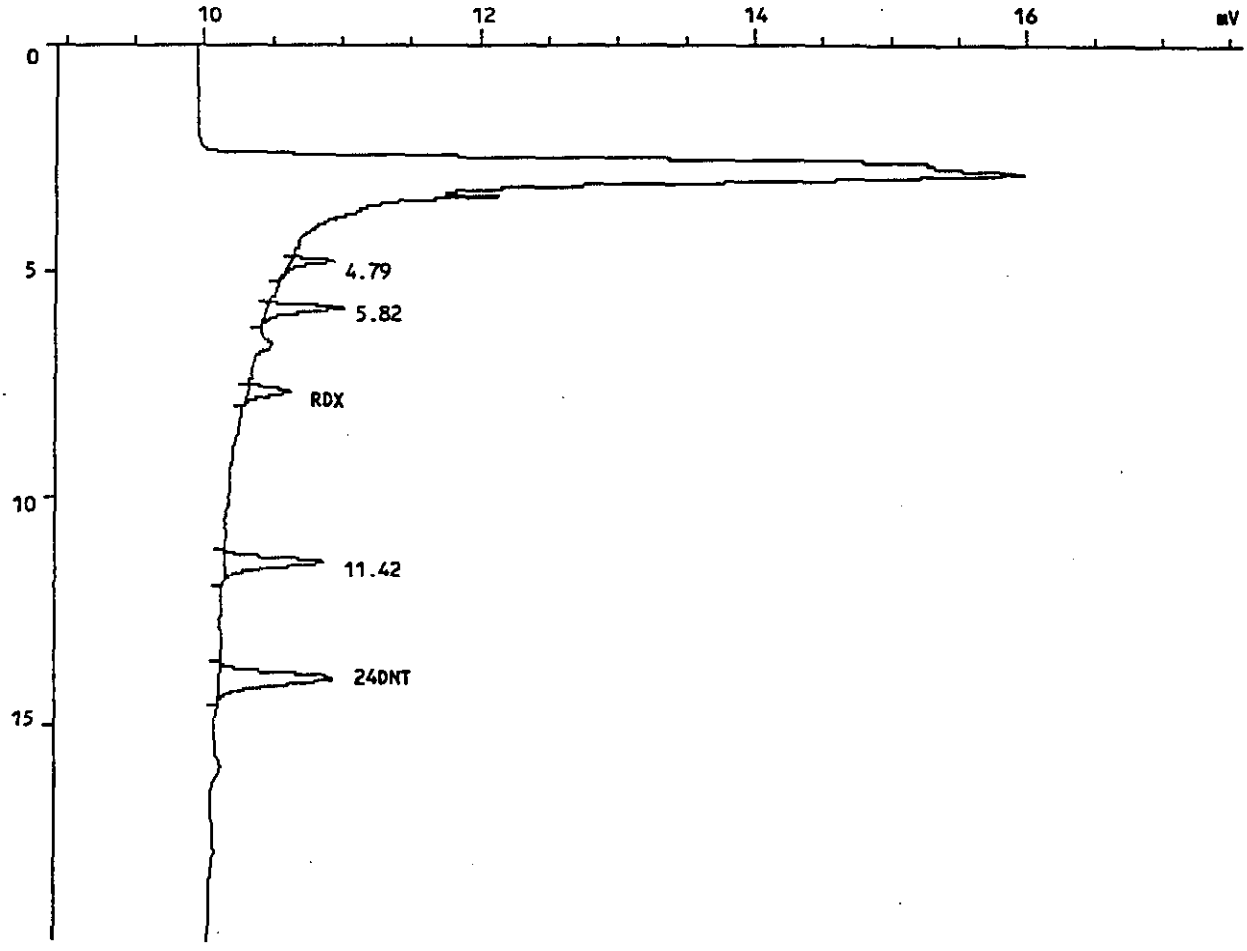
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.789	318	3084	639.864	HMX
4	11.424	724	11282	882.795	TNT
Total		1042	14366	1522.659	
Residual		1684	26164	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,3,1

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:23:54
Reported on 20-Jul-98 at 10:58:09



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,3,1

Acquired on 17-Jul-98 at 02:23:54
Modified on 20-Jul-82 at 10:53:14
Reported on 20-Jul-98 at 10:53:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.648	311	4105	671.878	RDX
5	13.984	817	15661	945.122	24DNT
Total		1128	19766	1617.000	
Residual		1598	20764	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.01

Sample Amt: 2g % Moisture 11.94 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

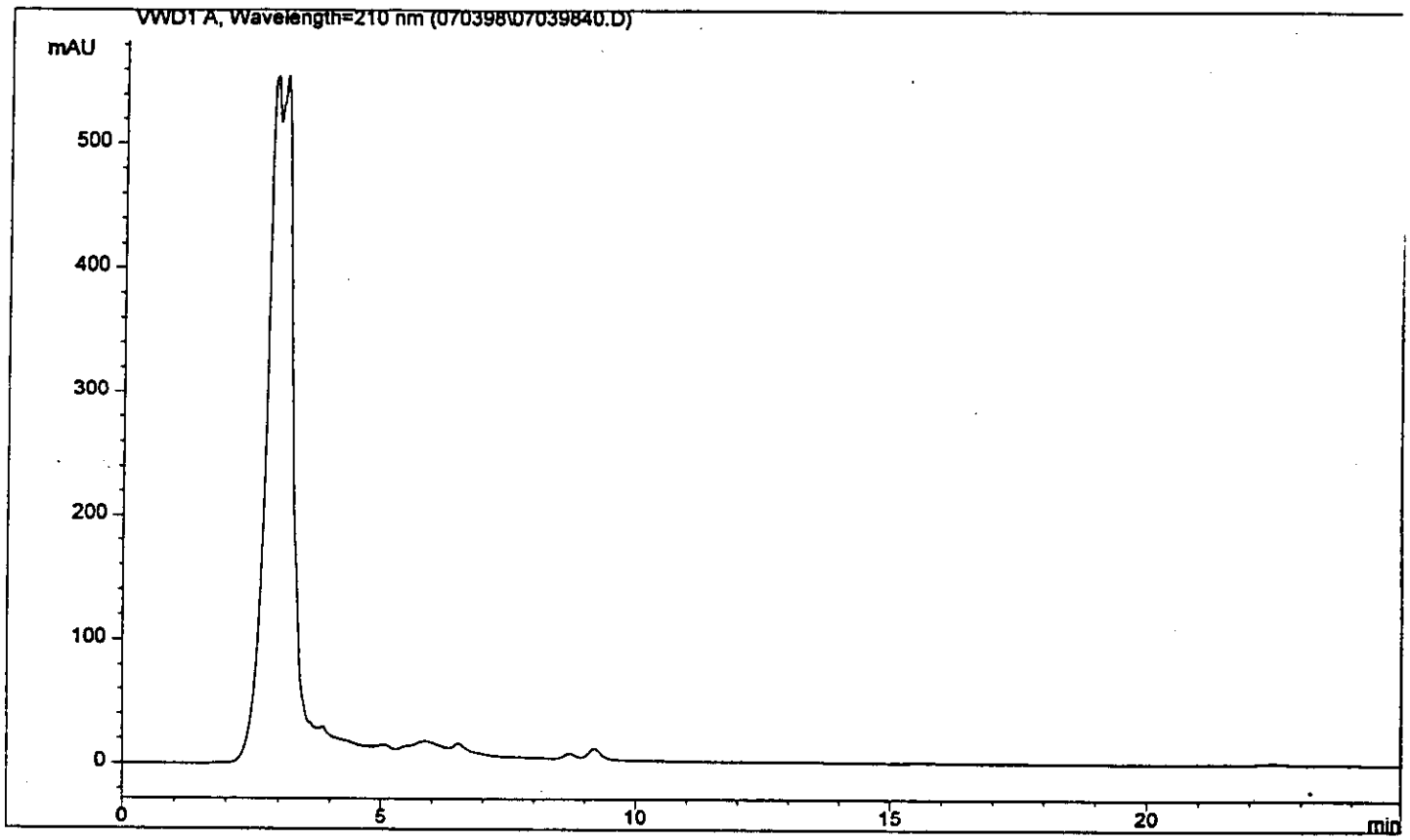
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN	250		U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 40
Sample Name	: 34581.01	Vial No.	: 40
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-60-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.02

Sample Amt: 2g % Moisture 14.19 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	7170	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	384	
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

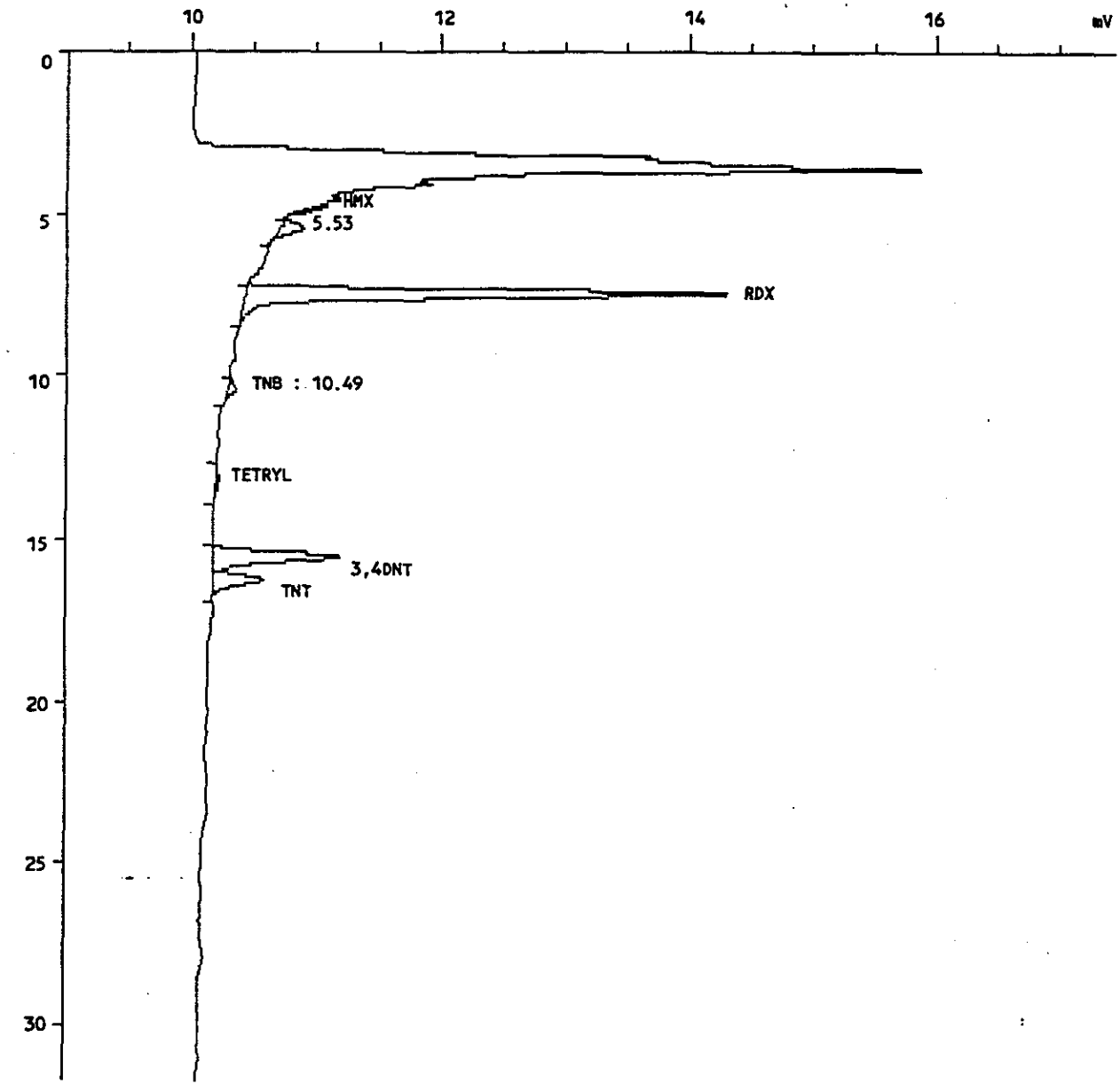
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,6,1

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 04:54:18
Reported on 01-Jul-98 at 15:26:10



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,6,1

Acquired on 01-Jul-98 at 04:54:18
Modified on 01-Jul-82 at 15:14:58
Reported on 01-Jul-98 at 15:14:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

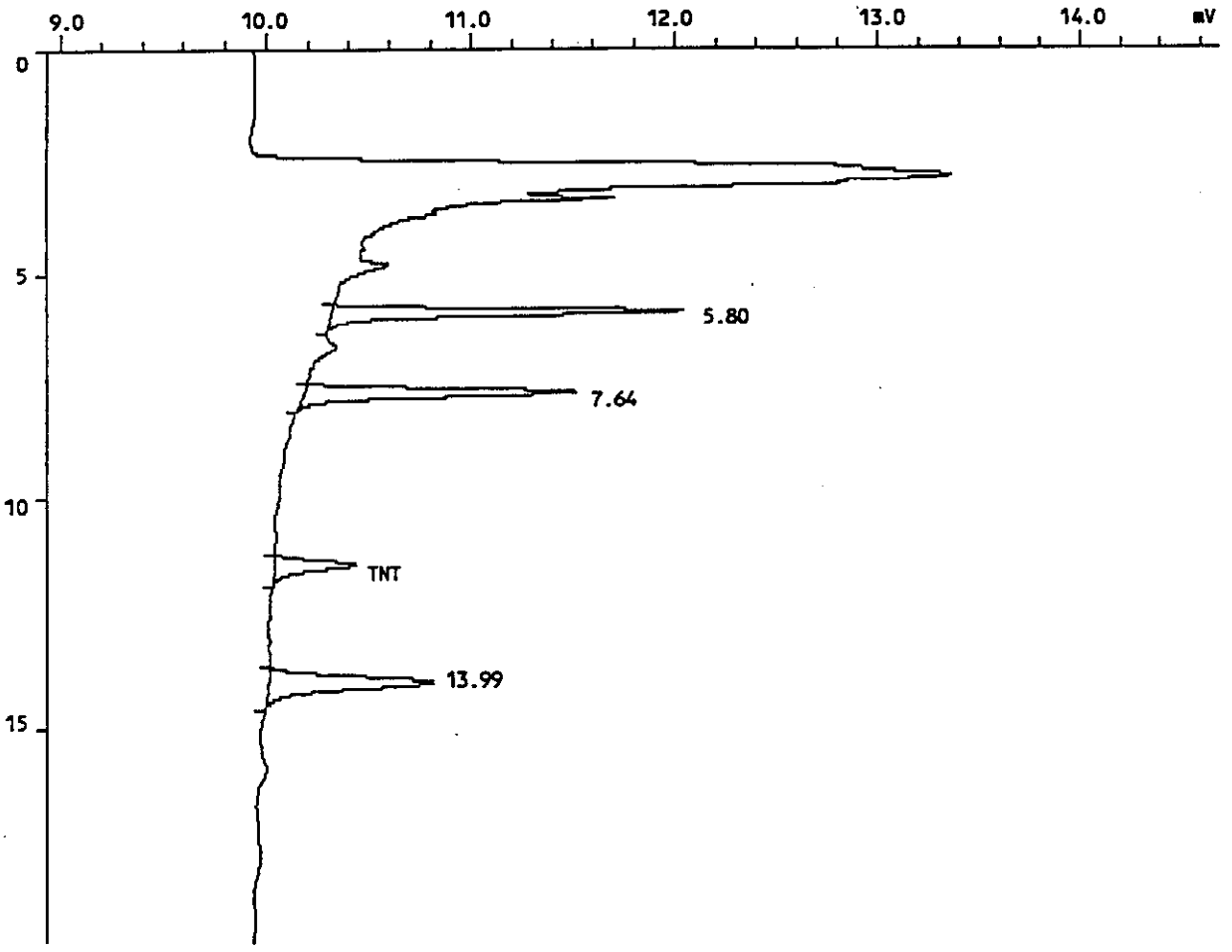
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	116	766	99.784	HMX
3	7.504	3863	67982	7171.133	RDX *P
4	10.251	25	158	7.823	TNB
6	13.307	33	1068	91.764	TETRYL
7	15.563	1028	21774	1703.758	3,4DNT 85
8	16.283	407	8942	383.793	TNT *
Total		5472	100691	9458.055	
Residual		269	5673	619.538	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,4,1

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:58:20
Reported on 20-Jul-98 at 10:35:53



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,4,1

Acquired on 17-Jul-98 at 02:58:20
Modified on 20-Jul-82 at 10:27:46
Reported on 20-Jul-98 at 10:27:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:24:30
Method file.....: LCCN Last modified on 20-Jul-82 at 10:07:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

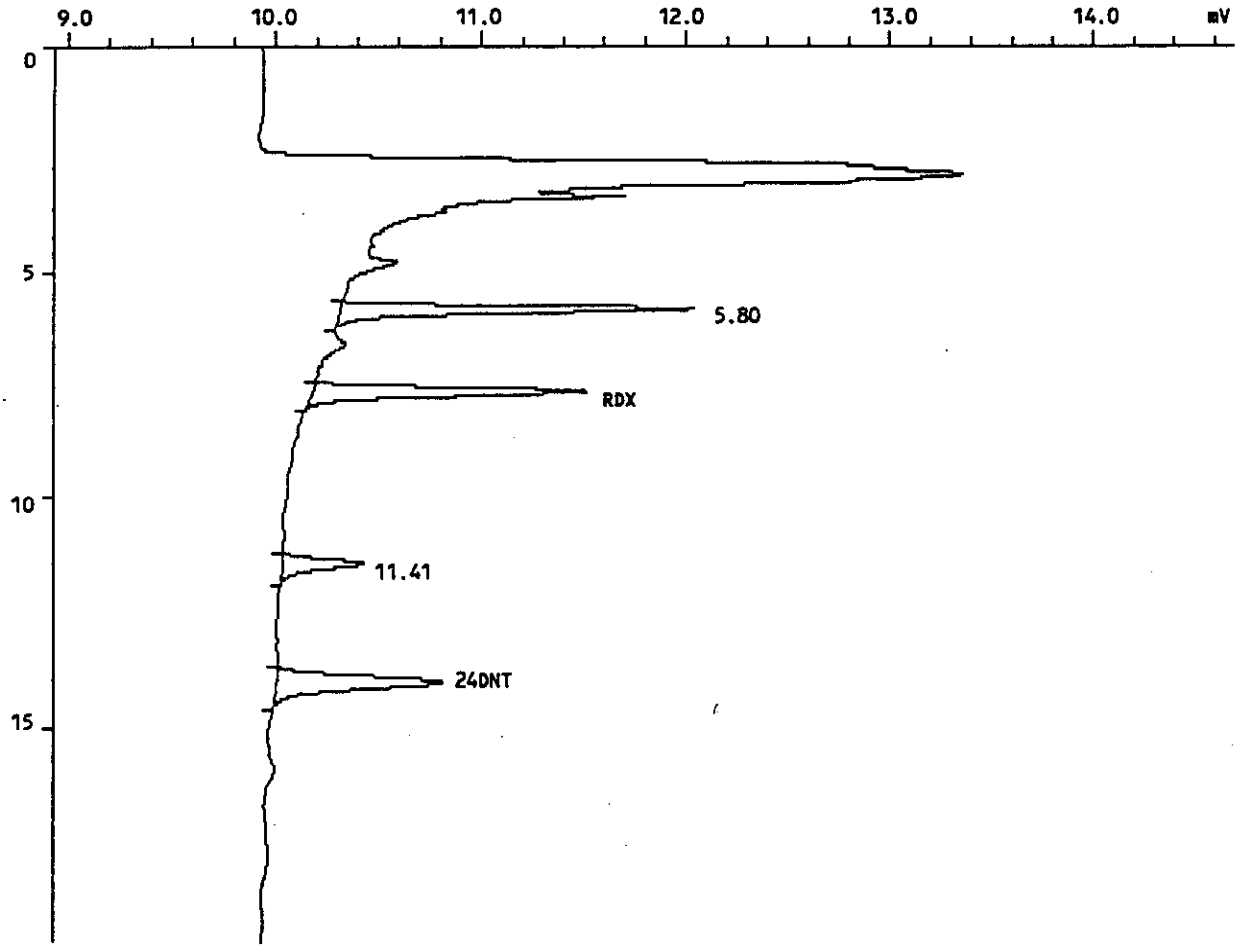
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	11.413	398	6223	486.950	TNT
Total		398	6223	486.950	
Residual		3876	54451	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,4,1

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:58:20
Reported on 20-Jul-98 at 10:58:29



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,4,1

Acquired on 17-Jul-98 at 02:58:20
Modified on 20-Jul-82 at 10:53:26
Reported on 20-Jul-98 at 10:53:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.637	1331	18812	3078.868	RDX
4	13.989	813	15700	947.475	24DNT
Total		2145	34512	4026.343	
Residual		2130	26163	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.02

Sample Amt: 2g % Moisture 14.19 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

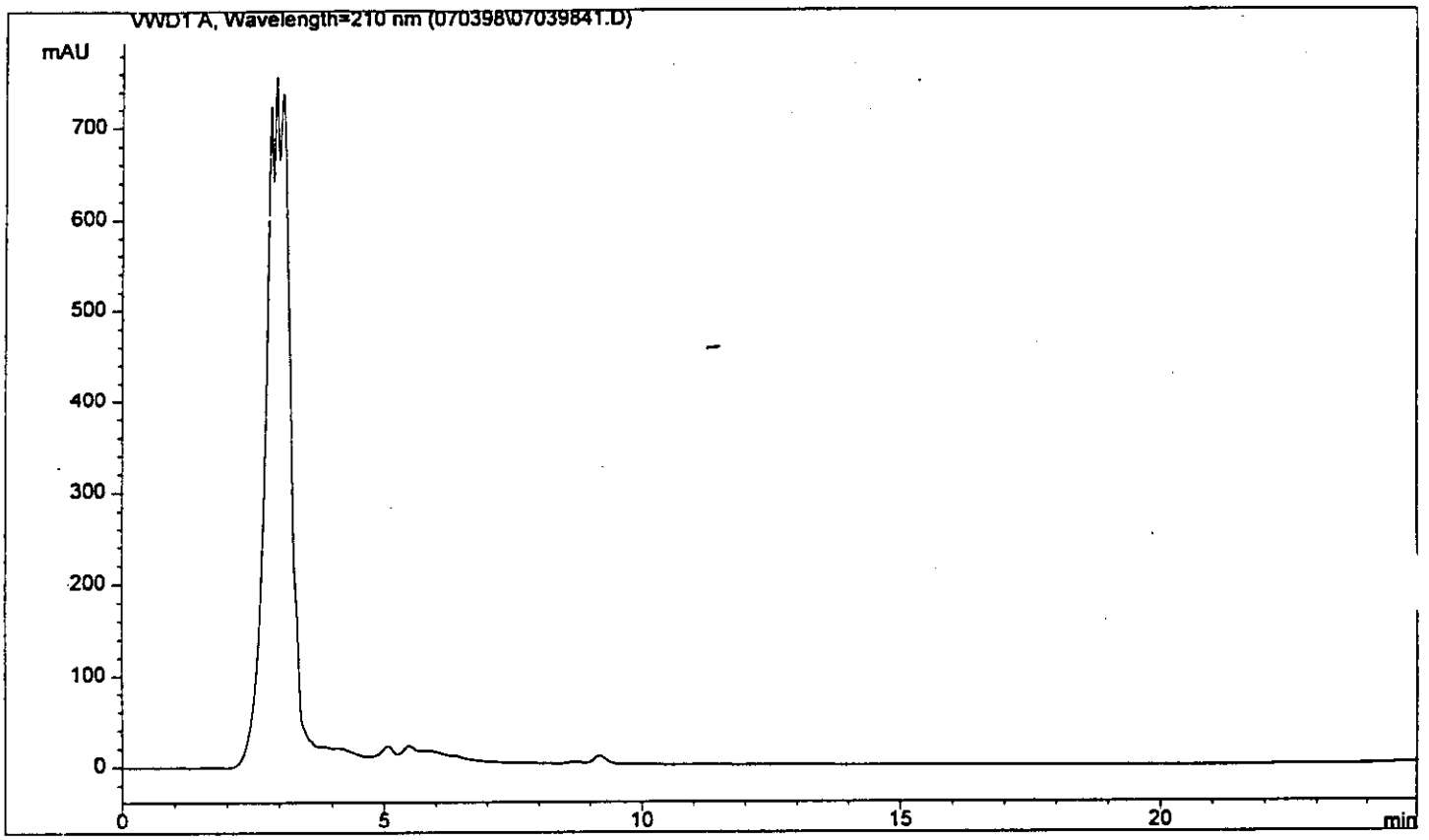
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 41
Sample Name	: 34581.02	Vial No.	: 41
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.03

Sample Amt: 2g % Moisture 13.41 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2230	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	148	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

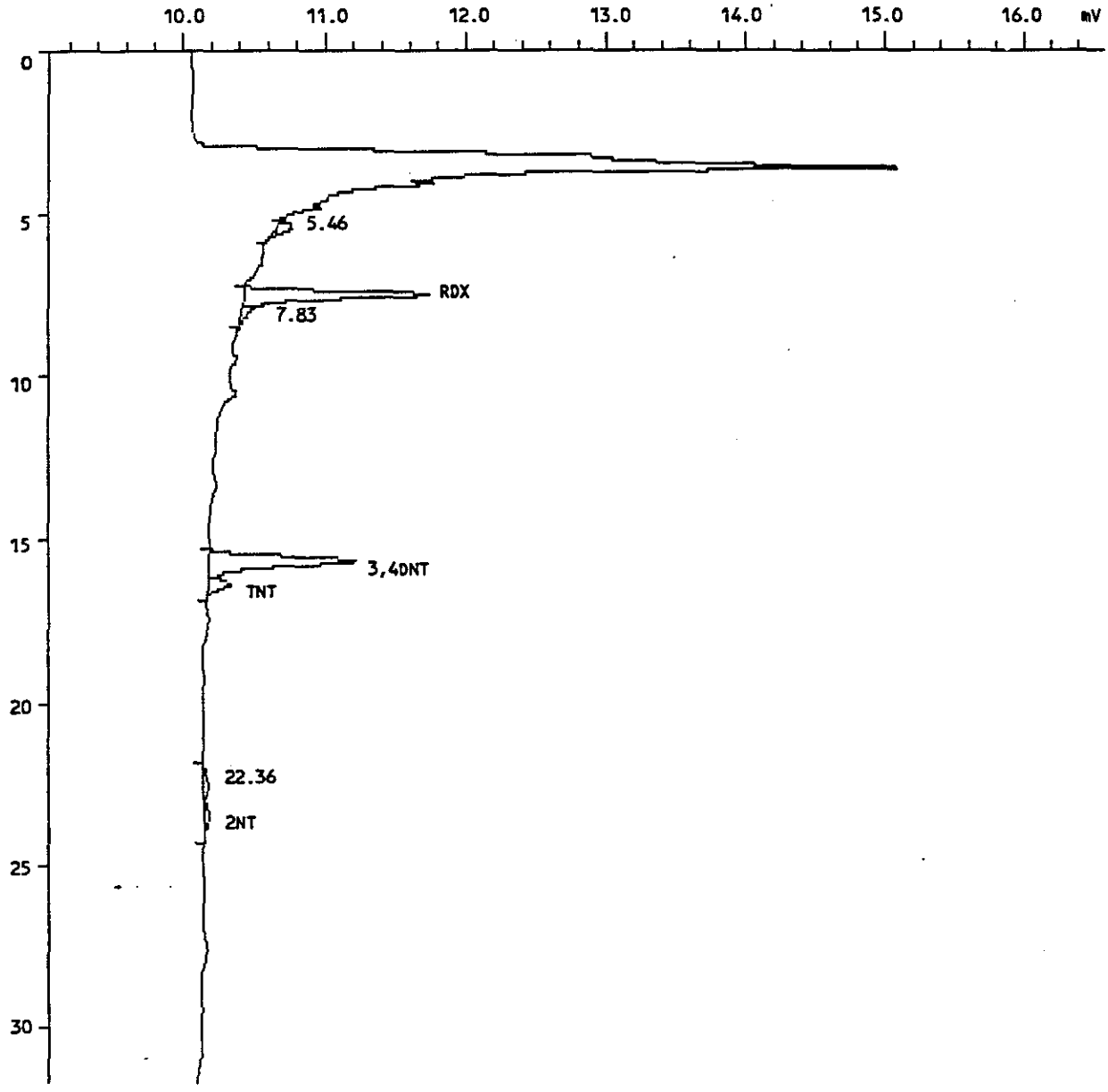
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,7,1

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 05:39:02
Reported on 01-Jul-98 at 15:26:48



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,7,1

Acquired on 01-Jul-98 at 05:39:02
Modified on 01-Jul-82 at 15:15:12
Reported on 01-Jul-98 at 15:15:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

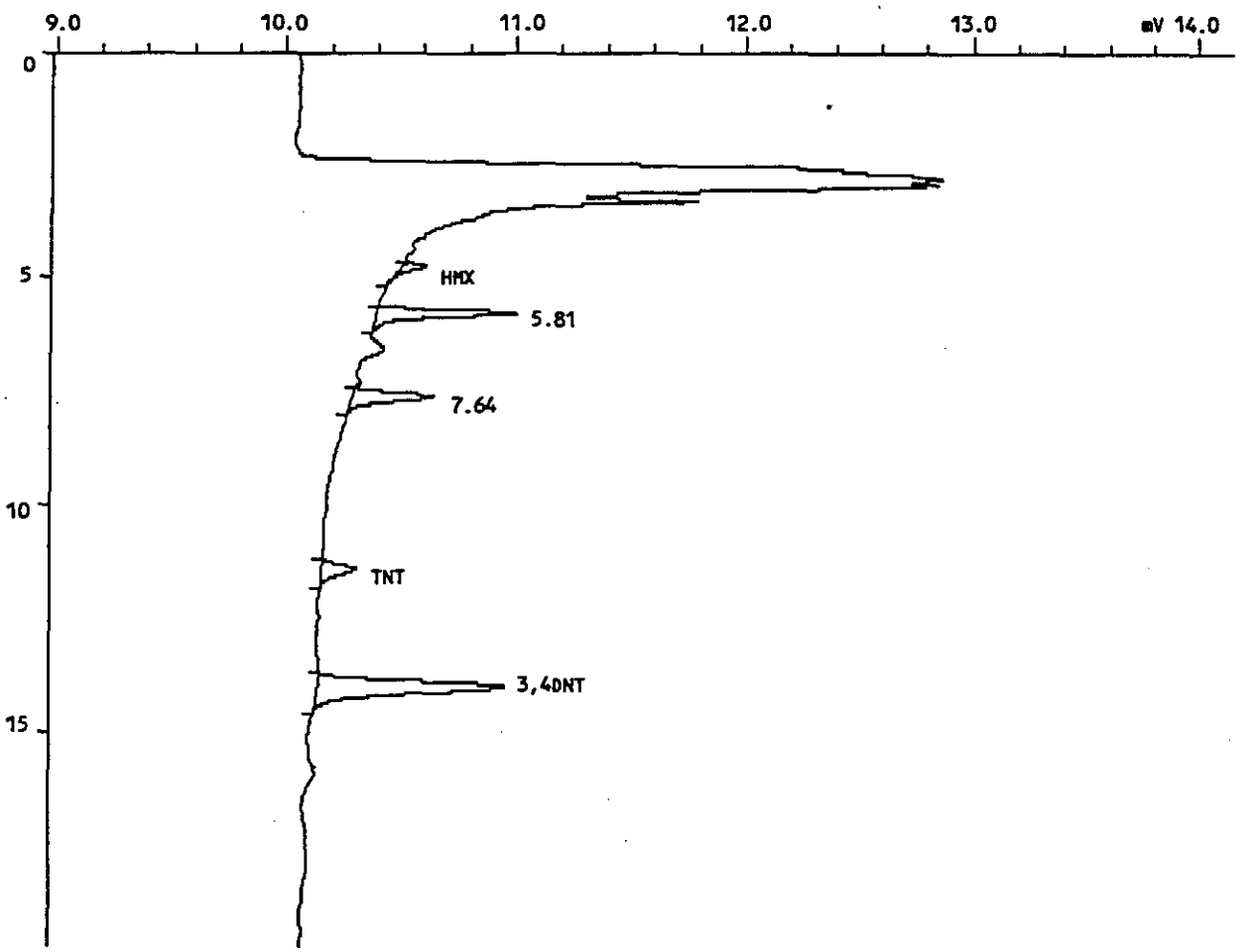
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.531	1314	21126	2228.496	RDX *P
4	15.659	1041	22295	1744.495	3,4DNT 87
5	16.384	160	3449	148.029	TNT *J
7	23.365	40	1595	141.657	2NT
Total		2554	48465	4262.677	
Residual		301	6175	543.497	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,5,1

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 03:32:46
Reported on 21-Jul-98 at 11:09:48



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,5,1

Acquired on 17-Jul-98 at 03:32:46
Modified on 21-Jul-82 at 11:09:08
Reported on 21-Jul-98 at 11:09:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

