Department of Energy
Albuquerque Operations
Los Alamos Area Office
Los Alamos, New Mexico 87544

RECEIVED
MAY 19 1988
EID DIRECTOR'S OFFICE

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Michael Burkhart, Director
N. M. Environmental Improvement Division
P. O. Box 968
Santa Fe, NM 87504-0968

Dear Mr. Burkhart:

CERTIFICATION OF CLOSURE

Enclosed please find two certifications of closure prepared by the owner and operator of the Los Alamos National Laboratory and by Mr. Lauren Ames, an independent, certified engineer (see enclosures #1 and #2, respectively). As you know, submission of these certifications is required by New Mexico Hazardous Waste Management Regulations following the completion of closure of hazardous waste management units. Closure has been completed at two areas used to store high explosives, namely Technical Area (TA) 22, Building 24 and TA 40, Building 2.

As members of your staff have been informed (Mr. Jack Ellvinger and Mr. C. Kelly Crossman), some exceptions to the closure plans approved by the New Mexico Environmental Improvement Division were necessary. These exceptions were as follows: (1) laboratory soap was not initially used to clean the storage areas as originally proposed because of its adverse effect on analytical equipment measuring organic constituents; (2) the time allowed for closure, 98 days (NOTE: significantly less than the 180 days allowed by the New Mexico Hazardous Waste Management Regulations), was exceeded in the closure of TA-24-22. This was due to the difficulty in removing total cyanides believed to be associated with the glue used to fasten the floor covering. The Department of Energy (DOE) has, after four decontamination efforts, effected successful removal of the compound within the time allowed by the regulations (see enclosure #3) and now considers the area closed; and, (3) minute quantities of barium were detected in the final wash water at TA-40-2. However, the levels indicate a significant decrease in concentration occurred following three decontamination efforts (see enclosure #3). Mr. Crossman suggested if DOE could achieve a decrease of one order of magnitude from the second decontamination effort, this would suffice to demonstrate effective closure. The concentration decreased from 5.68 mg/l after the first washing, to 1.916 mg/l following the second event, to 0.78 mg/l after the third washing. As you can see from the final result, the concentration decreased nearly an order of magnitude. DOE considers this area closed.

5391

As in the lithium hydride storage area closure recently performed, analytical results of wash water from both before and after decontamination reflect trace levels of three hazardous constituents (butyl benzyl phthalate, bis-(2-ethylhexyl)phthalate, and di-n-octyl phthalate). DOE has attributed their presence to the decontamination equipment itself rather than residual hazardous materials from the facility. One compound was found only in the used wash water and not in the clean water; however, it was detected in the clean water during the last closure activity conducted at the lithium storage area. DOE has therefore assumed that it was also associated with the decontamination equipment. There is little doubt that, had this compound actually been present in the storage area prior to decontamination, it would not remain after four washings.

If you should have any questions regarding this submittal, please contact Mr. James Phoenix (667-5288) of my staff.

Sincerely,

Harold E. Valencia
Area Manager

8659A

3 Enclosures

cc w/enclosures:
EPA Region VI, Dallas, Texas
A. Tiedman, LANL, ADS, MS A120
M. Martz Emerson, LANL, (HSE8-88-260-1, 5/6), HSE-8, MS K490

ENCLOSURE #1

I certify under penalty of law that the hazardous waste management units at TA-22-24 and TA-40-2 have been closed pursuant to the the specifications in the approved closure plan with the exception of the issues discussed with EID and noted in the accompanying transmittal letter. The closure was performed under my direction in accordance with a system designed to assure that qualified personnel properly conduct closure activities. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for closure activities, the closure was conducted as specified. I am aware that there are significant penalties for submitting false information, including the possibility of fines or imprisonment for knowing violations.

Siegfried S. Hecker
Director
Los Alamos National Laboratory
Operator

5/12/88
Date Signed

Harold E. Valencia
Area Manager, Los Alamos Area Office
U. S. Department of Energy
Albuquerque Operations
Owner

5-17-88
Date Signed

ENCLOSURE #2

Santa Fe Engineering, Ltd.

POST OFFICE BOX 1764 SANTA FE, NEW MEXICO 87504-1764 (505) 988-7438

April 29, 1988

To Whom It May Concern:

I have observed the closure of the following areas at Los Alamos National Laboratory:

TA-22-24 Magazine Container Storage Area
TA-40-2 Magazine Container Storage Area

With the exceptions noted in the attached letter from Harold Valencia to Michael Burkhart, both closures were performed in accordance with the plans dated September, 1985 and ammended December, 1985.

Lauren B. Ames

Lauren B. Ames, P.E.
NM #10254

LAUREN B. AMES
NEW MEXICO
10254
REGISTERED PROFESSIONAL ENGINEER

ENCLOSURE #3

2/22/88 TA-22-24 TA-40-2

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: M.C.WILLIAMS on 2-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: CN MATRIX: WW OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
Clean — TA-22-24	88.00237		0.0	0.01	MG/L	2/25/88	
Dirty — " " "	88.00243		2.3	0.23	MG/L	2/25/88	
	88.00243		2.4	0.24	MG/L	2/25/88	
Clean — TA-40-2	88.00249		0.0	0.01	MG/L	2/25/88	
Dirty — TA-40-2	88.00252		0.0320	0.01	MG/L	2/25/88	
	88.00252		0.0320	0.01	MG/L	2/25/88	
Distilled H_2O Field Blank	88.00256		0.0	0.01	MG/L	2/25/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: M.C.WILLIAMS on 2-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: CN MATRIX: WW OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01211		182.	18.	UG/L	224.	29.	3/02/88	WARNING 1-2 SIG
00.01211		182.	18.	UG/L	224.	29.	3/02/88	WARNING 1-2 SIG

Analyst	Section Leader	QA Officer
3-2-88	3/3/88	3/3/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: CB on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: PH MATRIX: W OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
Clean — TA-22-24 —	88.00234		7.	0.1	UNITS	3/01/88	
Dirty — TA-22-24 —	88.00242		6.4	0.1	UNITS	3/01/88	
Clean — TA-40-2	88.00246		6.9	0.1	UNITS	3/01/88	
Dirty — TA-40-2	88.00253		6.8	0.1	UNITS	3/01/88	
Distilled H_2O Blank —	88.00257		6.2	0.1	UNITS	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: CB on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: PH MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01002		5.8	0.1	UNITS	5.7	0.06	3/01/88	UNDER CONTROL

CB	DWF	mag
Analyst	Section Leader	QA Officer
3/1/88	3/2/88	3/2/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: CR MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234		6.	1.	UG/L	3/01/88	
88.00242		28.	3.	UG/L	3/01/88	
88.00246		9.	1.	UG/L	3/01/88	
88.00253		18.	2.	UG/L	3/01/88	
88.00257		1.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: CR MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		17.	2.	UG/L	18.6	0.4	3/01/88	UNDER CONTROL
00.98307		184.	18.	UG/L	200.	20.4	3/01/88	UNDER CONTROL
00.01100		4.7	0.5	MG/L	5.	0.42	3/01/88	UNDER CONTROL
00.00895		17.	2.	UG/L	18.6	0.4	3/01/88	UNDER CONTROL
00.98307		204.	20.	UG/L	200.	20.4	3/01/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-1-88	3/2/88	3/2/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: BA MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234		24.	2.	UG/L	3/01/88	
88.00242		1.2	0.1	MG/L	3/01/88	
88.00246		19.	2.	UG/L	3/01/88	
88.00253		5.68	0.57	MG/L	3/01/88	
88.00257	<	1.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: BA MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		44.	5.	UG/L	44.	2.	3/01/88	UNDER CONTROL
00.00895		39.	4.	UG/L	44.	2.	3/01/88	WARNING 1-2 SIG
00.01100		116.	15.	MG/L	100.	10.2	3/01/88	UNDER CONTROL
00.01100		110.	15.	MG/L	100.	10.2	3/01/88	UNDER CONTROL

MGB
Analyst

RW
Section Leader

[redacted] mag
QA Officer

3-1-88
Date

3/2/88
Date

3/2/88
Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: AG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234	<	1.	1.	UG/L	3/01/88	
88.00242	<	1.	1.	UG/L	3/01/88	
88.00246	<	1.	1.	UG/L	3/01/88	
88.00253	<	1.	1.	UG/L	3/01/88	
88.00257	<	1.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: AG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01100		5.1	0.5	MG/L	5.	0.28	3/01/88	UNDER CONTROL
00.01100		5.	0.5	MG/L	5.	0.28	3/01/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-1-88	3/2/88	3/2/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: HG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234	<	1.	1.	UG/L	3/01/88	
88.00242	<	1.	1.	UG/L	3/01/88	
88.00246	<	1.	1.	UG/L	3/01/88	
88.00253	<	1.	1.	UG/L	3/01/88	
88.00257	<	1.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: HG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01100		191.	19.	UG/L	200.	40.	3/01/88	UNDER CONTROL

