



10/21/14

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Technical Report for

Saga Petroleum

SAGA Petroleum

Accutest Job Number: D63097

Sampling Date: 10/07/14

Report to:

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Total number of pages in report: 43



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

A handwritten signature in black ink, appearing to read 'Scott Heideman'.

Scott Heideman
Laboratory Director

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Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Sample Summary

Saga Petroleum

Job No: D63097

SAGA Petroleum

Sample Number	Collected		Matrix Code	Type	Client	
	Date	Time By	Received		Sample ID	
D63097-1	10/07/14	09:00 JER	10/07/14	SO	Soil	1 SW PIT
D63097-2	10/07/14	09:00 JER	10/07/14	SO	Soil	2 NW PIT
D63097-3	10/07/14	09:00 JER	10/07/14	SO	Soil	3 NE PIT
D63097-4	10/07/14	09:00 JER	10/07/14	SO	Soil	4 SE PIT

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

Summary of Hits

Job Number: D63097
Account: Saga Petroleum
Project: SAGA Petroleum
Collected: 10/07/14

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D63097-1	1 SW PIT					
Indeno(1,2,3-cd)pyrene ^a		22.1	20	9.8	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		968	7.8	5.8	mg/kg	SW846-8015B
D63097-2	2 NW PIT					
Benzo(a)pyrene ^a		250	20	9.5	ug/kg	SW846 8270C BY SIM
Chrysene ^a		77.2	20	9.5	ug/kg	SW846 8270C BY SIM
Indeno(1,2,3-cd)pyrene ^a		29.8	20	9.5	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		1200	38	29	mg/kg	SW846-8015B
D63097-3	3 NE PIT					
Benzo(b)fluoranthene ^a		64.6	21	13	ug/kg	SW846 8270C BY SIM
Benzo(a)pyrene ^a		492	21	9.9	ug/kg	SW846 8270C BY SIM
Chrysene ^a		199	21	9.9	ug/kg	SW846 8270C BY SIM
Indeno(1,2,3-cd)pyrene ^a		42.6	21	9.9	ug/kg	SW846 8270C BY SIM
Pyrene ^a		56.3	21	12	ug/kg	SW846 8270C BY SIM
TPH-DRO (C10-C28)		2330	79	59	mg/kg	SW846-8015B
D63097-4	4 SE PIT					
Ethylbenzene		24.2 J	130	24	ug/kg	SW846 8260B
Xylene (total)		142	130	63	ug/kg	SW846 8260B
Acenaphthene ^a		64.0	20	15	ug/kg	SW846 8270C BY SIM
Benzo(a)anthracene ^a		85.0	20	9.5	ug/kg	SW846 8270C BY SIM
Benzo(b)fluoranthene ^a		106	20	12	ug/kg	SW846 8270C BY SIM
Benzo(a)pyrene ^a		390	20	9.5	ug/kg	SW846 8270C BY SIM
Chrysene ^a		317	20	9.5	ug/kg	SW846 8270C BY SIM
Fluoranthene ^a		51.5	20	11	ug/kg	SW846 8270C BY SIM
Fluorene ^a		351	20	14	ug/kg	SW846 8270C BY SIM
Indeno(1,2,3-cd)pyrene ^a		38.6	20	9.5	ug/kg	SW846 8270C BY SIM
Naphthalene ^a		46.7	20	12	ug/kg	SW846 8270C BY SIM
Pyrene ^a		176	20	11	ug/kg	SW846 8270C BY SIM
TPH-GRO (C6-C10)		38.2	13	6.3	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		1580	76	57	mg/kg	SW846-8015B

(a) Elevated reporting limits due to matrix interference, dilution required during sample analysis.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	1 SW PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-1	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	85.9
Method:	SW846 8260B		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V33904.D	1	10/11/14	DC	n/a	n/a	V5V1996
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	66	25	ug/kg	
108-88-3	Toluene	ND	130	66	ug/kg	
100-41-4	Ethylbenzene	ND	130	25	ug/kg	
1330-20-7	Xylene (total)	ND	130	66	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		64-130%
460-00-4	4-Bromofluorobenzene	90%		62-131%
17060-07-0	1,2-Dichloroethane-D4	109%		70-130%

