



04/05/12

## Technical Report for

**XTO Energy, Inc.**

**Federal 3S-95-34-44 Pit Samples**

**Accutest Job Number: D33246**

**Sampling Date: 03/28/12**

### Report to:

**XTO Energy, Inc.**  
**21459 County Road 5**  
**Rifle, CO 81650**  
**jessica\_dooling@xtoenergy.com**

**ATTN: Jes Dooling**

**Total number of pages in report: 24**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

  
**Brad Madadian**  
**Laboratory Director**

**Client Service contact: Renea Jackson 303-425-6021**

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

# Table of Contents

-1-

<b>Section 1: Sample Summary .....</b>	<b>3</b>
<b>Section 2: Case Narrative/Conformance Summary .....</b>	<b>4</b>
<b>Section 3: Sample Results .....</b>	<b>5</b>
<b>3.1: D33246-1: RESERVE A .....</b>	<b>6</b>
<b>3.2: D33246-2: RESERVE B .....</b>	<b>8</b>
<b>3.3: D33246-3: CUTTINGS .....</b>	<b>10</b>
<b>3.4: D33246-4: FRESH H2O .....</b>	<b>12</b>
<b>Section 4: Misc. Forms .....</b>	<b>14</b>
<b>4.1: Chain of Custody .....</b>	<b>15</b>
<b>Section 5: GC Volatiles - QC Data Summaries .....</b>	<b>17</b>
<b>5.1: Method Blank Summary .....</b>	<b>18</b>
<b>5.2: Blank Spike Summary .....</b>	<b>19</b>
<b>5.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>20</b>
<b>Section 6: GC Semi-volatiles - QC Data Summaries .....</b>	<b>21</b>
<b>6.1: Method Blank Summary .....</b>	<b>22</b>
<b>6.2: Blank Spike Summary .....</b>	<b>23</b>
<b>6.3: Matrix Spike/Matrix Spike Duplicate Summary .....</b>	<b>24</b>



Sample Summary

XTO Energy, Inc.

Job No: D33246

Federal 3S-95-34-44 Pit Samples

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D33246-1	03/28/12	10:00 JD	03/30/12	SO	Soil	RESERVE A
D33246-2	03/28/12	09:50 JD	03/30/12	SO	Soil	RESERVE B
D33246-3	03/28/12	09:40 JD	03/30/12	SO	Soil	CUTTINGS
D33246-4	03/28/12	09:30 JD	03/30/12	SO	Soil	FRESH H2O

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** XTO Energy, Inc.

**Job No** D33246

**Site:** Federal 3S-95-34-44 Pit Samples

**Report Date** 4/5/2012 3:07:06 PM

On 03/30/2012, 4 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 4 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D33246 was assigned to the project. The lab sample IDs, client sample IDs, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GC By Method SW846 8015B

**Matrix** SO

**Batch ID:** GGB871

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33088-13MS, D33088-13MSD were used as the QC samples indicated.
- Sample(s) D33088-13MS, D33088-13MSD have surrogates outside control limits. Probable cause due to matrix interference.
- D33088-13MS/MSD for 1,2,4-Trichlorobenzene: Outside control limits due to possible matrix interference.

### Extractables by GC By Method SW846-8015B

**Matrix** SO

**Batch ID:** OP5651

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33253-1MS, D33253-1MSD were used as the QC samples indicated.

### Wet Chemistry By Method SM19 2540B M

**Matrix** SO

**Batch ID:** GN14338

- The data for SM19 2540B M meets quality control requirements.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

## Sample Results

## Report of Analysis

## Report of Analysis

<b>Client Sample ID:</b>	RESERVE A	
<b>Lab Sample ID:</b>	D33246-1	<b>Date Sampled:</b> 03/28/12
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 03/30/12
<b>Method:</b>	SW846 8015B	<b>Percent Solids:</b> 86.6
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15590.D	1	04/03/12	SK	n/a	n/a	GGB871
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	13	6.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	89%		60-140%

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	RESERVE A	
<b>Lab Sample ID:</b>	D33246-1	<b>Date Sampled:</b> 03/28/12
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 03/30/12
<b>Method:</b>	SW846-8015B SW846 3546	<b>Percent Solids:</b> 86.6
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002898.D	1	04/04/12	TR	04/02/12	OP5651	GFH150
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	15	10	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	59%		43-136%		

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	RESERVE B	
<b>Lab Sample ID:</b>	D33246-2	<b>Date Sampled:</b> 03/28/12
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 03/30/12
<b>Method:</b>	SW846 8015B	<b>Percent Solids:</b> 81.2
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15591.D	1	04/03/12	SK	n/a	n/a	GGB871
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	14	7.2	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	91%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Page 1 of 1

