

AP - 022

# STAGE 1 & 2 REPORTS

DATE:

Feb. 28, 2000

1305 Stockton Rd.  
P. O. Box 494  
Brownfield, Texas 79316

1-800-765-3478  
Office: 806/637-8033  
Fax: 806/637-6926

BIOREMEDIATION CONTRACTORS & CONSULTANTS



Land Reclamation



Weed Control

February 28, 2000

State of New Mexico  
Energy And Minerals Department  
Oil Conservation Division  
P.O. Box 1980  
Hobbs, New Mexico 88240

RECEIVED

DEC 19 2000

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION

**RE: Final Closure of Unlined Surface Impoundments - Eddy County, New Mexico**

Closure Report:

Locations:

Yates Petroleum Corporation  
Inex Battery Pit  
Sec. 26 - T18S - R26E  
Eddy County, New Mexico

Yates Petroleum Corporation  
Lattion Battery Pit  
Sec. ~~28~~ - T18S - R26E  
Eddy County, New Mexico

Yates Petroleum Corporation  
Scripp Battery Pit  
Sec. 25 - T18S - R26E  
Eddy County, New Mexico

Yates Petroleum Corporation  
Williams Battery Pit  
Sec. 25 - T18S - R26E  
Eddy County, New Mexico

Since satisfying the criteria for final closure, remedial actions have been completed on the above mentioned unlined surface impoundments. The attached soil analysis of these four sites demonstrate the soil remediation levels have been met. Upon approval from the OCD, final closure will begin by backfilling these four sites, contouring them as to provide drainage away from the sites.

For any questions or concerns regarding this matter, please contact Paul Porter at 1-800-765-3478.

Sincerely,

Paul Porter  
Vice President

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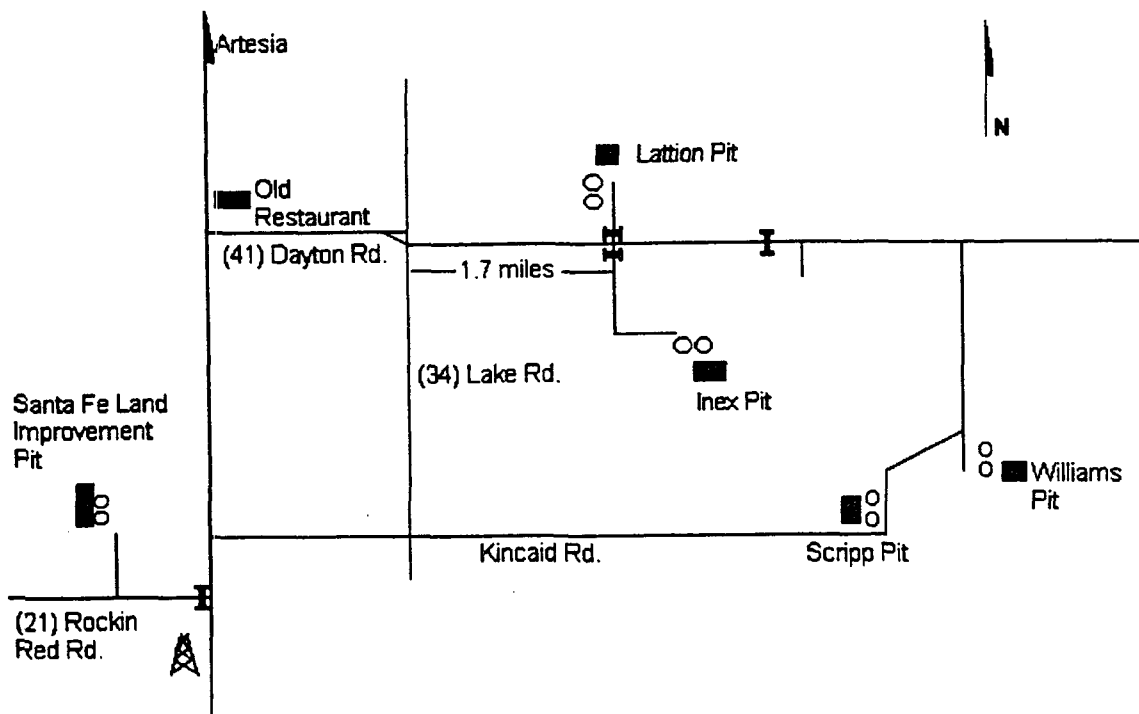
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**Yates Petroleum Corporation**

**Unlined Surface Impoundment Closures**  
***(Pit Closures)***  
**on old H & S Battery Sites**

**1999**



**YATES PETROLEUM CORPORATION**

1305 Stockton Rd.  
P. O. Box 494  
Brownfield, Texas 79316

1-800-765-3478  
Office: 806/637-8033  
Fax: 806/637-8926

BIOREMEDIATION CONTRACTORS & CONSULTANTS



May 20, 1998

Mr. Darrell Atkins  
YATES PETROLEUM CORPORATION  
105 South 4th Street  
Artesia, New Mexico 88210

RE: Pit Closures On Old H & S Battery Sites

Dear Darrell,

The following is the costs and procedure for complete pit closures on the old H & S battery sites. I have made the necessary site assessments and rankings required by the OCD. The total cost includes all monitoring, documentation and soil sampling that will be required in order to be in complete compliance with the OCD.