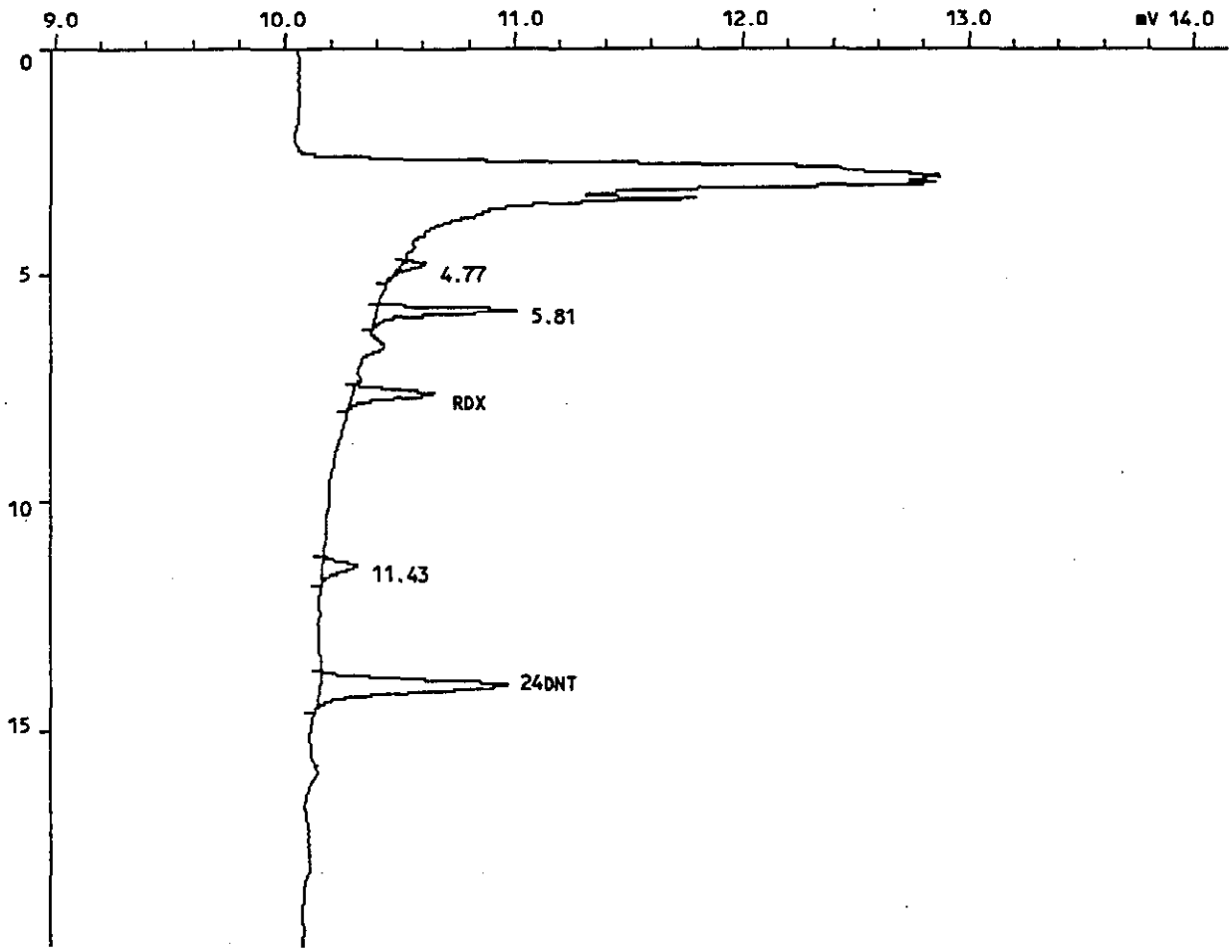
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.773	110	1260	261.378	HMX
4	11.429	152	2395	187.391	TNT
5	14.000	818	15740	1977.398	3,4DNT
Total		1081	19395	2426.167	
Residual		966	12063	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,5,1

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 03:32:46
Reported on 20-Jul-98 at 10:59:09



WD 7-23-98

43A

INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,5,1

Acquired on 17-Jul-98 at 03:32:46
Modified on 20-Jul-82 at 10:53:40
Reported on 20-Jul-98 at 10:53:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.643	354	4920	805.219	RDX
5	14.000	818	15740	949.915	24DNT
Total		1173	20660	1755.133	
Residual		874	10797	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.03

Sample Amt: 2g % Moisture 13.41 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

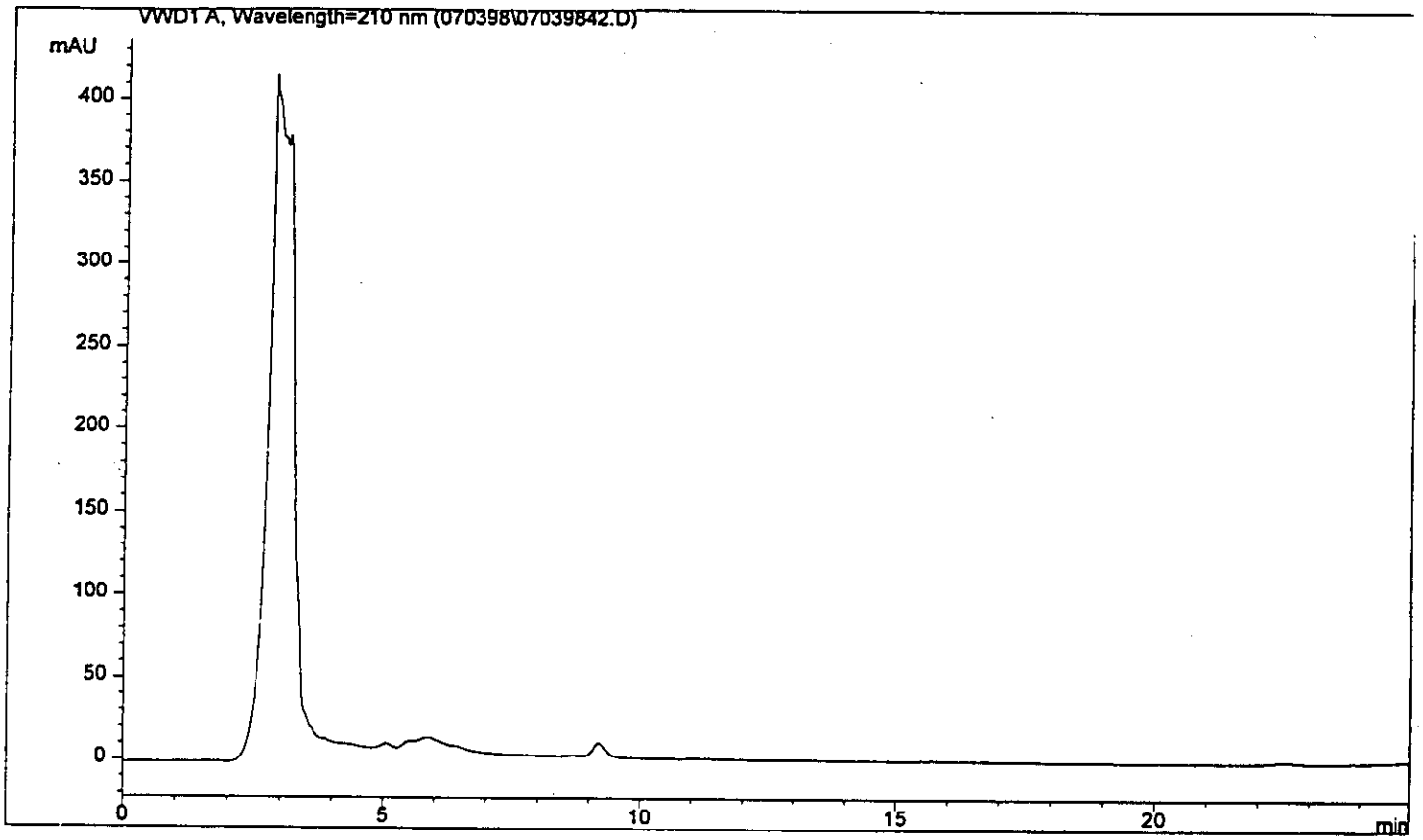
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 42
Sample Name	: 34581.03	Vial No.	: 42
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

46

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.04

Sample Amt: 2g % Moisture 15.83 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	5570	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	213	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

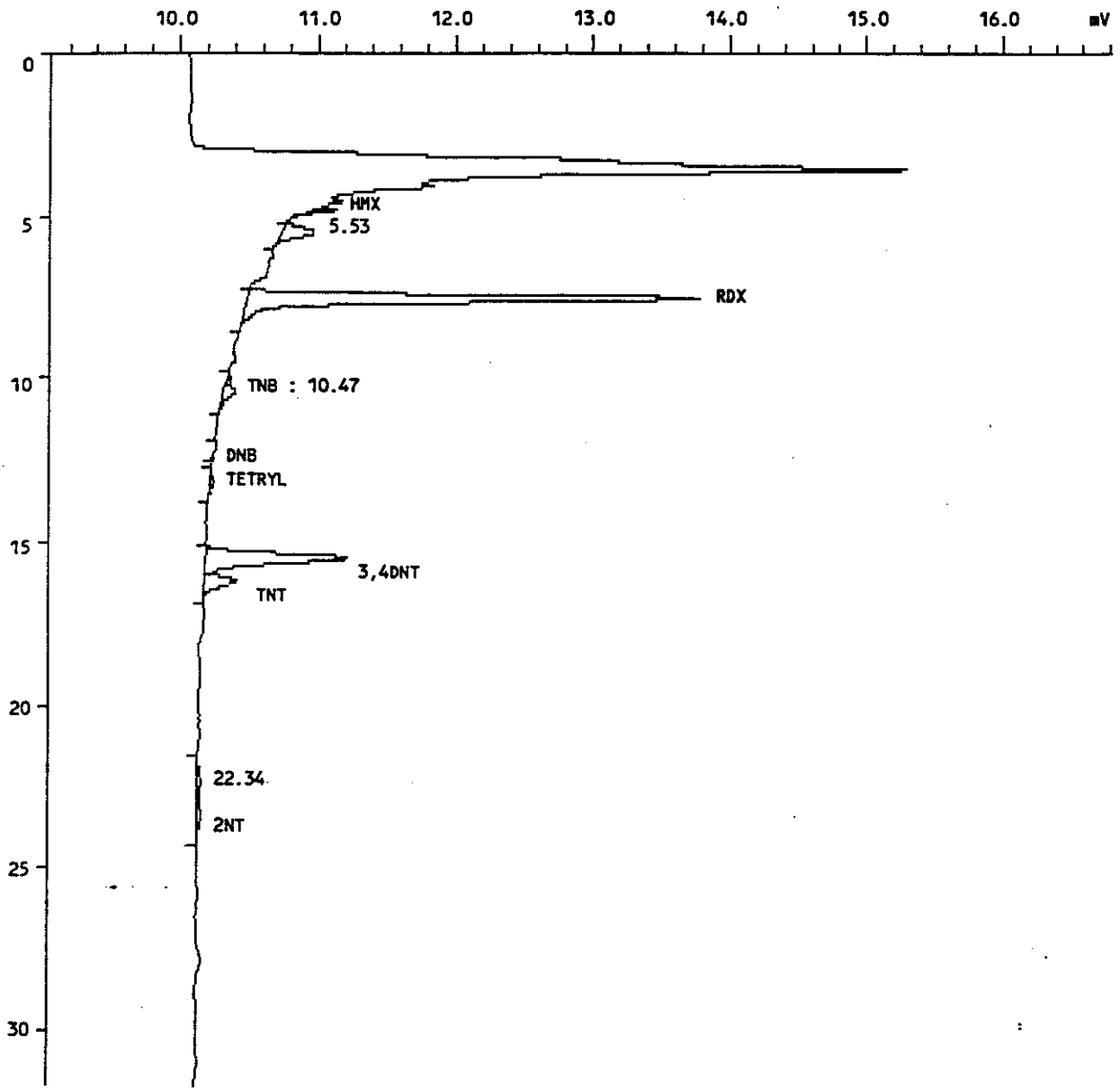
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,8,1

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 06:23:46
Reported on 01-Jul-98 at 15:27:21



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,8,1

Acquired on 01-Jul-98 at 06:23:46
Modified on 01-Jul-82 at 15:15:28
Reported on 01-Jul-98 at 15:15:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

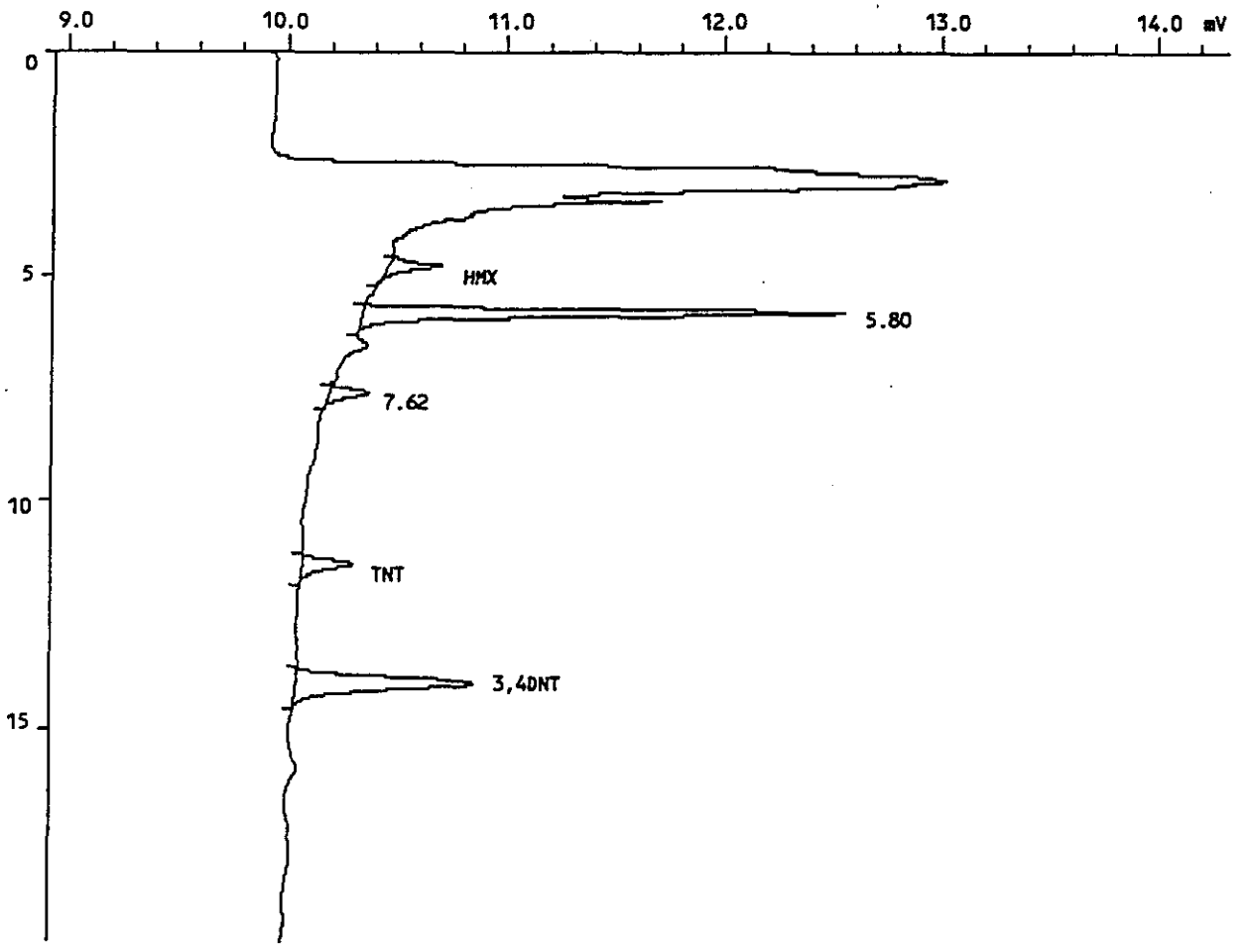
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.827	155	986	128.335	HMX
3	7.531	3290	52842	5574.015	RDX *P
4	10.261	50	613	30.356	TNB
6	12.181	15	266	8.886	DNB
7	13.184	29	863	74.183	TETRYL
8	15.483	1036	22068	1726.762	3,4DNT 86
9	16.213	232	4961	212.916	TNT *J
11	23.451	32	1421	126.202	2NT
Total		4840	84019	7881.655	
Residual		351	8114	799.433	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,6,1

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:07:12
Reported on 21-Jul-98 at 11:10:35



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,6,1

Acquired on 17-Jul-98 at 04:07:12
Modified on 21-Jul-82 at 11:10:14
Reported on 21-Jul-98 at 11:10:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

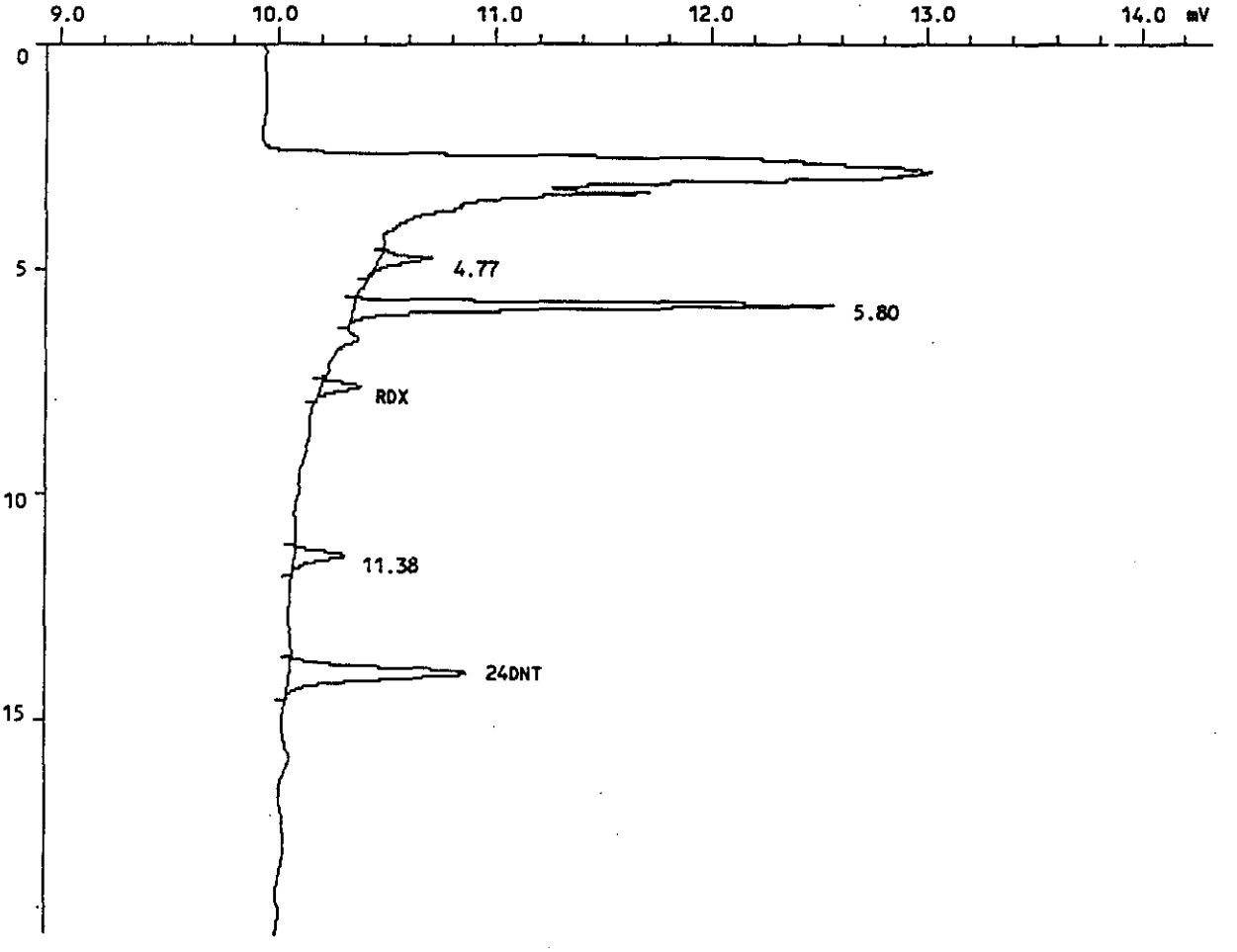
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.773	250	3181	660.031	HMX
4	11.376	234	3621	283.344	TNT
5	13.947	808	15608	1960.835	3,4DNT
Total		1293	22411	2904.210	
Residual		2394	27626	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,6,1

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:07:12
Reported on 20-Jul-98 at 10:59:25



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,6,1

Acquired on 17-Jul-98 at 04:07:12
Modified on 20-Jul-82 at 10:53:54
Reported on 20-Jul-98 at 10:53:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.621	181	2416	395.354	RDX
5	13.947	808	15608	941.958	24DNT
Total		989	18024	1337.313	
Residual		2698	32013	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.04

Sample Amt: 2g % Moisture 15.83 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

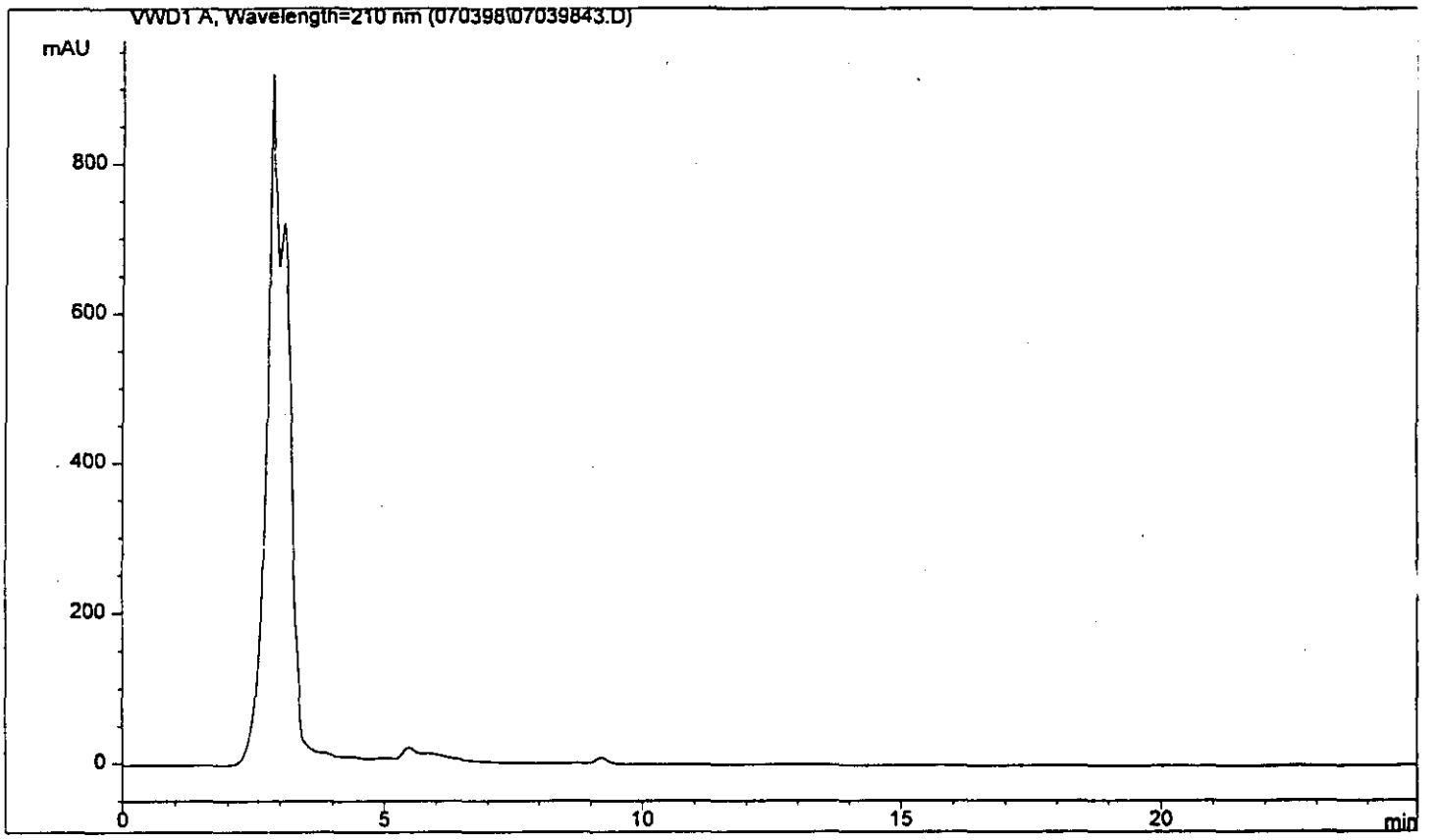
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 43
Sample Name	: 34581.04	Vial No.	: 43
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 μ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

55

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.05

Sample Amt: 2g % Moisture 26.90 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1660	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	144	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

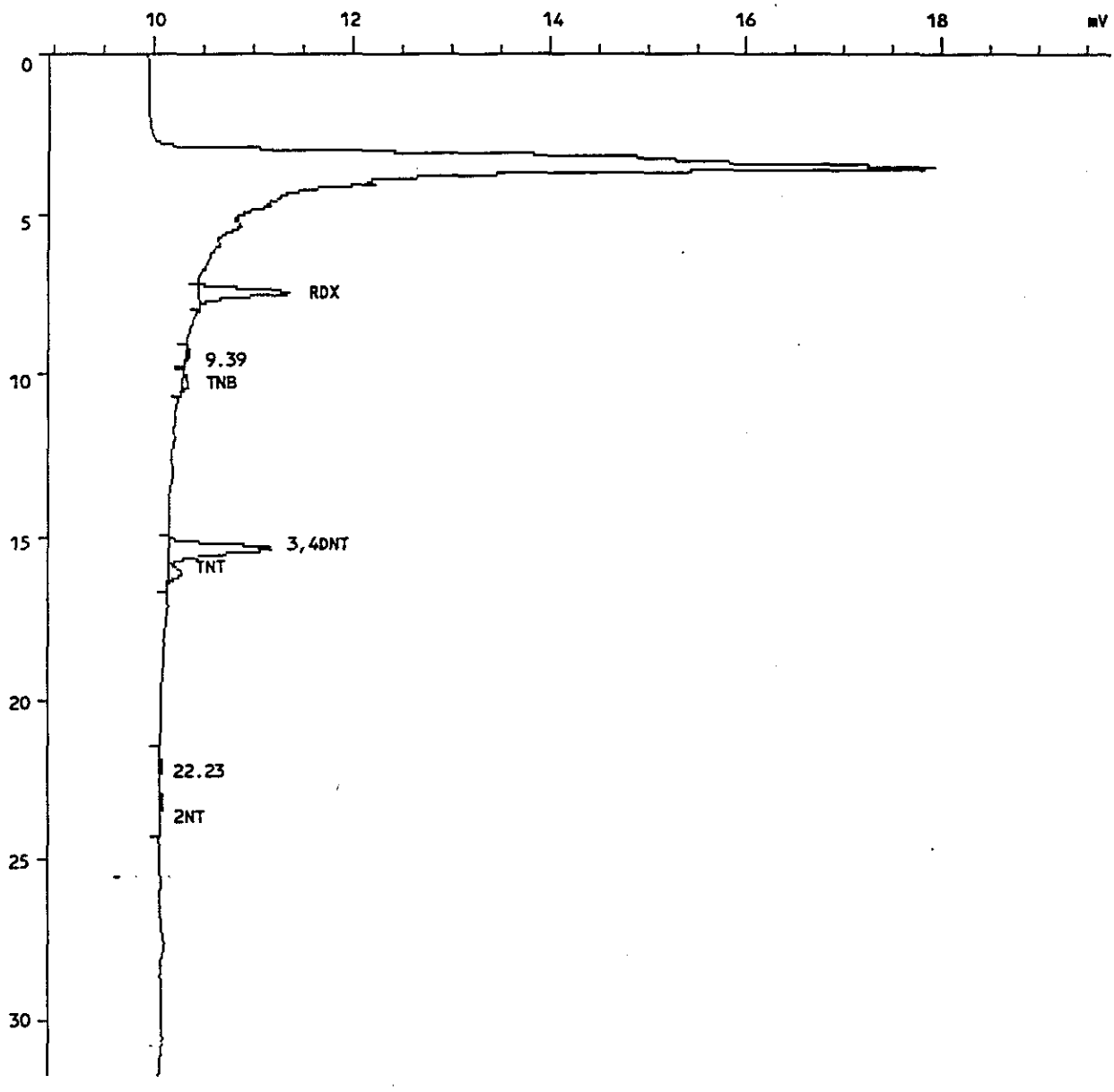
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,9,1

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 07:08:30
Reported on 01-Jul-98 at 15:27:42



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,9,1

Acquired on 01-Jul-98 at 07:08:30
Modified on 01-Jul-82 at 15:15:44
Reported on 01-Jul-98 at 15:15:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

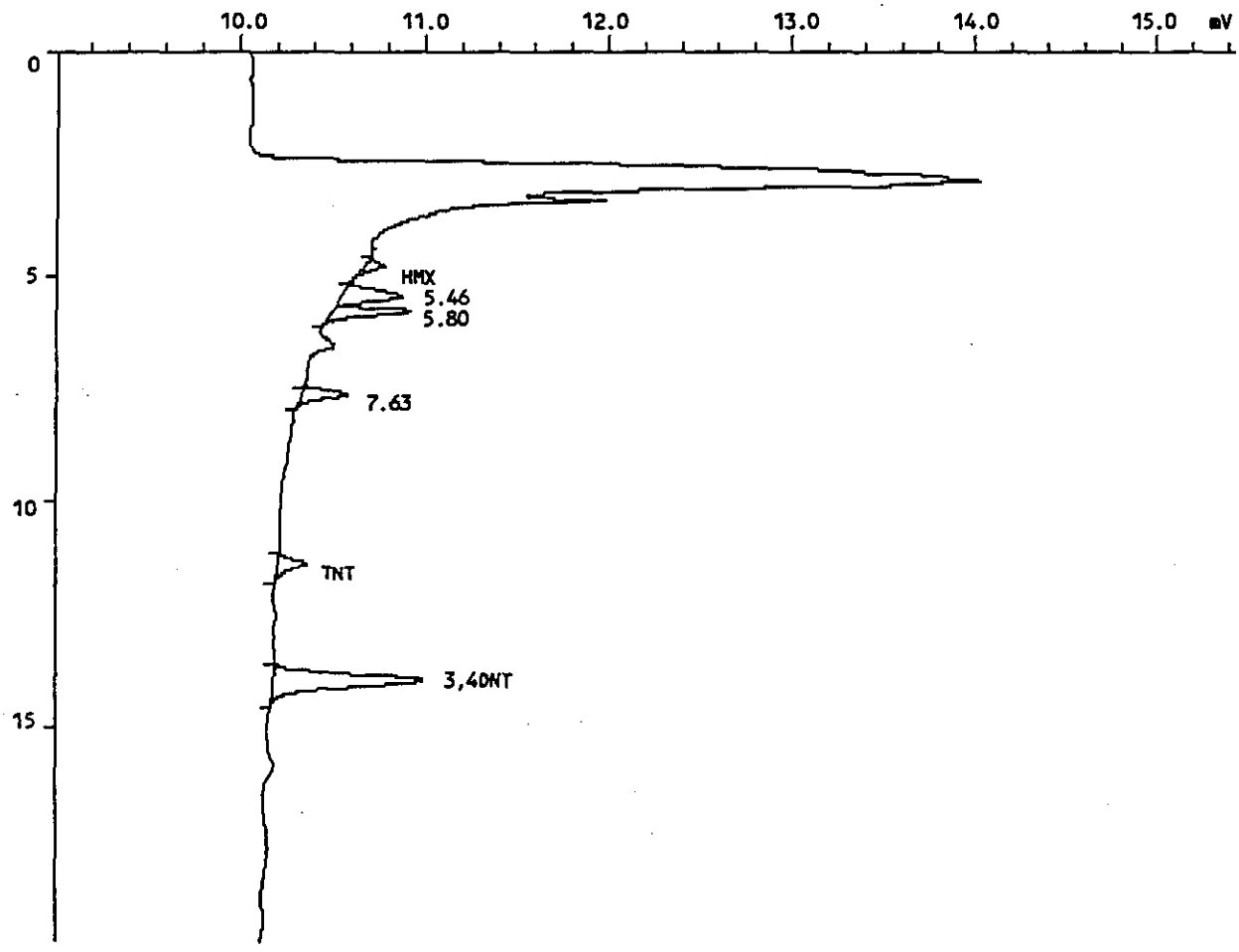
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.472	921	15788	1665.418	RDX *P
3	10.320	71	1691	83.807	TNB
4	15.387	1042	22323	1746.727	3,4DNT 87
5	16.128	154	3351	143.803	TNT *J
7	23.333	34	1403	124.603	2NT
Total		2222	44556	3764.358	
Residual		73	1932	134.316	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,7,1

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:41:38
Reported on 21-Jul-98 at 11:11:15



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,7,1

Acquired on 17-Jul-98 at 04:41:38
Modified on 21-Jul-82 at 11:10:58
Reported on 21-Jul-98 at 11:11:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

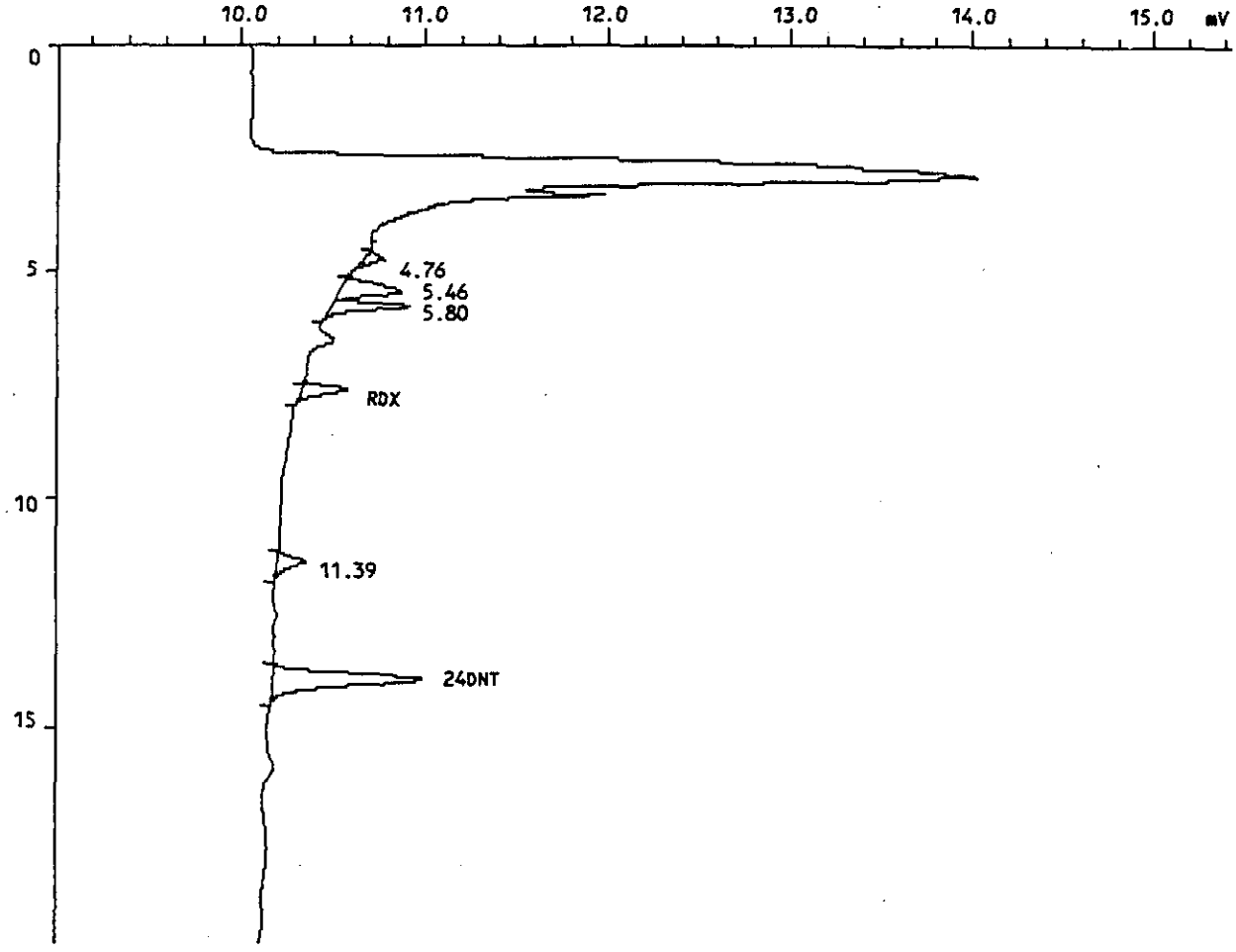
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.763	127	1874	388.777	HMX
5	11.387	153	2475	193.696	TNT
6	13.947	809	15679	1969.731	3,4DNT
Total		1089	20028	2552.204	
Residual		1023	13712	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,7,1