MGB
Analyst

RWF
Section Leader

mag
QA Officer

3-1-88
Date

3/2/88
Date

3/2/88
Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: CD MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234	<	1.	1.	UG/L	3/01/88	
88.00242		6.	1.	UG/L	3/01/88	
88.00246	<	1.	1.	UG/L	3/01/88	
88.00253		6.	1.	UG/L	3/01/88	
88.00257	<	1.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: CD MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01100		0.9	0.1	MG/L	1.	0.03	3/01/88	UNDER CONTROL
00.01100		0.9	0.1	MG/L	1.	0.03	3/01/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-1-88	3/2/88	3/2/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: AS MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234	<	1.	1.	UG/L	3/01/88	
88.00242		36.	4.	UG/L	3/01/88	
88.00246		19.	2.	UG/L	3/01/88	
88.00253		31.	3.	UG/L	3/01/88	
88.00257	<	1.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: AS MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.98307		180.	18.	UG/L	200.	22.	3/01/88	UNDER CONTROL
00.98307		187.	19.	UG/L	200.	22.	3/01/88	UNDER CONTROL

MGB
Analyst

RW
Section Leader

mag
QA Officer

3-1-88
Date

3/2/88
Date

3/2/88
Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: PB MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00234		12.	1.	UG/L	3/01/88	
88.00242		1.93	0.19	MG/L	3/01/88	
88.00246		5.	1.	UG/L	3/01/88	
88.00253		90.	9.	UG/L	3/01/88	
88.00257		7.	1.	UG/L	3/01/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 1-Mar-1988

REQUEST NUMBER: 6538 ANALYSIS: PB MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		25.	3.	UG/L	23.7	0.7	3/01/88	UNDER CONTROL
00.98307		198.	20.	UG/L	200.	16.8	3/01/88	UNDER CONTROL
00.01100		5.	0.5	MG/L	5.	0.44	3/01/88	UNDER CONTROL
00.00895		25.	3.	UG/L	23.7	0.7	3/01/88	UNDER CONTROL
00.98307		177.	18.	UG/L	200.	16.8	3/01/88	UNDER CONTROL
00.01100		4.7	0.5	MG/L	5.	0.44	3/01/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-1-88	3/2/88	3/2/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

3/7/88

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: AG MATRIX: W OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
TA-22 — Clean —	88.00262	<	1.	1.	UG/L	3/08/88	
22 — Clean —	88.00263	<	1.	1.	UG/L	3/08/88	
22 — Rinse —	88.00266	<	1.	1.	UG/L	3/08/88	
22 — Rinse —	88.00267	<	1.	1.	UG/L	3/08/88	
TA-40 — Clean —	88.00270	<	1.	1.	UG/L	3/08/88	
40 — Clean —	88.00271	<	1.	1.	UG/L	3/08/88	
40 — Rinse —	88.00274	<	1.	1.	UG/L	3/08/88	
40 — Rinse —	88.00275	<	1.	1.	UG/L	3/08/88	
Blank —	88.00278	<	1.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: AG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		9.6	1.	UG/L	9.8	0.8	3/08/88	UNDER CONTROL
00.00895		10.	1.	UG/L	9.8	0.8	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: AS MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262		14.	1.	UG/L	3/08/88	
88.00263		16.	2.	UG/L	3/08/88	
88.00266		27.	3.	UG/L	3/08/88	
88.00267		26.	3.	UG/L	3/08/88	
88.00270		16.	2.	UG/L	3/08/88	
88.00271		17.	2.	UG/L	3/08/88	
88.00274		27.	3.	UG/L	3/08/88	
88.00275		28.	3.	UG/L	3/08/88	
88.00278	<	1.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: AS MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		52.	5.	UG/L	49.		3/08/88	UNDER CONTROL
00.98307		184.	18.	UG/L	200.	22.	3/08/88	UNDER CONTROL
00.00895		53.	5.	UG/L	49.		3/08/88	UNDER CONTROL
00.98307		178.	18.	UG/L	200.	22.	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: BA MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262		20.	2.	UG/L	3/08/88	
88.00263		21.	2.	UG/L	3/08/88	
88.00266		26.	3.	UG/L	3/08/88	
88.00267		27.	3.	UG/L	3/08/88	
88.00270		19.	2.	UG/L	3/08/88	
88.00271		19.	2.	UG/L	3/08/88	
88.00274		1916.	192.	UG/L	3/08/88	
88.00275		1874.	187.	UG/L	3/08/88	
88.00278	<	1.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: BA MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		43.	4.	UG/L	44.	2.	3/08/88	UNDER CONTROL
00.00895		44.	4.	UG/L	44.	2.	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: CD MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262	<	1.	1.	UG/L	3/08/88	
88.00263	<	1.	1.	UG/L	3/08/88	
88.00266	<	1.	1.	UG/L	3/08/88	
88.00267	<	1.	1.	UG/L	3/08/88	
88.00270	<	1.	1.	UG/L	3/08/88	
88.00271	<	1.	1.	UG/L	3/08/88	
88.00274	<	1.	1.	UG/L	3/08/88	
88.00275	<	1.	1.	UG/L	3/08/88	
88.00278	<	1.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: CD MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		20.	2.	UG/L	20.	1.	3/08/88	UNDER CONTROL
00.98307		48.	5.	UG/L	50.	3.94	3/08/88	UNDER CONTROL
00.00895		20.	2.	UG/L	20.	1.	3/08/88	UNDER CONTROL
00.98307		49.	5.	UG/L	50.	3.94	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: CR MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262		9.	1.	UG/L	3/08/88	
88.00263		9.	1.	UG/L	3/08/88	
88.00266		11.	1.	UG/L	3/08/88	
88.00267		10.	1.	UG/L	3/08/88	
88.00270		10.	1.	UG/L	3/08/88	
88.00271		10.	1.	UG/L	3/08/88	
88.00274		9.	1.	UG/L	3/08/88	
88.00275		10.	1.	UG/L	3/08/88	
88.00278	<	1.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: CR MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		20.	2.	UG/L	18.6	0.4	3/08/88	UNDER CONTROL
00.98307		185.	19.	UG/L	200.	20.4	3/08/88	UNDER CONTROL
00.00895		20.	2.	UG/L	18.6	0.4	3/08/88	UNDER CONTROL
00.98307		179.	18.	UG/L	200.	20.4	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: HG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262	<	1.	1.	UG/L	3/08/88	
88.00263	<	1.	1.	UG/L	3/08/88	
88.00266	<	1.	1.	UG/L	3/08/88	
88.00267	<	1.	1.	UG/L	3/08/88	
88.00270	<	1.	1.	UG/L	3/08/88	
88.00271	<	1.	1.	UG/L	3/08/88	
88.00274	<	1.	1.	UG/L	3/08/88	
88.00275	<	1.	1.	UG/L	3/08/88	
88.00278	<	1.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: HG MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.98307		9.	1.	UG/L	10.	1.52	3/08/88	UNDER CONTROL
00.98307		8.	2.	UG/L	10.	1.52	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: PB MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262		9.	1.	UG/L	3/08/88	
88.00263		8.	1.	UG/L	3/08/88	
88.00266		27.	3.	UG/L	3/08/88	
88.00267		25.	3.	UG/L	3/08/88	
88.00270		13.	1.	UG/L	3/08/88	
88.00271		14.	1.	UG/L	3/08/88	
88.00274		5.	1.	UG/L	3/08/88	
88.00275		6.	1.	UG/L	3/08/88	
88.00278		144.	14.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: PB MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		24.	2.	UG/L	23.7	0.7	3/08/88	UNDER CONTROL
00.98307		218.	22.	UG/L	200.	16.8	3/08/88	UNDER CONTROL
00.00895		22.	2.	UG/L	23.7	0.7	3/08/88	UNDER CONTROL
00.98307		217.	22.	UG/L	200.	16.8	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/89	3/9/89
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: SE MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
88.00262		5.	1.	UG/L	3/08/88	
88.00263	<	1.	1.	UG/L	3/08/88	
88.00266		6.	1.	UG/L	3/08/88	
88.00267	<	1.	1.	UG/L	3/08/88	
88.00270		5.	1.	UG/L	3/08/88	
88.00271	<	1.	1.	UG/L	3/08/88	
88.00274	<	1.	1.	UG/L	3/08/88	
88.00275		5.	1.	UG/L	3/08/88	
88.00278		6.	1.	UG/L	3/08/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 8-Mar-1988