If you have any further questions, please call me at 1 800 765 - 3478. Thank you for the opportunity to price this project.

Sincerely,

A handwritten signature in cursive script, reading 'Paul Porter', with a long, sweeping underline.

Paul Porter  
Vice President

1305 Stockton Rd.  
P. O. Box 494  
Field, Texas 79316

1-800-785-3478  
Office: 806/637-803  
Fax: 806/637-8928

BIOREMEDIATION CONTRACTORS & CONSULTANTS



Land Reclamation



Weed Control

**\*\* LAND RECLAMATION PROPOSAL \*\***  
**YATES PETROLEUM CORPORATION**  
**PIT CLOSURES**

**Procedure:**

After excess fluids have been vacuumed off pit areas, BCC, Inc. would begin work with the clearing of bird netting and debris from each pit. Backhoe work would then begin in order to make pits accessible for treatment procedures. Affected areas would be deep ripped and power tilled to prepare the soil for treatment. BCC SOP 3 microbial solution would be spray applied over the sites and nutrients added to promote the hydrocarbon degradation process. Sufficient watering will be maintained throughout the project as well as periodic tilling to promote degradation. Once degradation has occurred (TPH levels at 5000 ppm or less - BTEX levels at 50 ppm or less), pit areas would be layered with 10 inches of manure, backfilled, layered with 10 more inches of manure and tandermed smooth.

**Cost:**

Inex Pit	(based on 250 cubic yards)	\$5,354.98
Lattion Pit	(based on 196 cubic yards)	\$4,217.48
Williams Pit	(based on 196 cubic yards)	\$4,217.48
Scripp Pit	(based on 299 cubic yards)	\$6,378.98
Santa Fe Land	(based on 311 cubic yards)	\$6,622.93
Improvement Pit		
Total Project: (5 pits - complete site closures)		\$26,791.85
(plus any applicable taxes)		

Note: This proposal is for treating hydrocarbon damage only. If affected area needs treatment for produced water damage, additional costs would be incurred.

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BIOREMEDIATION CONTRACTORS & CONSULTANTS



Land Reclamation



Weed Control

**\*\* LAND RECLAMATION PROPOSAL \*\***  
**YATES PETROLEUM CORPORATION**  
**PIT CLOSURES**

**Cost Breakdown:** (5 pits - complete site closures)

**Materials -**

11.5 drums BCC SOP 3 @ \$1,031.25/drum	\$11,859.38
635 lbs. Nutrients @ \$4.00/lb.	\$ 2,540.00
Water	\$ 250.00

Total Materials..... \$14,649.38

**Labor & Equipment -**

Backhoe / Dump Trucks for Hauling Manure / Operators	\$6,492.47
Application Truck / Equipment / Personnel	\$2,250.00
Tractor & Equipment / Personnel	\$1,400.00

Total Labor & Equipment..... \$10,142.47

Soil Sampling / Monitoring / Documentation..... \$ 2,000.00

Total Project: (5 pits).....\$26,791.85  
(plus any applicable taxes)

Groundwater

190' ft.