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:41:38
Reported on 20-Jul-98 at 10:59:48



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,7,1

Acquired on 17-Jul-98 at 04:41:38
Modified on 20-Jul-82 at 10:54:06
Reported on 20-Jul-98 at 10:54:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.627	247	3333	545.554	RDX
6	13.947	809	15679	946.232	24DNT
Total		1056	19012	1491.785	
Residual		1057	14728	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.05

Sample Amt: 2g % Moisture 26.90 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

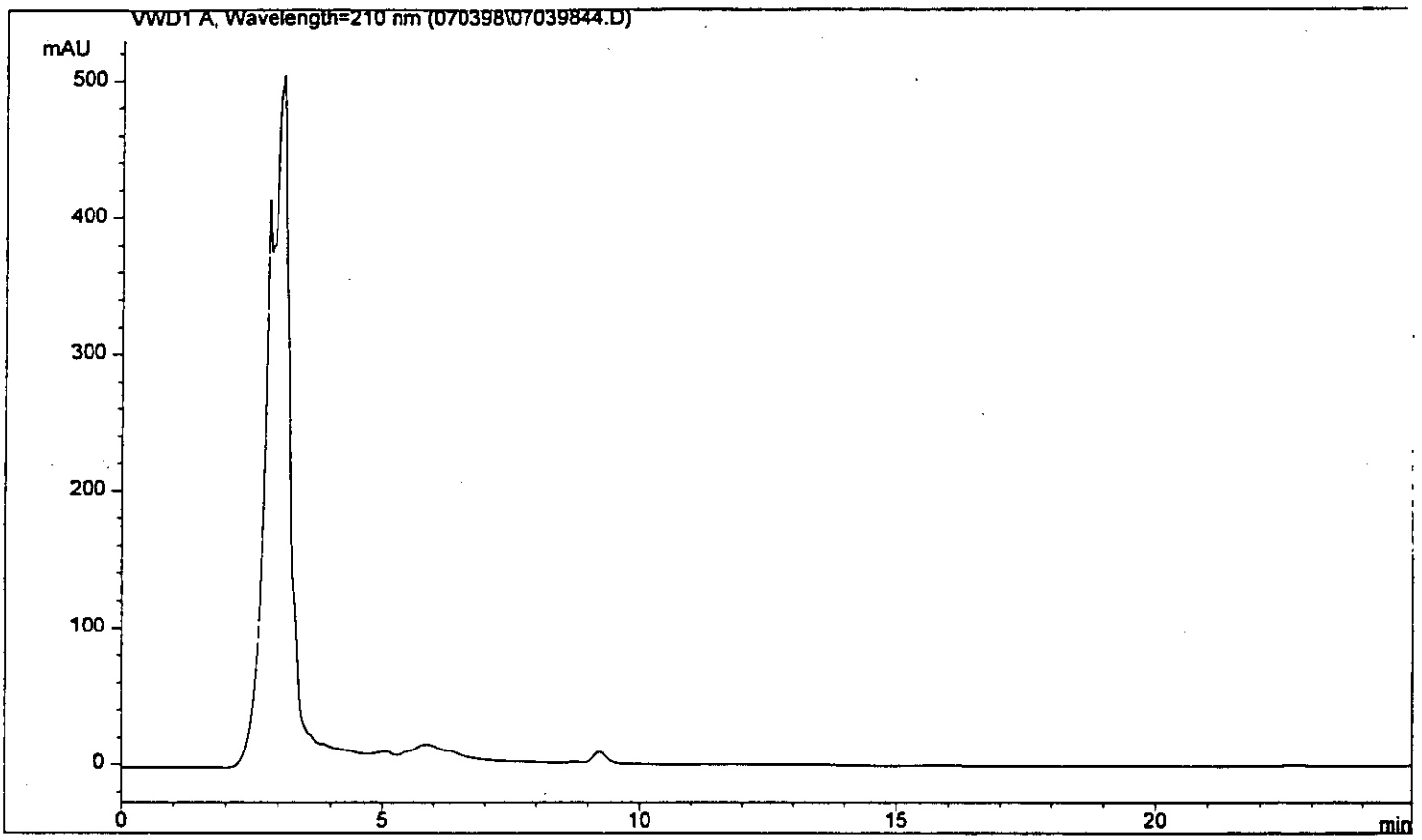
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 44
Sample Name	: 34581.05	Vial No.	: 44
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



==========
Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.06

Sample Amt: 2g % Moisture 14.76 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	4160	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	359	
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

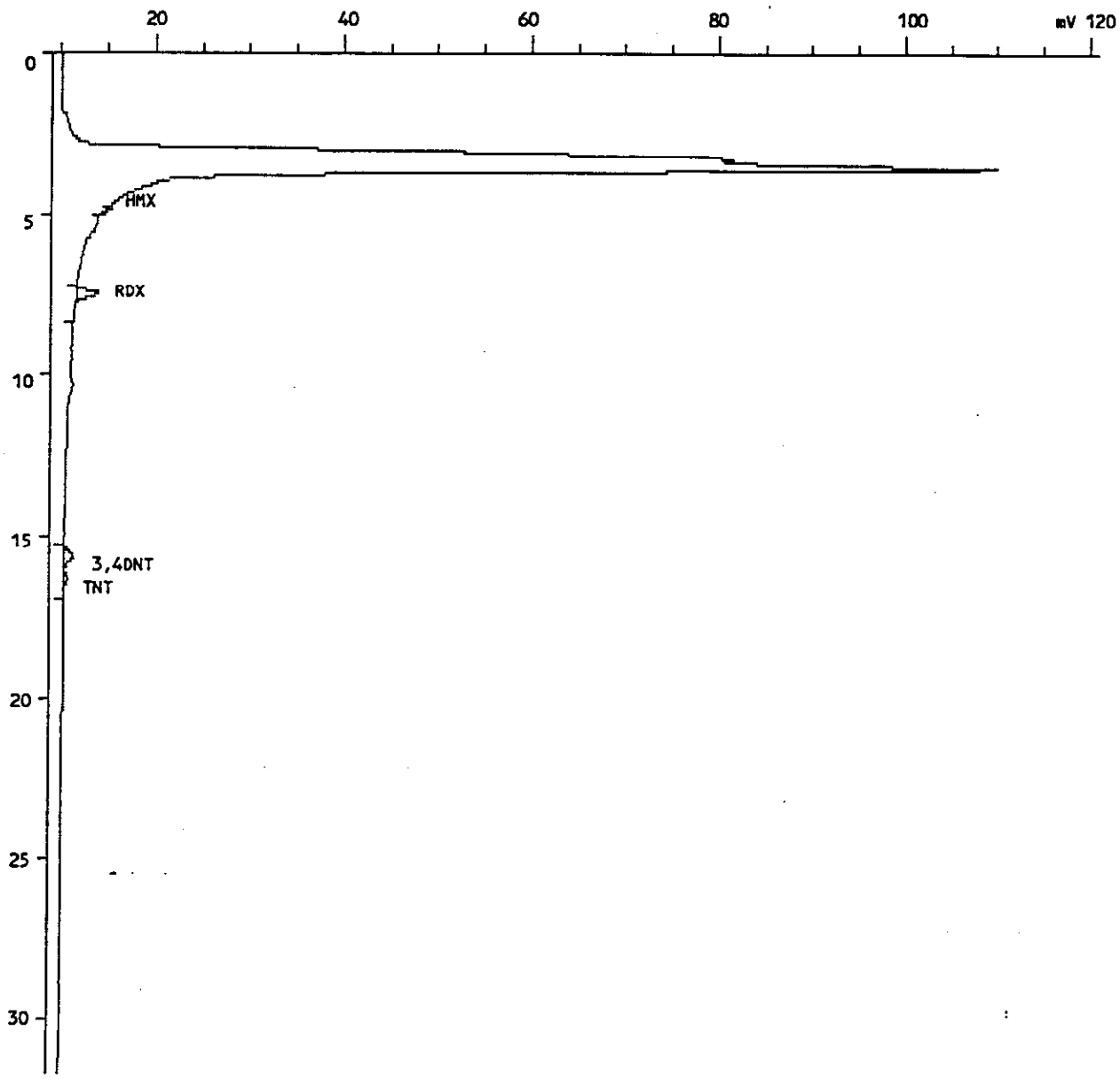
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,10,1

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 07:53:15
Reported on 01-Jul-98 at 15:28:11



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,10,1

Acquired on 01-Jul-98 at 07:53:15
Modified on 01-Jul-82 at 15:16:00
Reported on 01-Jul-98 at 15:15:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

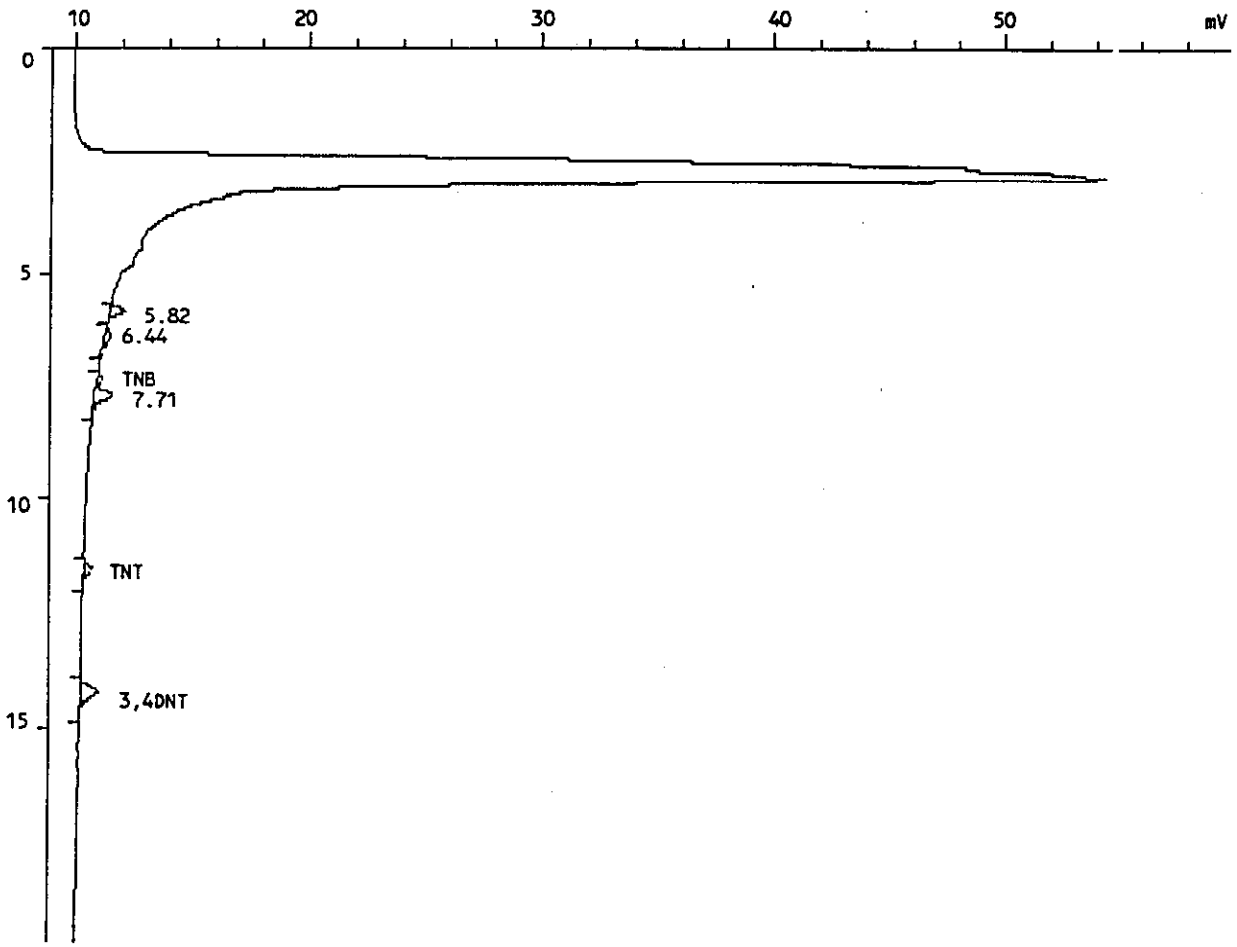
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	334	2046	266.349	HMX
2	7.509	2367	39412	4157.374	RDX * P
3	15.648	1021	21547	1686.024	3,4DNT 84
4	16.363	392	8359	358.775	TNT *
Total		4113	71364	6468.523	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,8,1

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 05:16:05
Reported on 20-Jul-98 at 10:37:17



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,8,1

Acquired on 17-Jul-98 at 05:16:05
Modified on 20-Jul-82 at 10:28:38
Reported on 20-Jul-98 at 10:28:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:24:30
Method file.....: LCCN Last modified on 20-Jul-82 at 10:07:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

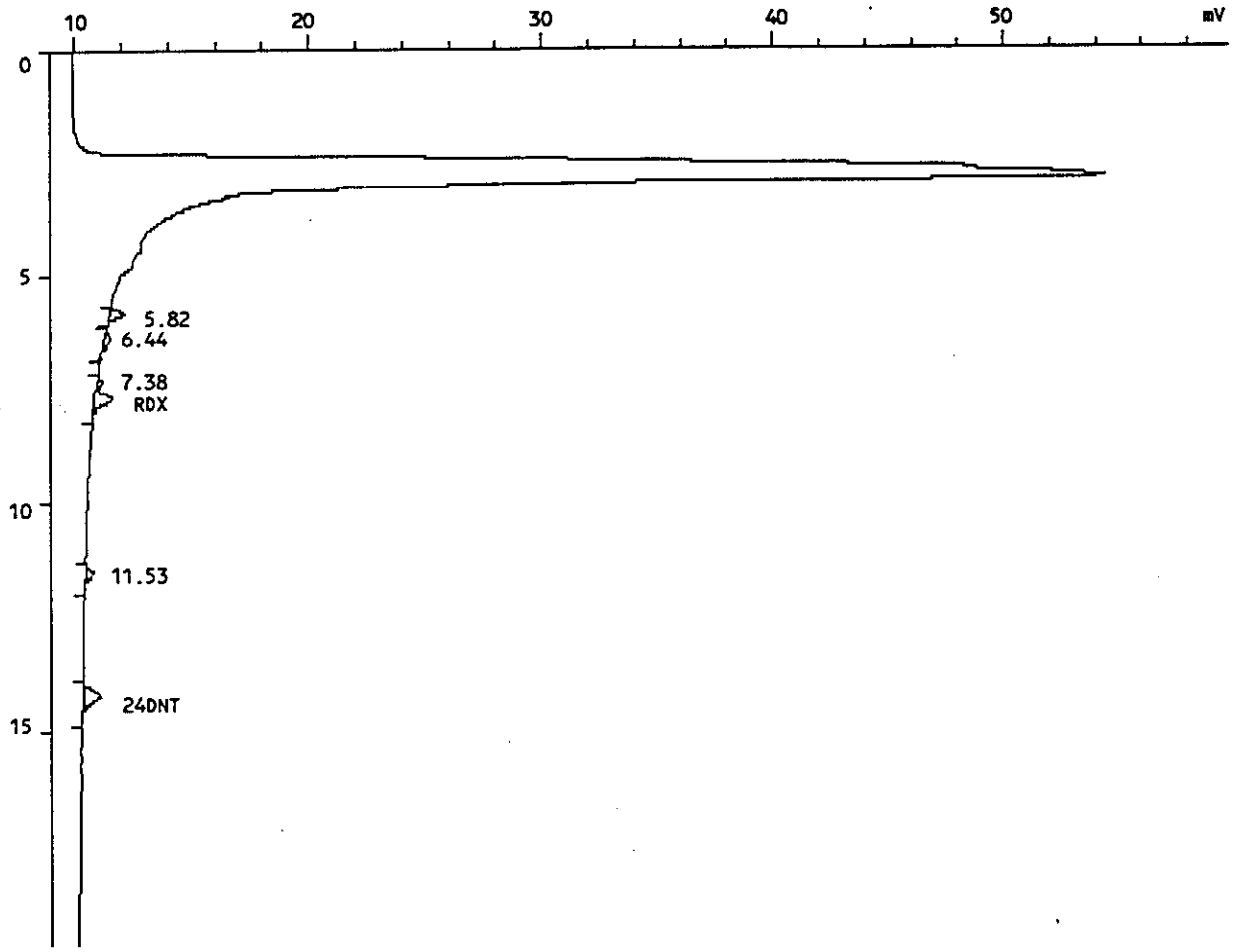
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.381	209	2425	172.331	TNB
5	11.531	388	6044	472.932	TNT
6	14.203	797	15551	1953.627	3,4DNT
Total		1394	24020	2598.890	
Residual		1709	23787	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,8,1

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 05:16:05
Reported on 20-Jul-98 at 11:00:06



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,8,1

Acquired on 17-Jul-98 at 05:16:05
Modified on 20-Jul-82 at 10:54:20
Reported on 20-Jul-98 at 10:54:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.712	790	11510	1883.878	RDX
6	14.203	797	15551	938.496	24DNT
Total		1587	27061	2822.374	
Residual		1516	20746	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.06

Sample Amt: 2g % Moisture 14.76 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

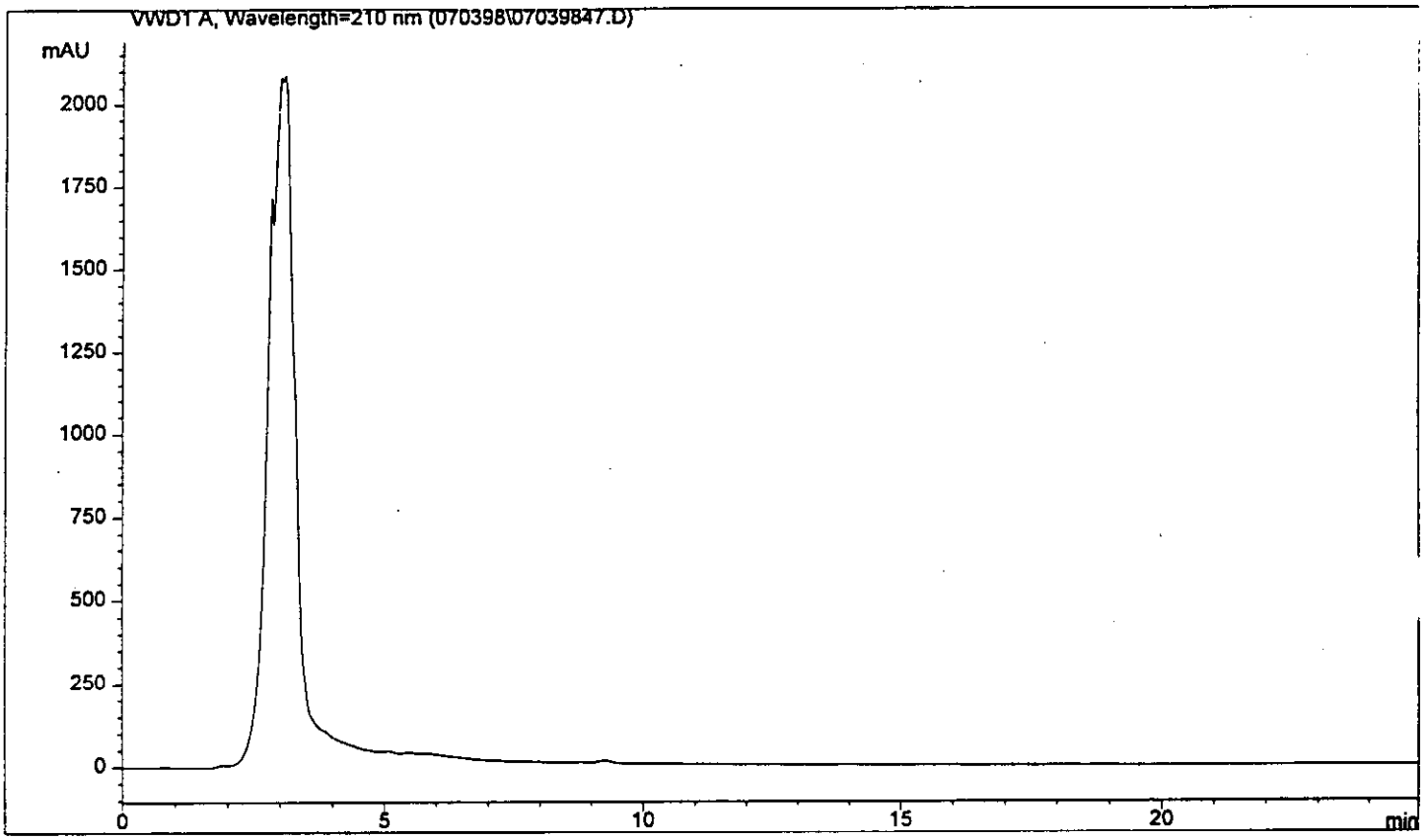
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 47
Sample Name	: 34581.06	Vial No.	: 47
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.07

Sample Amt: 2g % Moisture 14.39 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	3520	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	138	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

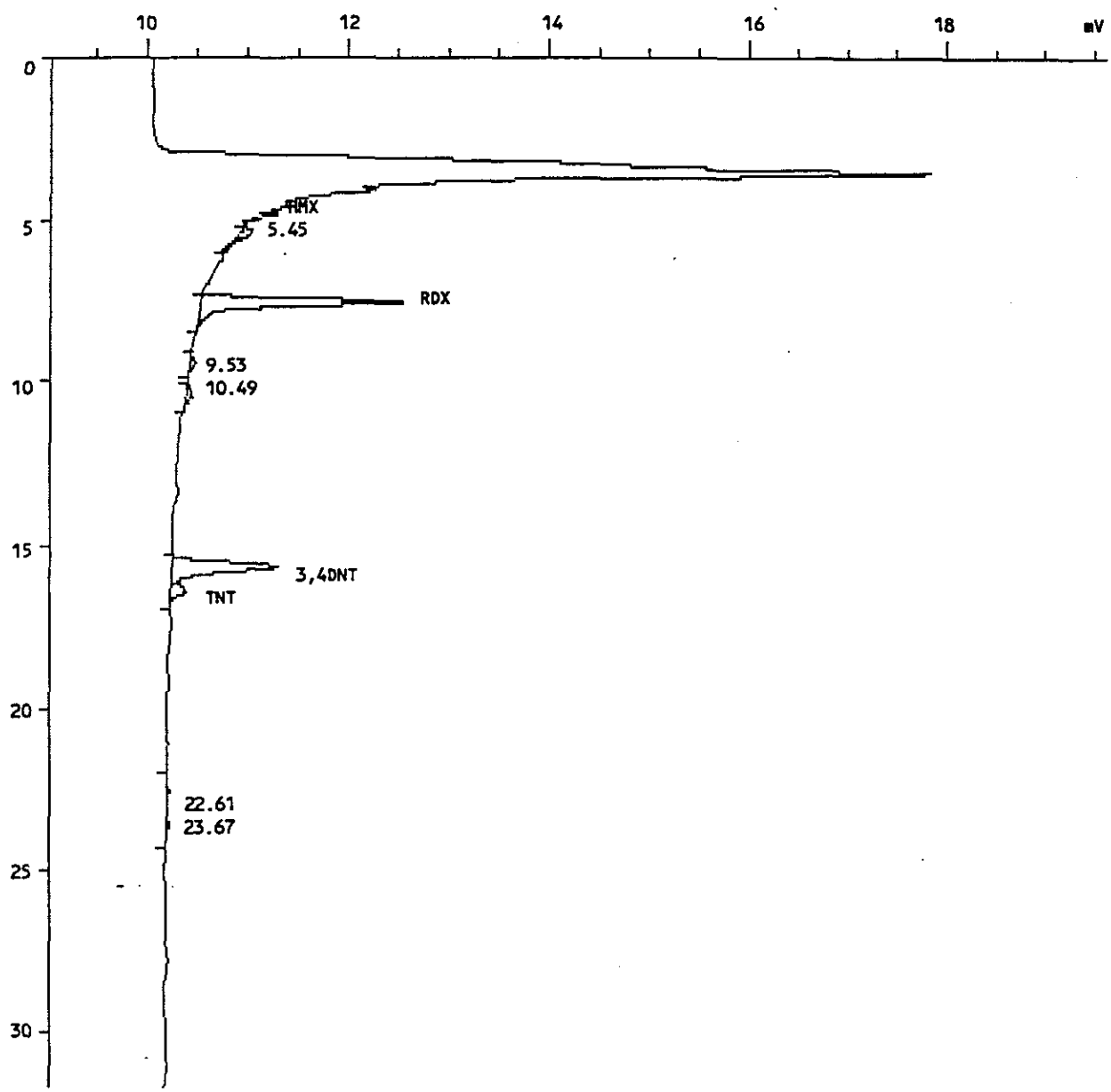
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,13,1

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 10:07:31
Reported on 01-Jul-98 at 15:28:36



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,13,1

Acquired on 01-Jul-98 at 10:07:31
Modified on 01-Jul-82 at 15:16:14
Reported on 01-Jul-98 at 15:16:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

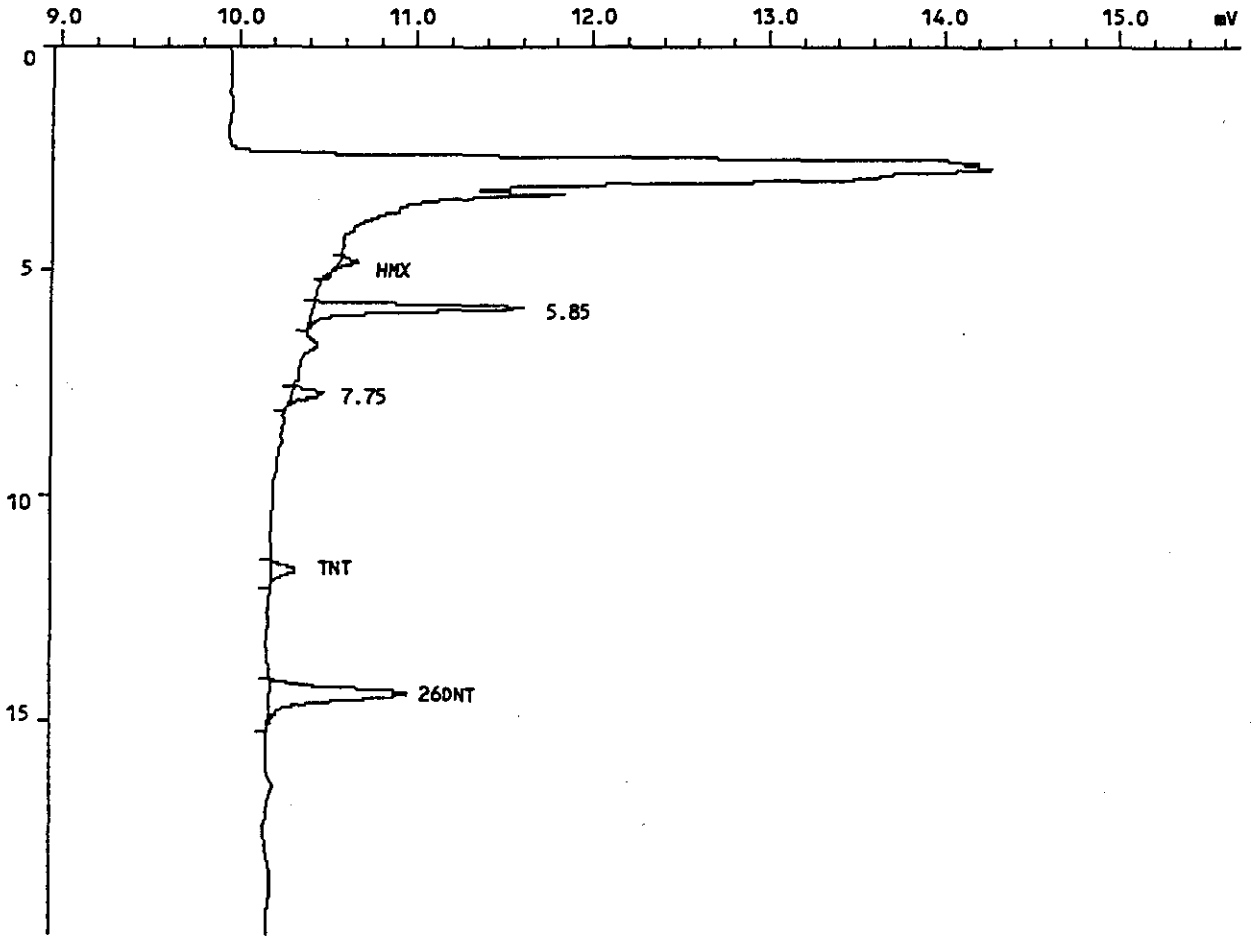
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	131	919	119.641	HMX
3	7.568	2019	33332	3516.079	RDX * P
6	15.653	1050	22299	1744.828	3,4DNT 87
7	16.357	153	3208	137.676	TNT *J
Total		3354	59758	5518.224	
Residual		318	7878	760.890	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,11,1

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:13:04
Reported on 21-Jul-98 at 11:11:53



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,11,1

Acquired on 17-Jul-98 at 10:13:04
Modified on 21-Jul-82 at 11:11:38
Reported on 21-Jul-98 at 11:11:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

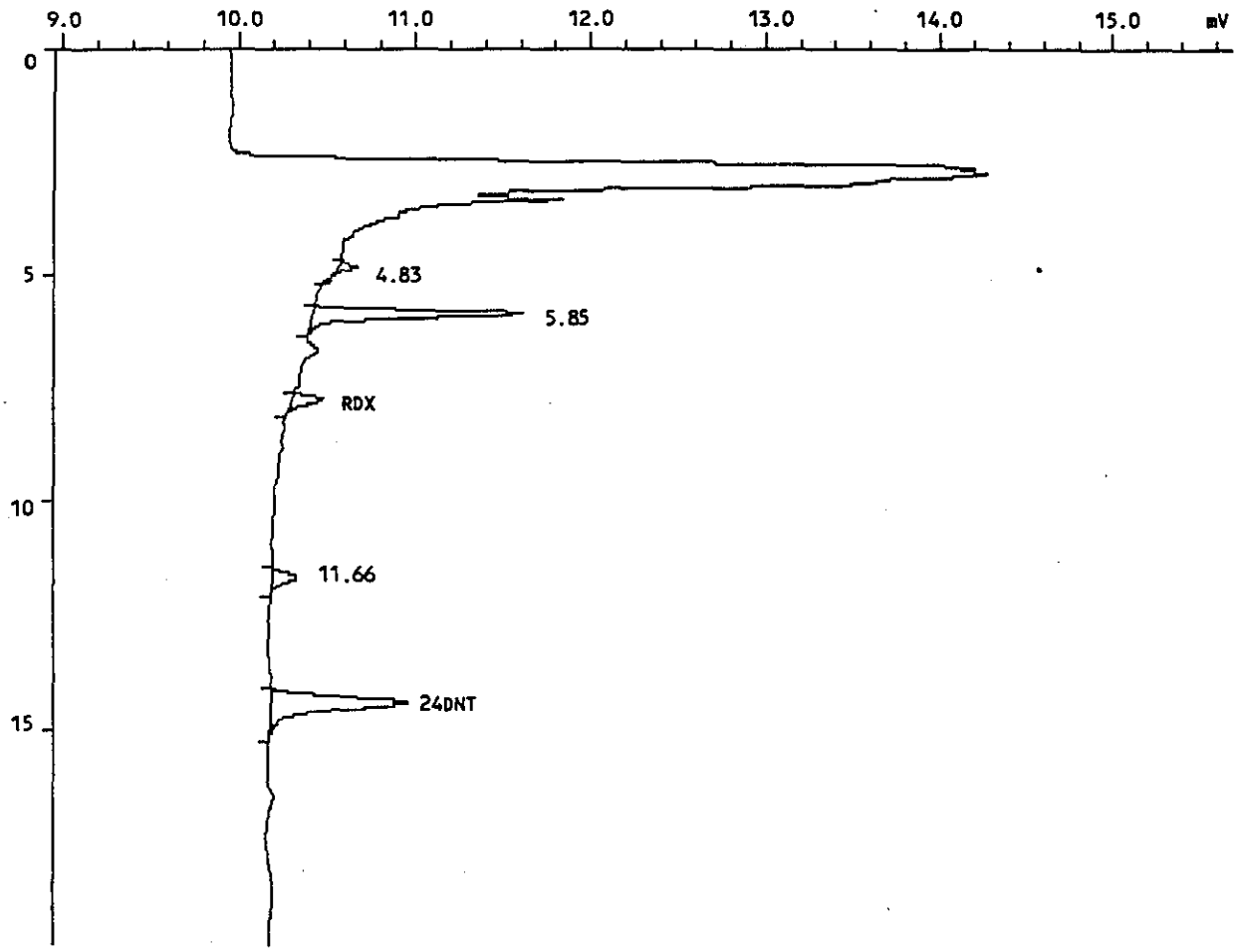
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	116	1293	268.266	HMX
4	11.664	135	2090	163.499	TNT
5	14.400	777	16045	1678.308	26DNT
Total		1028	19427	2110.073	
Residual		1382	16557	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,11,1

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:13:04
Reported on 20-Jul-98 at 11:00:26