REQUEST NUMBER: 6586 ANALYSIS: SE MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		9.6	1.	UG/L	9.7	0.5	3/08/88	UNDER CONTROL
00.98307		48.	5.	UG/L	50.	8.12	3/08/88	UNDER CONTROL
00.98307		44.	5.	UG/L	50.	8.12	3/08/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
3-8-88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

3/7/88 TA-22-2A TA-40-2

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: E.M.HODGE on 9-Mar-1988

REQUEST NUMBER: 6585 ANALYSIS: CN MATRIX: WW OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
TA-22 Clean	88.00264		<	0.01	MG/L	3/09/88	
	88.00264		<	0.01	MG/L	3/09/88	
	88.00264		<	0.01	MG/L	3/09/88	
	88.00264	R	<	0.01	MG/L	3/09/88	
22 Clean	88.00265		<	0.01	MG/L	3/09/88	
	88.00265		<	0.01	MG/L	3/09/88	
	88.00265	R	<	0.01	MG/L	3/09/88	
22 Rinse	88.00268		0.1620	0.02	MG/L	3/09/88	
	88.00268		0.1670	0.02	MG/L	3/09/88	
22 Rinse	88.00269		0.1320	0.01	MG/L	3/09/88	
	88.00269		0.1320	0.01	MG/L	3/09/88	
TA-40 Clean	88.00272		<	0.01	MG/L	3/09/88	
	88.00272		<	0.01	MG/L	3/09/88	
40 Clean	88.00273		<	0.01	MG/L	3/09/88	
40 Rinse	88.00276		<	0.01	MG/L	3/09/88	

Where's my blank?

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: E.M.HODGE on 9-Mar-1988

REQUEST NUMBER: 6585 ANALYSIS: CN MATRIX: WW OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01211		178.	17.8	UG/L	224.	29.	3/09/88	WARNING 1-2 SIG
00.01211		0.1780	0.02	MG/L	224.	29.	3/09/88	
00.01211		0.1780	0.02	MG/L	224.	29.	3/09/88	

Analyst	Section Leader	QA Officer
3/9/88	3/9/88	3/9/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

3/21/88 TA-22-24

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: E.M.HODGE on 22-Mar-1988

REQUEST NUMBER: 6591 ANALYSIS: CN MATRIX: W OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
Control	88.00279		0.0170	0.01	MG/L	3/22/88	
	88.00280		0.0150	0.01	MG/L	3/22/88	
Rinse	88.00281		0.2220	0.02	MG/L	3/22/88	
	88.00282		0.2270	0.02	MG/L	3/22/88	
BLANKS	88.00283		—	0.01	MG/L	3/22/88	
	88.00284		—	0.01	MG/L	3/22/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: E.M.HODGE on 22-Mar-1988

REQUEST NUMBER: 6591 ANALYSIS: CN MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01401		450.	45.	UG/L	500.	79.	3/22/88	UNDER CONTROL
00.01401		0.45	0.04	MG/L	500.	79.	3/22/88	
00.01401		0.45	0.04	MG/L	500.	79.	3/22/88	

Analyst	Section Leader	QA Officer
	RWF	
Date	3/24/88 Date	3/24/88 Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

4/6/88 TA-22-2

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: E.M.HODGE on 14-Apr-1988

REQUEST NUMBER: 6612 ANALYSIS: CN MATRIX: W OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
Control	88.00296	<		0.01	MG/L	4/14/88	
	88.00297	<		0.01	MG/L	4/14/88	
Rinse	88.00298		0.0240	0.01	MG/L	4/14/88	
	88.00299		0.0240	0.01	MG/L	4/14/88	
BLANK	88.00300	<		0.01	MG/L	4/14/88	
	88.00301	<		0.01	MG/L	4/14/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: E.M.HODGE on 14-Apr-1988

REQUEST NUMBER: 6612 ANALYSIS: CN MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.01211		188.	18.8	UG/L	224.	29.	4/14/88	WARNING 1-2 SIG
00.01401		462.	46.	UG/L	500.	79.	4/14/88	UNDER CONTROL

Analyst	Section Leader	QA Officer
[illegible]	D.F	meg
[illegible]	4/15/88	4/15/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

TA-40-2 4/25/88

********** HSE-9 ANALYTICAL REPORT **********

Sampled 4/25/88

Prepared by: MGBELL on 28-Apr-1988

REQUEST NUMBER: 6621 ANALYSIS: AS MATRIX: W OWNER: AG

TA-40-2	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
Clean	88.00302		0.02	0.01	MG/L	4/28/88	
	88.00303		0.01	0.01	MG/L	4/28/88	
Rinse	88.00304		0.02	0.01	MG/L	4/28/88	
	88.00305		0.01	0.01	MG/L	4/28/88	
Blanks	88.00306	--	< 0.01	0.01	MG/L	4/28/88	
	88.00307		< 0.01	0.01	MG/L	4/28/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 28-Apr-1988

REQUEST NUMBER: 6621 ANALYSIS: AS MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		30.	15.	UG/L	49.		4/28/88	WARNING 1-2 SIG
00.98307		98.	50.	UG/L	200.	22.	4/28/88	WARNING 1-2 SIG

MGBell — Analyst

RJF — Section Leader

mag — QA Officer

4-28-88 — Date

4/29/88 — Date

4/29/88 — Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

TA-40-2 4/25/88

********** HSE-9 ANALYTICAL REPORT **********

Prepared by: MGBELL on 28-Apr-1988

REQUEST NUMBER: 6621 ANALYSIS: BA MATRIX: W OWNER: AG

	SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	COMPLETION DATE	COMMENT
Clean	88.00302		0.02	0.01	MG/L	4/28/88	
	88.00303		0.02	0.01	MG/L	4/28/88	
Rinse	88.00304		0.77	0.08	MG/L	4/28/88	
	88.00305		0.78	0.08	MG/L	4/28/88	
Blanks	88.00306	--	< 0.01	0.01	MG/L	4/28/88	
	88.00307		< 0.01	0.01	MG/L	4/28/88	

********** HSE-9 QUALITY ASSURANCE REPORT *********

Prepared by: MGBELL on 28-Apr-1988

REQUEST NUMBER: 6621 ANALYSIS: BA MATRIX: W OWNER: AG

SAMPLE NUM	SYMBOL	RESULT	UNCERTAINTY	UNITS	CERTIFIED VALUE	CERTIFIED VALUE UNCERTAINTY	COMPLETION DATE	COMMENT
00.00895		38.	4.	UG/L	44.	2.	4/28/88	WARNING 1-2 SIG
00.00895		41.	4.	UG/L	44.	2.	4/28/88	UNDER CONTROL

MGB	RWF	mag
Analyst	Section Leader	QA Officer
4-28-88	4/29/88	4/29/88
Date	Date	Date

The control status of the preceeding data were evaluated using the standard statistical criteria set forth in 'Quality Assurance for Health and Environmental Chemistry: 1986,' LA-11114-MS, pp. 3-4.

HSE-9 ORGANIC ANALYSIS RESULTS
VOLATILE ORGANICS

REQUEST SHEET NUMBER: 88.6499
SAMPLES NUMBERS: 88.00232, 233, 238, 239, 244, 245, 250, 251, 258, 259
SUBMITTER: HSE-8, ALICE BARR
DATE: MARCH 7, 1987

The above listed samples were delivered to me on February 22, 1988, and were refrigerated until analysis began. Chain-of-custody was documented, and the forms used are attached. The samples were consumed in analysis. Attached are result sheets for each sample as well as results of Quality Assurance and Quality Control samples. Each sample run included surrogate spikes, and the percent recovery for these surrogates is found on the corresponding results sheet. The recovery of the surrogates is useful in gauging the efficacy of the analytical technique. Matrix spike samples were run to determine if the matrix itself might cause interferences. EPA prepared QC samples were analyzed as well as a blind QA sample prepared by the HSE-9 QA section. The analysis of laboratory blanks showed the presence of methylene chloride, indicating that the methylene chloride found in the samples was attributable to lab contamination and not part of the samples themselves.

Please call if you have any questions.