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:	1 SW PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-1	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	85.9
Method:	SW846 8270C BY SIM SW846 3546		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G21804.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	20	16	ug/kg	
120-12-7	Anthracene	ND	20	14	ug/kg	
56-55-3	Benzo(a)anthracene	ND	20	9.8	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	20	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	20	9.9	ug/kg	
50-32-8	Benzo(a)pyrene	ND	20	9.8	ug/kg	
218-01-9	Chrysene	ND	20	9.8	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	20	9.8	ug/kg	
206-44-0	Fluoranthene	ND	20	11	ug/kg	
86-73-7	Fluorene	ND	20	14	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	22.1	20	9.8	ug/kg	
91-20-3	Naphthalene	ND	20	12	ug/kg	
129-00-0	Pyrene	ND	20	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		11-164%
321-60-8	2-Fluorobiphenyl	69%		14-138%
1718-51-0	Terphenyl-d14	66%		35-139%

(a) Elevated reporting limits due to matrix interference, dilution required during sample analysis.

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:	1 SW PIT		
Lab Sample ID:	D63097-1	Date Sampled:	10/07/14
Matrix:	SO - Soil	Date Received:	10/07/14
Method:	SW846 8015B	Percent Solids:	85.9
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB26958.D	1	10/14/14	EP	n/a	n/a	GGB1461
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	13	6.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		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:	1 SW PIT		
Lab Sample ID:	D63097-1	Date Sampled:	10/07/14
Matrix:	SO - Soil	Date Received:	10/07/14
Method:	SW846-8015B SW846 3546	Percent Solids:	85.9
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI17944.D	1	10/13/14	JS	10/13/14	OP10797	GF1997
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	968	7.8	5.8	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	60%		20-130%		

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:	2 NW PIT		
Lab Sample ID:	D63097-2	Date Sampled:	10/07/14
Matrix:	SO - Soil	Date Received:	10/07/14
Method:	SW846 8260B	Percent Solids:	87.7
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V33905.D	1	10/11/14	DC	n/a	n/a	V5V1996
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.01 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	64	24	ug/kg	
108-88-3	Toluene	ND	130	64	ug/kg	
100-41-4	Ethylbenzene	ND	130	24	ug/kg	
1330-20-7	Xylene (total)	ND	130	64	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		64-130%
460-00-4	4-Bromofluorobenzene	91%		62-131%
17060-07-0	1,2-Dichloroethane-D4	106%		70-130%

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:	2 NW PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-2	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	87.7
Method:	SW846 8270C BY SIM SW846 3546		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G21805.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	20	15	ug/kg	
120-12-7	Anthracene	ND	20	14	ug/kg	
56-55-3	Benzo(a)anthracene	ND	20	9.5	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	20	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	20	9.7	ug/kg	
50-32-8	Benzo(a)pyrene	250	20	9.5	ug/kg	
218-01-9	Chrysene	77.2	20	9.5	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	20	9.5	ug/kg	
206-44-0	Fluoranthene	ND	20	11	ug/kg	
86-73-7	Fluorene	ND	20	14	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	29.8	20	9.5	ug/kg	
91-20-3	Naphthalene	ND	20	12	ug/kg	
129-00-0	Pyrene	ND	20	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	58%		11-164%
321-60-8	2-Fluorobiphenyl	73%		14-138%
1718-51-0	Terphenyl-d14	82%		35-139%

(a) Elevated reporting limits due to matrix interference, dilution required during sample analysis.

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:	2 NW PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-2	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	87.7
Method:	SW846 8015B		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB26959.D	1	10/14/14	EP	n/a	n/a	GGB1461
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	13	6.4	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	82%		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:	2 NW PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-2	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	87.7
Method:	SW846-8015B SW846 3546		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18220.D	5	10/20/14	JS	10/13/14	OP10797	GFI1009
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1200	38	29	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	57%		20-130%		

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:	3 NE PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-3	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	83.9
Method:	SW846 8260B		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V33906.D	1	10/11/14	DC	n/a	n/a	V5V1996
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.08 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	68	26	ug/kg	
108-88-3	Toluene	ND	140	68	ug/kg	
100-41-4	Ethylbenzene	ND	140	26	ug/kg	
1330-20-7	Xylene (total)	ND	140	68	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	96%		64-130%
460-00-4	4-Bromofluorobenzene	90%		62-131%
17060-07-0	1,2-Dichloroethane-D4	109%		70-130%