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,11,1

Acquired on 17-Jul-98 at 10:13:04
Modified on 20-Jul-82 at 10:54:34
Reported on 20-Jul-98 at 10:54:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.755	182	2525	413.336	RDX
5	14.400	777	16045	968.294	24DNT
Total		959	18570	1381.630	
Residual		1452	17414	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.07

Sample Amt: 2g % Moisture 14.39 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

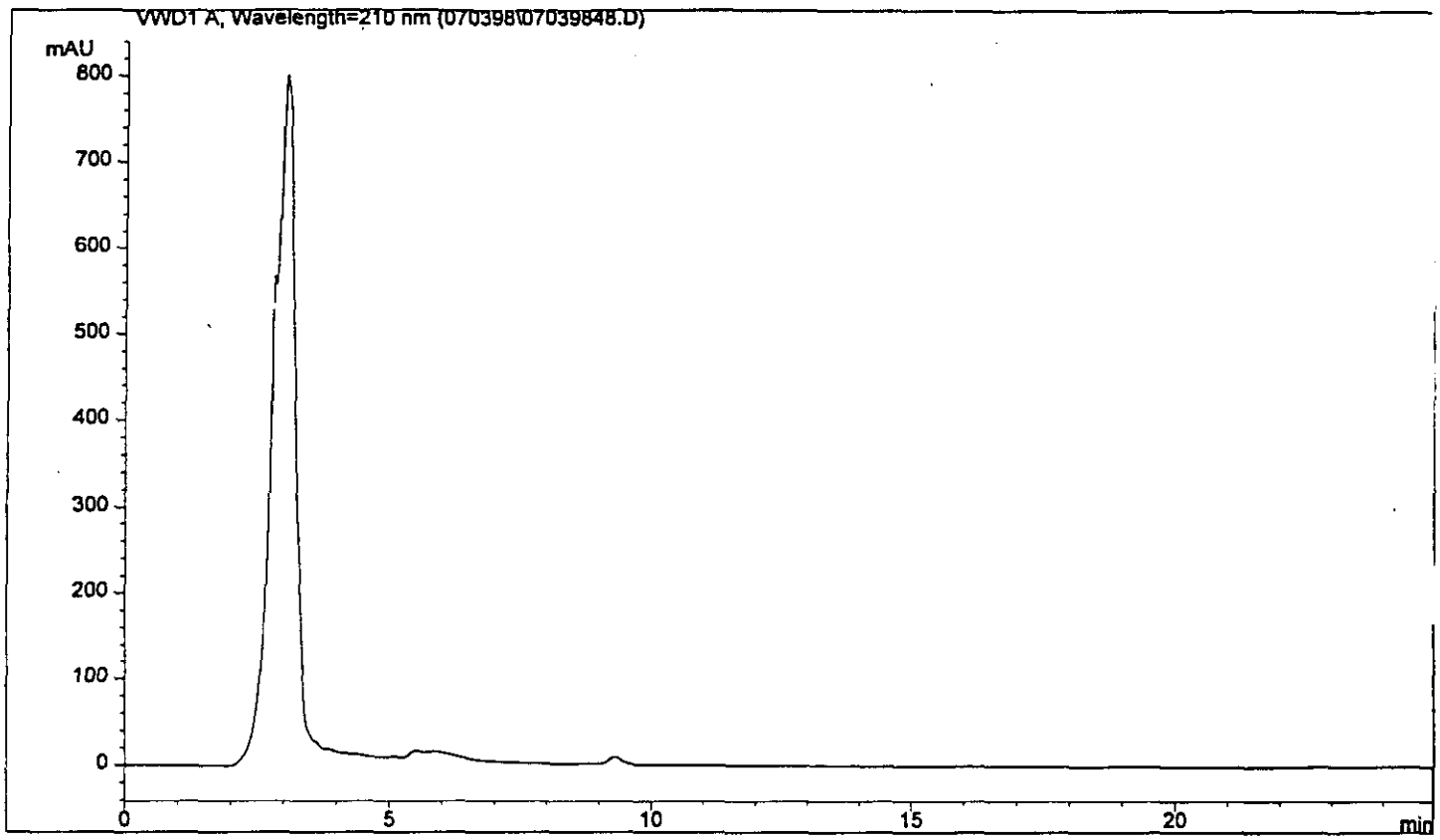
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 48
Sample Name	: 34581.07	Vial No.	: 48
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

82

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.08

Sample Amt: 2g % Moisture 15.23 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	5650	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	380	
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

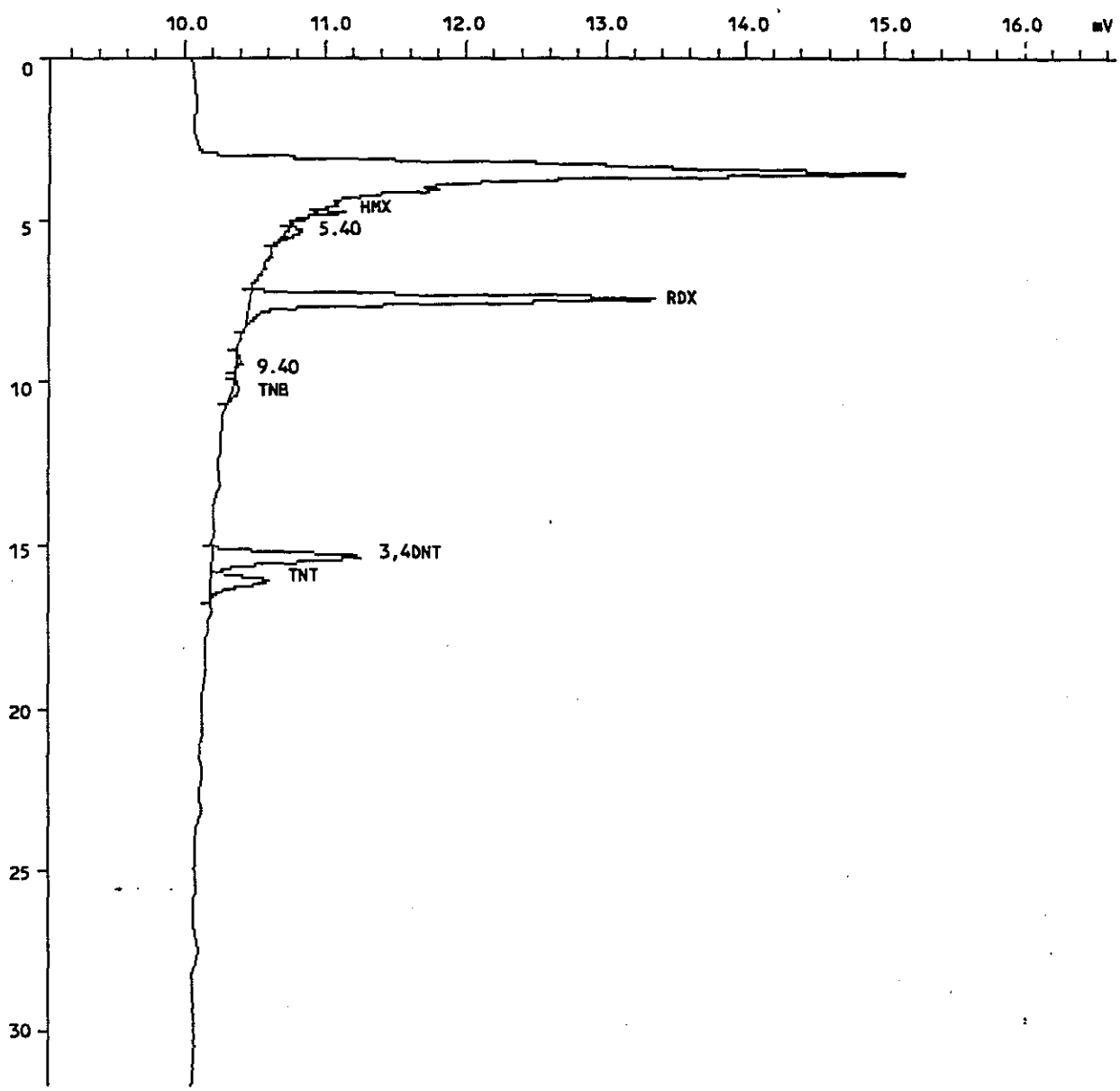
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,14,1

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 10:52:17
Reported on 01-Jul-98 at 15:29:13



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,14,1

Acquired on 01-Jul-98 at 10:52:17
Modified on 01-Jul-82 at 15:16:28
Reported on 01-Jul-98 at 15:16:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

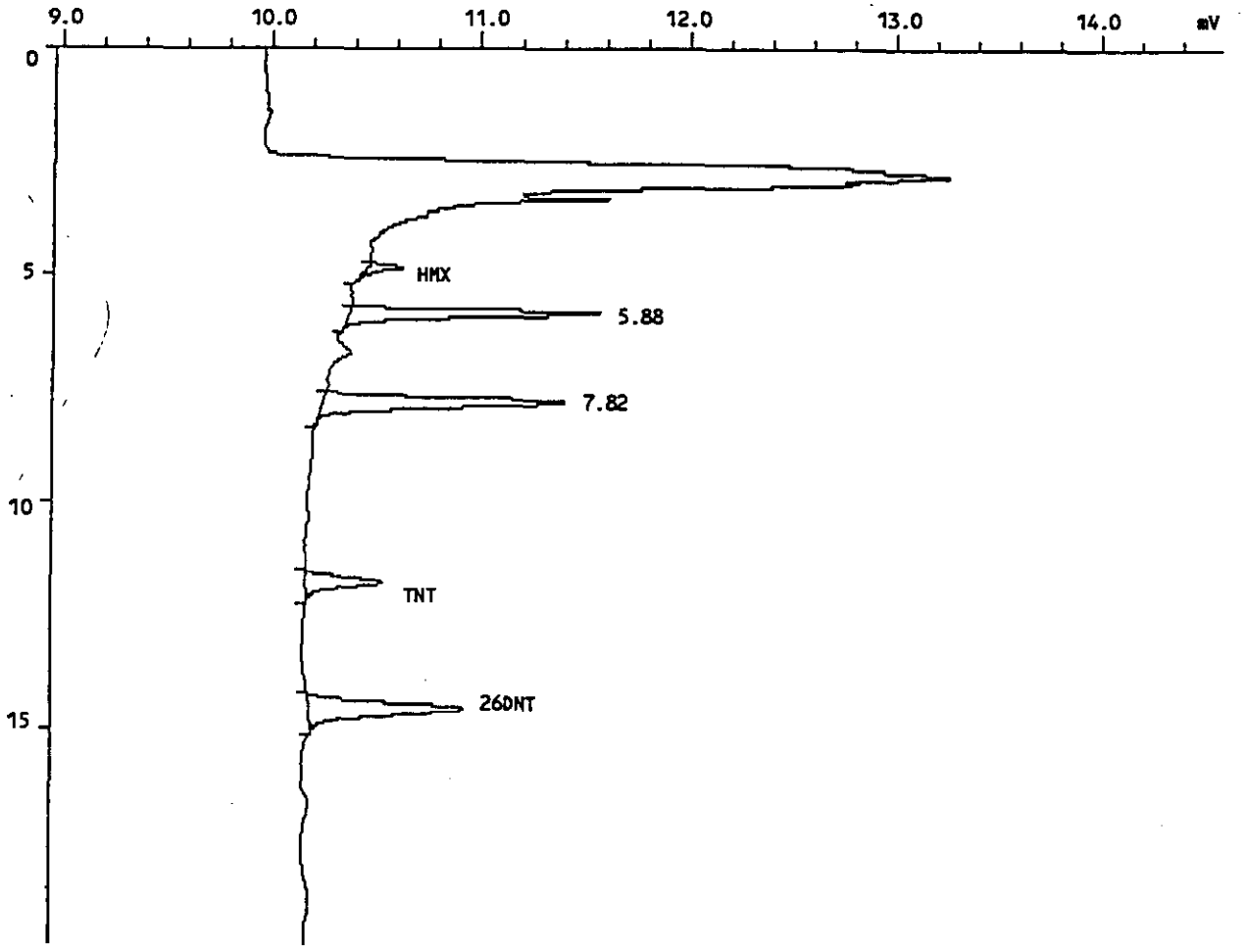
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.821	231	1680	218.815	HMX
3	7.472	2889	53606	5654.628	RDX *P
5	10.267	50	1228	60.876	TNB
6	15.355	1054	21957	1718.069	3,4DNT 86
7	16.112	401	8843	379.527	TNT *
Total		4625	87315	8031.916	
Residual		162	3261	402.516	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,12,1

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:47:28
Reported on 21-Jul-98 at 10:07:35



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,12,1

Acquired on 17-Jul-98 at 10:47:28
Modified on 21-Jul-82 at 10:05:26
Reported on 21-Jul-98 at 10:06:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

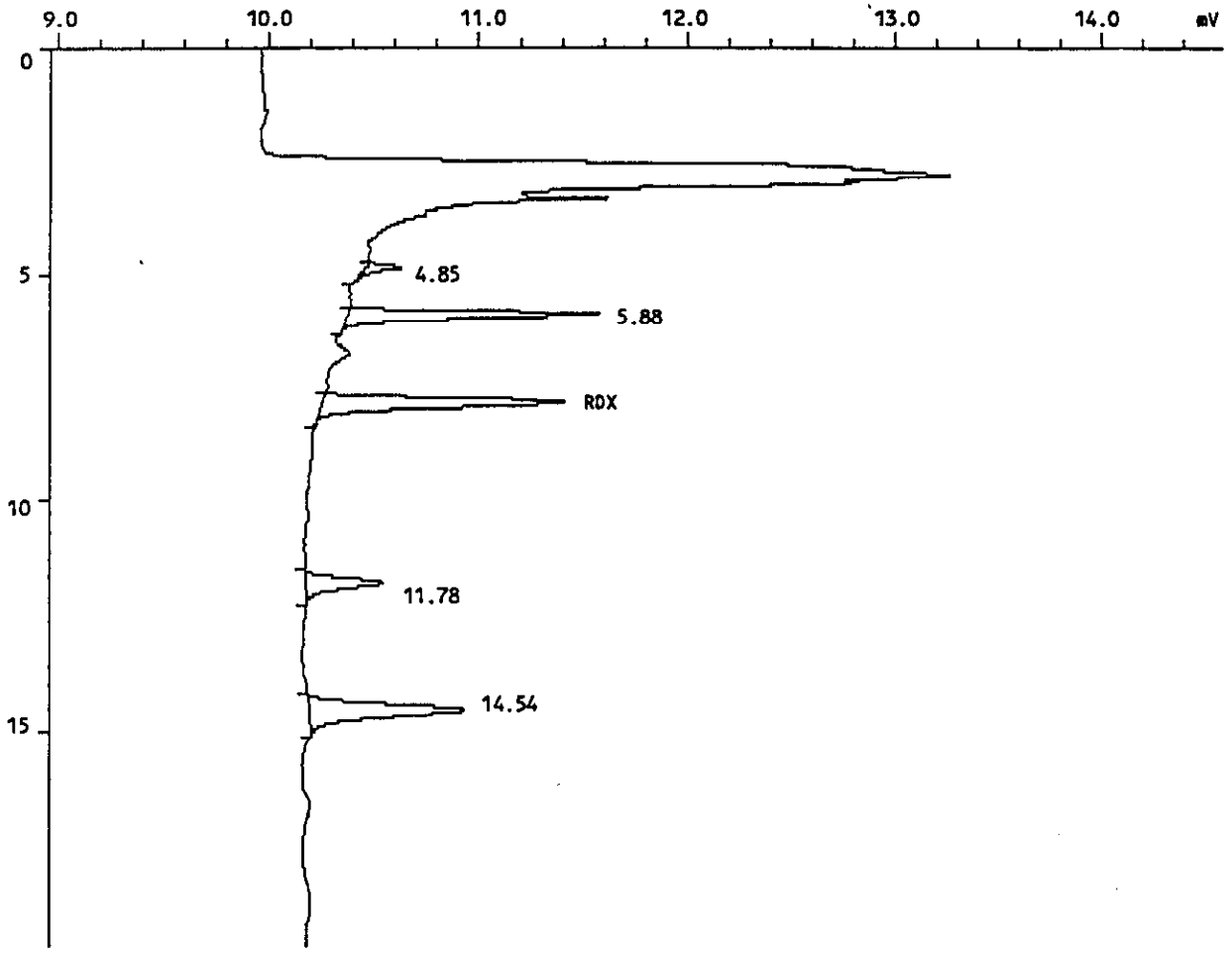
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	182	1916	397.513	HMX
4	11.776	372	5930	464.024	TNT
5	14.539	748	14619	1529.212	26DNT
Total		1302	22466	2390.749	
Residual		2375	30680	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,12,1

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:47:28
Reported on 20-Jul-98 at 11:00:43



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,12,1

Acquired on 17-Jul-98 at 10:47:28
Modified on 20-Jul-82 at 10:54:46
Reported on 20-Jul-98 at 10:54:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.824	1166	16903	2766.454	RDX
Total		1166	16903	2766.454	
Residual		2512	36242	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.08

Sample Amt: 2g % Moisture 15.23 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

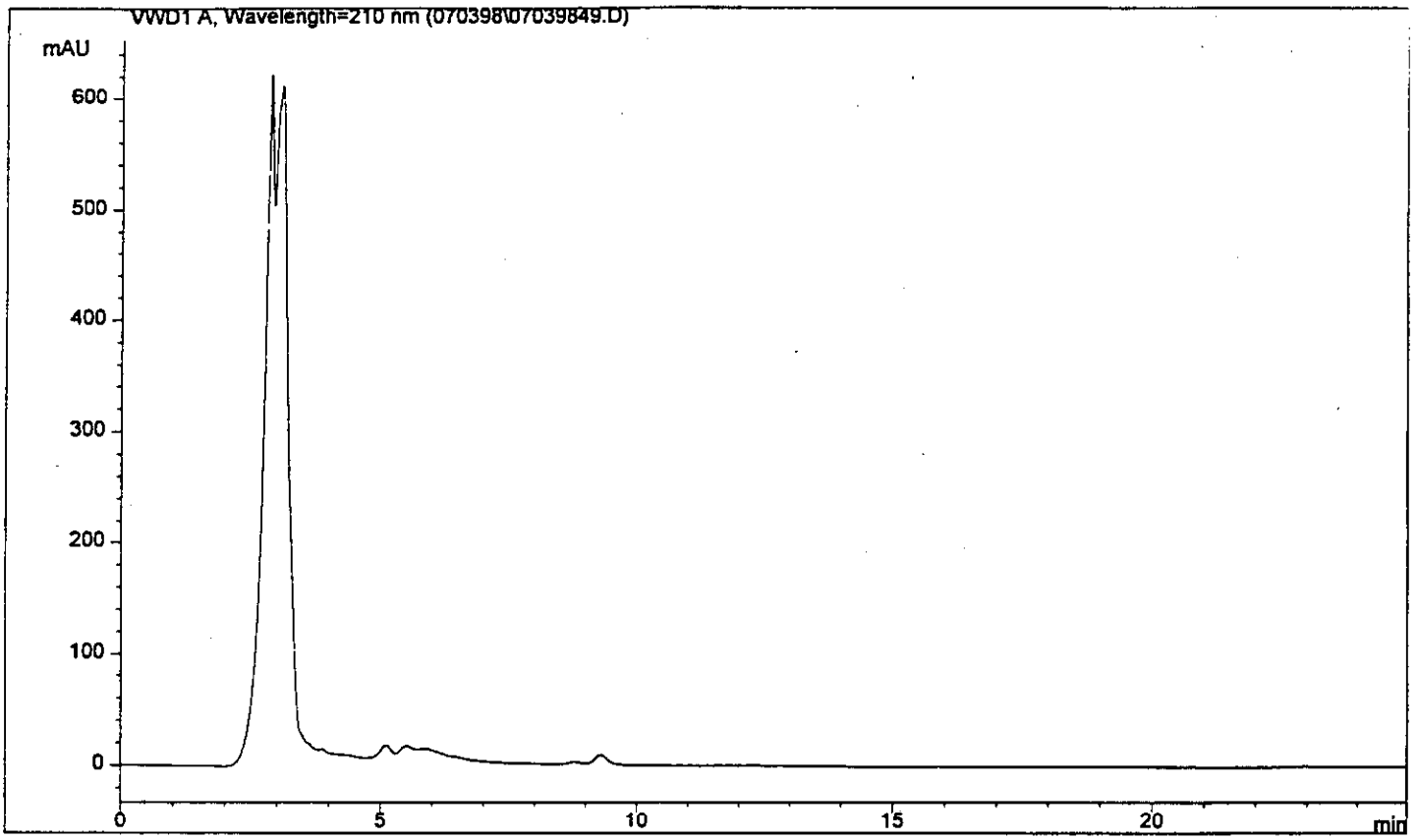
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 49
Sample Name	: 34581.08	Vial No.	: 49
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.09

Sample Amt: 2g % Moisture 16.93 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	5490	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	102	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

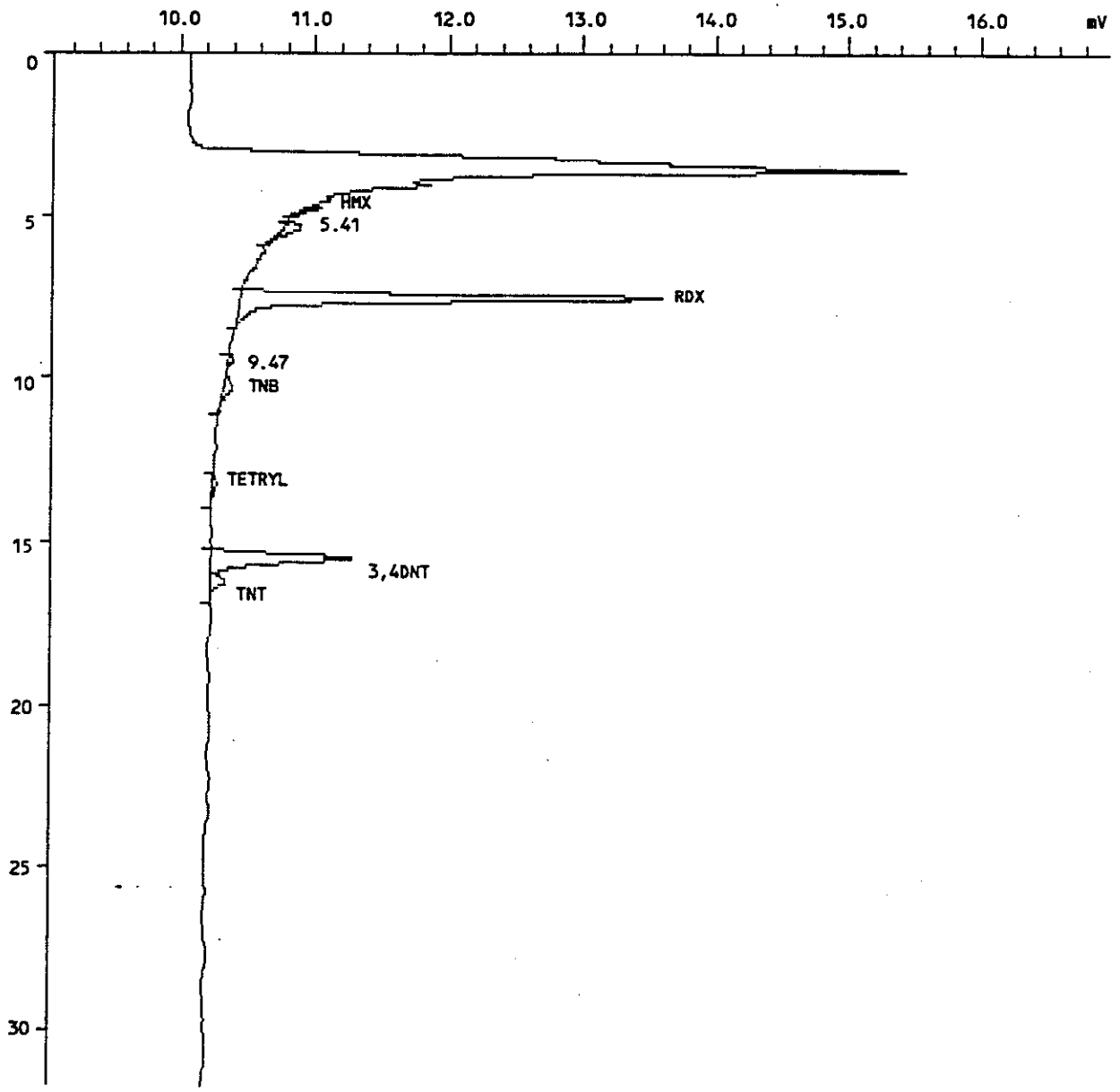
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,15,1

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 11:37:10
Reported on 01-Jul-98 at 15:29:37



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,15,1

Acquired on 01-Jul-98 at 11:37:10
Modified on 01-Jul-82 at 15:16:44
Reported on 01-Jul-98 at 15:16:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

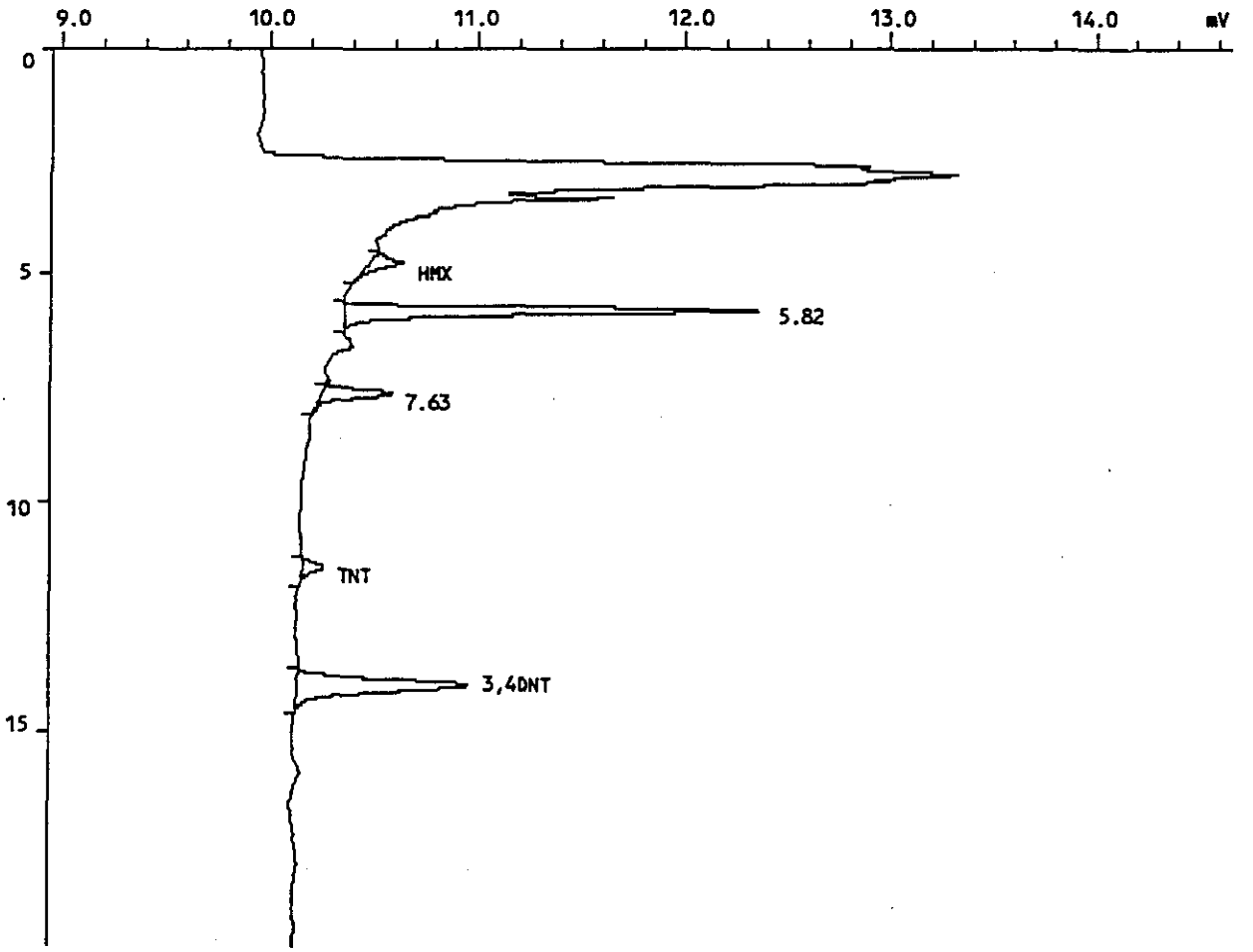
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.821	108	712	92.703	HMX
3	7.531	3147	52044	5489.862	RDX *P
5	10.293	73	2517	124.716	TNB
6	13.205	27	787	67.601	TETRYL
7	15.499	1049	22334	1747.541	3,4DNT 87
8	16.245	111	2381	102.184	TNT *J
Total		4515	80774	7624.608	
Residual		194	4158	519.765	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,13,1

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:21:52
Reported on 21-Jul-98 at 11:12:40



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,13,1

Acquired on 17-Jul-98 at 11:21:52
Modified on 21-Jul-82 at 11:12:22
Reported on 21-Jul-98 at 11:12:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

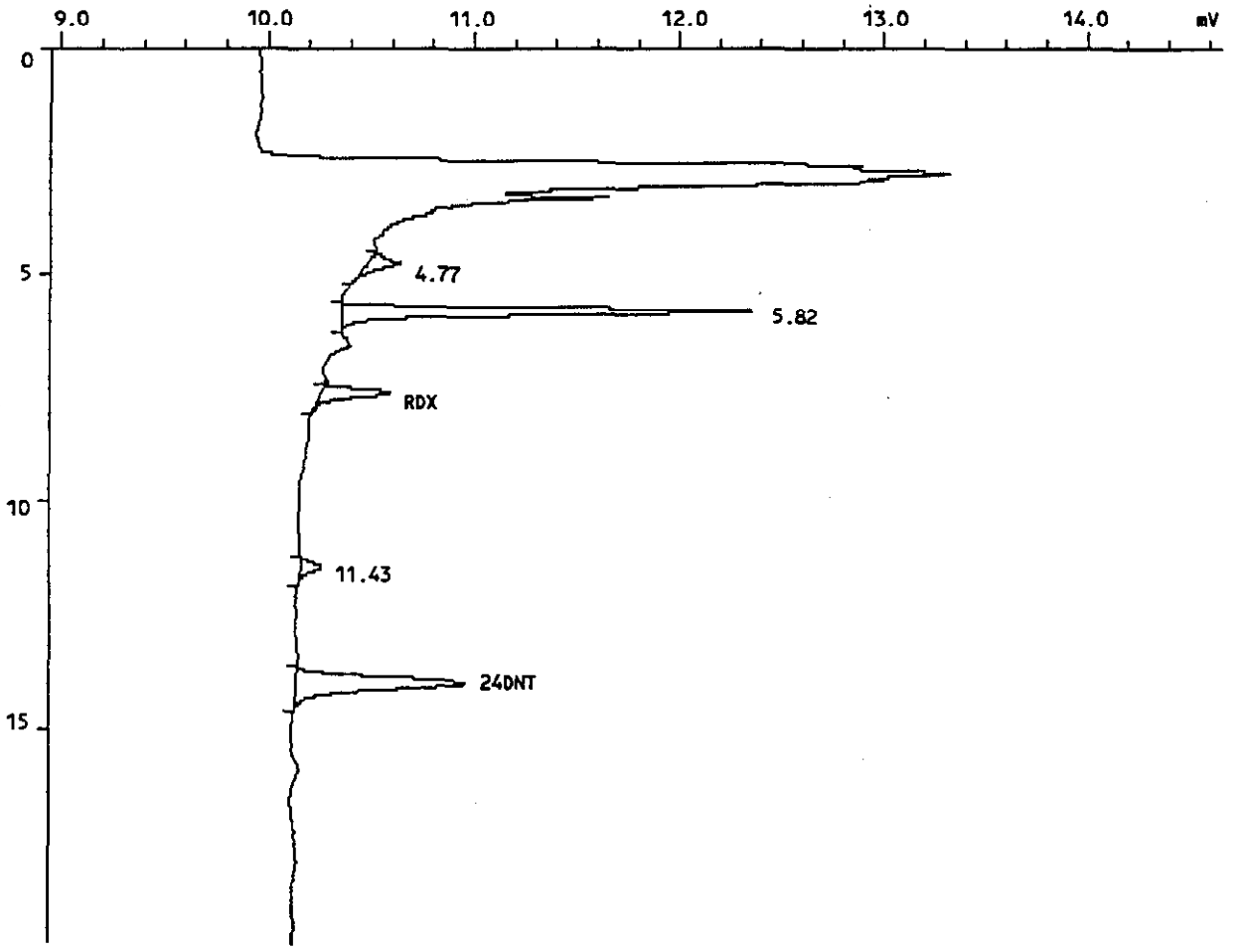
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.773	165	2579	535.140	HMX
4	11.429	104	1618	126.615	TNT
5	13.968	814	15721	1974.984	3,4DNT
Total		1083	19918	2636.739	
Residual		2346	27660	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,13,1

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:21:52
Reported on 20-Jul-98 at 11:01:02



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,13,1

Acquired on 17-Jul-98 at 11:21:52
Modified on 20-Jul-82 at 10:55:00
Reported on 20-Jul-98 at 10:54:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.632	344	4740	775.734	RDX
5	13.968	814	15721	948.755	24DNT
Total		1157	20461	1724.489	
Residual		2272	27118	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.09

Sample Amt: 2g % Moisture 16.93 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