Suzanne C. Bell

Suzanne C. Bell
HSE-9 Organic Analysis Section

Peggy Gautier

Quality Control Officer

Los Alamos
Los Alamos National Laboratory

HSE-9 Analytical Chemistry Request

6499

Requestor	Program Code	Sample Owner	Date	Total No. Samples
[illegible]	[illegible]	AB	[illegible]	[illegible]

Sample Numbers	Matrix	Analysis	Tech	Analyst	Priority	Remarks
[illegible]	W	141	PTGC	SCB	2	[illegible]
[illegible]						
[illegible]						
[illegible]						
[illegible]						
[illegible]	W	[illegible]	[illegible]	[illegible]		

QA

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 00 ~~88~~-98340 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	99.8	(76-114)
TOLUENE d8	108.4	(88-110)
p-BROMOFLUOROBENZENE	100.2	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)	Added	%Rec
74873	CHLOROMETHANE	<MDL	10.0		
73839	BROMOMETHANE		10.0		
75014	VINYL CHLORIDE		10.0		
75003	CHLOROETHANE		10.0		
75092	METHYLENE CHLORIDE		10.0		
67641	ACETONE	>MDL	10.0		
75150	CARBON DISULFIDE	<MDL	10.0		
75354	1,1-DICHLOROETHENE		10.0		
75343	1,1-DICHLOROETHANE		10.0		
540590	1,2-DICHLOROETHENE		10.0		
67663	CHLOROFORM		10.0		
107062	1,2-DICHLOROETHANE	(TOTAL)	10.0		
78933	2-BUTANONE		10.0		
71556	1,1,1-TRICHLOROETHANE		10.0		
56235	CARBON TETRACHLORIDE		10.0		
108054	VINYL ACETATE	82.0±8.2	10.0		
75274	BROMODICHLOROMETHANE	<MDL	10.0	89	92%
78875	1,2-DICHLOROPROPANE	96.2±9.6	10.0		
10061015	cis-1,3-DICHLOROPROPENE	<MDL	10.0	98	98%
79016	TRICHLOROETHENE		10.0		
124481	DIBROMOCHLOROMETHANE		10.0		
79005	1,1,2-TRICHLOROETHANE		10.0		
71432	BENZENE		10.0		
10061026	trans-1,3-DICHLOROPROPENE		10.0		
75252	BROMOFORM		10.0		
108101	4-METHYL-2-PENTANONE		10.0		
591786	2-HEXANONE		10.0		
127184	TETRACHLOROETHENE		10.0		
79345	1,1,2,2-TETRACHLOROETHANE **	80.5±8.1	10.0		
108883	TOLUENE	<MDL	10.0	87	93%
108907	CHLOROBENZENE	<MDL	10.0		
100414	ETHYLBENZENE	52.5±5.3	10.0		
100425	STYRENE	<MDL	10.0	58	91%
133027	XYLENES		10.0		
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0		
541731	1,3-DICHLOROBENZENE		10.0		
			10.0		
			10.0		

106467	1,4-DICHLOROBENZENE	<MDL	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: ~~88~~ 00-98340 REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: ~~88~~- Lab Blank REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	101.8	(76-114)
TOLUENE d8	107.6	(88-110)
p-BROMOFLUOROBENZENE	103.2	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	>MDL	10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0
			10.0

106467	1,4-DICHLOROBENZENE	Lmnc	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1.1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88- Lab Blank

REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET QA

SAMPLE NUMBER: 88- EPAVI REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	106.9	(76-114)
TOLUENE d8	109.8	(88-110)
p-BROMOFLUOROBENZENE	103.7	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)		MDL (ppb)
		% recovery		
74873	CHLOROMETHANE			10.0
73839	BROMOMETHANE			10.0
75014	VINYL CHLORIDE			10.0
75003	CHLOROETHANE			10.0
75092	METHYLENE CHLORIDE			10.0
67641	ACETONE			10.0
75150	CARBON DISULFIDE			10.0
75354	1,1-DICHLOROETHENE			10.0
75343	1,1-DICHLOROETHANE	23.0		10.0
540590	1,2-DICHLOROETHENE			10.0
67663	CHLOROFORM	140.6	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE			10.0
78933	2-BUTANONE			10.0
71556	1,1,1-TRICHLOROETHANE			10.0
56235	CARBON TETRACHLORIDE	89.5		10.0
108054	VINYL ACETATE			10.0
75274	BROMODICHLOROMETHANE			10.0
78875	1,2-DICHLOROPROPANE			10.0
10061015	cis-1,3-DICHLOROPROPENE			10.0
79016	TRICHLOROETHENE			10.0
124481	DIBROMOCHLOROMETHANE			10.0
79005	1,1,2-TRICHLOROETHANE			10.0
71432	BENZENE	105.6		10.0
10061026	trans-1,3-DICHLOROPROPENE			10.0
75252	BROMOFORM			10.0
108101	4-METHYL-2-PENTANONE	91.1		10.0
591786	2-HEXANONE			10.0
127184	TETRACHLOROETHENE			10.0
79345	1,1,2,2-TETRACHLOROETHANE **	85.9		10.0
108883	TOLUENE			10.0
108907	CHLOROBENZENE			10.0
100414	ETHYLBENZENE			10.0
100425	STYRENE			10.0
133027	XYLENES			10.0
95501	1,2-DICHLOROBENZENE		(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE			10.0
				10.0

106467	1,4-DICHLOROBENZENE		10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88- EPA VI REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

QA - Matrix Spike

SAMPLE NUMBER: 88-_____ REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	100.9	(76-114)
TOLUENE d8	109.6	(88-110)
p-BROMOFLUOROBENZENE	104.6	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
		% recovery (acceptable)	
74873	CHLOROMETHANE		10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE		10.0
67641	ACETONE		10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE	114.0 (61-145)	10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE	92.8 (71-120)	10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE	111.7 (76-127)	10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE	103.5 (76-125)	10.0
100414	ETHYLBENZENE	105.9 (75-130)	10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0
			10.0

106467	1,4-DICHLOROBENZENE		10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88- Matrix Spike REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET QA - Matrix Spike Duplicate

SAMPLE NUMBER: 88-_____ REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	102.1	(76-114)
TOLUENE d8	105.0	(88-110)
p-BROMOFLUOROBENZENE	102.3	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
		% recovery (acceptable)	
74873	CHLOROMETHANE		10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE		10.0
67641	ACETONE		10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE	104.2 (61-145)	10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE	89.5 (71-120)	10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE	105.8 (76-127)	10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE	102.2 (76-125)	10.0
100414	ETHYLBENZENE	101.8 (75-130)	10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0
			10.0

106467	1,4-DICHLOROBENZENE		10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88- MSD

REQUEST SHEET NUMBER: 88.6499

22-24

VOA control

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 88-00232 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	102.7	(76-114)
TOLUENE d8	109.8	(88-110)
p-BROMOFLUOROBENZENE	104.0	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	3MDL	10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0
			10.0

106467	1,4-DICHLOROBENZENE	<MDL	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00232 REQUEST SHEET NUMBER: 88.6499

Detected on additional compound: hydrocarbon, no definitive identification, 3-6 carbon range, estimated concentration 10ug/L

HSF-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

22-24

SAMPLE NUMBER: 88-00233 REQUEST SHEET: 88.6499

NUMBER OF REPLICATE RUNS: 1

UVA control

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	104.3	(76-114)
TOLUENE d8	102.1	(88-110)
p-BROMOFLUOROBENZENE	101.2	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	>MDL	10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM		10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE		10.0
541731	1,3-DICHLOROBENZENE		10.0
		(TOTAL)	10.0

106467	1,4-DICHLOROBENZENE	<mdl	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0
			10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00233 REQUEST SHEET NUMBER: 88.6499

hydrocarbon detected. See 88.00232

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

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VOA

SAMPLE NUMBER: 88-00238 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	100.0	(76-114)
TOLUENE d8	109.9	(88-110)
p-BROMOFLUOROBENZENE	102.2	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<mdl	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	>mdl	10.0
67641	ACETONE	<mdl	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM		10.0
107062	1,2-DICHLOROETHANE	(TOTAL)	10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE		10.0
541731	1,3-DICHLOROBENZENE	(TOTAL)	10.0
			10.0
			10.0
			10.0

106467	1,4-DICHLOROBENZENE	cmoc	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00238 REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

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VOA

SAMPLE NUMBER: 88-00239 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	99.1	(76-114)
TOLUENE d8	108.8	(88-110)
p-BROMOFLUOROBENZENE	100.6	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	>MDL	10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0