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:	3 NE PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-3	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	83.9
Method:	SW846 8270C BY SIM SW846 3546		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G21806.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	21	16	ug/kg	
120-12-7	Anthracene	ND	21	14	ug/kg	
56-55-3	Benzo(a)anthracene	ND	21	9.9	ug/kg	
205-99-2	Benzo(b)fluoranthene	64.6	21	13	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	21	10	ug/kg	
50-32-8	Benzo(a)pyrene	492	21	9.9	ug/kg	
218-01-9	Chrysene	199	21	9.9	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	21	9.9	ug/kg	
206-44-0	Fluoranthene	ND	21	12	ug/kg	
86-73-7	Fluorene	ND	21	15	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	42.6	21	9.9	ug/kg	
91-20-3	Naphthalene	ND	21	12	ug/kg	
129-00-0	Pyrene	56.3	21	12	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	50%		11-164%
321-60-8	2-Fluorobiphenyl	61%		14-138%
1718-51-0	Terphenyl-d14	78%		35-139%

(a) Elevated reporting limits due to matrix interference, dilution required during sample analysis.

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:	3 NE PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-3	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	83.9
Method:	SW846 8015B		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB26960.D	1	10/14/14	EP	n/a	n/a	GGB1461
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	6.8	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	85%		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:	3 NE PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-3	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	83.9
Method:	SW846-8015B SW846 3546		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18226.D	10	10/20/14	JS	10/14/14	OP10802	GFI1009
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	2330	79	59	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	63%		20-130%		

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:	4 SE PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-4	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	88.3
Method:	SW846 8260B		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5V33907.D	1	10/11/14	DC	n/a	n/a	V5V1996
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.06 g	5.0 ml	100 ul
Run #2			

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	63	24	ug/kg	
108-88-3	Toluene	ND	130	63	ug/kg	
100-41-4	Ethylbenzene	24.2	130	24	ug/kg	J
1330-20-7	Xylene (total)	142	130	63	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2037-26-5	Toluene-D8	94%		64-130%
460-00-4	4-Bromofluorobenzene	106%		62-131%
17060-07-0	1,2-Dichloroethane-D4	104%		70-130%

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:	4 SE PIT	Date Sampled:	10/07/14
Lab Sample ID:	D63097-4	Date Received:	10/07/14
Matrix:	SO - Soil	Percent Solids:	88.3
Method:	SW846 8270C BY SIM SW846 3546		
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3G21807.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

COGCC Table 910-1 PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	64.0	20	15	ug/kg	
120-12-7	Anthracene	ND	20	14	ug/kg	
56-55-3	Benzo(a)anthracene	85.0	20	9.5	ug/kg	
205-99-2	Benzo(b)fluoranthene	106	20	12	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	20	9.6	ug/kg	
50-32-8	Benzo(a)pyrene	390	20	9.5	ug/kg	
218-01-9	Chrysene	317	20	9.5	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	20	9.5	ug/kg	
206-44-0	Fluoranthene	51.5	20	11	ug/kg	
86-73-7	Fluorene	351	20	14	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	38.6	20	9.5	ug/kg	
91-20-3	Naphthalene	46.7	20	12	ug/kg	
129-00-0	Pyrene	176	20	11	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	53%		11-164%
321-60-8	2-Fluorobiphenyl	64%		14-138%
1718-51-0	Terphenyl-d14	85%		35-139%

(a) Elevated reporting limits due to matrix interference, dilution required during sample analysis.

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

Client Sample ID:	4 SE PIT		
Lab Sample ID:	D63097-4	Date Sampled:	10/07/14
Matrix:	SO - Soil	Date Received:	10/07/14
Method:	SW846 8015B	Percent Solids:	88.3
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB26961.D	1	10/14/14	EP	n/a	n/a	GGB1461
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)	38.2	13	6.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	123%		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:	4 SE PIT		
Lab Sample ID:	D63097-4	Date Sampled:	10/07/14
Matrix:	SO - Soil	Date Received:	10/07/14
Method:	SW846-8015B SW846 3546	Percent Solids:	88.3
Project:	SAGA Petroleum		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI18228.D	10	10/20/14	JS	10/14/14	OP10802	GFI1009
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1580	76	57	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	52%		20-130%		

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

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

FED-EX Tracking #	Accutest Order Control #
Accutest Quote #	Accutest Job # D63097