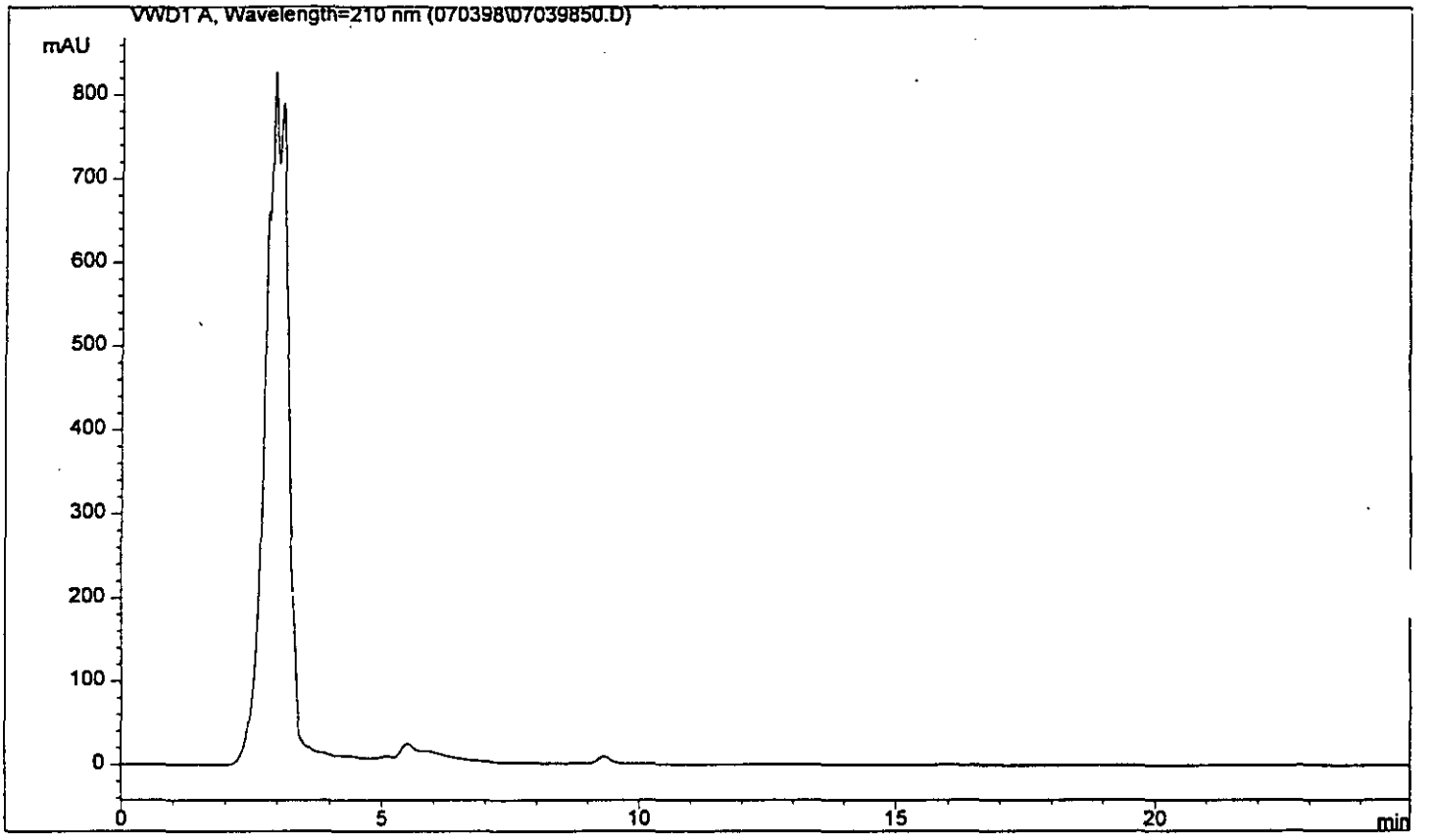
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 50
Sample Name	: 34581.09	Vial No.	: 50
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.10

Sample Amt: 2g % Moisture 16.08 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	5530	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	479	
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

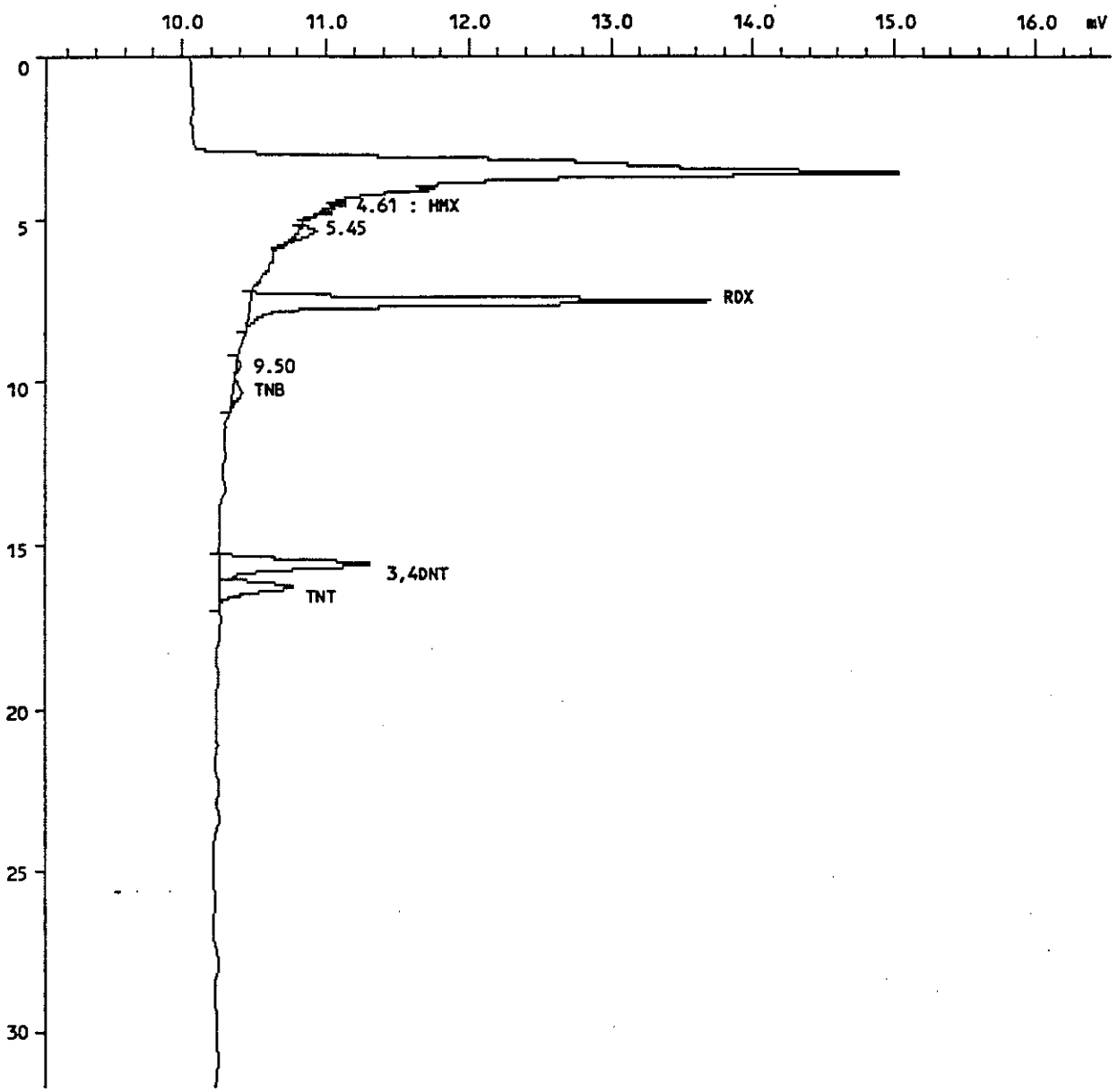
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,16,1

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 12:21:52
Reported on 01-Jul-98 at 15:30:15



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,16,1

Acquired on 01-Jul-98 at 12:21:52
Modified on 01-Jul-82 at 15:16:58
Reported on 01-Jul-98 at 15:16:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

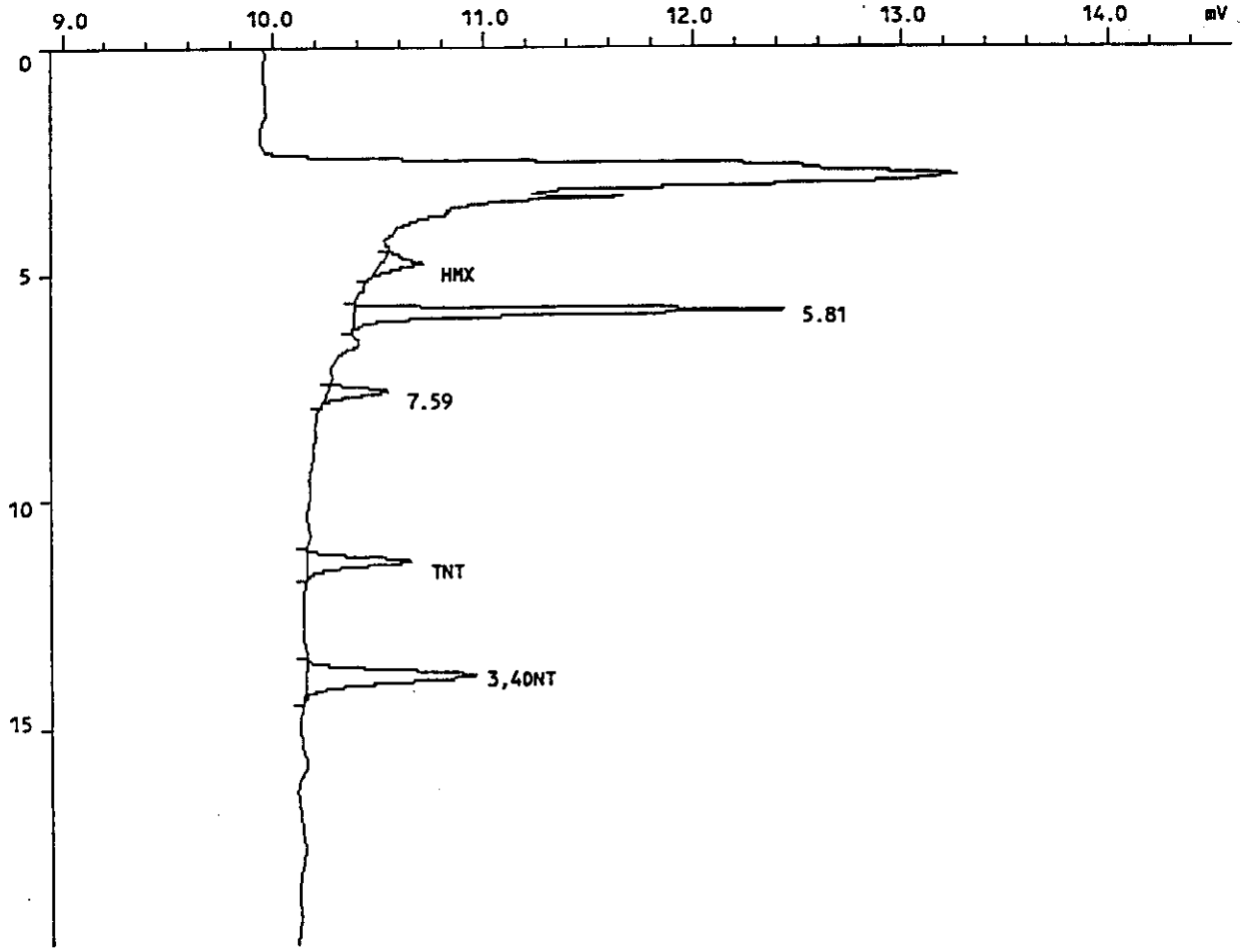
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.848	127	854	111.251	HMX
4	7.568	3223	52389	5526.304	RDX *P
6	10.363	65	2004	99.295	TNB
7	15.595	1041	21726	1699.968	3,4DNT 85
8	16.320	511	11152	478.622	TNT *
Total		4968	88125	7915.440	
Residual		293	5096	647.547	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,14,1

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:56:16
Reported on 20-Jul-98 at 10:43:23



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,14,1

Acquired on 17-Jul-98 at 11:56:16
Modified on 20-Jul-82 at 10:39:52
Reported on 20-Jul-98 at 10:39:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:38:22
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

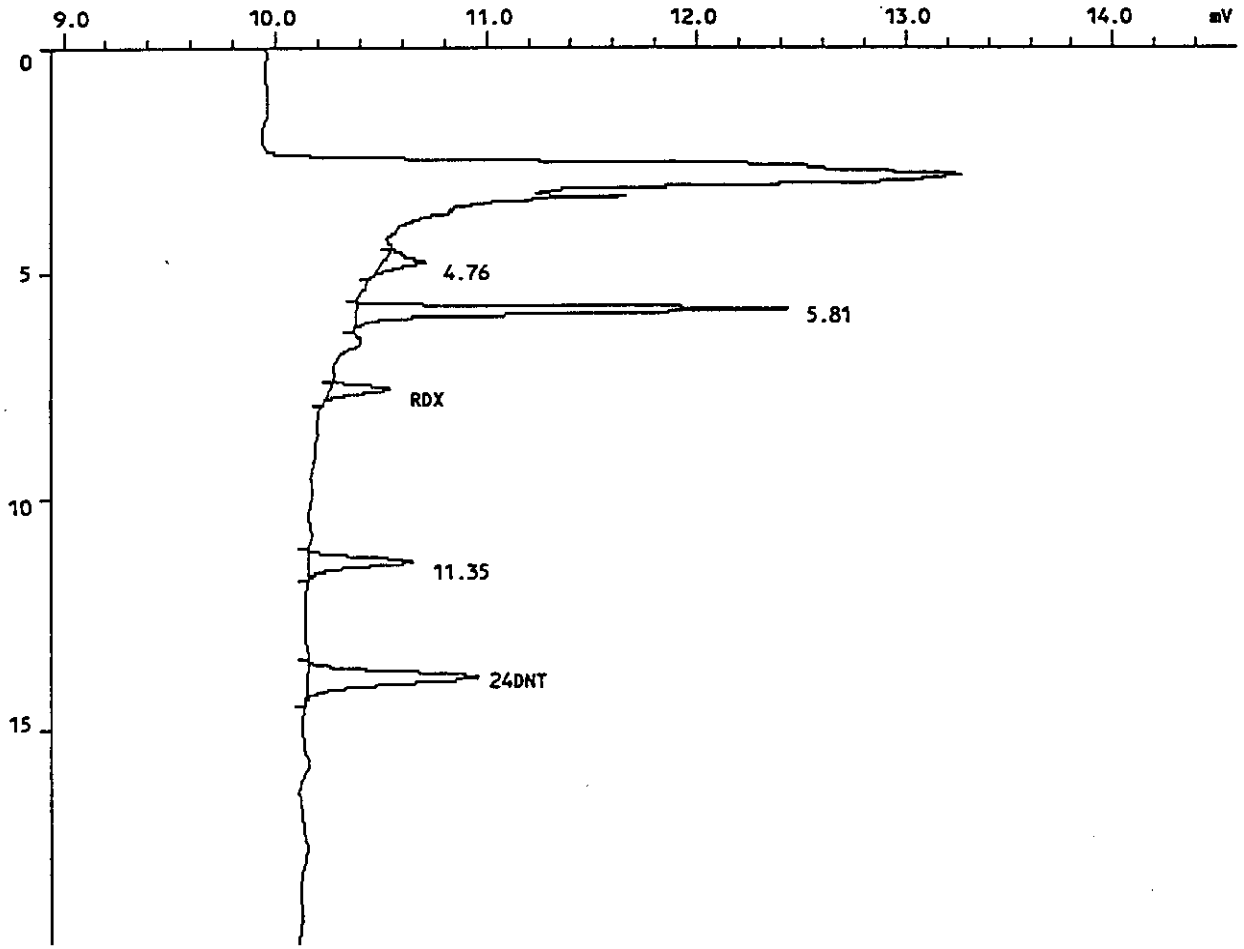
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.763	204	3314	687.606	HMX
4	11.349	500	7658	599.231	TNT
5	13.856	813	15642	1965.111	3,4DNT
Total		1517	26615	3251.948	
Residual		2335	27189	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,14,1

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:56:16
Reported on 20-Jul-98 at 11:01:24



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,14,1

Acquired on 17-Jul-98 at 11:56:16
Modified on 20-Jul-82 at 10:55:12
Reported on 20-Jul-98 at 10:55:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.595	287	3880	635.064	RDX
5	13.856	813	15642	944.012	24DNT
Total		1100	19523	1579.076	
Residual		2752	34281	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.10

Sample Amt: 2g % Moisture 16.08 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

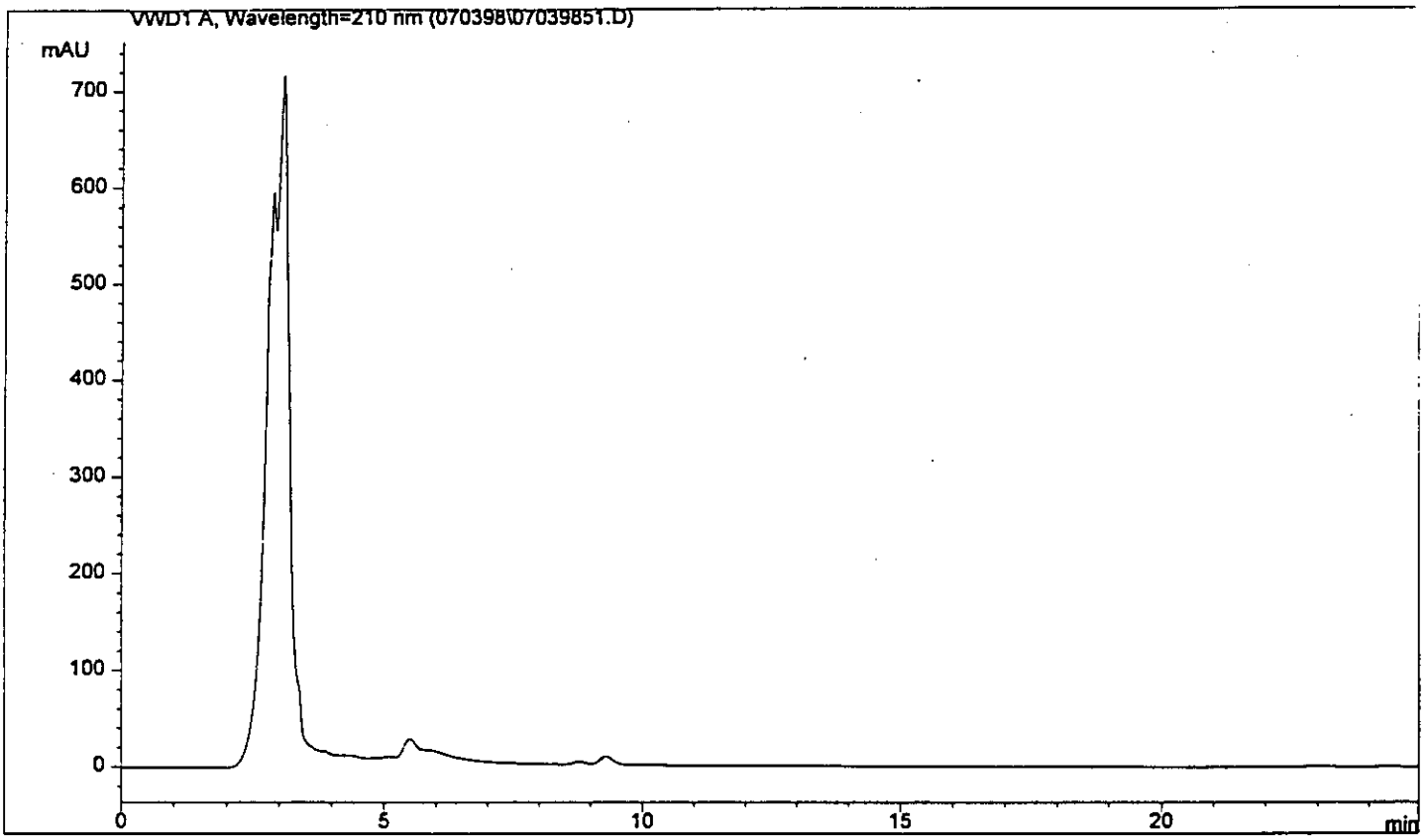
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 51
Sample Name	: 34581.10	Vial No.	: 51
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.13

Sample Amt: 2g % Moisture 12.99 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2400	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	191	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

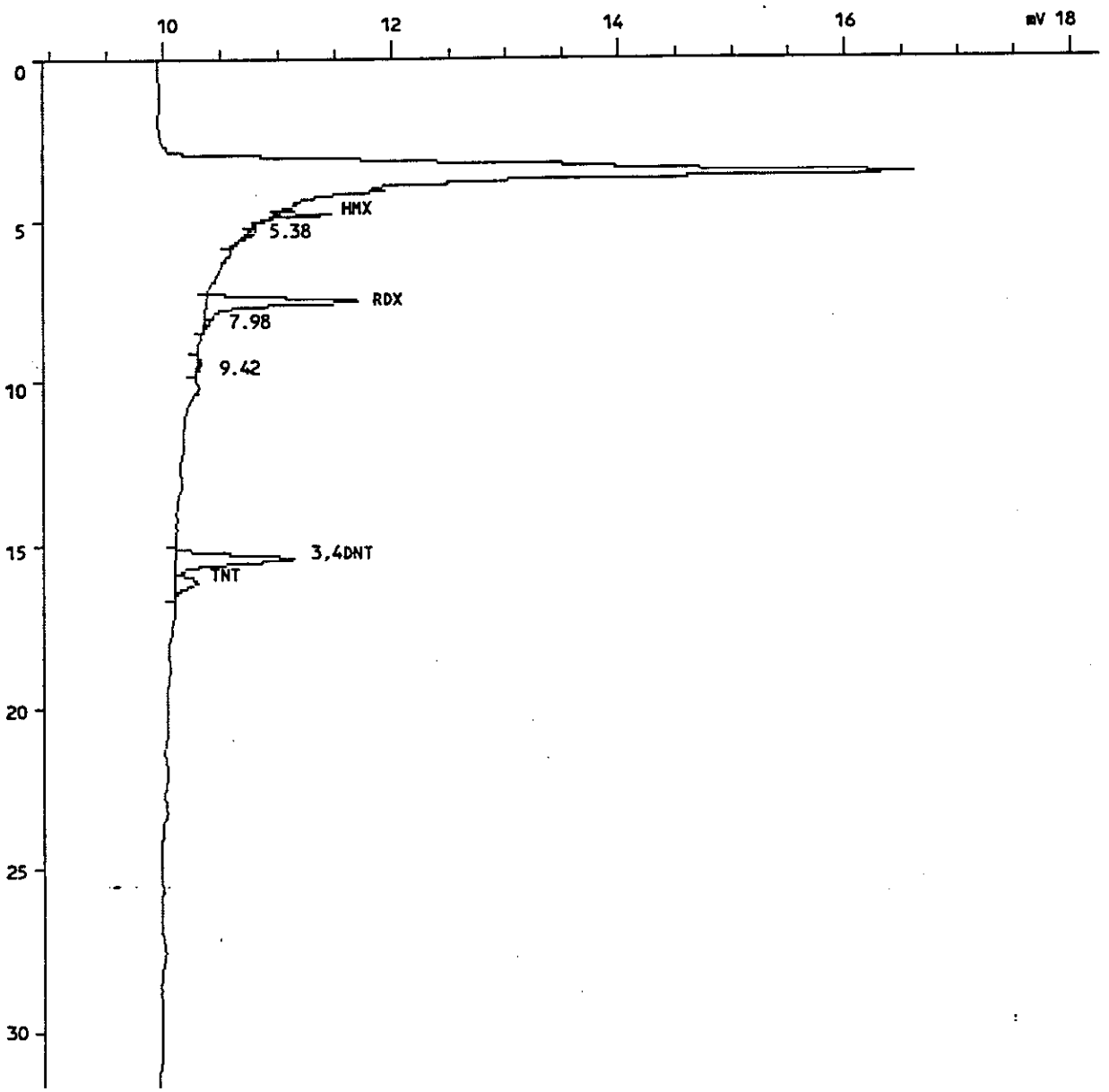
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,19,1

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 14:35:53
Reported on 01-Jul-98 at 16:54:11



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,19,1

Acquired on 01-Jul-98 at 14:35:53
Modified on 01-Jul-82 at 16:51:46
Reported on 01-Jul-98 at 16:53:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:27:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

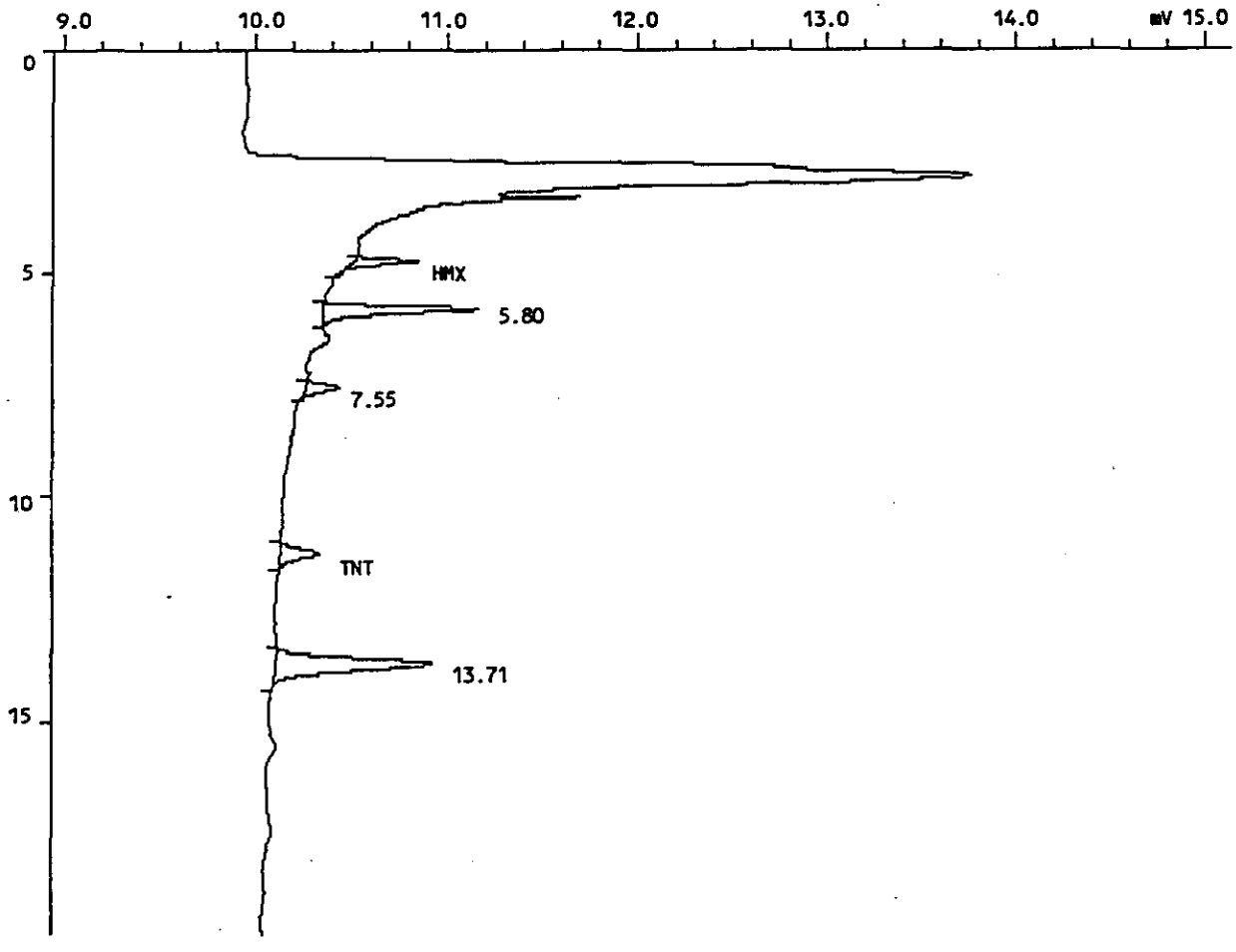
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.816	503	3625	472.058	HMX
3	7.509	1337	22760	2400.859	RDX * P
6	15.392	1035	21816	1707.075	3,4DNT 85
7	16.149	203	4447	190.859	TNT
Total		3078	52649	4770.851	
Residual		208	3617	418.839	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,15,1

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 12:30:40
Reported on 21-Jul-98 at 11:13:21



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,15,1

Acquired on 17-Jul-98 at 12:30:40
Modified on 21-Jul-82 at 11:13:06
Reported on 21-Jul-98 at 11:13:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

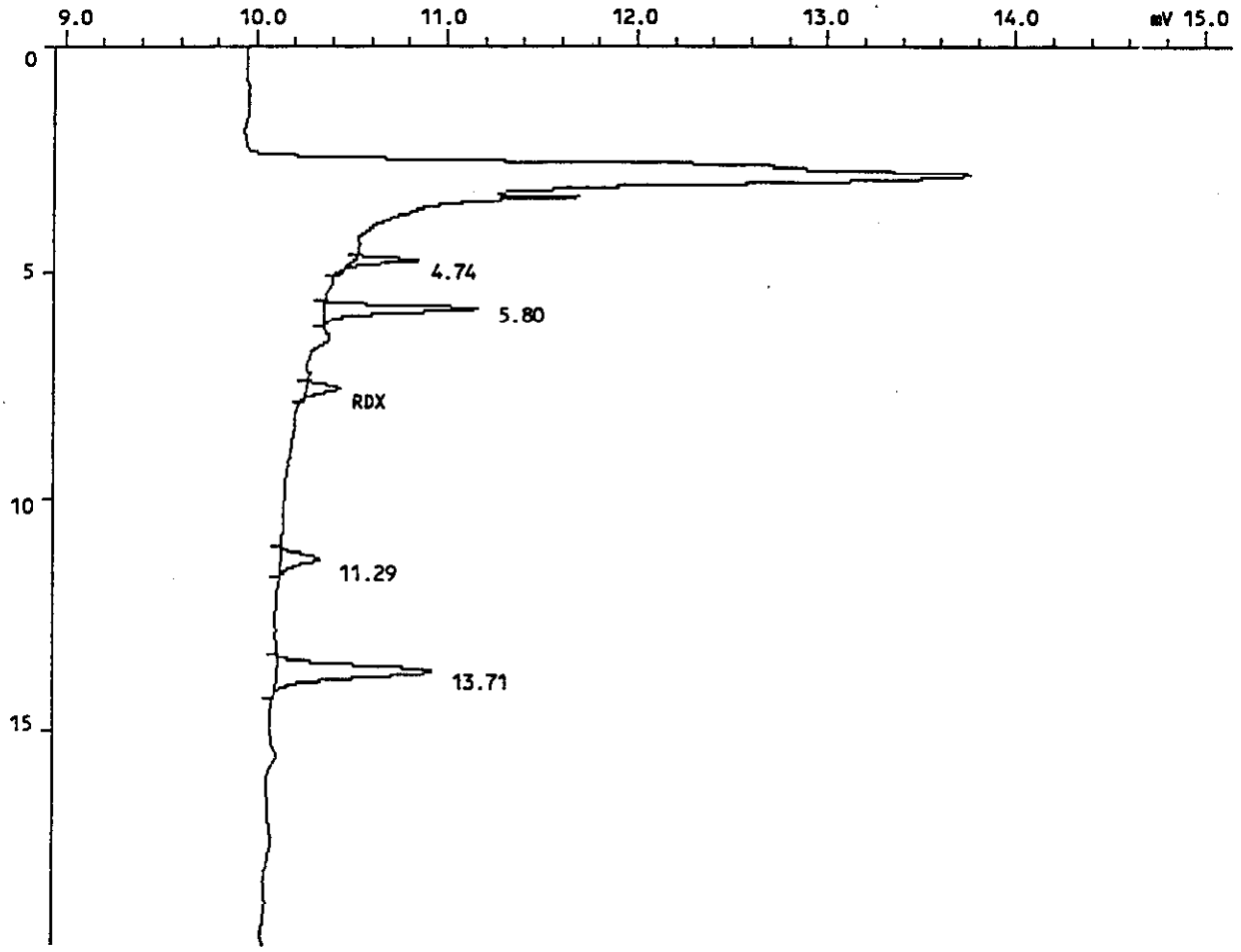
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.741	366	3230	670.035	HMX
4	11.285	207	3173	248.275	TNT
Total		572	6403	918.310	
Residual		1796	26737	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,15,1

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 12:30:40
Reported on 20-Jul-98 at 11:02:12



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,15,1

Acquired on 17-Jul-98 at 12:30:40
Modified on 20-Jul-82 at 10:55:26
Reported on 20-Jul-98 at 10:55:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.552	179	2298	376.123	RDX
Total		179	2298	376.123	
Residual		2189	30842	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.13

Sample Amt: 2g % Moisture 12.99 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

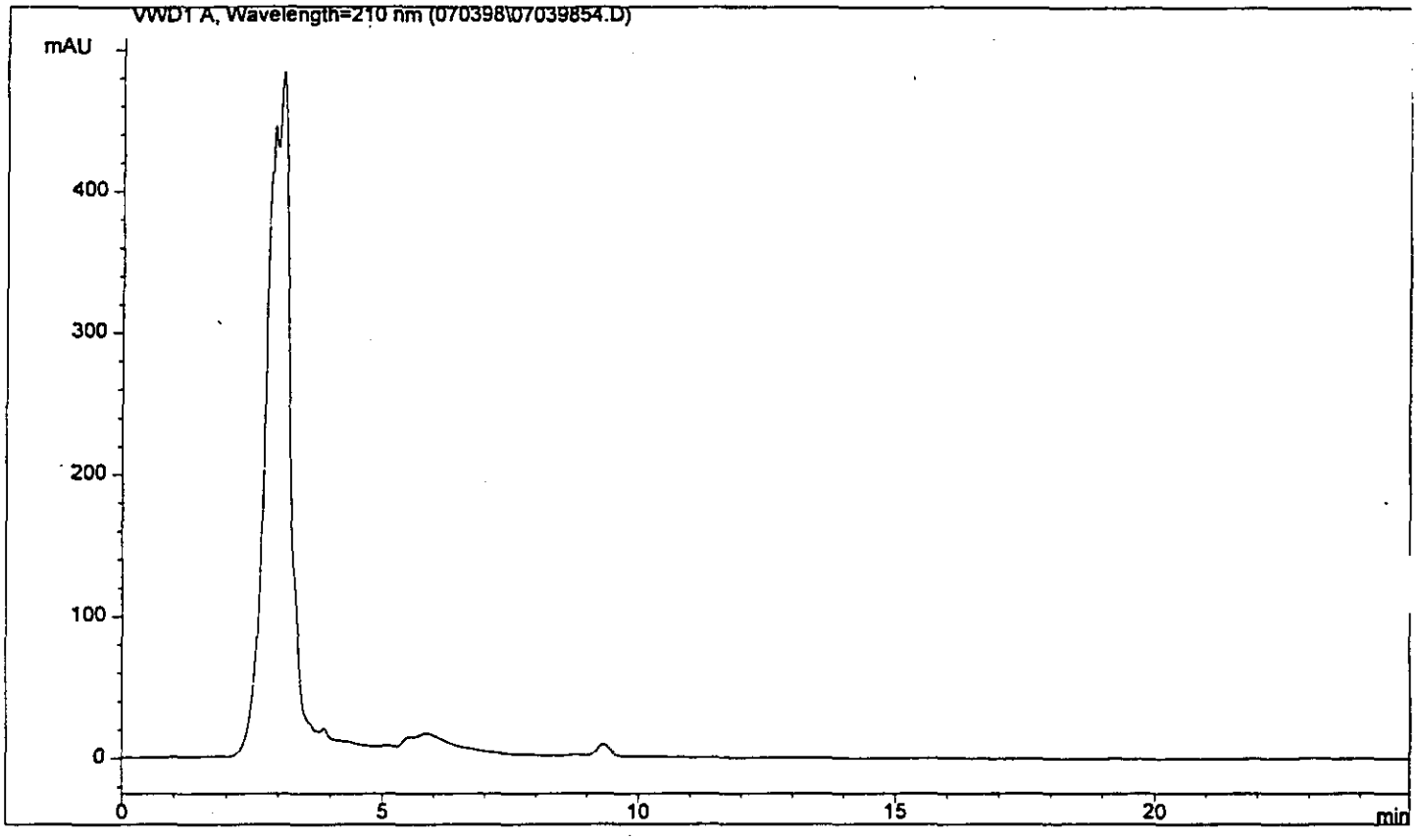
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 54
Sample Name	: 34581.13	Vial No.	: 54
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.14