<b>Client Sample ID:</b>	RESERVE B	<b>Date Sampled:</b>	03/28/12
<b>Lab Sample ID:</b>	D33246-2	<b>Date Received:</b>	03/30/12
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	81.2
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002900.D	1	04/04/12	TR	04/02/12	OP5651	GFH150
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	16	11	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	56%		43-136%		

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	CUTTINGS	<b>Date Sampled:</b>	03/28/12
<b>Lab Sample ID:</b>	D33246-3	<b>Date Received:</b>	03/30/12
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.6
<b>Method:</b>	SW846 8015B		
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15592.D	1	04/03/12	SK	n/a	n/a	GGB871
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.2	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	90%		60-140%

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	CUTTINGS	<b>Date Sampled:</b>	03/28/12
<b>Lab Sample ID:</b>	D33246-3	<b>Date Received:</b>	03/30/12
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	88.6
<b>Method:</b>	SW846-8015B SW846 3546		
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002902.D	1	04/04/12	TR	04/02/12	OP5651	GFH150
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	15	9.8	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	60%		43-136%		

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	FRESH H2O	
<b>Lab Sample ID:</b>	D33246-4	<b>Date Sampled:</b> 03/28/12
<b>Matrix:</b>	SO - Soil	<b>Date Received:</b> 03/30/12
<b>Method:</b>	SW846 8015B	<b>Percent Solids:</b> 90.2
<b>Project:</b>	Federal 3S-95-34-44 Pit Samples	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB15593.D	1	04/03/12	SK	n/a	n/a	GGB871
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	12	6.1	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	96%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: FRESH H2O

Lab Sample ID: D33246-4

Matrix: SO - Soil

Method: SW846-8015B SW846 3546

Project: Federal 3S-95-34-44 Pit Samples

Date Sampled: 03/28/12

Date Received: 03/30/12

Percent Solids: 90.2

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH002904.D	1	04/04/12	TR	04/02/12	OP5651	GFH150
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	15	9.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	53%		43-136%		

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

## Misc. Forms

### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States  
4036 Youngfield Street Wheat Ridge, Co 80033  
TEL. 303-425-6021 877-737-4521  
FAX 303-425-6021

[illegible]

## D33246: Chain of Custody

Page 1 of 2

## Accutest Laboratories Sample Receipt Summary

**Accutest Job Number:** D33246

**Client:** XTO

**Immediate Client Services Action Required:** No

**Date / Time Received:** 3/30/2012 12:30:00 PM

**No. Coolers:** 1

**Client Service Action Required at Login:** No

**Project:** FEDERAL

**Airbill #'s:** CO

**Cooler Security**
**Y or N**
**Y or N**

- |  |  |
|--|--|
| 1. Custody Seals Present: <input checked="" type="checkbox"/> <input type="checkbox"/> | 3. COC Present: <input checked="" type="checkbox"/> <input type="checkbox"/>       |
| 2. Custody Seals Intact: <input checked="" type="checkbox"/> <input type="checkbox"/>  | 4. Smpl Dates/Time OK <input checked="" type="checkbox"/> <input type="checkbox"/> |

**Cooler Temperature**
**Y or N**

- |   |  |
|---|--|
| 1. Temp criteria achieved: <input checked="" type="checkbox"/> <input type="checkbox"/> |  |
| 2. Cooler temp verification: Infrared gun   |  |
| 3. Cooler media: Ice (bag)  |  |

**Quality Control Preservation**
**Y or N**
**N/A**

- |   |  |
|---|--|
| 1. Trip Blank present / cooler: <input type="checkbox"/> <input type="checkbox"/>                             |  |
| 2. Trip Blank listed on COC: <input type="checkbox"/> <input type="checkbox"/>                                |  |
| 3. Samples preserved properly: <input checked="" type="checkbox"/> <input type="checkbox"/>                   |  |
| 4. VOCs headspace free: <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |  |

**Sample Integrity - Documentation**
**Y or N**

- |   |  |
|---|--|
| 1. Sample labels present on bottles: <input checked="" type="checkbox"/> <input type="checkbox"/>   |  |
| 2. Container labeling complete: <input checked="" type="checkbox"/> <input type="checkbox"/>        |  |
| 3. Sample container label / COC agree: <input checked="" type="checkbox"/> <input type="checkbox"/> |  |