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)		Matrix Codes	
Company Name Saga Petro/Env	Project Name	Street	Billing Information (if different from Report to)	DRO 8015 8070SIMPAT4910L GR0 8015 80606TX		DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Street Address 601 17th St	City	State	Zip				
City Denver Co	State	Zip					
Project Contact Jaimie Reis	Email jreis@sagapetroleum.com	Project #	Street Address				
Phone # 303 996 7706	Fax # 303 996 7707	Client PO#	City				
Sampler(s) Name(s) Jaimie Reis	Phone #	Project Manager	Attention:	PO#			

Accutest Sample #	Field ID / Point of Collection	MEQ/2L Vial #	Collection		Sampled by	Matrix	# of bottles	Number of preserved bottles											LAB USE ONLY
			Date	Time				HCL	NaOH	HNO3	H2SO4	NaNO2	DI Water	MECH	EMC/CH	Residual			
1	SW pit		10/7/14	8:00am	JER	SO	1												
2	SW pit						1												
3	ME pit						1												
4	SE pit						1												

Turnaround Time (Business Days)		Approved By (Accutest PM): / Date:		Data Deliverable Information		Comments / Special Instructions	
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day RW SH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> FULLT1 (Level 3+4)	<input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> PDF	Sample provided in plastic tupperware	

Emergency & Rush T/A data available VIA Lablink

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: Jaimie Reis	Date Time: 10/7/14 11:45	Received By: Jacob	Date Time: 10/7/14 1:45	Relinquished By:	Date Time:	Received By:
Relinquished by Sampler:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:
Relinquished by:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:

Custody Seal # **HTS** ☒ Intact ☐ Not Intact Preserved where applicable ☐ N/A ☐ On Ice ☐ NO Cooler Temp. **22.0**

D63097: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D63097 **Client:** SAGA **Project:** _____
Date / Time Received: 10/7/2014 11:45:00 AM **Delivery Method:** _____ **Airbill #'s:** HD
Cooler Temps (Initial/Adjusted): 0

Cooler Security
Y or N

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

Cooler Temperature
Y or N

- | | |
|---|--|
| 1. Temp criteria achieved: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | |
| 2. Cooler temp verification: _____ ; | |
| 3. Cooler media: _____ Ice (Bag) | |
| 4. No. Coolers: _____ 1 | |

Quality Control Preservation
Y or N
N/A

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

Comments

Sample Integrity - Documentation
Y or N

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

Sample Integrity - Condition
Y or N

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

Sample Integrity - Instructions
Y or N
N/A

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

GC/MS Volatiles

5

QC Data Summaries

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: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1996-MB	5V33894.D	1	10/11/14	DC	n/a	n/a	V5V1996

The QC reported here applies to the following samples:

Method: SW846 8260B

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	50	19	ug/kg	
100-41-4	Ethylbenzene	ND	100	19	ug/kg	
108-88-3	Toluene	ND	100	50	ug/kg	
1330-20-7	Xylene (total)	ND	100	50	ug/kg	

CAS No.	Surrogate Recoveries	Limits
2037-26-5	Toluene-D8	102% 64-130%
460-00-4	4-Bromofluorobenzene	91% 62-131%
17060-07-0	1,2-Dichloroethane-D4	100% 70-130%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Blank Spike Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V5V1996-BS	5V33895.D	1	10/11/14	DC	n/a	n/a	V5V1996

The QC reported here applies to the following samples:

Method: SW846 8260B

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
71-43-2	Benzene	2500	2380	95	70-130
100-41-4	Ethylbenzene	2500	2770	111	70-130
108-88-3	Toluene	2500	2420	97	70-130
1330-20-7	Xylene (total)	7500	8260	110	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2037-26-5	Toluene-D8	101%	64-130%
460-00-4	4-Bromofluorobenzene	112%	62-131%
17060-07-0	1,2-Dichloroethane-D4	92%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D63255-1MS	5V33897.D	1	10/11/14	DC	n/a	n/a	V5V1996
D63255-1MSD	5V33898.D	1	10/11/14	DC	n/a	n/a	V5V1996
D63255-1	5V33896.D	1	10/11/14	DC	n/a	n/a	V5V1996

The QC reported here applies to the following samples:

Method: SW846 8260B

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	D63255-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		2720	2560	94	2720	2690	99	5	64-139/30
100-41-4	Ethylbenzene	ND		2720	2860	105	2720	2860	105	0	68-136/30
108-88-3	Toluene	ND		2720	2530	93	2720	2580	95	2	60-130/30
1330-20-7	Xylene (total)	71.4	J	8160	8510	103	8160	8530	104	0	58-142/30

CAS No.	Surrogate Recoveries	MS	MSD	D63255-1	Limits
2037-26-5	Toluene-D8	99%	95%	94%	64-130%
460-00-4	4-Bromofluorobenzene	108%	104%	101%	62-131%
17060-07-0	1,2-Dichloroethane-D4	93%	89%	104%	70-130%

* = Outside of Control Limits.