Sample Amt: 2g % Moisture 15.03 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	3320	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	223	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

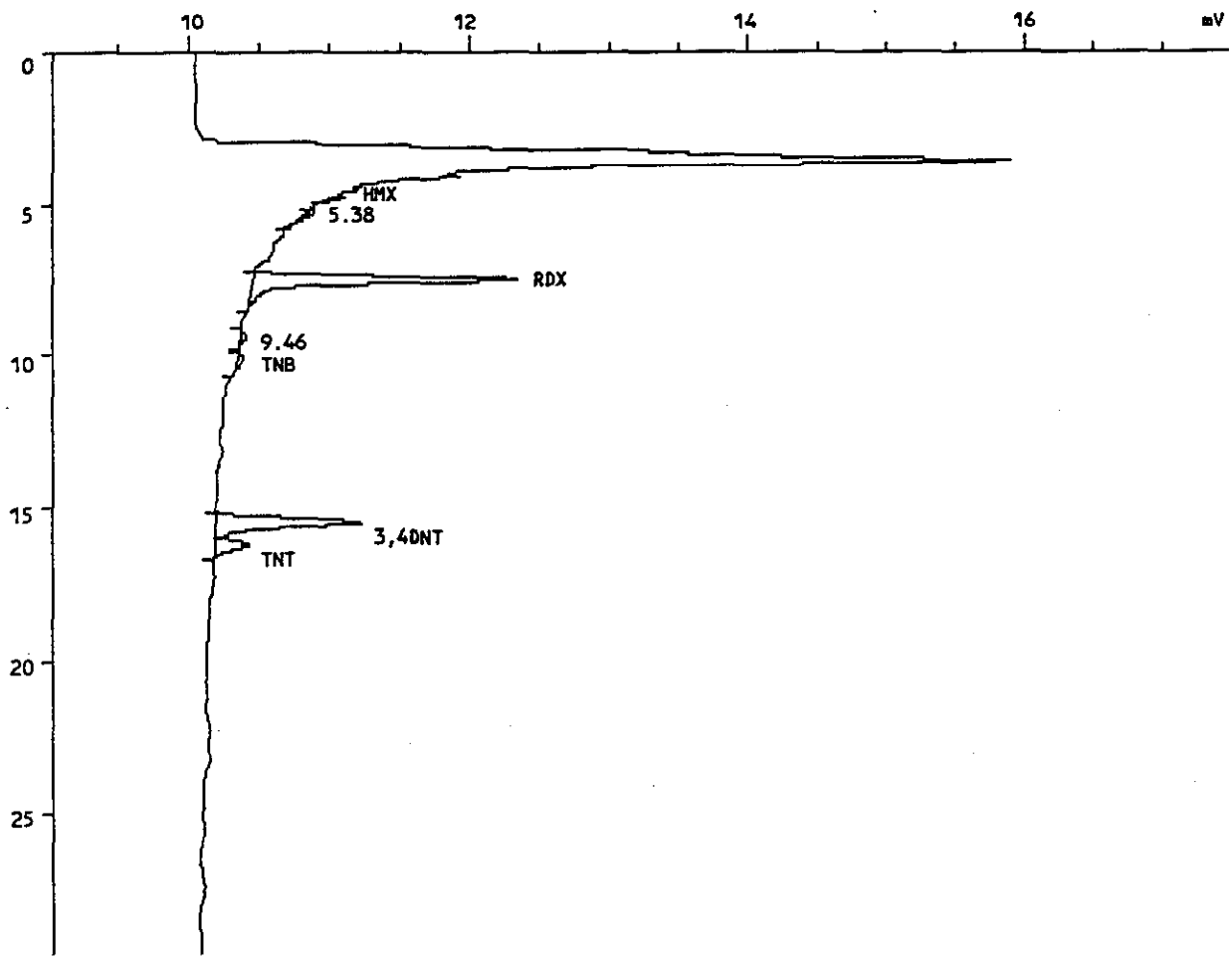
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,20,1

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 15:20:34
Reported on 20-Jul-98 at 11:33:19



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,20,1

Acquired on 01-Jul-98 at 15:20:34
Modified on 20-Jul-82 at 11:32:32
Reported on 20-Jul-98 at 11:32:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 14-Jul-82 at 15:09:38
Method file.....: EXPLOS Last modified on 19-Jul-82 at 17:04:38
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

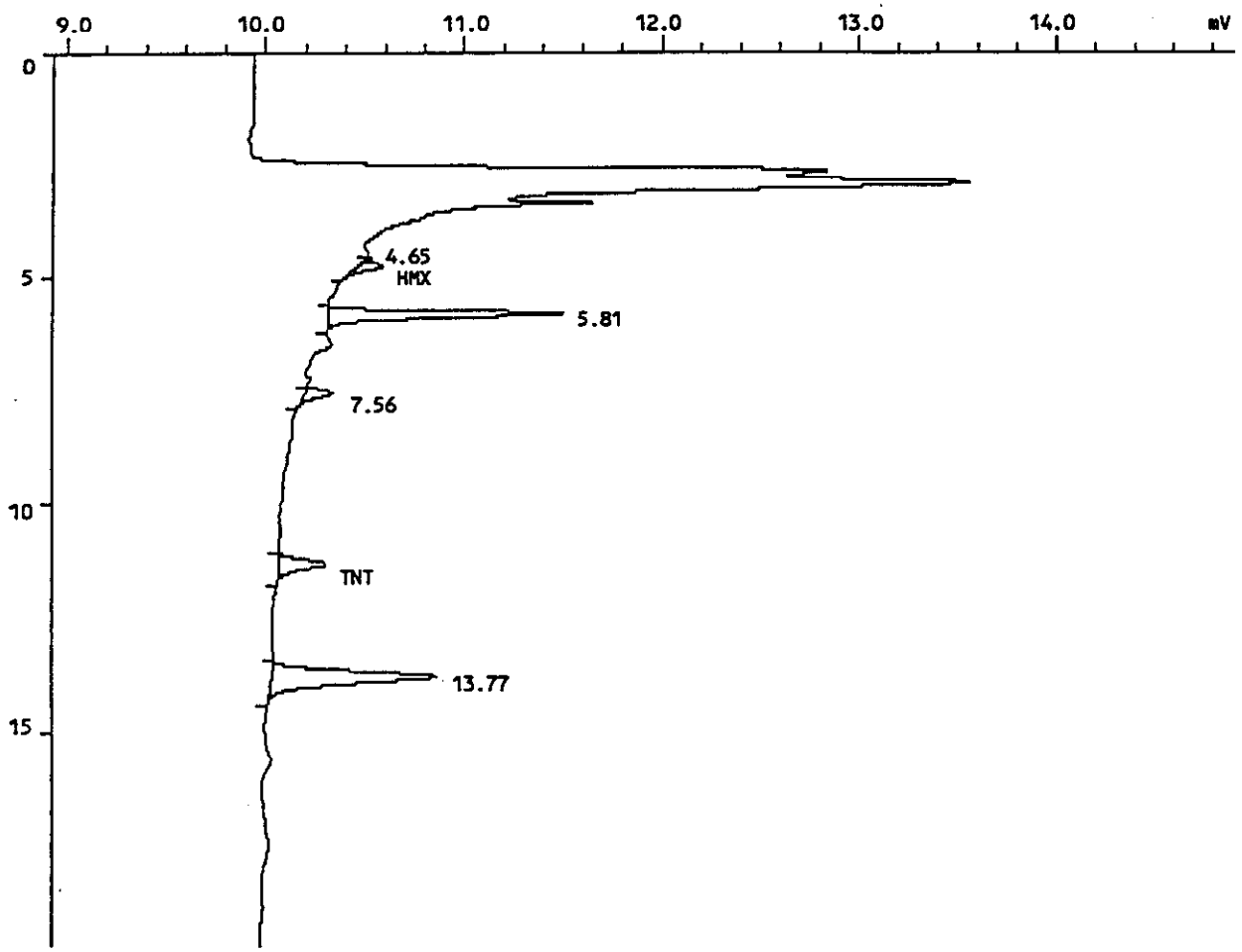
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.827	94	602	78.368	HMX
3	7.536	1879	31434	3315.770	RDX *P
5	10:197	54	1195	59.205	TNB
6	15.525	1038	21850	1709.713	3,4DNT 85
7	16.256	242	5191	222.793	TNT
Total		3306	60271	5385.849	
Residual		125	2353	285.260	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,16,1

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:05:04
Reported on 21-Jul-98 at 11:13:59



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,16,1

Acquired on 17-Jul-98 at 13:05:04
Modified on 21-Jul-82 at 11:13:44
Reported on 21-Jul-98 at 11:13:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

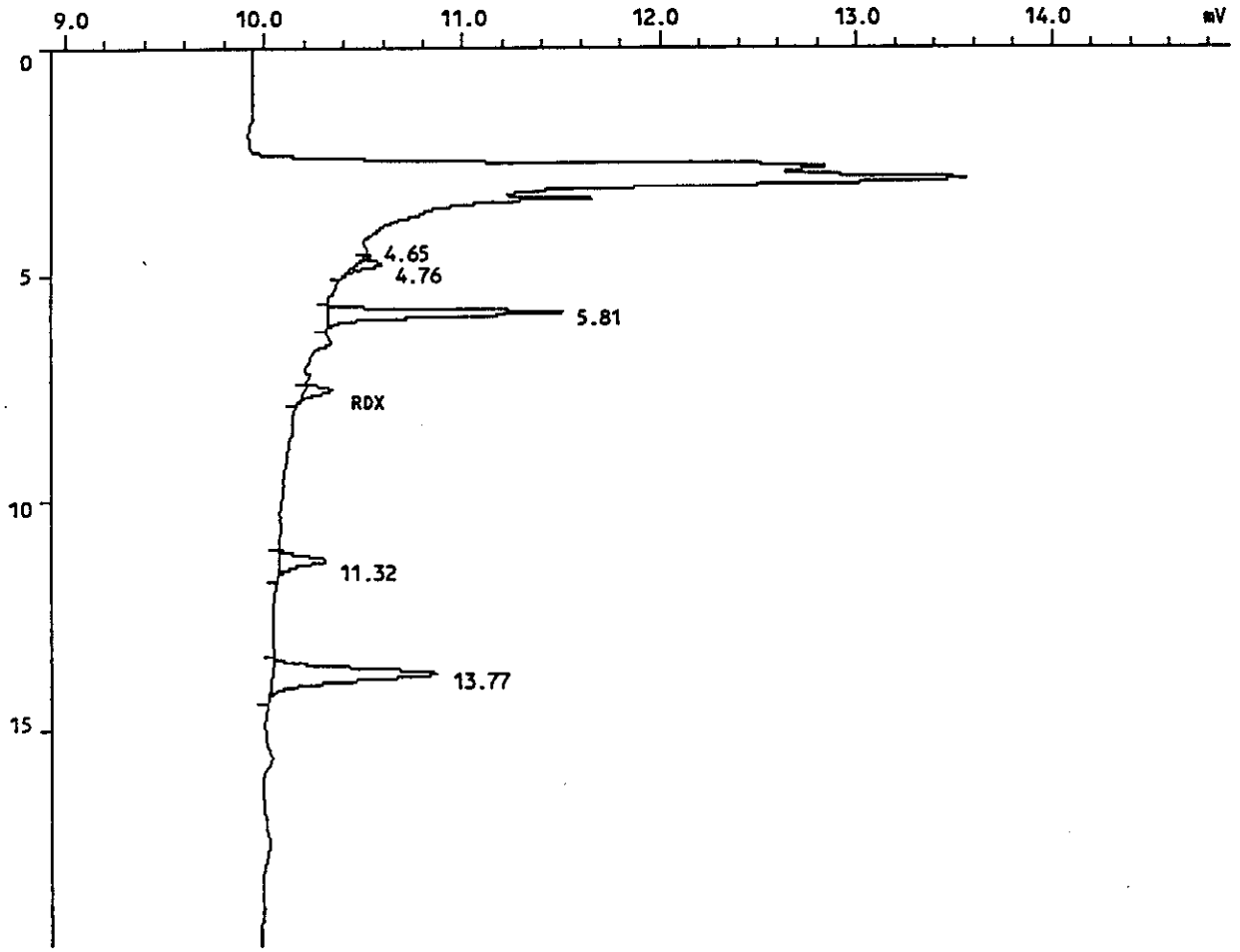
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.763	145	1741	361.184	HMX
5	11.317	242	3792	296.722	TNT
Total		387	5533	657.906	
Residual		2229	31316	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,16,1

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:05:04
Reported on 20-Jul-98 at 11:02:47



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,16,1

Acquired on 17-Jul-98 at 13:05:04
Modified on 20-Jul-82 at 10:55:38
Reported on 20-Jul-98 at 10:55:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.563	143	1865	305.244	RDX
Total		143	1865	305.244	
Residual		2474	34984	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.14

Sample Amt: 2g % Moisture 15.03 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

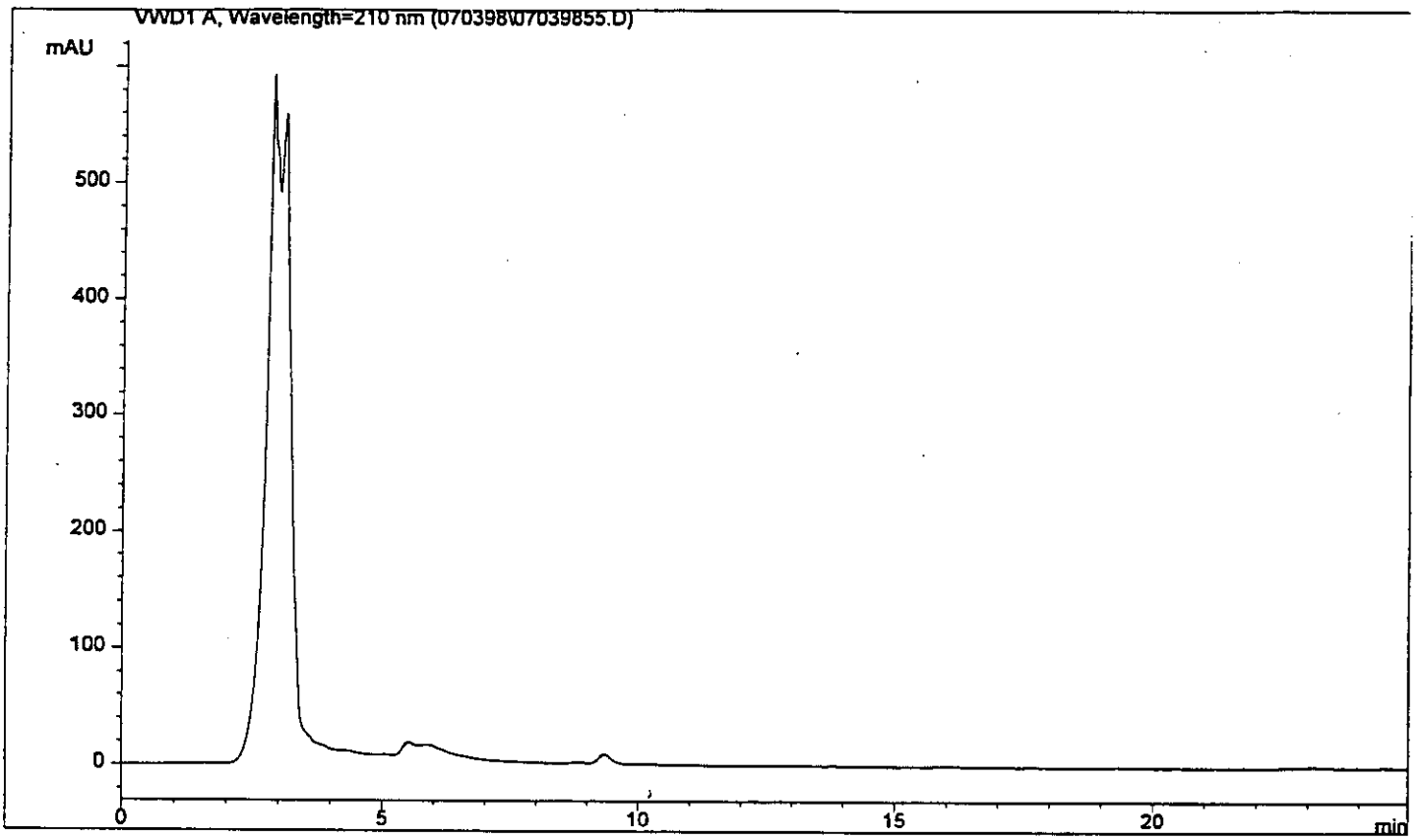
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 55
Sample Name	: 34581.14	Vial No.	: 55
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.15

Sample Amt: 2g % Moisture 15.81 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	6880	
121-82-4	RDX	67200	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	18000	E
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

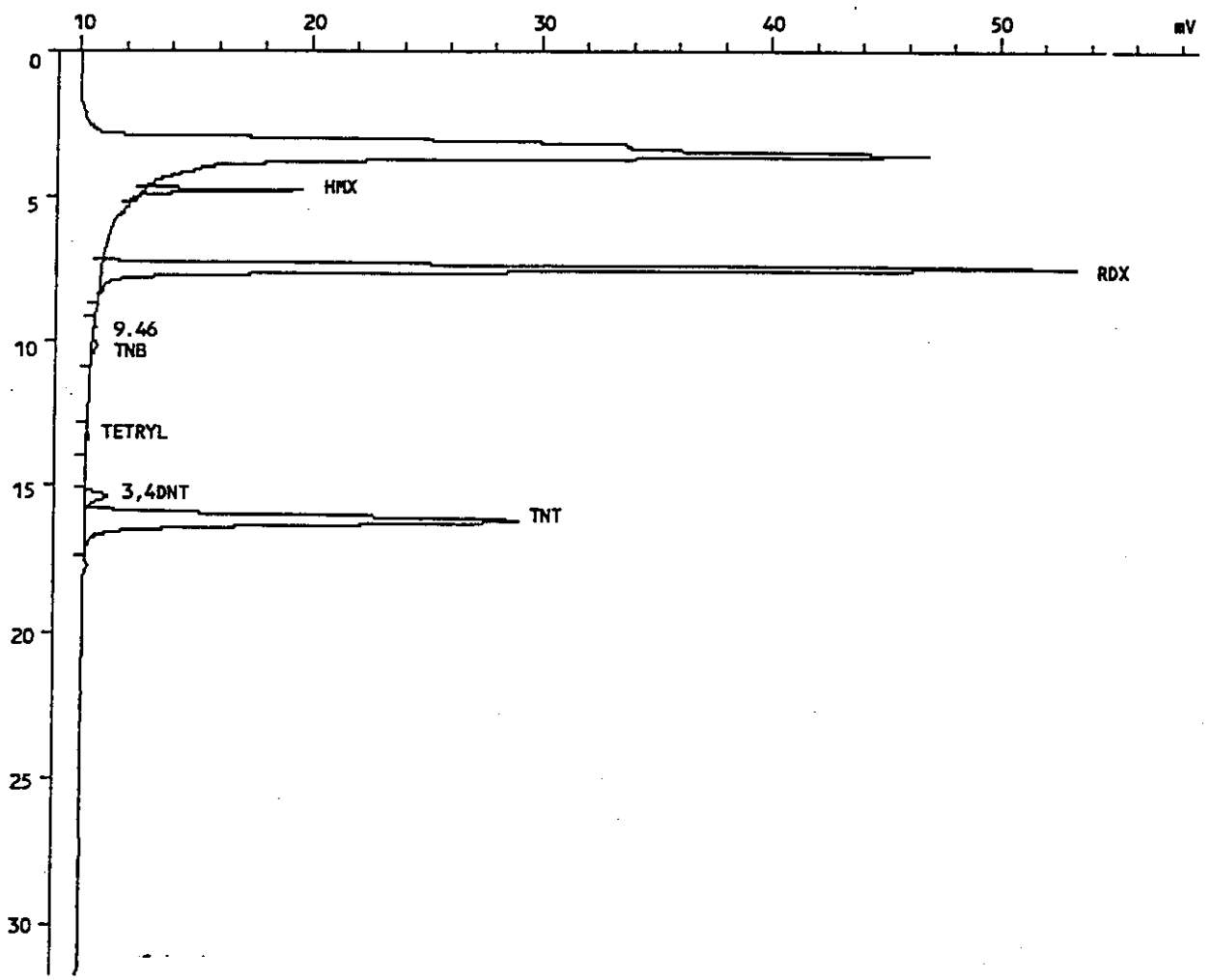
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,21,1

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 16:05:16
Reported on 21-Jul-98 at 10:36:41



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,21,1

Acquired on 01-Jul-98 at 16:05:16
Modified on 01-Jul-82 at 16:51:52
Reported on 21-Jul-98 at 10:38:41

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, I
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 14
Method file.....: EXPLOS Last modified on 21-
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

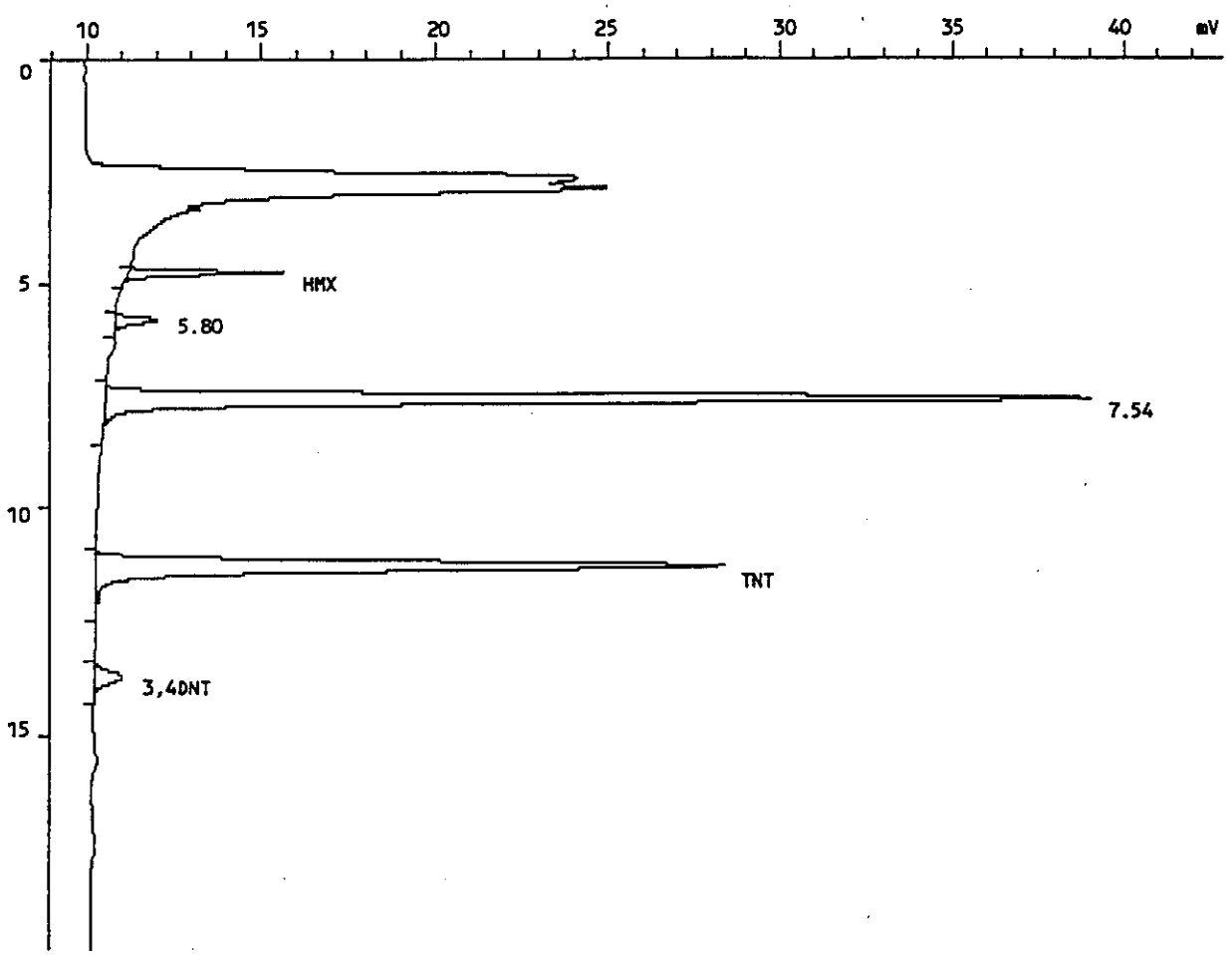
Peak	RT mins	Hght uV	Area uVs	ug/[illegible]
1	4.821	6909	52801	6875.17[illegible]
2	7.424	42416	637526	67249.[illegible]
4	10.149	203	5658	280.35[illegible]
5	13.211	100	3380	290.4[illegible]
6	15.413	1036	20726	1621.776
7	16.149	18722	420786	18059.49[illegible]
Total		69386	1140878	94376.80[illegible]
Residual		76	1643	173.3[illegible]

LONG PLOT

Injection F: <MC3> 5 5CN0716A,17,1

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:39:29
Reported on 20-Jul-98 at 10:44:28



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,17,1

Acquired on 17-Jul-98 at 13:39:29
Modified on 20-Jul-82 at 10:40:32
Reported on 20-Jul-98 at 10:40:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:38:22
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

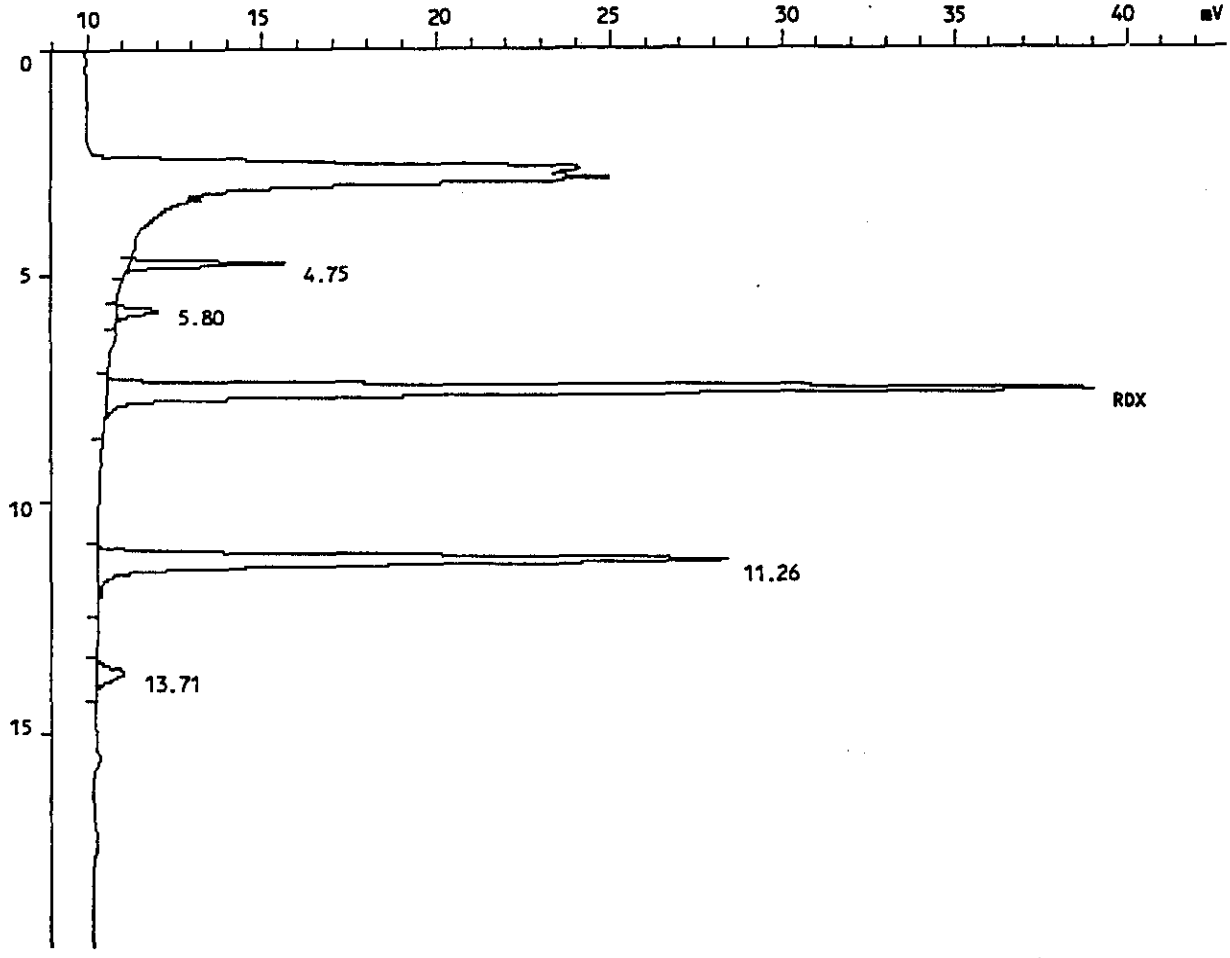
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.747	4474	35319	7327.579	HMX
4	11.264	18145	280081	21915.545	TNT
5	13.707	844	15798	1984.703	3,4DNT
Total		23463	331198	31227.826	
Residual		29745	418145	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,17,1

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:39:29
Reported on 20-Jul-98 at 11:03:09



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,17,1

Acquired on 17-Jul-98 at 13:39:29
Modified on 20-Jul-82 at 10:55:52
Reported on 20-Jul-98 at 10:55:52

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.536	28505	404673	66231.305	RDX
Total		28505	404673	66231.305	
Residual		24703	344669	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D3 5X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.15DL

Sample Amt: 2g % Moisture 15.81 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	5420	DJ
121-82-4	RDX	47800	D
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	14100	DP
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

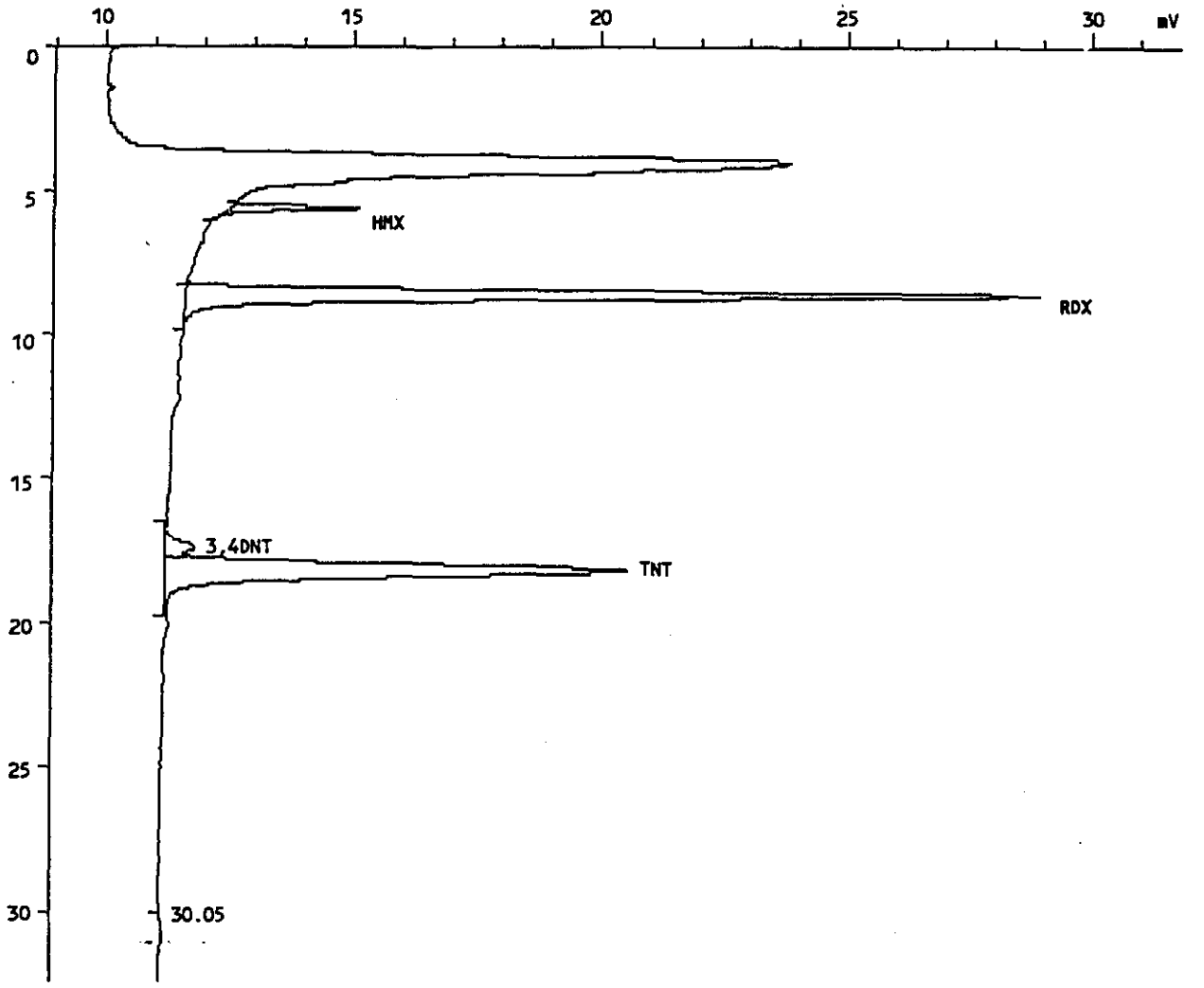
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711B,4,1