106467	1,4-DICHLOROBENZENE	<mdl	
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0
			10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00239 REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 88-00244 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

40-2
VOA
control

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	107.7	(76-114)
TOLUENE d8	85.0	(88-110)
p-BROMOFLUOROBENZENE	143.3	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)		MDL (ppb)
74873	CHLOROMETHANE	<MDL		10.0
73839	BROMOMETHANE			10.0
75014	VINYL CHLORIDE			10.0
75003	CHLOROETHANE			10.0
75092	METHYLENE CHLORIDE	>MDL		10.0
67641	ACETONE	<MDL		10.0
75150	CARBON DISULFIDE			10.0
75354	1,1-DICHLOROETHENE			10.0
75343	1,1-DICHLOROETHANE			10.0
540590	1,2-DICHLOROETHENE			10.0
67663	CHLOROFORM		(TOTAL)	10.0
107062	1,2-DICHLOROETHANE			10.0
78933	2-BUTANONE			10.0
71556	1,1,1-TRICHLOROETHANE			10.0
56235	CARBON TETRACHLORIDE			10.0
108054	VINYL ACETATE			10.0
75274	BROMODICHLOROMETHANE			10.0
78875	1,2-DICHLOROPROPANE			10.0
10061015	cis-1,3-DICHLOROPROPENE			10.0
79016	TRICHLOROETHENE			10.0
124481	DIBROMOCHLOROMETHANE			10.0
79005	1,1,2-TRICHLOROETHANE			10.0
71432	BENZENE			10.0
10061026	trans-1,3-DICHLOROPROPENE			10.0
75252	BROMOFORM			10.0
108101	4-METHYL-2-PENTANONE			10.0
591786	2-HEXANONE			10.0
127184	TETRACHLOROETHENE			10.0
79345	1,1,2,2-TETRACHLOROETHANE **			10.0
108883	TOLUENE			10.0
108907	CHLOROBENZENE			10.0
100414	ETHYLBENZENE			10.0
100425	STYRENE			10.0
133027	XYLENES			10.0
95501	1,2-DICHLOROBENZENE		(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE			10.0
				10.0

106467	1,4-DICHLOROBENZENE	<mol	
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0
			10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00244

REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

40-2
VOA
Control

SAMPLE NUMBER: 88-00245 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: _____

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	_____	(76-114)
TOLUENE d8	_____	(88-110)
p-BROMOFLUOROBENZENE	_____	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE	↓	10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	>MDL	10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM		10.0
107062	1,2-DICHLOROETHANE	(TOTAL)	10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0

106467	1,4-DICHLOROBENZENE	<MDL	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00245 REQUEST SHEET NUMBER: 88.6499

Trace of bromoform seen (<MDL)

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 88-00250 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

40-2
VOA
rinse

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	58.6	(76-114)
TOLUENE d8	109.1	(88-110)
p-BROMOFLUOROBENZENE	102.9	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE	>MDL	10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE		10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM		10.0
107062	1,2-DICHLOROETHANE	(TOTAL)	10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0

106467	1,4-DICHLOROBENZENE	cmol	
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0
			10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00250 REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 88-00251 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: _____

40-2
VOA
rinse

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	114.7	(76-114)
TOLUENE d8	110.9	(88-110)
p-BROMOFLUOROBENZENE	104.4	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE		10.0
67641	ACETONE	>MDL	10.0
75150	CARBON DISULFIDE	<MDL	10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0
			10.0

106467	1,4-DICHLOROBENZENE	<MDL	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00251 REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 88-00258 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	102.3	(76-114)
TOLUENE d8	113.4	(88-110)
p-BROMOFLUOROBENZENE	99.6	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)	MDL (ppb)
74873	CHLOROMETHANE	<MDL	10.0
73839	BROMOMETHANE		10.0
75014	VINYL CHLORIDE		10.0
75003	CHLOROETHANE		10.0
75092	METHYLENE CHLORIDE		10.0
67641	ACETONE	<MDL	10.0
75150	CARBON DISULFIDE	<MDL	10.0
75354	1,1-DICHLOROETHENE		10.0
75343	1,1-DICHLOROETHANE		10.0
540590	1,2-DICHLOROETHENE		10.0
67663	CHLOROFORM	(TOTAL)	10.0
107062	1,2-DICHLOROETHANE		10.0
78933	2-BUTANONE		10.0
71556	1,1,1-TRICHLOROETHANE		10.0
56235	CARBON TETRACHLORIDE		10.0
108054	VINYL ACETATE		10.0
75274	BROMODICHLOROMETHANE		10.0
78875	1,2-DICHLOROPROPANE		10.0
10061015	cis-1,3-DICHLOROPROPENE		10.0
79016	TRICHLOROETHENE		10.0
124481	DIBROMOCHLOROMETHANE		10.0
79005	1,1,2-TRICHLOROETHANE		10.0
71432	BENZENE		10.0
10061026	trans-1,3-DICHLOROPROPENE		10.0
75252	BROMOFORM		10.0
108101	4-METHYL-2-PENTANONE		10.0
591786	2-HEXANONE		10.0
127184	TETRACHLOROETHENE		10.0
79345	1,1,2,2-TETRACHLOROETHANE **		10.0
108883	TOLUENE		10.0
108907	CHLOROBENZENE		10.0
100414	ETHYLBENZENE		10.0
100425	STYRENE		10.0
133027	XYLENES		10.0
95501	1,2-DICHLOROBENZENE	(TOTAL)	10.0
541731	1,3-DICHLOROBENZENE		10.0
			10.0

106467	1,4-DICHLOROBENZENE	<MDL	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

~~All results are reported~~ with a corresponding uncertainty. Values ~~close to the~~ MDL have larger uncertainties associ~~ated~~ with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00258 REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS SECTION
VOLATILE ORGANICS RESULT SHEET

SAMPLE NUMBER: 88-00259 REQUEST SHEET: 88.6499
NUMBER OF REPLICATE RUNS: 1

SURROGATE SPIKE RECOVERIES: (% RECOVERY)

COMPOUND		ACCEPTABLE RANGE (CLP)
1,2-DICHLOROETHANE d4	101.4	(76-114)
TOLUENE d8	105.6	(88-110)
p-BROMOFLUOROBENZENE	96.9	(86-115)

CAS #	COMPOUND	RESULT +/- (ppb)		MDL (ppb)
74873	CHLOROMETHANE	<MDL		10.0
73839	BROMOMETHANE			10.0
75014	VINYL CHLORIDE			10.0
75003	CHLOROETHANE			10.0
75092	METHYLENE CHLORIDE	>MDL		10.0
67641	ACETONE	<MDL		10.0
75150	CARBON DISULFIDE			10.0
75354	1,1-DICHLOROETHENE			10.0
75343	1,1-DICHLOROETHANE			10.0
540590	1,2-DICHLOROETHENE		(TOTAL)	10.0
67663	CHLOROFORM			10.0
107062	1,2-DICHLOROETHANE			10.0
78933	2-BUTANONE			10.0
71556	1,1,1-TRICHLOROETHANE			10.0
56235	CARBON TETRACHLORIDE			10.0
108054	VINYL ACETATE			10.0
75274	BROMODICHLOROMETHANE			10.0
78875	1,2-DICHLOROPROPANE			10.0
10061015	cis-1,3-DICHLOROPROPENE			10.0
79016	TRICHLOROETHENE			10.0
124481	DIBROMOCHLOROMETHANE			10.0
79005	1,1,2-TRICHLOROETHANE			10.0
71432	BENZENE			10.0
10061026	trans-1,3-DICHLOROPROPENE			10.0
75252	BROMOFORM			10.0
108101	4-METHYL-2-PENTANONE			10.0
591786	2-HEXANONE			10.0
127184	TETRACHLOROETHENE			10.0
79345	1,1,2,2-TETRACHLOROETHANE **			10.0
108883	TOLUENE			10.0
108907	CHLOROBENZENE			10.0
100414	ETHYLBENZENE			10.0
100425	STYRENE			10.0
133027	XYLENES		(TOTAL)	10.0
95501	1,2-DICHLOROBENZENE			10.0
541731	1,3-DICHLOROBENZENE			10.0

106467	1,4-DICHLOROBENZENE	<MDL	10.0
91023	NAPHTHALENE		10.0
104518	n-BUTYLBENZENE		10.0
108861	BROMOBENZENE		10.0
95498	2-CHLOROTOLUENE		10.0
106434	4-CHLOROTOLUENE		10.0
74953	DIBROMOMETHANE		10.0
142289	1,3-DICHLOROPROPANE		10.0
590207	2,2-DICHLOROPROPANE		10.0
87683	HEXACHLOROBUTADIENE		10.0
103651	n-PROPYLBENZENE		10.0
630206	1,1,1,2-TETRACHLOROETHANE		10.0
120821	1,2,4-TRICHLOROBENZENE		10.0
96184	1,2,3-TRICHLOROPROPANE		10.0
95636	1,2,4-TRIMETHYLBENZENE		10.0
75694	TRICHLOROFLUOROMETHANE		10.0
106934	1,2-DIBROMOETHANE		10.0
98828	ISOPROPYLBENZENE		10.0
98066	t-BUTYLBENZENE		10.0
135988	s-BUTYLBENZENE		10.0
99876	p-ISOPROPYLTOLUENE		10.0

** Stability studies of this compound have shown it to be unstable.

MDL: Estimated minimum detection limit based on the lowest point on the calibration curve.