GC/MS Semi-volatiles

QC Data Summaries

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: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10780-MB	3G21822.D	1	10/11/14	AR	10/09/14	OP10780	E3G1083

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.3	3.3	ug/kg	
120-12-7	Anthracene	ND	4.3	3.0	ug/kg	
56-55-3	Benzo(a)anthracene	ND	4.3	2.1	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	4.3	2.7	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	4.3	2.1	ug/kg	
50-32-8	Benzo(a)pyrene	ND	4.3	2.1	ug/kg	
218-01-9	Chrysene	ND	4.3	2.1	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	4.3	2.1	ug/kg	
206-44-0	Fluoranthene	ND	4.3	2.4	ug/kg	
86-73-7	Fluorene	ND	4.3	3.1	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.3	2.1	ug/kg	
91-20-3	Naphthalene	ND	4.3	2.6	ug/kg	
129-00-0	Pyrene	ND	4.3	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Limits
4165-60-0	Nitrobenzene-d5	83% 11-164%
321-60-8	2-Fluorobiphenyl	77% 14-138%
1718-51-0	Terphenyl-d14	90% 35-139%

Blank Spike Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10780-BS	3G21792.D	1	10/10/14	AR	10/09/14	OP10780	E3G1082

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
83-32-9	Acenaphthene	83.3	71.3	86	42-130
120-12-7	Anthracene	83.3	61.6	74	45-130
56-55-3	Benzo(a)anthracene	83.3	63.0	76	49-137
205-99-2	Benzo(b)fluoranthene	83.3	63.5	76	43-146
207-08-9	Benzo(k)fluoranthene	83.3	77.4	93	27-146
50-32-8	Benzo(a)pyrene	83.3	68.4	82	53-130
218-01-9	Chrysene	83.3	68.8	83	61-130
53-70-3	Dibenzo(a,h)anthracene	83.3	65.3	78	59-130
206-44-0	Fluoranthene	83.3	60.0	72	48-130
86-73-7	Fluorene	83.3	64.4	77	44-130
193-39-5	Indeno(1,2,3-cd)pyrene	83.3	66.1	79	58-130
91-20-3	Naphthalene	83.3	61.6	74	56-130
129-00-0	Pyrene	83.3	67.8	81	53-130

CAS No.	Surrogate Recoveries	BSP	Limits
4165-60-0	Nitrobenzene-d5	78%	11-164%
321-60-8	2-Fluorobiphenyl	92%	14-138%
1718-51-0	Terphenyl-d14	94%	35-139%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10780-MS	3G21808.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082
OP10780-MSD	3G21809.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082
D63097-1 ^a	3G21804.D	4	10/10/14	AR	10/09/14	OP10780	E3G1082

The QC reported here applies to the following samples:

Method: SW846 8270C BY SIM

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	D63097-1 ug/kg	Q	Spike ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
83-32-9	Acenaphthene	ND		97	61.1	63	96.7	48.6	50	23	10-167/30
120-12-7	Anthracene	ND		97	64.8	67	96.7	54.4	56	17	10-200/30
56-55-3	Benzo(a)anthracene	ND		97	78.2	81	96.7	70.2	73	11	10-161/30
205-99-2	Benzo(b)fluoranthene	ND		97	76.2	79	96.7	68.6	71	10	10-166/30
207-08-9	Benzo(k)fluoranthene	ND		97	69.9	72	96.7	57.8	60	19	10-152/30
50-32-8	Benzo(a)pyrene	ND		97	138	142	96.7	160	165* ^b	15	10-149/30
218-01-9	Chrysene	ND		97	82.0	85	96.7	68.1	70	19	10-156/30
53-70-3	Dibenzo(a,h)anthracene	ND		97	71.1	73	96.7	67.4	70	5	11-149/30
206-44-0	Fluoranthene	ND		97	57.5	59	96.7	49.9	52	14	10-175/30
86-73-7	Fluorene	ND		97	69.4	72	96.7	57.1	59	19	10-280/30
193-39-5	Indeno(1,2,3-cd)pyrene	22.1		97	72.8	52	96.7	64.6	44	12	10-151/30
91-20-3	Naphthalene	ND		97	51.4	53	96.7	41.1	43	22	10-230/30
129-00-0	Pyrene	ND		97	79.3	82	96.7	64.1	66	21	10-160/30