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15DL
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 19:11:19
Reported on 21-Jul-98 at 10:48:35



INJECTION REPORT

Injection F: <MC3> 2 2EX0711B,4,1

Acquired on 12-Jul-98 at 19:11:19
Modified on 21-Jul-82 at 10:47:54
Reported on 21-Jul-98 at 10:47:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 16:43:14
Method file.....: EXPLOS Last modified on 21-Jul-82 at 09:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

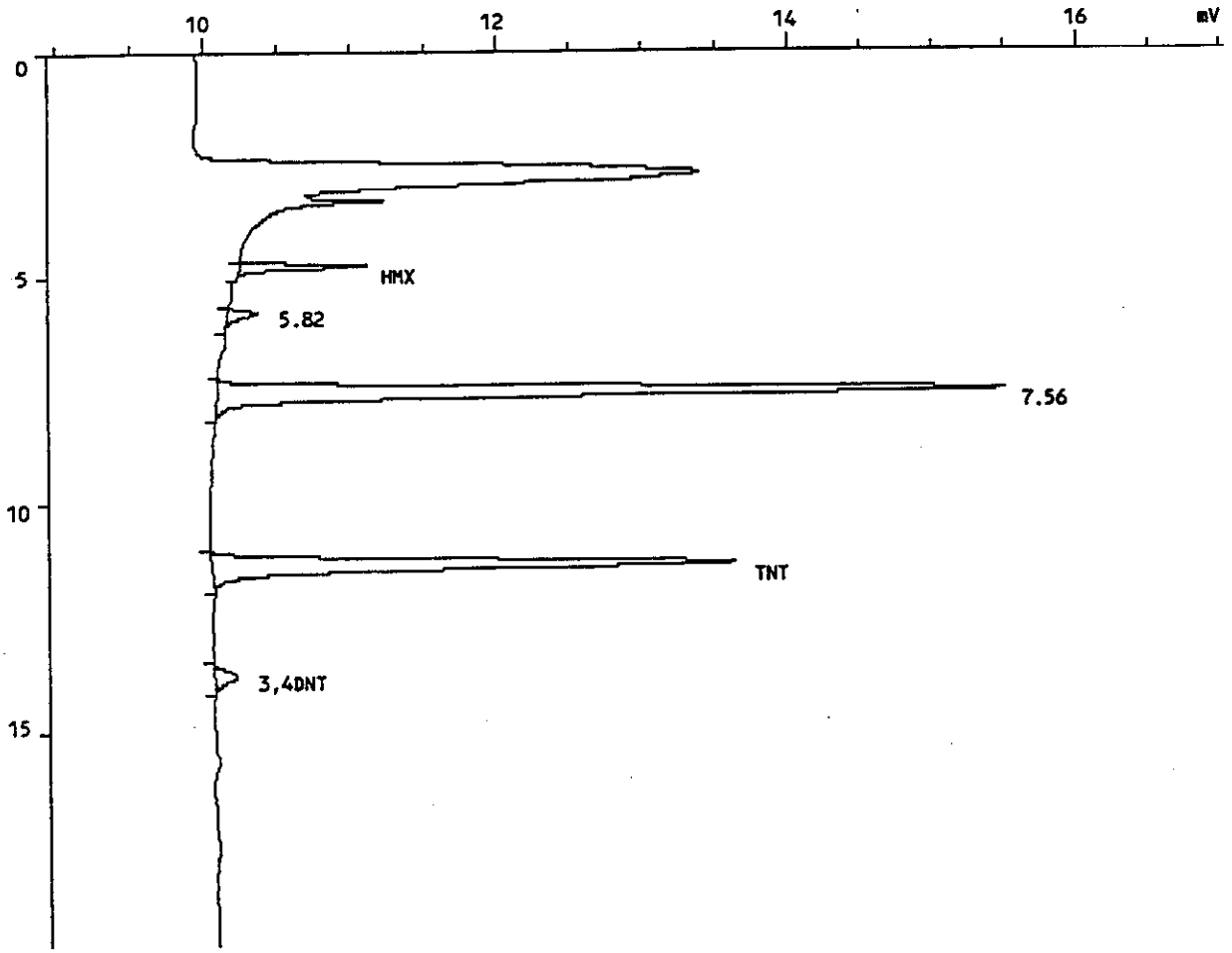
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.632	2681	29228	5420.630	HMX *D
2	8.613	17281	371879	47750.305	RDX *D
3	17.403	595	17624	1619.224	3,4DNT 64%
4	18.197	9310	285705	14104.712	TNT *D DP 071-23/98
Total		29867	704436	68894.867	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,18,1

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 14:13:53
Reported on 20-Jul-98 at 10:44:45



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,18,1

Acquired on 17-Jul-98 at 14:13:53
Modified on 20-Jul-82 at 10:40:46
Reported on 20-Jul-98 at 10:40:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:38:22
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

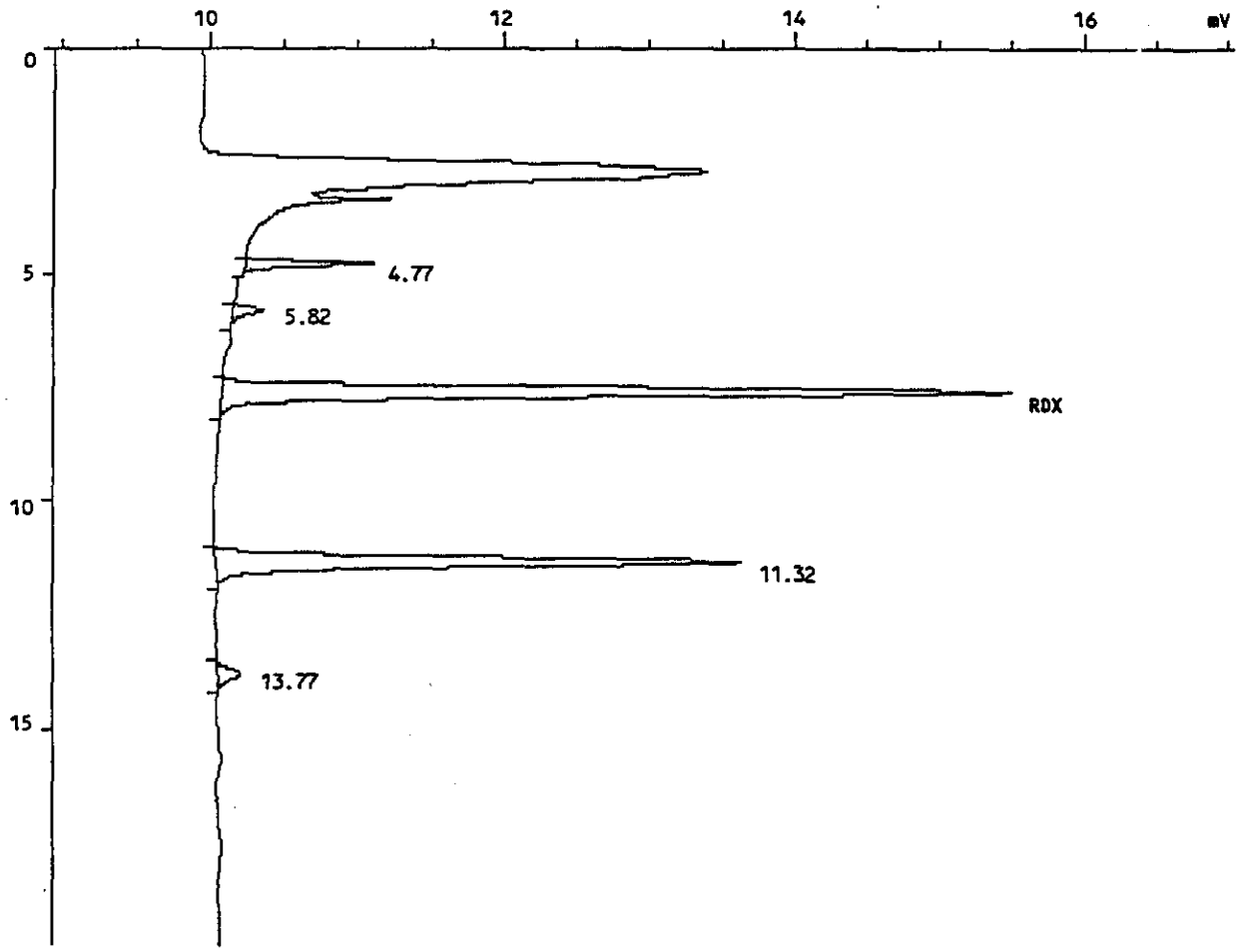
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.768	876	7149	7416.002	HMX
4	11.323	3589	55144	21574.453	TNT
5	13.771	159	2880	1809.121	3,4DNT
Total		4624	65173	30799.576	
Residual		5606	82429	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,18,1

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 14:13:53
Reported on 20-Jul-98 at 11:03:25



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,18,1

Acquired on 17-Jul-98 at 14:13:53
Modified on 20-Jul-82 at 10:56:04
Reported on 20-Jul-98 at 10:56:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.563	5403	79962	65435.500	RDX
Total		5403	79962	65435.500	
Residual		4826	67640	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.15

Sample Amt: 2g % Moisture 15.81 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

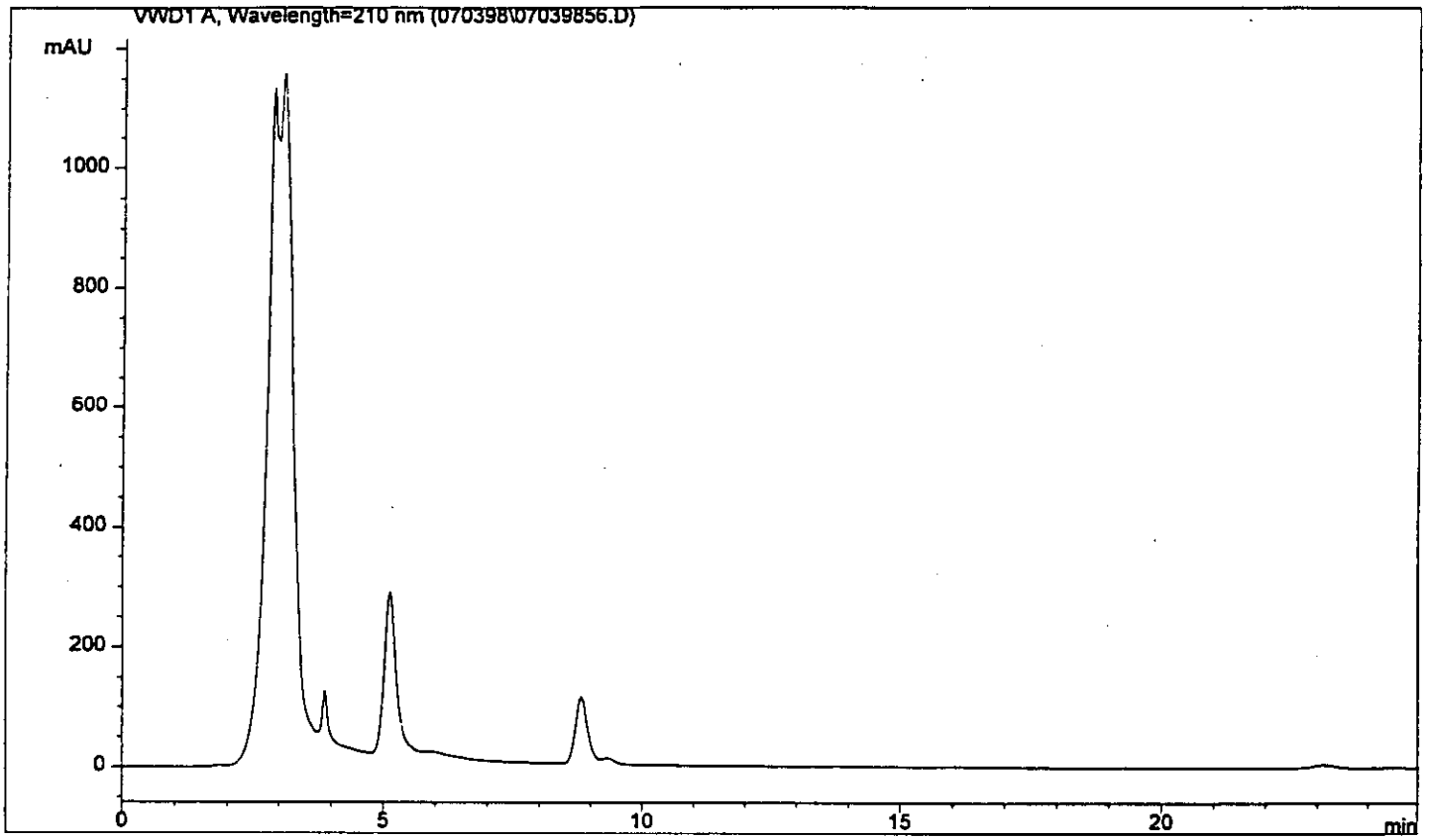
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 56
Sample Name	: 34581.15	Vial No.	: 56
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

BIO-038

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

Project No.: 4324-CC09-C7-35

Project Name: NSWC Crane Bio Facility

Samplers: (Signature)

Sampler: (Print) Ryan Erwin

Analysis Required: 4.330 Explosives

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	4.330 Explosives	Remarks
Compost	CS A SL 1	6/26/98	931	BIO-N-30% 60-A1		✓	✓	
	A 2		935	BIO-N-30% 60-A2		✓	✓	
	A 3		941	BIO-N-30% 60-A3		✓	✓	
	CS B SL 1		952	BIO-N-30% 60-B1		✓	✓	
	B SL 2		956	BIO-N-30% 60-B2		✓	✓	
	B SL 3		1001	BIO-N-30% 60-B3		✓	✓	
	B 3		1001	BIO-N-30% 60-B3FD		✓	✓	
	CS C SL 1		1007	BIO-N-30% 60-C1		✓	✓	
	C 2		1012	BIO-N-30% 60-C2		✓	✓	
	C 3		1017	BIO-N-30% 60-C3		✓	✓	MS/MSD
	CS D SL 1		1022	BIO-N-30% 60 D1		✓	✓	
	D 2		1025	BIO-N-30% 60 D2		✓	✓	
	D 3		1029	BIO-N-30% 60 D3		✓	✓	
Liquid	Rinse Blank		1038	BIO-RB 062698		✓	✓	

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Ryan Erwin	6/26/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: Hedson	Date/Time 6/26/98 910	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal #'s 5155, 5156

1c

APPENDIX Q
CALIBRATION SUMMARIES FOR LAB ANALYSIS OF DAY 60 SAMPLES

TABLE OF CONTENTS

DESCRIPTION **PAGES**

Calibration Summary for Analysis of Windrow N-30% Day 60 . . . . . 51 pages

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : CARB-10

Inj 1

Injection File Name Level 1 : 5EX0701,3
Injection File Name Level 2 : 5EX0701,4
Injection File Name Level 3 : 5EX0701,5
Injection File Name Level 4 : 5EX0701,6
Injection File Name Level 5 : 5EX0701,7

Calibration Date : 06/30/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	3574	352	98024	386	259344	393	390845	395	519342	393
RDX	1620	384	49914	473	138474	502	208209	505	277643	505
TNB	2772	918	76705	1015	207219	1052	307112	1038	403124	1023
DNB	2390	1475	60244	1484	158709	1503	239425	1512	319931	1509
TETRYL	2164	582	53694	577	150800	623	207537	570	269152	556
NB	3082	934	79271	962	205655	961	313258	973	431557	1004
3,4-DNT	3108	612	81232	641	212097	643	319130	643	431861	654
TNT	3007	1114	78483	1161	207589	1179	311227	1179	419597	1192
4ADNT	1809	767	48072	812	124942	811	190877	823	259346	842
2ADNT	2329	987	61025	1031	161592	1049	243467	1049	329229	1069
26DNT	2552	658	67177	691	178318	702	267959	705	357283	706
24DNT	2712	1149	74294	1255	197784	1284	297360	1282	399853	1298
2NT	1763	522	47229	558	126188	574	192101	582	255844	581
	1785	528	41534	491	112762	513	171716	520	227374	517
	2135	663	54428	677	145381	692	221034	704	294439	704

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : CARB-10

Inj 1
Injection File Name Level 1 : 5EX0701,3
Injection File Name Level 2 : 5EX0701,4
Injection File Name Level 3 : 5EX0701,5
Injection File Name Level 4 : 5EX0701,6
Injection File Name Level 5 : 5EX0701,7

Calibration Date : 06/30/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	384	4.67	0.99999	394	0.000
RDX	474	10.98	0.99994	504	0.000
TNB	1009	5.24	0.99986	1031	0.000
DNB	1497	1.07	0.99999	1509	0.000
TETRYL	582	4.32	0.99816	571	0.000
NB	967	2.60	0.99965	988	0.000
3,4-DNT	639	2.49	0.99992	649	0.000
TNT	1165	2.64	0.99996	1186	0.000
NT	811	3.42	0.99978	832	0.000
NT	1037	3.00	0.99990	1060	0.000
26DNT	692	2.93	0.99999	705	0.000
24DNT	1254	4.83	0.99995	1291	0.000
2NT	563	4.49	0.99996	580	0.000
4NT	514	2.72	0.99993	517	0.000
3NT	688	2.61	0.99995	702	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/30/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/01/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5EX0701A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	258885	392	384	2.17	394	0.35
RDX	137858	499	474	5.45	504	0.89
TNB	207612	1054	1009	4.45	1031	2.18
DNB	159761	1513	1497	1.09	1509	0.29
TETRYL	150457	622	582	6.88	571	8.94
NB	217106	1015	967	4.95	988	2.68
3,4-DNT	215212	652	639	2.13	649	0.45
TNT	210714	1197	1165	2.77	1186	0.97
4ADNT	127218	826	811	1.87	832	0.66
2ADNT	162798	1057	1037	1.93	1060	0.24
26DNT	179049	705	692	1.80	705	0.01
24DNT	197971	1286	1254	2.54	1291	0.39
2NT	127615	580	563	2.96	580	0.02
4NT	113201	515	514	0.16	517	0.44
[illegible]T	146617	698	688	1.46	702	0.56

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/30/1998
Continuing Calibration #: 2
Continuing Cal Date : 07/01/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5EX0701A,23
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	248869	377	384	1.78	394	4.21
RDX	138426	502	474	5.88	504	0.48
TNB	193628	983	1009	2.59	1031	4.70
DNB	171564	1625	1497	8.56	1509	7.70
TETRYL	175156	724	582	24.43	571	26.82
NB	281718	1316	967	36.18	988	33.24
3,4-DNT	187599	568	639	10.98	649	12.43
TNT	185241	1053	1165	9.66	1186	11.24
4ADNT	134439	873	811	7.65	832	4.98
2ADNT	152265	989	1037	4.66	1060	6.69
26DNT	162628	640	692	7.53	705	9.18
24DNT	197434	1282	1254	2.26	1291	0.66
2NT	127605	580	563	2.95	580	0.02
4NT	103135	469	514	8.75	517	9.29
[illegible]T	130723	622	688	9.54	702	11.34

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
olumn ID : CARB-10
Calibration Date : 06/30/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.83	4.82	4.82	4.82	4.82
RDX	7.44	7.40	7.42	7.42	7.44
TNB	10.18	10.13	10.15	10.17	10.20
DNB	12.48	12.41	12.41	12.47	12.50
TETRYL	13.45	13.35	13.37	13.46	13.50
NB	14.23	14.14	14.15	14.23	14.26
3,4-DNT	15.52	15.42	15.43	15.55	15.58
TNT	16.23	16.15	16.17	16.27	16.30
4ADNT	16.95	16.83	16.87	17.00	17.04
2ADNT	17.81	17.72	17.76	17.90	17.94
26DNT	18.98	18.89	18.92	19.05	19.08
24DNT	19.65	19.54	19.57	19.70	19.73
2NT	23.18	23.09	23.13	23.30	23.32
4NT	24.86	24.73	24.76	24.93	24.96
3NT	26.84	26.68	26.73	26.90	26.91

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.83	4.82
RDX	7.46	7.41
TNB	10.20	10.15
DNB	12.51	12.43
TETRYL	13.54	13.41
NB	14.23	14.17
3,4-DNT	15.53	15.46
TNT	16.25	16.20
4ADNT	16.99	16.90
2ADNT	17.89	17.78
26DNT	18.97	18.93
24DNT	19.61	19.58
2NT	23.12	23.15
4NT	24.74	24.78
3NT	26.69	26.75

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.82	0.006	0.017	4.80 - 4.84
RDX	7.42	0.020	0.060	7.36 - 7.49
'B	10.17	0.026	0.079	10.09 - 10.25
3.	12.46	0.043	0.129	12.33 - 12.59
TETRYL	13.44	0.069	0.207	13.23 - 13.64
NB	14.20	0.046	0.139	14.06 - 14.34
3,4-DNT	15.50	0.063	0.188	15.31 - 15.69
TNT	16.22	0.056	0.169	16.05 - 16.39

4ADNT	16.94	0.076	0.229	16.71 - 17.17
2ADNT	17.83	0.081	0.244	17.58 - 18.07
26DNT	18.97	0.072	0.215	18.76 - 19.19
24DNT	19.63	0.071	0.212	19.41 - 19.84
2NT	23.18	0.090	0.270	22.91 - 23.45
4NT	24.82	0.095	0.285	24.54 - 25.11
T	26.79	0.097	0.291	26.49 - 27.08

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0711,4
Injection File Name Level 2 : 2EX0711,5
Injection File Name Level 3 : 2EX0711,6
Injection File Name Level 4 : 2EX0711,7
Injection File Name Level 5 : 2EX0711,8

Calibration Date : 07/11/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	12938	1276	336021	1323	944421	1431	1243733	1256	1918922	1454
RDX	7482	1773	200355	1897	571436	2070	763747	1854	1176159	2138
TNB	11289	3738	300908	3980	828066	4203	1105116	3734	1721555	4369
DNB	11471	7081	291880	7189	824364	7806	1085120	6851	1696763	8004
TETRYL	10846	2916	253224	2723	646413	2671	825112	2267	1322733	2733
NB	22850	6924	590648	7168	1572054	7346	2255663	7005	3220308	7489
3,4-DNT	13424	2643	334919	2641	946234	2867	1243174	2506	1946595	2949
TNT	12963	4801	335091	4957	936678	5322	1249405	4733	1937698	5505
4ADNT	8480	3593	213616	3608	610432	3964	801371	3454	1253935	4071
2ADNT	10517	4456	258332	4364	727654	4725	954300	4113	1482934	4815
26DNT	10030	2585	269535	2773	751599	2959	1001778	2636	1552509	3068
24DNT	14766	6257	374235	6322	1049451	6815	1406605	6063	2172110	7052
2NT	8983	2658	243591	2879	652229	2965	936181	2837	1332843	3029
	8233	2436	222191	2626	616536	2802	881688	2672	1259274	2862
	9344	2902	263158	3273	722207	3439	1045202	3329	1478164	35

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
umn ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0711,4
Injection File Name Level 2 : 2EX0711,5
Injection File Name Level 3 : 2EX0711,6
Injection File Name Level 4 : 2EX0711,7
Injection File Name Level 5 : 2EX0711,8

Calibration Date : 07/11/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	1348	6.67	0.99471	1394	0.000
RDX	1947	7.85	0.99512	2046	0.000
TNB	4005	7.04	0.99413	4165	0.000
DNB	7386	6.69	0.99416	7647	0.000
TETRYL	2662	8.99	0.99122	2599	0.000
NB	7187	3.26	0.99889	7323	0.000
3,4-DNT	2721	6.68	0.99362	2811	0.000
[illegible]	5064	6.63	0.99455	5257	0.000
T	3738	7.08	0.99347	3879	0.000
[illegible]NT	4495	6.29	0.99388	4601	0.000
26DNT	2804	7.37	0.99452	2929	0.000
24DNT	6502	6.37	0.99452	6732	0.000
2NT	2874	4.94	0.99894	2961	0.000
4NT	2680	6.21	0.99882	2794	0.000
3NT	3296	7.36	0.99910	3457	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/1998
Continuing Calibration #: 3
Continuing Cal Date : 07/12/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0711B,1
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	855156	1296	1348	3.88	1394	7.03
RDX	514718	1865	1947	4.20	2046	8.85
TNB	746493	3789	4005	5.38	4165	9.01
DNB	742413	7030	7386	4.82	7647	8.06
TETRYL	579511	2395	2662	10.04	2599	7.87
NB	1437893	6719	7187	6.50	7323	8.24
3,4-DNT	869312	2634	2721	3.20	2811	6.29
TNT	820247	4660	5064	7.96	5257	11.35
4ADNT	554331	3600	3738	3.71	3879	7.20
2ADNT	670527	4354	4495	3.13	4601	5.36
26DNT	667219	2627	2804	6.33	2929	10.31
24DNT	925226	6008	6502	7.59	6732	10.76
2NT	619804	2817	2874	1.96	2961	4.87
4NT	586640	2667	2680	0.49	2794	4.56
[illegible]T	688865	3280	3296	0.47	3457	5.12

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/1998
Continuing Calibration #: 4
inuing Cal Date : 07/13/1998
inuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0711B,12
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	869065	1317	1348	2.31	1394	5.52
RDX	526047	1906	1947	2.09	2046	6.85
TNB	767437	3896	4005	2.73	4165	6.46
DNB	758541	7183	7386	2.75	7647	6.06
TETRYL	577415	2386	2662	10.36	2599	8.20
NB	1489964	6962	7187	3.12	7323	4.92
3,4-DNT	881249	2670	2721	1.87	2811	5.01
TNT	848743	4822	5064	4.76	5257	8.27
4ADNT	567078	3682	3738	1.49	3879	5.06
2ADNT	685932	4454	4495	0.90	4601	3.19
26DNT	687766	2708	2804	3.44	2929	7.54
24DNT	958435	6224	6502	4.28	6732	7.55
2NT	623525	2834	2874	1.37	2961	4.30
4NT	592535	2693	2680	0.51	2794	3.61
3NT	697472	3321	3296	0.77	3457	3.93

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

trument ID : IN12
Column ID : CARB-07
Calibration Date : 07/11/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.68	5.66	5.66	5.66	5.66
RDX	8.70	8.68	8.69	8.68	8.68
TNB	11.66	11.63	11.63	11.62	11.62
DNB	14.22	14.20	14.20	14.19	14.19
TETRYL	15.41	15.39	15.40	15.39	15.38
NB	16.06	16.04	16.05	16.03	16.03
3,4-DNT	17.63	17.58	17.57	17.56	17.55
TNT	18.36	18.31	18.31	18.29	18.29
4ADNT	19.50	19.41	19.43	19.41	19.42
2ADNT	20.54	20.49	20.51	20.49	20.50
26DNT	21.47	21.38	21.39	21.37	21.38
24DNT	22.22	22.12	22.13	22.11	22.12
2NT	25.91	25.88	25.89	25.87	25.87
4NT	27.68	27.69	27.69	27.67	27.66
3NT	29.85	29.81	29.82	29.80	29.80

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.67	5.66	5.68	5.66	5.66
RDX	8.72	8.66	8.54	8.66	8.66
TNB	11.67	11.61	11.49	11.63	11.62
DNB	14.25	14.15	14.03	14.18	14.18
TETRYL	15.47	15.34	15.20	15.39	15.39
NB	16.10	16.00	15.88	16.04	16.03
3,4-DNT	17.65	17.51	17.36	17.56	17.56
TNT	18.39	18.26	18.14	18.32	18.30
4ADNT	19.53	19.30	19.14	19.36	19.37
2ADNT	20.61	20.35	20.19	20.42	20.44
26DNT	21.49	21.30	21.17	21.38	21.38
24DNT	22.24	22.03	21.89	22.10	22.10
2NT	26.01	25.78	25.66	25.87	25.88
4NT	27.82	27.56	27.44	27.66	27.68
3NT	29.97	29.69	29.56	29.80	29.82

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.66	0.008	0.024	5.64 - 5.69
RDX	8.66	0.050	0.149	8.51 - 8.81
B	11.61	0.048	0.144	11.47 - 11.76
3-	14.17	0.066	0.197	13.97 - 14.36
TETRYL	15.36	0.080	0.241	15.12 - 15.60
NB	16.02	0.063	0.190	15.83 - 16.21
3,4-DNT	17.54	0.090	0.270	17.27 - 17.81
TNT	18.29	0.074	0.221	18.06 - 18.51

4ADNT	19.36	0.147	0.442	18.91 - 19.80
2ADNT	20.42	0.164	0.491	19.93 - 20.91
26DNT	21.35	0.108	0.323	21.03 - 21.67
24DNT	22.08	0.122	0.365	21.72 - 22.45
2NT	25.84	0.115	0.345	25.49 - 26.18
4NT	27.63	0.132	0.396	27.23 - 28.02
T	29.76	0.141	0.424	29.34 - 30.19

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
lumn ID :

	Inj 1
Injection File Name Level 1 :	070398,30
Injection File Name Level 2 :	070398,31
Injection File Name Level 3 :	070398,32
Injection File Name Level 4 :	070398,33
Injection File Name Level 5 :	070398,34

Calibration Date : 07/05/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	4.87002	4.11E0	58.5125	2.73E0	109.144	2.93E0	430.513	2.97E0	860.493	2.98E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
lumn ID :

	Inj 1
Injection File Name Level 1 :	070398,30
Injection File Name Level 2 :	070398,31
Injection File Name Level 3 :	070398,32
Injection File Name Level 4 :	070398,33
Injection File Name Level 5 :	070398,34

Calibration Date : 07/05/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.14E0	17.40	0.99998	2.97E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/05/98
Continuing Calibration #: 1
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398,35
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.127	3.13E0	3.14E0	0.35	2.97E0	5.38

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/05/98
Continuing Calibration #: 2
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398,45
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	115.956	2.76E0	3.14E0	12.23	2.97E0	7.19

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/05/98
Continuing Calibration #: 3
tinuing Cal Date : 07/06/98
ntinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398,57
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	96.4308	3.32E0	3.14E0	5.54	2.97E0	11.61

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

trument ID : LC4
Column ID :
Calibration Date : 07/05/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.76	11.73	11.73	11.72	11.72

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	11.77	11.91	12.05	11.94	11.64

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.79	0.123	0.369	11.42 - 12.16

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : MET-02

Inj 1

Injection File Name Level 1 : 5CN0716,4
Injection File Name Level 2 : 5CN0716,5
Injection File Name Level 3 : 5CN0716,6
Injection File Name Level 4 : 5CN0716,7
Injection File Name Level 5 : 5CN0716,8

Calibration Date : 07/16/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	3401	486	16563	473	42826	489	84211	481	168555	482
TNB	6071	1320	31898	1387	83391	1450	165684	1441	331119	1440
TNT	5561	1209	28511	1240	75433	1312	149806	1303	304678	1325
TETRYL	6452	717	34598	769	90577	805	182559	811	370013	822
3,4DNT	870	659	5035	763	13474	817	27026	819	60962	924
26DNT	4483	897	23364	935	61336	981	121570	973	249016	996

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
umn ID : MET-02

Inj 1

Injection File Name Level 1 : 5CN0716,9
Injection File Name Level 2 : 5CN0716,10
Injection File Name Level 3 : 5CN0716,11
Injection File Name Level 4 : 5CN0716,12
Injection File Name Level 5 : 5CN0716,13

Calibration Date : 07/16/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
RDX	2948	590	15093	604	39340	629	76843	615	154863	619
DNB	7139	1785	35429	1771	92894	1858	181599	1816	365859	1829
NB	5700	1140	27887	1115	73868	1182	145402	1163	290998	1164
24DNT	8191	1638	40314	1613	106078	1697	207931	1663	417771	1671
4ADNT	6992	760	34323	746	91253	794	177005	770	347615	756
2ADNT	12565	1257	62341	1247	165552	1324	322305	1289	650744	1301

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : MET-02

Inj 1

Injection File Name Level 1 : 5CN0716,4
Injection File Name Level 2 : 5CN0716,5
Injection File Name Level 3 : 5CN0716,6
Injection File Name Level 4 : 5CN0716,7
Injection File Name Level 5 : 5CN0716,8

Calibration Date : 07/16/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	482	1.26	0.99999	482	0.000
TNB	1407	3.91	0.99999	1440	0.000
TNT	1278	3.95	0.99996	1319	0.000
TETRYL	785	5.48	0.99998	819	0.000
3,4DNT	796	12.09	0.99840	900	0.000
26DNT	956	4.22	0.99993	991	0.000

CALIBRATION FACTOR DATA
FORM 9B

XPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN13
umn ID : MET-02

Inj 1

Injection File Name Level 1 : 5CN0716,9
Injection File Name Level 2 : 5CN0716,10
Injection File Name Level 3 : 5CN0716,11
Injection File Name Level 4 : 5CN0716,12
Injection File Name Level 5 : 5CN0716,13

Calibration Date : 07/16/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
RDX	611	2.50	0.99997	619	0.000
DNB	1812	1.91	0.99997	1828	0.000
NB	1153	2.23	0.99998	1164	0.000
24DNT	1657	1.95	0.99998	1670	0.000
4ADNT	765	2.36	0.99988	760	0.000
2ADNT	1284	2.50	0.99996	1300	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	42669	488	482	1.12	482	1.21
TNB	83652	1455	1407	3.36	1440	1.03
TNT	75778	1318	1278	3.16	1319	0.11
TETRYL	95743	851	785	8.43	819	3.91
3,4DNT	12820	777	796	2.42	900	13.66
26DNT	61950	991	956	3.66	991	0.07

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	38515	616	611	0.79	619	0.43
DNB	90448	1809	1812	0.16	1828	1.03
NB	72221	1156	1153	0.23	1164	0.76
24DNT	102786	1645	1657	0.72	1670	1.55
4ADNT	87224	758	765	0.85	760	0.22
2ADNT	161956	1296	1284	0.93	1300	0.33