All results are reported with a corresponding uncertainty. Values close to the MDL have larger uncertainties associated with them. If a sample is run at least in triplicate, the reported uncertainty represents the standard deviation of these values.

SAMPLE NUMBER: 88-00259

REQUEST SHEET NUMBER: 88.6499

HSE-9 ORGANIC ANALYSIS RESULTS
SEMIVOLATILE ORGANICS

REQUEST SHEET NUMBER: 88.6498
SAMPLE NUMBER(S): 88.00235 through 88.00261, discontinuous
SUBMITTER: HSE-8, ALICE BARR
DATE: MARCH 28, 1988
NOTEBOOK/PAGE REFERENCE: R6572, PAGE 30

The above samples were received on February 22, 1988. They were extracted on February 24 and instrumental analysis was completed on March 7. Final workup of the data was completed on March 28. The results obtained along with pertinent QA/QC data are attached. The following samples were selected for extraction and analysis: 88.00235, 88.00236 (as a duplicate of 88.00235), 88.00240, 88.00254, and 88.00260. Chain of custody procedures were followed as requested and receipts are attached also. Please call if you have any questions.

Suzanne Bell
HSE-9 Organic Analysis Section

Peggy Gautier 3/28/88
QA/QC Approval

Los Alamos
Los Alamos National Laboratory

HSE-9 Analytical Chemistry Request

6498

Requestor	Program Code	Sample Owner	Date	Total No. Samples
HSE-8	W573	HQ	02/22/88	11

Sample Numbers	Matrix	Analysis	Tech	Analyst	Priority	Remarks
88.00235 + 236	W	139	GCMS	SCB	2	Rush from - 3/17 final 3/28
88 00240 + ~~241~~						
88 00247 + 248						
88 00254 + ~~255~~						
88 00260 + ~~261~~						
00.98339	W					

HSE-9 ORGANIC RESULTS SHEET QA/QC
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 00 98339 Acid
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**	Added	% Rec
PHENOL	108952	20.0			
bis(2-CHLOROETHYL)ETHER	111444	20.0			
2-CHLOROPHENOL	95578	20.0	72.7 ± 7.3	100.0	73
1,3-DICHLOROBENZENE	541731	20.0			
1,4-DICHLOROBENZENE	106467	20.0	20.0 ± 20.0 *	at MDL 52.0	38
BENZYL ALCOHOL	100516	50.0			
1,2-DICHLOROBENZENE	95501	20.0			
2-METHYLPHENOL	95487	20.0			
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0			
4-METHYLPHENOL	106445	20.0			
N-NITROSO-DIPROPYLAMINE	621647	50.0	43.0 ± 4.3	—	—
HEXACHLOROETHANE	67721	50.0			
NITROBENZENE	98953	20.0			
ISOPHORONE	78591	20.0			
2-NITROPHENOL	88755	50.0			
2,4-DIMETHYLPHENOL	105679	50.0			
BENZOIC ACID	65850	NOT QUANTITATED			
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0			
2,4-DICHLOROPHENOL	120832	50.0			
1,2,4-TRICHLOROBENZENE	120821	20.0			
NAPHTHALENE	91203	20.0			
4-CHLOROANILINE	106478	20.0			
HEXACHLOROBUTADIENE	87683	20.0			
4-CHLORO-3-METHYLPHENOL	59507	50.0	30.9 ± 3.1	54.0	57
2-METHYLNAPHTHALENE	91576	20.0	61.2 ± 6.1	130.0	47
HEXACHLOROCYCLOPENTADIENE	77474	50.0			
2,4,6-TRICHLOROPHENOL	88062	50.0			
2,4,5-TRICHLOROPHENOL	95954	50.0			
2-CHLORONAPHTHALENE	91587	20.0			
2-NITROANILINE	88744	20.0			
DIMETHYLPHTHALATE	131113	20.0			
ACENAPHTHYLENE	208968	20.0			
2,6-DINITROTOLUENE	606202	50.0			
3-NITROANILINE	99092	50.0			
ACENAPHTHENE	83329	20.0			
2,4-DINITROPHENOL	51285	100.0			
4-NITROPHENOL	100027	100.0			
DIBENZOFURAN	132649	20.0			
2,4-DINITROTOLUENE	121142	20.0	46.4 ± 4.6	74.0	63
DIETHYLPHTHALATE	84662	20.0			
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0			

FLUORENE	86737	20.0			
4-NITROANILINE	100016	50.0			
4,6-DINITRO-2-METHYLPHENOL	534521	50.0			
N-NITROSODIPHENYLAMINE	86306	20.0			
4-BROMOMPHENYL PHENYL ETHER	101553	20.0			
HEXACHLOROBENZENE	118741	20.0			
PENTACHLOROPHENOL	87865	100.0	52.0 ± 52.0 **	68.0	76
PHENANTHRENE	85018	20.0			
ANTHRACENE	120127	20.0			
DI-N-BUTYLPHTHALATE	84742	20.0			
FLUORANTHENE	206440	20.0			
PYRENE	129000	20.0			
BUTYL BENZYL PHTHALATE	85687	20.0			
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED			
BENZO(a)ANTHRACENE	56553	20.0			
CHRYSENE	218019	20.0			
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0			
DI-N-OCTYL PHTHALATE	117840	20.0			
BENZO(b)FLUORANTHENE	205992	20.0			
BENZO(k)FLUORANTHENE	207089	20.0			
BENZO(a)PYRENE	50328	20.0			
INDENO(1,2,3-cd)PYRENE	193395	20.0			
DIBENZ(a,h)ANTHRACENE	53703	20.0			
BENZO(g,h,i)PERYLENE	191242	20.0			

* MDL: MINIMUM DETECTION LIMIT IN uG/L
** RESULTS: UNITS ARE uG/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	33.6	10.0- 94.0
2-FLUOROPHENOL	26.6	21.0-100.0
2,4,6-TRIBROMOPHENOL	63.5	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	71.1	43.0-116.0
NITROBENZENE d5	69.3	35.0-114.0
4-TERPHENYL d14	99.7	33.0-141.0

COMMENTS: * Detected, below lowest successful calibration point

SAMPLE NUMBER: 00.98339 Acid.

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

QC/QA

SAMPLE NUMBER: 00.98339 B/N
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	Lmoc
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<mdl
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN UG/L
** RESULTS: UNITS ARE UG/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	NA	10.0- 94.0
2-FLUOROPHENOL		21.0-100.0
2,4,6-TRIBROMOPHENOL		10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	NA	43.0-116.0
NITROBENZENE d5		35.0-114.0
4-TERPHENYL d14		33.0-141.0

COMMENTS:

SAMPLE NUMBER: 00.98339 B/N

HSE-9 ORGANIC RESULTS SHEET QA/QC
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88 00248 Matrix Spike
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6478