CAS No.	Surrogate Recoveries	MS	MSD	D63097-1	Limits
4165-60-0	Nitrobenzene-d5	52%	43%	54%	11-164%
321-60-8	2-Fluorobiphenyl	63%	51%	69%	14-138%
1718-51-0	Terphenyl-d14	78%	62%	66%	35-139%

(a) Elevated reporting limits due to matrix interference, dilution required during sample analysis.

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

* = Outside of Control Limits.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1461-MB	GB26937.D	1	10/13/14	EP	n/a	n/a	GGB1461

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

D63097-1, D63097-2, D63097-3, D63097-4

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: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1461-BS	GB26938.D	1	10/13/14	EP	n/a	n/a	GGB1461

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

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	115	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	94%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D63028-1MS	GB26940.D	1	10/13/14	EP	n/a	n/a	GGB1461
D63028-1MSD	GB26941.D	1	10/13/14	EP	n/a	n/a	GGB1461
D63028-1	GB26939.D	1	10/13/14	EP	n/a	n/a	GGB1461

The QC reported here applies to the following samples:

Method: SW846 8015B

D63097-1, D63097-2, D63097-3, D63097-4

CAS No.	Compound	D63028-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	44.2		152	179	89	152	176	87	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D63028-1	Limits
120-82-1	1,2,4-Trichlorobenzene	197% * a	191% * a	371% * a	60-140%

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

* = Outside of Control Limits.

GC Semi-volatiles

QC Data Summaries

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: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10797-MB	FI17930.D	1	10/13/14	JS	10/13/14	OP10797	GFI997

The QC reported here applies to the following samples:

Method: SW846-8015B

D63097-1, D63097-2

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	94% 20-130%

8.1.1

8

Method Blank Summary

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10802-MB	FI17984.D	1	10/14/14	JS	10/14/14	OP10802	GFI999

The QC reported here applies to the following samples: Method: SW846-8015B
D63097-3, D63097-4

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	6.7	5.0	mg/kg	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	93% 20-130%

Blank Spike Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10797-BS	FI17932.D	1	10/13/14	JS	10/13/14	OP10797	GF1997

The QC reported here applies to the following samples:

Method: SW846-8015B

D63097-1, D63097-2

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	167	112	67	42-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	102%	20-130%

* = Outside of Control Limits.

Blank Spike Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10802-BS	FI17986.D	1	10/14/14	JS	10/14/14	OP10802	GFI999

The QC reported here applies to the following samples:

Method: SW846-8015B

D63097-3, D63097-4

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	167	105	63	42-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	94%	20-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10797-MS	FI17934.D	1	10/13/14	JS	10/13/14	OP10797	GFI997
OP10797-MSD	FI17936.D	1	10/13/14	JS	10/13/14	OP10797	GFI997
D63052-1	FI17938.D	1	10/13/14	JS	10/13/14	OP10797	GFI997

The QC reported here applies to the following samples:

Method: SW846-8015B

D63097-1, D63097-2

CAS No.	Compound	D63052-1 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	19.1		304	204	61	304	174	51	16	20-150/30

CAS No.	Surrogate Recoveries	MS	MSD	D63052-1	Limits
84-15-1	o-Terphenyl	95%	87%	90%	20-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D63097
Account: SAGAPCOD Saga Petroleum
Project: SAGA Petroleum

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP10802-MS	FI17988.D	1	10/14/14	JS	10/14/14	OP10802	GFI999
OP10802-MSD	FI17990.D	1	10/14/14	JS	10/14/14	OP10802	GFI999
D63351-5	FI17992.D	1	10/14/14	JS	10/14/14	OP10802	GFI999

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

D63097-3, D63097-4

CAS No.	Compound	D63351-5 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		193	124	64	193	128	66	3	20-150/30

CAS No.	Surrogate Recoveries	MS	MSD	D63351-5	Limits
84-15-1	o-Terphenyl	98%	101%	89%	20-130%

* = Outside of Control Limits.