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
Continuing Calibration #: 2
Continuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	42946	491	482	1.77	482	1.86
TNB	82284	1431	1407	1.67	1440	0.62
TNT	73897	1285	1278	0.60	1319	2.59
TETRYL	90360	803	785	2.33	819	1.93
3,4DNT	13554	821	796	3.17	900	8.72
26DNT	59586	953	956	0.30	991	3.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
ntinuing Calibration #: 2
inuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	43225	692	611	13.12	619	11.74
DNB	103858	2077	1812	14.64	1828	13.65
NB	76137	1218	1153	5.66	1164	4.62
24DNT	119593	1913	1657	15.51	1670	14.55
4ADNT	103930	904	765	18.14	760	18.89
2ADNT	183945	1472	1284	14.64	1300	13.21

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	7.000	35.000	87.500	175.000	350.000
TNB	4.600	23.000	57.500	115.000	230.000
TNT	4.600	23.000	57.500	115.000	230.000
TETRYL	9.000	45.000	112.500	225.000	450.000
3,4DNT	1.320	6.600	16.500	33.000	66.000
26DNT	5.000	25.000	62.500	125.000	250.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
RDX	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
NB	5.000	25.000	62.500	125.000	250.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000

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A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
Column ID : MET-02
Calibration Date : 07/16/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.80	4.79	4.81	4.78	4.78
TNB	7.39	7.38	7.39	7.36	7.36
TNT	11.50	11.47	11.49	11.46	11.46
TETRYL	12.67	12.65	12.67	12.62	12.63
3,4DNT	14.04	14.04	14.06	14.02	14.02
26DNT	14.57	14.54	14.57	14.53	14.53

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.84	4.74
TNB	7.44	7.29
TNT	11.65	11.25
TETRYL	12.90	12.33
3,4DNT	14.37	13.68
DNT	14.87	14.21

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.79	0.031	0.094	4.70 - 4.89
TNB	7.37	0.046	0.139	7.23 - 7.51
TNT	11.47	0.116	0.347	11.12 - 11.81
TETRYL	12.64	0.168	0.504	12.13 - 13.14
3,4DNT	14.03	0.201	0.602	13.43 - 14.64
26DNT	14.55	0.192	0.575	13.97 - 15.12

5CN0716
BSTD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
olumn ID : MET-02
Calibration Date : 07/16/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
RDX	7.70	7.68	7.69	7.64	7.68
DNB	9.53	9.49	9.49	9.43	9.48
NB	10.73	10.67	10.68	10.60	10.66
24DNT	14.24	14.15	14.19	14.06	14.14
4ADNT	15.58	15.47	15.53	15.39	15.49
2ADNT	16.12	16.01	16.06	15.93	16.02

COMPONENT NAME	RT Cont CA1	RT Cont CA2
RDX	7.79	7.55
DNB	9.64	9.32
NB	10.88	10.46
24DNT	14.49	13.80
4ADNT	15.92	15.01
DNT	16.45	15.53

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
RDX	7.68	0.073	0.219	7.46 - 7.89
DNB	9.48	0.097	0.291	9.19 - 9.77
NB	10.67	0.124	0.372	10.30 - 11.04
24DNT	14.15	0.206	0.617	13.53 - 14.77
4ADNT	15.48	0.269	0.806	14.68 - 16.29
2ADNT	16.02	0.273	0.819	15.20 - 16.84

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-10

Inj 1

Injection File Name Level 1 : 5E0703W,4
Injection File Name Level 2 : 5E0703W,5
Injection File Name Level 3 : 5E0703W,6
Injection File Name Level 4 : 5E0703W,7
Injection File Name Level 5 : 5E0703W,8

Calibration Date : 07/03/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	455	355	1084	341	55813	351	114625	360	232174	365
RDX	536	515	1217	468	58275	448	116740	449	237269	458
TNB	550	764	1597	887	87007	971	176570	986	356991	997
DNB	452	1189	1783	1857	63376	1331	128973	1358	259145	1364
TETRYL	343	381	937	415	57981	513	112885	499	220830	491
NB	397	584	1224	720	72653	855	143341	843	297575	875
3,4-DNT	509	398	1696	527	88342	552	180061	563	364421	569
TNT	539	842	1648	1030	83862	1048	169992	1062	344409	1076
4ADNT	506	506	1612	640	83243	666	168366	673	341433	683
2ADNT	381	680	1228	877	63632	909	129294	924	262995	939
26DNT	586	610	1308	545	70749	615	140695	612	285198	620
24DNT	572	1021	1738	1241	86565	1237	177381	1267	361816	1292
2NT	480	429	1286	459	75793	523	148763	513	304759	525
	238	298	784	392	43915	439	87656	438	178032	445
	334	418	917	459	57002	600	116199	612	234141	61

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : CARB-10

Inj 1
Injection File Name Level 1 : 5E0703W,4
Injection File Name Level 2 : 5E0703W,5
Injection File Name Level 3 : 5E0703W,6
Injection File Name Level 4 : 5E0703W,7
Injection File Name Level 5 : 5E0703W,8

Calibration Date : 07/03/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	355	2.62	0.99994	364	0.000
RDX	468	5.95	0.99994	456	0.000
TNB	921	10.64	0.99997	994	0.000
DNB	1420	17.93	0.99998	1361	0.000
TETRYL	460	12.69	0.99990	494	0.000
NB	775	15.88	0.99983	868	0.000
3,4-DNT	522	13.65	0.99996	567	0.000
TNT	1012	9.52	0.99997	1072	0.000
NT	634	11.54	0.99997	680	0.000
JT	866	12.27	0.99995	935	0.000
26DNT	600	5.20	0.99998	618	0.000
24DNT	1212	8.97	0.99991	1285	0.000
2NT	490	8.88	0.99993	523	0.000
4NT	402	15.51	0.99997	444	0.000
3NT	541	17.59	0.99998	615	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/03/1998
C tinuing Calibration #: 1
tinuing Cal Date : 07/04/1998
tinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5E0703W,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	57441	361	355	1.89	364	0.63
RDX	59027	454	468	2.93	456	0.40
TNB	88584	989	921	7.33	994	0.53
DNB	64102	1347	1420	5.16	1361	1.07
TETRYL	54533	483	460	4.96	494	2.22
NB	67600	795	775	2.57	868	8.41
3,4-DNT	91598	572	522	9.73	567	0.91
TNT	86118	1076	1012	6.39	1072	0.38
4ADNT	84288	674	634	6.43	680	0.88
2ADNT	65001	929	866	7.24	935	0.68
26DNT	70426	612	600	1.99	618	0.94
24DNT	89373	1277	1212	5.37	1285	0.64
2NT	69826	482	490	1.68	523	7.92
4NT	40650	407	402	1.02	444	8.35
T	53020	558	541	3.21	615	9.18

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

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page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
olumn ID : CARB-10
Calibration Date : 07/03/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.77	4.78	4.77	4.76	4.75
RDX	7.45	7.49	7.49	7.48	7.48
TNB	10.20	10.27	10.25	10.22	10.23
DNB	12.52	12.61	12.58	12.57	12.58
TETRYL	13.52	13.65	13.60	13.60	13.62
NB	14.29	14.36	14.35	14.34	14.35
3,4-DNT	15.59	15.71	15.66	15.66	15.68
TNT	16.32	16.42	16.39	16.39	16.41
4ADNT	17.03	17.19	17.19	17.21	17.22
2ADNT	17.97	18.11	18.10	18.12	18.13
26DNT	19.06	19.20	19.18	19.21	19.22
24DNT	19.72	19.87	19.85	19.87	19.87
2NT	23.29	23.46	23.41	23.46	23.44
4NT	24.88	25.09	25.05	25.09	25.06
3NT	26.75	27.02	27.04	27.08	27.04

COMPONENT NAME	RT Cont CAl
HMX	4.75
RDX	7.47
TNB	10.22
DNB	12.56
TETRYL	13.56
NB	14.32
3,4-DNT	15.63
TNT	16.34
4ADNT	17.16
2ADNT	18.06
26DNT	19.14
24DNT	19.79
2NT	23.33
4NT	24.96
3NT	26.92

COMPONENT NAME	AVE-RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.76	0.011	0.033	4.73 - 4.80
RDX	7.48	0.015	0.045	7.43 - 7.52
B	10.23	0.024	0.072	10.16 - 10.30
B	12.57	0.029	0.086	12.48 - 12.66
TETRYL	13.59	0.046	0.139	13.45 - 13.73
NB	14.33	0.028	0.083	14.25 - 14.42
3,4-DNT	15.65	0.041	0.122	15.53 - 15.77
TNT	16.38	0.039	0.118	16.26 - 16.49

5E0703W
page 2

4ADNT	17.17	0.070	0.210	16.96 - 17.37
2ADNT	18.08	0.059	0.177	17.91 - 18.26
26DNT	19.17	0.060	0.180	18.99 - 19.35
24DNT	19.83	0.061	0.182	19.65 - 20.01
2NT	23.40	0.071	0.213	23.18 - 23.61
4NT	25.02	0.085	0.256	24.77 - 25.28
T	26.97	0.123	0.369	26.61 - 27.34

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
'nstrument ID: IN13
lumn ID : CARB-10

Inj 1

Injection File Name Level 1 : 5E0704W,4
Injection File Name Level 2 : 5E0704W,5
Injection File Name Level 3 : 5E0704W,6
Injection File Name Level 4 : 5E0704W,7
Injection File Name Level 5 : 5E0704W,8

Calibration Date : 07/04/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	339	265	958	301	56125	353	112336	353	225474	355
RDX	570	548	1095	421	57293	441	116387	448	237106	458
TNB	538	747	1560	867	86410	964	176202	984	355708	994
DNB	460	1211	1273	1326	63386	1332	127120	1338	257405	1355
TETRYL	331	368	1257	556	59779	529	118955	526	233246	518
NB	435	640	1340	788	73590	866	147910	870	304803	896
3,4-DNT	509	398	1727	536	88282	552	177025	553	356784	557
TNT	806	1259	1604	1003	83898	1049	168310	1052	340003	1063
4ADNT	755	755	1601	635	83132	665	166622	666	338556	677
2ADNT	725	1295	1220	871	63114	902	127582	911	259674	927
26DNT	778	810	1299	541	69213	602	139898	608	282015	613
24DNT	562	1004	1657	1184	87008	1243	176852	1263	359954	1286
2NT	583	521	1468	524	78327	540	157056	542	322215	556
	359	449	923	462	44961	450	90687	453	187246	468
	404	505	1157	579	59110	622	119674	630	243380	6

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
umn ID : CARB-10

Inj 1
Injection File Name Level 1 : 5E0704W,4
Injection File Name Level 2 : 5E0704W,5
Injection File Name Level 3 : 5E0704W,6
Injection File Name Level 4 : 5E0704W,7
Injection File Name Level 5 : 5E0704W,8

Calibration Date : 07/04/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	325	12.52	1.00000	354	0.000
RDX	463	10.66	0.99991	455	0.000
TNB	911	11.49	0.99997	990	0.000
DNB	1312	4.41	0.99998	1351	0.000
TETRYL	500	15.02	0.99996	520	0.000
NB	812	12.86	0.99988	890	0.000
3,4-DNT	519	13.18	0.99999	556	0.000
TNT	1085	9.23	0.99998	1060	0.000
T	680	6.59	0.99996	675	0.000
T	981	17.97	0.99994	923	0.000
26DNT	635	16.11	0.99998	612	0.000
24DNT	1196	9.53	0.99994	1279	0.000
2NT	536	2.65	0.99991	552	0.000
4NT	456	1.82	0.99985	465	0.000
3NT	595	9.35	0.99995	638	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/04/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/05/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5E0704W,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	56270	354	325	8.77	354	0.09
RDX	57268	441	463	4.87	455	3.19
TNB	86804	969	911	6.31	990	2.19
DNB	63484	1334	1312	1.64	1351	1.25
TETRYL	55551	492	500	1.59	520	5.53
NB	73444	864	812	6.40	890	2.93
3,4-DNT	90175	564	519	8.53	556	1.29
TNT	83602	1045	1085	3.69	1060	1.40
4ADNT	83225	666	680	2.06	675	1.30
2ADNT	63860	912	981	7.03	923	1.18
26DNT	69601	605	635	4.68	612	1.05
24DNT	87592	1251	1196	4.64	1279	2.19
2NT	77911	537	536	0.17	552	2.70
4NT	44555	446	456	2.35	465	4.09
[illegible]T	58608	617	595	3.65	638	3.25

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
olumn ID : CARB-10
Calibration Date : 07/04/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.73	4.72	4.71	4.72	4.73
RDX	7.31	7.29	7.32	7.35	7.41
TNB	9.96	9.96	9.98	10.01	10.12
DNB	12.18	12.17	12.23	12.25	12.42
TETRYL	12.98	13.02	13.10	13.13	13.38
NB	13.84	13.81	13.90	13.92	14.15
3,4-DNT	14.97	14.93	15.05	15.06	15.40
TNT	15.73	15.72	15.84	15.85	16.15
4ADNT	16.38	16.37	16.53	16.57	16.92
2ADNT	17.31	17.28	17.44	17.48	17.82
26DNT	18.36	18.32	18.49	18.56	18.88
24DNT	19.04	18.94	19.14	19.23	19.53
2NT	22.50	22.29	22.52	22.70	22.98
4NT	23.98	23.82	24.06	24.29	24.57
3NT	25.91	25.67	25.92	26.19	26.49

COMPONENT NAME	RT Cont CAl
HMX	4.72
RDX	7.30
TNB	9.96
DNB	12.19
TETRYL	13.04
NB	13.87
3,4-DNT	14.99
TNT	15.78
4ADNT	16.47
2ADNT	17.37
26DNT	18.46
24DNT	19.13
2NT	22.62
4NT	24.23
3NT	26.18

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.72	0.008	0.024	4.70 - 4.74
RDX	7.33	0.045	0.134	7.19 - 7.46
B	10.00	0.061	0.183	9.82 - 10.18
B	12.24	0.092	0.276	11.96 - 12.51
TETRYL	13.11	0.145	0.436	12.67 - 13.54
NB	13.92	0.122	0.365	13.55 - 14.28
3,4-DNT	15.07	0.169	0.506	14.56 - 15.57
TNT	15.84	0.158	0.474	15.37 - 16.32

4ADNT	16.54	0.201	0.603	15.94 - 17.14
2ADNT	17.45	0.197	0.592	16.86 - 18.04
26DNT	18.51	0.201	0.603	17.91 - 19.11
24DNT	19.17	0.200	0.601	18.57 - 19.77
2NT	22.60	0.233	0.699	21.90 - 23.30
4NT	24.16	0.263	0.788	23.37 - 24.95
T	26.06	0.286	0.858	25.20 - 26.92

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
lumn ID :

Inj 1

Injection File Name Level 1 : 070398W,4
Injection File Name Level 2 : 070398W,5
Injection File Name Level 3 : 070398W,6
Injection File Name Level 4 : 070398W,7
Injection File Name Level 5 : 070398W,8

Calibration Date : 07/04/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	5.53255	3.61E0	45.0061	3.56E0	92.52	3.46E0	368.591	3.47E0	737.765	3.47E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
lumn ID :

	Inj 1
Injection File Name Level 1 :	070398W,4
Injection File Name Level 2 :	070398W,5
Injection File Name Level 3 :	070398W,6
Injection File Name Level 4 :	070398W,7
Injection File Name Level 5 :	070398W,8

Calibration Date : 07/04/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.51E0	1.94	1.00000	3.47E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/04/98
Continuing Calibration #: 1
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398W,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	114.652	2.79E0	3.51E0	20.58	3.47E0	19.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/04/98
Continuing Calibration #: 2
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398W,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	89.8397	3.56E0	3.51E0	1.36	3.47E0	2.63

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
olumn ID :
Calibration Date : 07/04/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.63	11.60	11.59	11.57	11.57

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
PETN	11.58	11.85	11.94

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.67	0.145	0.436	11.23 - 12.10

APPENDIX R
FIELD QC DATA FOR ENSYS TEST KIT/LAB COMPARISON

TABLE OF CONTENTS

DESCRIPTION	PAGES
Field QC Data	25 pages

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.12

Sample Amt: 2g % Moisture 40.05 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	51200	J
121-82-4	RDX	357000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	27600	
1946-51-0	4ADNT	3550	JP
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.12

Sample Amt: 2g % Moisture 40.05 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1
FD 50

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.13

Sample Amt: 2g % Moisture 46.19 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	64800	
121-82-4	RDX	445000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	32400	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.13

Sample Amt: 2g % Moisture 46.19 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOR042798

Lab Name: SWL-TULSA Contract:

ab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) WATER Lab Sample ID: 33783.16

Sample Amt: 1ml % Moisture Date Received: 04/29/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/02/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOR042798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) WATER Lab Sample ID: 33783.16

Sample Amt: 1ml % Moisture Date Received: 04/29/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C2
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.08

Sample Amt: 2g % Moisture 56.99 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	32300	
121-82-4	RDX	87200	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	19000	
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-C2	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.08	
Sample Amt: 2g	% Moisture	56.99	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N		Dilution Factor:	10.00	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C2
FD 10

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.09

Sample Amt: 2g % Moisture 32.74 Date Received: 05/05/98

Extraction Volume: 10ml Date Extracted: 05/05/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	33200	
121-82-4	RDX	94500	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	9470	J
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-C2FD	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.09	
Sample Amt: 2g	% Moisture	32.74	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N		Dilution Factor:	10.00	

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB050798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33911

Matrix: (soil/water) WATER Lab Sample ID: 33911.20

Sample Amt: 1ml % Moisture Date Received: 05/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/13/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D

EXPLOSIVES ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB050798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33911

Matrix: (soil/water) WATER Lab Sample ID: 33911.20

Sample Amt: 1ml % Moisture Date Received: 05/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.08

Sample Amt: 2g % Moisture 23.34 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	857	J
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.08

Sample Amt: 2g % Moisture 23.34 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.09

Sample Amt: 2g % Moisture 24.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	3030	P
121-82-4	RDX	4820	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	568	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.09

Sample Amt: 2g % Moisture 24.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB050798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) WATER Lab Sample ID: 33910.16

Sample Amt: 1ml % Moisture Date Received: 05/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/13/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB050798

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) WATER Lab Sample ID: 33910.16

Sample Amt: 1ml % Moisture Date Received: 05/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.06

Sample Amt: 2g % Moisture 14.76 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	4160	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	359	
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.06

Sample Amt: 2g % Moisture 14.76 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN	250		U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.07

Sample Amt: 2g % Moisture 14.39 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	3520	P
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	138	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.07

Sample Amt: 2g % Moisture 14.39 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB062698

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) WATER Lab Sample ID: 34581.16

Sample Amt: 1ml % Moisture Date Received: 06/27/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 07/05/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB062698

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) WATER Lab Sample ID: 34581.16

Sample Amt: 1ml % Moisture Date Received: 06/27/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 07/04/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-FB-052798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) WATER Lab Sample ID: 34140.16

Sample Amt: 1ml % Moisture Date Received: 05/28/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/29/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

FORM I

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-FB-052798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No: 34140

Matrix: (soil/water) WATER Lab Sample ID: 34140.16

Sample Amt: 1ml % Moisture Date Received: 05/28/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/31/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

APPENDIX S
LABORATORY QC DATA FOR TEST KIT/LAB COMPARISON

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DESCRIPTION	PAGES
Laboratory QC Data	28 pages

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:33783

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-00-A1 50X	68.1	0
2	BIO-N-30%-00-A2 50X	73.5	0
3	BIO-N-30%-00-A3 50X	68.1	0
4	BIO-N-30%-00-A3 10X	212*	0
5	BIO-N-30%-00-B1 50X	60.9	0
6	BIO-N-30%-00-B2 50X	61.7	0
7	BIO-N-30%-00-B3 50X	44.3*	0
8	BIO-N-30%-00-B3 MS 5	80.7	0
9	BIO-N-30%-00-B3 MSD	72.6	0
10	BIO-N-30%-00-C1 50X	65.8	0
11	BIO-N-30%-00-C2 50X	71.7	0
12	BIO-N-30%-00-C3 50X	35.5*	0
13	BIO-N-30%-00-C3 10X	124	0
14	BIO-N-30%-00-D1 50X	53.5*	0
15	BIO-N-30%-00-D1FD 50	56.0*	0
16	BIO-N-30%-00-D2 50X	43.4*	0
17	BIO-N-30%-00-D3 50X	43.0*	0
18	BIOR042798	104	0
19	BIOR042798 MS	126	0
20	BIOR042798 MSD	134	0
21	BL0429SF	120	0
22	BL0501WA	114	0
23	LC0429SF	123	0
24	LC0501WA	125	0
25	LD0429SF	122	0
26	LD0501WA	124	0
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

01

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: BIO-N-30%-00-B3 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500	20900	25100	44*	54-128
RDX	9500	129000	114000	158*	66-109
TNB	9500		8990	95	57-130
DNB	9500		11500	121	74-122
TETRYL	9500		3100	33	32-119
NB	9500		9010	95	70-135
TNT	9500	4650	14100	100	44-124
4ADNT	9500		12800	135	60-140
2ADNT	9500		13600	143*	60-140
26DNT	9500		10100	106	58-125
24DNT	9500		9830	103	59-120
2NT	9500		8720	92	79-124
4NT	9500		7520	79	74-128
3NT	9500		7670	81	79-121

No of Analyte recoveries out of QC Advisory Limits = 3

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	32900	126	96*	30	54-128
RDX	9500	169000	421*	91*	30	66-109
TNB	9500	8460	89	6	30	57-130
DNB	9500	12500	132*	9	45	74-122
TETRYL	9500	2170	23*	35*	30	32-119
NB	9500	8600	91	5	35	70-135
TNT	9500	16800	128*	25	30	44-124
4ADNT	9500	14400	152*	12	40	60-140
2ADNT	9500	14200	149*	4	40	60-140
26DNT	9500	13000	137*	26	35	58-125
24DNT	9500	10200	107	4	35	59-120
2NT	9500	8020	84	8	35	79-124
4NT	9500	7750	82	3	35	74-128
3NT	9500	7310	77*	5	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 3
No of RPD's out of QC Limits 3

TA SM 5/22/95

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: BIO-N-30%-00-B3

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000			0*	70-130

No of Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000		0*	100*		70-130

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 1

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LC0429SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		11200	118	57-137
RDX	9500		9650	102	77-113
TNB	9500		10700	113	64-125
DNB	9500		10800	114	82-118
TETRYL	9500		10700	113	23-124
NB	9500		10500	110	69-143
TNT	9500		10100	106	75-118
4ADNT	9500		10400	109	60-140
2ADNT	9500		10300	108	60-140
26DNT	9500		10300	108	78-117
24DNT	9500		10400	109	74-126
2NT	9500		10500	110	78-123
4NT	9500		10500	110	79-125
3NT	9500		10700	113	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LC0429SG

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3440	115	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LD0429SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		11100	117	57-137
RDX	9500		9500	100	77-113
TNB	9500		10500	110	64-125
DNB	9500		10700	113	82-118
TETRYL	9500		10100	106	23-124
NB	9500		10400	109	69-143
TNT	9500		10000	105	75-118
4ADNT	9500		10200	107	60-140
2ADNT	9500		10200	107	60-140
26DNT	9500		10200	107	78-117
24DNT	9500		10300	108	74-126
2NT	9500		10400	109	78-123
4NT	9500		10400	109	79-125
3NT	9500		10600	112	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LD0429SG

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3130	104	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-05-A1 10X	130	0
2	BIO-N-30%-05-A2 10X	126	0
3	BIO-N-30%-05-A3 10X	89.7	0
4	BIO-N-30%-05-B1 10X	96.6	0
5	BIO-N-30%-05-B2 10X	86.2	0
6	BIO-N-30%-05-B3 10X	95.6	0
7	BIO-N-30%-05-C1 10X	85.4	0
8	BIO-N-30%-05-C2 10X	104	0
9	BIO-N-30%-05-C2FD 10	88.4	0
10	BIO-N-30%-05-C3 10X	93.8	0
11	BIO-N-30%-05-D1 10X	103	0
12	BIO-N-30%-05-D1 10X	73.4	0
13	BIO-N-30%-05-D1 10X	86.6	0
14	BIO-N-30%-05-D2 10X	102	0
15	BIO-N-30%-05-D3 10X	217*	0
16	BL0505SE	109	0
17	LC0505SE	121	0
18	LD0505SE	106	0
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: BIO-N-30%-05-D1 10X

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500	11400	25800	152*	54-128
RDX	9500	16600	41500	262*	66-109
TNB	9500		9260	98	57-130
DNB	9500		11100	117	74-122
TETRYL	9500		8660	91	32-119
NB	9500		10000	105	70-135
TNT	9500		8940	94	44-124
4ADNT	9500		11100	117	60-140
2ADNT	9500		9110	96	60-140
26DNT	9500		9660	102	58-125
24DNT	9500		9490	100	59-120
2NT	9500		10100	106	79-124
4NT	9500		9790	103	74-128
3NT	9500		10600	112	79-121

i # Analyte recoveries out of QC Advisory Limits = 2

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	23400	126	19	30	54-128
RDX	9500	30700	148*	56*	30	66-109
TNB	9500	9220	97	1	30	57-130
DNB	9500	11400	120	3	45	74-122
TETRYL	9500	7900	83	9	30	32-119
NB	9500	10200	107	2	35	70-135
TNT	9500	9900	104	10	30	44-124
4ADNT	9500	11800	124	6	40	60-140
2ADNT	9500	10300	108	12	40	60-140
26DNT	9500	10200	107	5	35	58-125
24DNT	9500	9970	105	5	35	59-120
2NT	9500	9990	105	1	35	79-124
4NT	9500	10200	107	4	35	74-128
3NT	9500	10000	105	6	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 2
No of RPD's out of QC Limits 1

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: BIO-N-30%-05-D1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2910	97	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	3200	107	10	30	70-130

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: LC0505SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		10900	115	57-137
RDX	9500		9990	105	77-113
TNB	9500		9760	103	64-125
DNB	9500		11100	117	82-118
TETRYL	9500		9120	96	23-124
NB	9500		10400	109	69-143
TNT	9500		9160	96	75-118
4ADNT	9500		11400	120	60-140
2ADNT	9500		10000	105	60-140
26DNT	9500		10100	106	78-117
24DNT	9500		10200	107	74-126
2NT	9500		10200	107	78-123
4NT	9500		10500	110	79-125
3NT	9500		10500	110	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: LC0505SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3180	106	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: LD0505SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9630	101	57-137
RDX	9500		8880	94	77-113
TNB	9500		8650	91	64-125
DNB	9500		9580	101	82-118
TETRYL	9500		9350	98	23-124
NB	9500		9240	97	69-143
TNT	9500		8100	85	75-118
4ADNT	9500		9530	100	60-140
2ADNT	9500		8780	92	60-140
26DNT	9500		8950	94	78-117
24DNT	9500		8860	93	74-126
2NT	9500		9040	95	78-123
4NT	9500		9300	98	79-125
3NT	9500		9290	98	78-121

f Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: LD0505SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3100	103	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:33910

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-10-A1	73.6	0
2	BIO-N-30%-10-1A MS	57.4*	0
3	BIO-N-30%-10-A1 MSD	82.7	0
4	BIO-N-30%-10-A2	80.0	0
5	BIO-N-30%-10-A3	81.3	0
6	BIO-N-30%-10-B1	73.2	0
7	BIO-N-30%-10-B2	85.5	0
8	BIO-N-30%-10-B3	80.4	0
9	BIO-N-30%-10-B3FD	83.8	0
10	BIO-N-30%-10-C1	86.2	0
11	BIO-N-30%-10-C2	82.6	0
12	BIO-N-30%-10-C3	81.5	0
13	BIO-N-30%-10-D1 10X	71.2	0
14	BIO-N-30%-10-D2	69.2	0
15	BIO-N-30%-10-D3	84.0	0
16	BIO-RB050798	132	0
17	BIO-RB050798 MS	157*	0
18	BIO-RB050798 MSD	128	0
19	BL0511SA	88.4	0
20	BL0511WD	129	0
21	LC0511SA	94.6	0
22	LC0511WD	159*	0
23	LD0511SA	96.3	0
24	LD0511WD	151*	0
25			
26			
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

4

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: BIO-N-30%-10-A1 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		7810	82	54-128
RDX	9500	1340	6150	51*	66-109
TNB	9500		5960	63	57-130
DNB	9500		6150	65*	74-122
TETRYL	9500		3140	33	32-119
NB	9500		5780	61*	70-135
TNT	9500		5880	62	44-124
4ADNT	9500		5960	63	60-140
2ADNT	9500		5260	55*	60-140
26DNT	9500		6750	71	58-125
24DNT	9500		5820	61	59-120
2NT	9500		6580	69*	79-124
4NT	9500		6480	68*	74-128
3NT	9500		5440	57*	79-121

of Analyte recoveries out of QC Advisory Limits = 7

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	9610	101	21	30	54-128
RDX	9500	7760	68	29	30	66-109
TNB	9500	8200	86	32*	30	57-130
DNB	9500	8640	91	34	45	74-122
TETRYL	9500	4310	45	32*	30	32-119
NB	9500	8400	88	37*	35	70-135
TNT	9500	7180	76	20	30	44-124
4ADNT	9500	8450	89	35	40	60-140
2ADNT	9500	7550	80	36	40	60-140
26DNT	9500	9440	99	33	35	58-125
24DNT	9500	8380	88	36*	35	59-120
2NT	9500	9460	100	36*	35	79-124
4NT	9500	9270	98	35*	35	74-128
3NT	9500	7900	83	37*	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 7
No of RPD's out of QC Limits 7

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: BIO-N-30%-10-A1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2300	77	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	2350	78	2	30	70-130

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

T Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: LC0511SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		10500	110	57-137
RDX	9500		7740	82	77-113
TNB	9500		7830	82	64-125
DNB	9500		8520	90	82-118
TETRYL	9500		4080	43	23-124
NB	9500		8860	93	69-143
TNT	9500		7360	78	75-118
4ADNT	9500		8930	94	60-140
2ADNT	9500		7870	83	60-140
26DNT	9500		9480	100	78-117
24DNT	9500		8640	91	74-126
2NT	9500		9660	102	78-123
4NT	9500		9660	102	79-125
3NT	9500		8150	86	78-121

1 of Analyte recoveries out of QC Advisory Limits = 0

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Job Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: LC0511SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3000	100	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: LD0511SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		10700	113	57-137
RDX	9500		7880	83	77-113
TNB	9500		7980	84	64-125
DNB	9500		8670	91	82-118
TETRYL	9500		4590	48	23-124
NB	9500		9020	95	69-143
TNT	9500		7570	80	75-118
4ADNT	9500		8940	94	60-140
2ADNT	9500		8000	84	60-140
26DNT	9500		9660	102	78-117
24DNT	9500		8760	92	74-126
2NT	9500		9840	104	78-123
4NT	9500		9920	104	79-125
3NT	9500		8420	89	78-121

f Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: LD0511SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		2920	97	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-60-A1	85.1	0
2	BIO-N-30%-60-A2	85.2	0
3	BIO-N-30%-60-A3	87.2	0
4	BIO-N-30%-60-B1	86.3	0
5	BIO-N-30%-60-B2	87.3	0
6	BIO-N-30%-60-B3	84.3	0
7	BIO-N-30%-60-B3FD	87.2	0
8	BIO-N-30%-60-C1	85.9	0
9	BIO-N-30%-60-C2	87.4	0
10	BIO-N-30%-60-C3	85.0	0
11	BIO-N-30%-60-C3 MS	79.3	0
12	BIO-N-30%-60-C3 MSD	79.2	0
13	BIO-N-30%-60-D1	85.4	0
14	BIO-N-30%-60-D2	85.5	0
15	BIO-N-30%-60-D3	81.1	0
16	BIO-N-30%-60-D3 5X	81.0D	0
17	BIO-RB062698	102	0
18	BIO-RB062698 MS	111	0
19	BIO-RB062698 MSD	112	0
20	BL0628SA	90.2	0
21	BL0702WB	94.1	0
22	LC0628SA	102	0
23	LC0702WB	122	0
24	LD0628SA	99.2	0
25	LD0702WB	124	0
26			
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

4

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

I Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: BIO-N-30%-60-C3 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		8850	93	54-128
RDX	9500	5530	13800	87	66-109
TNB	9500		9100	96	57-130
DNB	9500		8680	91	74-122
TETRYL	9500		2420	26*	32-119
NB	9500		8470	89	70-135
TNT	9500	479	7320	72	44-124
4ADNT	9500		7710	81	60-140
2ADNT	9500		8530	90	60-140
26DNT	9500		8350	88	58-125
24DNT	9500		9580	101	59-120
2NT	9500		9410	99	79-124
4NT	9500		8550	90	74-128
3NT	9500		8320	88	79-121

f Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	8900	94	1	30	54-128
RDX	9500	12800	77	13	30	66-109
TNB	9500	9010	95	1	30	57-130
DNB	9500	8640	91	1	45	74-122
TETRYL	9500	2170	23*	11	30	32-119
NB	9500	8430	89	1	35	70-135
TNT	9500	7450	73	2	30	44-124
4ADNT	9500	7690	81	0	40	60-140
2ADNT	9500	8480	89	1	40	60-140
26DNT	9500	8340	88	0	35	58-125
24DNT	9500	9530	100	1	35	59-120
2NT	9500	9370	99	0	35	79-124
4NT	9500	8410	89	2	35	74-128
3NT	9500	8150	86	2	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 0

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

I-'' Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: BIO-N-30%-60-C3

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2930	98	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	REC.
PETN	3000	2930	98	0	30	70-130

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LC0628SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9210	97	57-137
RDX	9500		9010	95	77-113
TNB	9500		9210	97	64-125
DNB	9500		8520	90	82-118
TETRYL	9500		8610	91	23-124
NB	9500		9250	97	69-143
TNT	9500		7280	77	75-118
4ADNT	9500		8390	88	60-140
2ADNT	9500		8610	91	60-140
26DNT	9500		8330	88	78-117
24DNT	9500		9510	100	74-126
2NT	9500		9320	98	78-123
4NT	9500		8540	90	79-125
3NT	9500		8180	86	78-121

f Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LC0628SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		2930	98	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LD0628SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9370	99	57-137
RDX	9500		9160	96	77-113
TNB	9500		9370	99	64-125
DNB	9500		8700	92	82-118
TETRYL	9500		7930	84	23-124
NB	9500		9310	98	69-143
TNT	9500		7410	78	75-118
4ADNT	9500		9020	95	60-140
2ADNT	9500		8760	92	60-140
26DNT	9500		8500	90	78-117
24DNT	9500		9710	102	74-126
2NT	9500		9540	100	78-123
4NT	9500		8750	92	79-125
3NT	9500		8340	88	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LD0628SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3040	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0