COMPOUND	CAS #	MDL*	RESULTS**	% Recovery
PHENOL	108952	20.0	31.3±3.1	30.7
bis(2-CHLOROETHYL)ETHER	111444	20.0		
2-CHLOROPHENOL	95578	20.0	60.5±6.1	58.7
1,3-DICHLOROBENZENE	541731	20.0		
1,4-DICHLOROBENZENE	106467	20.0	46.8±4.7	46.8
BENZYL ALCOHOL	100516	50.0		
1,2-DICHLOROBENZENE	95501	20.0		
2-METHYLPHENOL	95487	20.0		
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0		
4-METHYLPHENOL	106445	20.0		
N-NITROSO-DIPROPYLAMINE	621647	50.0	72.6±7.3	60.3
HEXACHLOROETHANE	67721	50.0		
NITROBENZENE	98953	20.0		
ISOPHORONE	78591	20.0		
2-NITROPHENOL	88755	50.0		
2,4-DIMETHYLPHENOL	105679	50.0		
BENZOIC ACID	65850	NOT QUANTITATED		
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0		
2,4-DICHLOROPHENOL	120832	50.0		
1,2,4-TRICHLOROBENZENE	120821	20.0	52.7±5.3	52.9
NAPHTHALENE	91203	20.0		
4-CHLOROANILINE	106478	20.0		
HEXACHLOROBUTADIENE	87683	20.0		
4-CHLORO-3-METHYLPHENOL	59507	50.0	87.8±8.9	88.7
2-METHYLNAPHTHALENE	91576	20.0	35.2±3.5	Not added seen in stock
HEXACHLOROCYCLOPENTADIENE	77474	50.0		
2,4,6-TRICHLOROPHENOL	88062	50.0		
2,4,5-TRICHLOROPHENOL	95954	50.0		
2-CHLORONAPHTHALENE	91587	20.0		
2-NITROANILINE	88744	20.0		
DIMETHYLPHTHALATE	131113	20.0		
ACENAPHTHYLENE	208968	20.0	22.1±2.2	Not added
2,6-DINITROTOLUENE	606202	50.0		
3-NITROANILINE	99092	50.0		
ACENAPHTHENE	83329	20.0	69.3±6.9	68.8
2,4-DINITROPHENOL	51285	100.0		
4-NITROPHENOL	100027	100.0	59.0±5.9	56.5
DIBENZOFURAN	132649	20.0		
2,4-DINITROTOLUENE	121142	20.0	84.2±8.4	77.5
DIETHYLPHTHALATE	84662	20.0		
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0		

FLUORENE	86737	20.0		
4-NITROANILINE	100016	50.0		
4,6-DINITRO-2-METHYLPHENOL	534521	50.0		
N-NITROSODIPHENYLAMINE	86306	20.0		
4-BROMOMPHENYL PHENYL ETHER	101553	20.0		
HEXACHLOROBENZENE	118741	20.0		
PENTACHLOROPHENOL	87865	100.0	106.3 ± 10.6	104.8
PHENANTHRENE	85018	20.0		
ANTHRACENE	120127	20.0		
DI-N-BUTYLPHTHALATE	84742	20.0		
FLUORANTHENE	206440	20.0		
PYRENE	129000	20.0	84.9 ± 8.5	85.5
BUTYL BENZYL PHTHALATE	85687	20.0		
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED		
BENZO(a)ANTHRACENE	56553	20.0		
CHRYSENE	218019	20.0		
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0		
DI-N-OCTYL PHTHALATE	117840	20.0		
BENZO(b)FLUORANTHENE	205992	20.0		
BENZO(k)FLUORANTHENE	207089	20.0		
BENZO(a)PYRENE	50328	20.0		
INDENO(1,2,3-cd)PYRENE	193395	20.0		
DIBENZ(a,h)ANTHRACENE	53703	20.0		
BENZO(g,h,i)PERYLENE	191242	20.0		

* MDL: MINIMUM DETECTION LIMIT IN ug/L
** RESULTS: UNITS ARE ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	26.6	10.0- 94.0
2-FLUOROPHENOL	32.8	21.0-100.0
2,4,6-TRIBROMOPHENOL	64.1	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	59.4	43.0-116.0
NITROBENZENE d5	61.2	35.0-114.0
4-TERPHENYL d14	93.8	33.0-141.0

COMMENTS:

2 methylnapthalene is a contaminent, seen in the stock solution. Similarly for acenapthylene

SAMPLE NUMBER: Matrix Spike 88.00248

HSE-9 ORGANIC RESULTS SHEET QA/QC
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 8F00248 MS
SAMPLE MATRIX: WATER B/N

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	Trace
bis(2-CHLOROETHYL)ETHER	111444	20.0	<MDL
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MG/L~~ ug/L
** RESULTS: UNITS ARE ~~MG/L~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	* trace	10.0- 94.0
2-FLUOROPHENOL		21.0-100.0
2,4,6-TRIBROMOPHENOL		10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL		43.0-116.0
NITROBENZENE d5		35.0-114.0
4-TERPHENYL d14		33.0-141.0

COMMENTS:

SAMPLE NUMBER: SP00248 MS B/N

88-00235 Clean Wash Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00235 Acid
SAMPLE MATRIX: WATER
S802A48A

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	23.3 ± 2.3
BENZO(a)ANTHRACENE	56553	20.0	<MDL
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MG/L~~ ug/L
** RESULTS: UNITS ARE ~~MG/L~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	26.5	10.0- 94.0
2-FLUOROPHENOL	31.1	21.0-100.0
2,4,6-TRIBROMOPHENOL	64.7	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	81.1	43.0-116.0
NITROBENZENE d5	72.0	35.0-114.0
4-TERPHENYL d14	102.1	33.0-141.0

COMMENTS: Detected a large peak, best match 2-butoxyethanol: phosphate (3:1). Also detected and tentatively identified 1-(2-butoxyethoxy)ethanol, benzothiazole, hydrocarbons

SAMPLE NUMBER: 88.00235 Acid

88-00235 Clean Wash Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88-00235 B/N
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MG/L~~ ug/L
** RESULTS: UNITS ARE ~~MG/L~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	NA	10.0- 94.0
2-FLUOROPHENOL		21.0-100.0
2,4,6-TRIBROMOPHENOL		10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	NA	43.0-116.0
NITROBENZENE d5		35.0-114.0
4-TERPHENYL d14		33.0-141.0

COMMENTS:
Tentative ident of 2 butoxyethanol phosphate.

SAMPLE NUMBER: 88-00235-B/N

88.00~~de~~ Clean Wash Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00236 Acids REQUEST SHEET NUMBER: 6498
SAMPLE MATRIX: WATER
(235 Duplicate)

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	26.7 ± 2.7
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~mg/L~~ ug/L
** RESULTS: UNITS ARE ~~mg/L~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	26.3	10.0- 94.0
2-FLUOROPHENOL	29.1	21.0-100.0
2,4,6-TRIBROMOPHENOL	64.6	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	71.6	43.0-116.0
NITROBENZENE d5	69.6	35.0-114.0
4-TERPHENYL d14	95.6	33.0-141.0

COMMENTS:

See comments, 235

SAMPLE NUMBER: 88-00236

88.00236 Clean Wash Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00236 B/N REQUEST SHEET NUMBER: 6498
SAMPLE MATRIX: WATER
Duplicate 235

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	LMDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	23.8±2.4
DI-N-OCTYL PHTHALATE	117840	20.0	LMDL
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ug/L
** RESULTS: UNITS ARE ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	**	10.0- 94.0
2-FLUOROPHENOL		21.0-100.0
2,4,6-TRIBROMOPHENOL		10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL		43.0-116.0
NITROBENZENE d5		35.0-114.0
4-TERPHENYL d14		33.0-141.0

COMMENTS:

* trace recovered. Hydrocarbon pattern similar to a diesel type distillate. 2-butoxyethoxyethanol tentatively identified Miscellaneous hydrocarbons, miscellaneous phthalates in addition to target phthalates.

SAMPLE NUMBER: 88-00236 A/N

88.00240 Rinse Water

22-24
Semi Vol

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00240 A
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

5802A58A

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	25.2 ± 2.5
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ug/L
** RESULTS: UNITS ARE ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	18.4	10.0- 94.0
2-FLUOROPHENOL	19.4	21.0-100.0
2,4,6-TRIBROMOPHENOL	34.4	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	27.7	43.0-116.0
NITROBENZENE d5	28.8	35.0-114.0
4-TERPHENYL d14	39.1	33.0-141.0

COMMENTS: Extract was almost opaque and dark brown. Also detected many different hydrocarbons, benzothiazole, phthalates (not on the above list), and oxygenated hydrocarbons. Dilutions 1/10, 1/20 showed none of the above compounds.