**Sample Integrity - Condition**
**Y or N**

- |   |  |
|---|--|
| 1. Sample recvd within HT: <input checked="" type="checkbox"/> <input type="checkbox"/>       |  |
| 2. All containers accounted for: <input checked="" type="checkbox"/> <input type="checkbox"/> |  |
| 3. Condition of sample: Intact  |  |

**Sample Integrity - Instructions**
**Y or N N/A**

- |  |  |
|--|--|
| 1. Analysis requested is clear: <input checked="" type="checkbox"/> <input type="checkbox"/>                             |  |
| 2. Bottles received for unspecified tests: <input type="checkbox"/> <input checked="" type="checkbox"/>                  |  |
| 3. Sufficient volume rec'd for analysis: <input checked="" type="checkbox"/> <input type="checkbox"/>                    |  |
| 4. Compositing instructions clear: <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |  |
| 5. Filtering instructions clear: <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>   |  |

Comments

 Accutest Laboratories  
 V: (303) 425-6021

 4036 Youngfield Street  
 F: (303) 425-6854

 Wheat Ridge, CO  
 www.accutest.com

### D33246: Chain of Custody

### Page 2 of 2



## GC Volatiles

5

## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D33246

**Account:** XTOECOR XTO Energy, Inc.

**Project:** Federal 3S-95-34-44 Pit Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB871-MB	GB15580.D	1	04/03/12	SK	n/a	n/a	GGB871

The QC reported here applies to the following samples:

Method: SW846 8015B

D33246-1, D33246-2, D33246-3, D33246-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	91% 60-140%

Blank Spike Summary

Job Number: D33246  
Account: XTOECOR XTO Energy, Inc.  
Project: Federal 3S-95-34-44 Pit Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB871-BS	GB15581.D	1	04/03/12	SK	n/a	n/a	GGB871

The QC reported here applies to the following samples: Method: SW846 8015B

D33246-1, D33246-2, D33246-3, D33246-4

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	130	118	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	103%	60-140%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D33246

**Account:** XTOECOR XTO Energy, Inc.

**Project:** Federal 3S-95-34-44 Pit Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D33088-13MS	GB15583.D	1	04/03/12	SK	n/a	n/a	GGB871
D33088-13MSD	GB15584.D	1	04/03/12	SK	n/a	n/a	GGB871
D33088-13	GB15582.D	1	04/03/12	SK	n/a	n/a	GGB871

The QC reported here applies to the following samples:

Method: SW846 8015B

D33246-1, D33246-2, D33246-3, D33246-4

CAS No.	Compound	D33088-13 mg/kg	Spike Q	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	436	172	608	100	602	97	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D33088-13	Limits
120-82-1	1,2,4-Trichlorobenzene	245% * a	229% * a	383% * a	60-140%

(a) Outside control limits due to possible matrix interference.

## GC Semi-volatiles

### QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

## Method Blank Summary

Page 1 of 1

**Job Number:** D33246  
**Account:** XTOECOR XTO Energy, Inc.  
**Project:** Federal 3S-95-34-44 Pit Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5651-MB	FH002878.D	1	04/03/12	TR	04/02/12	OP5651	GFH150

The QC reported here applies to the following samples:

Method: SW846-8015B

D33246-1, D33246-2, D33246-3, D33246-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	13	8.7	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	66% 43-136%

## Blank Spike Summary

Page 1 of 1

**Job Number:** D33246

**Account:** XTOECOR XTO Energy, Inc.

**Project:** Federal 3S-95-34-44 Pit Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5651-BS	FH002880.D	1	04/04/12	TR	04/02/12	OP5651	GFH150

The QC reported here applies to the following samples:

Method: SW846-8015B

D33246-1, D33246-2, D33246-3, D33246-4

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	667	385	58	58-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	57%	43-136%

# Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

**Job Number:** D33246  
**Account:** XTOECOR XTO Energy, Inc.  
**Project:** Federal 3S-95-34-44 Pit Samples

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP5651-MS	FH002882.D	1	04/04/12	TR	04/02/12	OP5651	GFH150
OP5651-MSD	FH002884.D	1	04/04/12	TR	04/02/12	OP5651	GFH150
D33253-1	FH002912.D	1	04/04/12	TR	04/02/12	OP5651	GFH150

The QC reported here applies to the following samples:

Method: SW846-8015B

D33246-1, D33246-2, D33246-3, D33246-4

CAS No.	Compound	D33253-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	568		743	1000	58	970	54	3	20-183/43

CAS No.	Surrogate Recoveries	MS	MSD	D33253-1	Limits
84-15-1	o-Terphenyl	57%	54%	58%	43-136%