SAMPLE NUMBER: 88.00240 Acids

88.00240 Rinse Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00240B/N
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<mdl
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~mg~~ ug/L
** RESULTS: UNITS ARE ~~mg~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	Trace.	10.0- 94.0
2-FLUOROPHENOL		21.0-100.0
2,4,6-TRIBROMOPHENOL		10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL		43.0-116.0
NITROBENZENE d5		35.0-114.0
4-TERPHENYL d14		33.0-141.0

COMMENTS: Tentatively identified an ethoxyethanol (or other similar oxygenated hydrocarbon

SAMPLE NUMBER: 88.00240 B/N

88.00247 Clean Wash Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00247 Acids REQUEST SHEET NUMBER: 498
SAMPLE MATRIX: WATER

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	< MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	~MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MGL~~ ug/L
** RESULTS: UNITS ARE ~~MGL~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	24.3	10.0- 94.0
2-FLUOROPHENOL	28.2	21.0-100.0
2,4,6-TRIBROMOPHENOL	67.0	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	51.7	43.0-116.0
NITROBENZENE d5	50.4	35.0-114.0
4-TERPHENYL d14	95.1	33.0-141.0

COMMENTS: Similar to 235. Tentative identification of 2 butoxyethanol phosphate 3:1, + hydrocarbon

SAMPLE NUMBER: 88.00247 Acids

88.0024 Clean Wash Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00247B/N
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	< MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<mdl
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ug/L
** RESULTS: UNITS ARE ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	* trace	10.0- 94.0
2-FLUOROPHENOL	* trace	21.0-100.0
2,4,6-TRIBROMOPHENOL	NA	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	NA	43.0-116.0
NITROBENZENE d5	NA	35.0-114.0
4-TERPHENYL d14	NA	33.0-141.0

COMMENTS:

SAMPLE NUMBER: 88 00247 B/N

88.00254 Rinse Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00254 Acids
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

5802A59A

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	< MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MG/~~ug/L
** RESULTS: UNITS ARE ~~MG/~~ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	18.8	10.0- 94.0
2-FLUOROPHENOL	22.1	21.0-100.0
2,4,6-TRIBROMOPHENOL	42.7	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	40.7	43.0-116.0
NITROBENZENE d5	42.6	35.0-114.0
4-TERPHENYL d14	51.7	33.0-141.0

COMMENTS:

Extract became a jelly-like mixture when refrigerated. Detected additional hydrocarbons, 2-methyl-1,3,5-trinitrobenzene

SAMPLE NUMBER: 88-00254 B/N

88.00250 Rinse Water

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00254 B/N
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

ug/L

* MDL: MINIMUM DETECTION LIMIT IN ~~MGL~~

** RESULTS: UNITS ARE ~~MGL~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	NA	10.0- 94.0
2-FLUOROPHENOL	NA	21.0-100.0
2,4,6-TRIBROMOPHENOL	NA	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	NA	43.0-116.0
NITROBENZENE d5	NA	35.0-114.0
4-TERPHENYL d14	NA	33.0-141.0

COMMENTS: Extract gelled at refrigeration temperatures hydrocarbons, oxygenated hydrocarbons detected

SAMPLE NUMBER: 88-00254 B/N

Field Blanks

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00260 Acids REQUEST SHEET NUMBER: 6498
SAMPLE MATRIX: WATER

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100027	100.0	
DIBENZOFURAN	132649	20.0	
2,4-DINITROTOLUENE	121142	20.0	
DIETHYLPHTHALATE	84662	20.0	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	cmpl
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MGL~~ ug

** RESULTS: UNITS ARE ~~MGL~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS		ACCEPTABLE RANGE (CLP)
PHENOL d6	26.3	10.0- 94.0
2-FLUOROPHENOL	21.5	21.0-100.0
2,4,6-TRIBROMOPHENOL	57.0	10.0-123.0

BASE/NEUTRALS		
2-FLUOROBIPHENYL	53.4	43.0-116.0
NITROBENZENE d5	51.2	35.0-114.0
4-TERPHENYL d14	93.5	33.0-141.0

COMMENTS:

SAMPLE NUMBER: 88.00260 Acids

Field Blanks

HSE-9 ORGANIC RESULTS SHEET
SEMIVOLATILE ORGANICS

SAMPLE NUMBER: 88.00260 B/N
SAMPLE MATRIX: WATER

REQUEST SHEET NUMBER: 6498

5802A57A

COMPOUND	CAS #	MDL*	RESULTS**
PHENOL	108952	20.0	<MDL
bis(2-CHLOROETHYL)ETHER	111444	20.0	
2-CHLOROPHENOL	95578	20.0	
1,3-DICHLOROBENZENE	541731	20.0	
1,4-DICHLOROBENZENE	106467	20.0	
BENZYL ALCOHOL	100516	50.0	
1,2-DICHLOROBENZENE	95501	20.0	
2-METHYLPHENOL	95487	20.0	
bis-(2-CHLOROISOPROPYL)ETHER	39638329	20.0	
4-METHYLPHENOL	106445	20.0	
N-NITROSO-DIPROPYLAMINE	621647	50.0	
HEXACHLOROETHANE	67721	50.0	
NITROBENZENE	98953	20.0	
ISOPHORONE	78591	20.0	
2-NITROPHENOL	88755	50.0	
2,4-DIMETHYLPHENOL	105679	50.0	
BENZOIC ACID	65850	NOT QUANTITATED	
bis-(2-CHLOROETHYOXY)METHANE	111911	20.0	
2,4-DICHLOROPHENOL	120832	50.0	
1,2,4-TRICHLOROBENZENE	120821	20.0	
NAPHTHALENE	91203	20.0	
4-CHLOROANILINE	106478	20.0	
HEXACHLOROBUTADIENE	87683	20.0	
4-CHLORO-3-METHYLPHENOL	59507	50.0	
2-METHYLNAPHTHALENE	91576	20.0	
HEXACHLOROCYCLOPENTADIENE	77474	50.0	
2,4,6-TRICHLOROPHENOL	88062	50.0	
2,4,5-TRICHLOROPHENOL	95954	50.0	
2-CHLORONAPHTHALENE	91587	20.0	
2-NITROANILINE	88744	20.0	
DIMETHYLPHTHALATE	131113	20.0	
ACENAPHTHYLENE	208968	20.0	
2,6-DINITROTOLUENE	606202	50.0	
3-NITROANILINE	99092	50.0	
ACENAPHTHENE	83329	20.0	
2,4-DINITROPHENOL	51285	100.0	
4-NITROPHENOL	100[illegible]	100.0	
DIBENZOFURAN	132649	[illegible]	
2,4-DINITROTOLUENE	121142	[illegible]	
DIETHYLPHTHALATE	84662	[illegible]	
4-CHLOROPHENYL PHENYL ETHER	7005723	20.0	

FLUORENE	86737	20.0	<MDL
4-NITROANILINE	100016	50.0	
4,6-DINITRO-2-METHYLPHENOL	534521	50.0	
N-NITROSODIPHENYLAMINE	86306	20.0	
4-BROMOMPHENYL PHENYL ETHER	101553	20.0	
HEXACHLOROBENZENE	118741	20.0	
PENTACHLOROPHENOL	87865	100.0	
PHENANTHRENE	85018	20.0	
ANTHRACENE	120127	20.0	
DI-N-BUTYLPHTHALATE	84742	20.0	
FLUORANTHENE	206440	20.0	
PYRENE	129000	20.0	
BUTYL BENZYL PHTHALATE	85687	20.0	
3,3'-DICHLOROBENZIDINE	91941	NOT QUANTITATED	
BENZO(a)ANTHRACENE	56553	20.0	
CHRYSENE	218019	20.0	
bis-(2-ETHYLHEXYL)PHTHALATE	117817	20.0	
DI-N-OCTYL PHTHALATE	117840	20.0	
BENZO(b)FLUORANTHENE	205992	20.0	
BENZO(k)FLUORANTHENE	207089	20.0	
BENZO(a)PYRENE	50328	20.0	
INDENO(1,2,3-cd)PYRENE	193395	20.0	
DIBENZ(a,h)ANTHRACENE	53703	20.0	
BENZO(g,h,i)PERYLENE	191242	20.0	

* MDL: MINIMUM DETECTION LIMIT IN ~~MG~~ ug/L
** RESULTS: UNITS ARE ~~MG/L~~ ug/L +/- AN UNCERTAINTY

SURROGATE SPIKE RECOVERIES (%)

ACIDS

		ACCEPTABLE RANGE (CLP)
PHENOL d6	NA	10.0- 94.0
2-FLUOROPHENOL	↓	21.0-100.0
2,4,6-TRIBROMOPHENOL	↓	10.0-123.0

BASE/NEUTRALS

2-FLUOROBIPHENYL	NA	43.0-116.0
NITROBENZENE d5	↓	35.0-114.0
4-TERPHENYL d14	↓	33.0-141.0

COMMENTS:

SAMPLE NUMBER: 88 002260 B/N