Williams Battery

SE / NW

Sec. 25 - T18S - R26E

Eddy Co., NM

Scripps Battery

SW / SW

Sec. 25 - T18S - R26E

Eddy Co., NM

Inex Battery

NW / NE

Sec. 26 - T18S - R26E

Eddy Co., NM

Lutton Battery

SW / SE

Sec. 23 - T18S - R26E

Eddy Co., NM

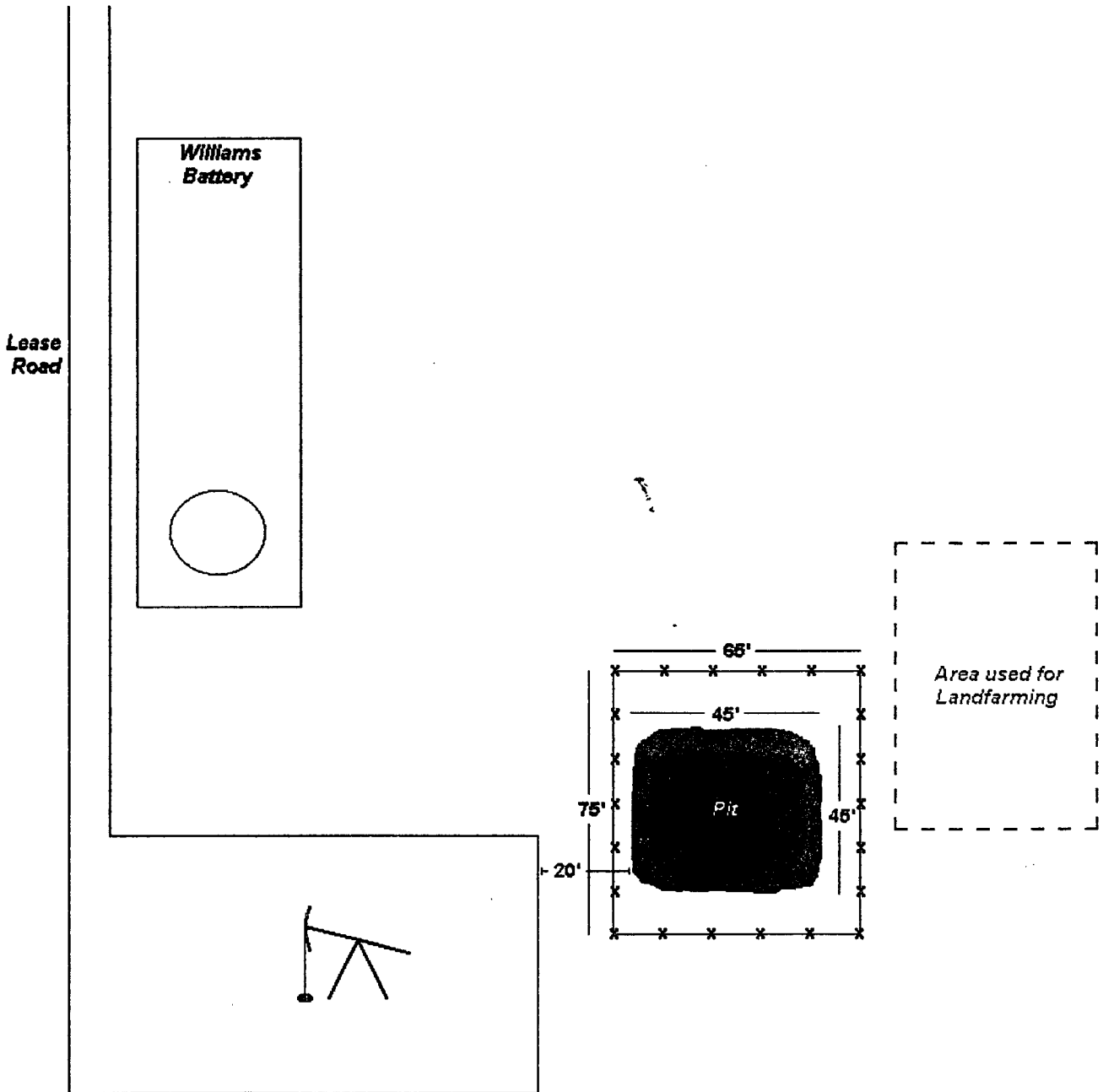


**Yates Petroleum Corporation**

***Williams Battery Pit***

Sec. 25 - T18S - R26E  
Eddy County, New Mexico

**Yates Petroleum Corporation**  
**Williams Battery Pit**  
*Unlined Surface Impoundment*  
Affected Surface Area - 2,025 sq. ft. / .05 acre



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BIOREMEDIATION CONTRACTORS & CONSULTANTS



**INVOICE TO:**

YATES PETROLEUM CORPORATION  
105 South 4th Street  
Artesia, New Mexico 88210

**INVOICE #:** 10199B  
**DATE:** 5/18/99

**LOCATION:**

Williams Pit

**CNTY/STATE:** Eddy Co., NM

**AUTHORIZED BY:**

Darrell Atkins/Ron Beasley

**JOB DATE:**

5/17/99

**DESCRIPTION**

**QUANTITY**

**UNIT PRICE**

**AMOUNT**

Phase I  
Excavated Pit for Land Farming,  
Ripped, Power Tilled, Treated  
and Watered to Promote  
Hydrocarbon Degradation

1 Drum	BCC SOP 3	1	\$1,031.25	\$1,031.25
55 Lbs.	Nutrients	55	\$4.00	\$220.00
1	Water	1	\$10.00	\$10.00
1	Backhoe/Equipment/Operators	1	\$598.77	\$598.77
2 Hours	Application Truck/Equipment/Operator	2	\$50.00	\$100.00
4 Hours	Tractor/Equipment/Operators	4	\$35.00	\$140.00
Subtotal				\$2,100.02
NM Gross Receipts Tax (5.625%)				\$118.13
				\$2,218.15

**INVOICE TOTAL:** (NET 30)

**\$2,218.15**

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BIOREMEDIATION CONTRACTORS & CONSULTANTS



INVOICE TO: YATES PETROLEUM CORPORATION INVOICE #: 11351B  
105 South 4th Street DATE: 3/31/00  
Artesia, New Mexico 88210

LOCATION: Williams Pit  
CNTY/STATE: Eddy, NM

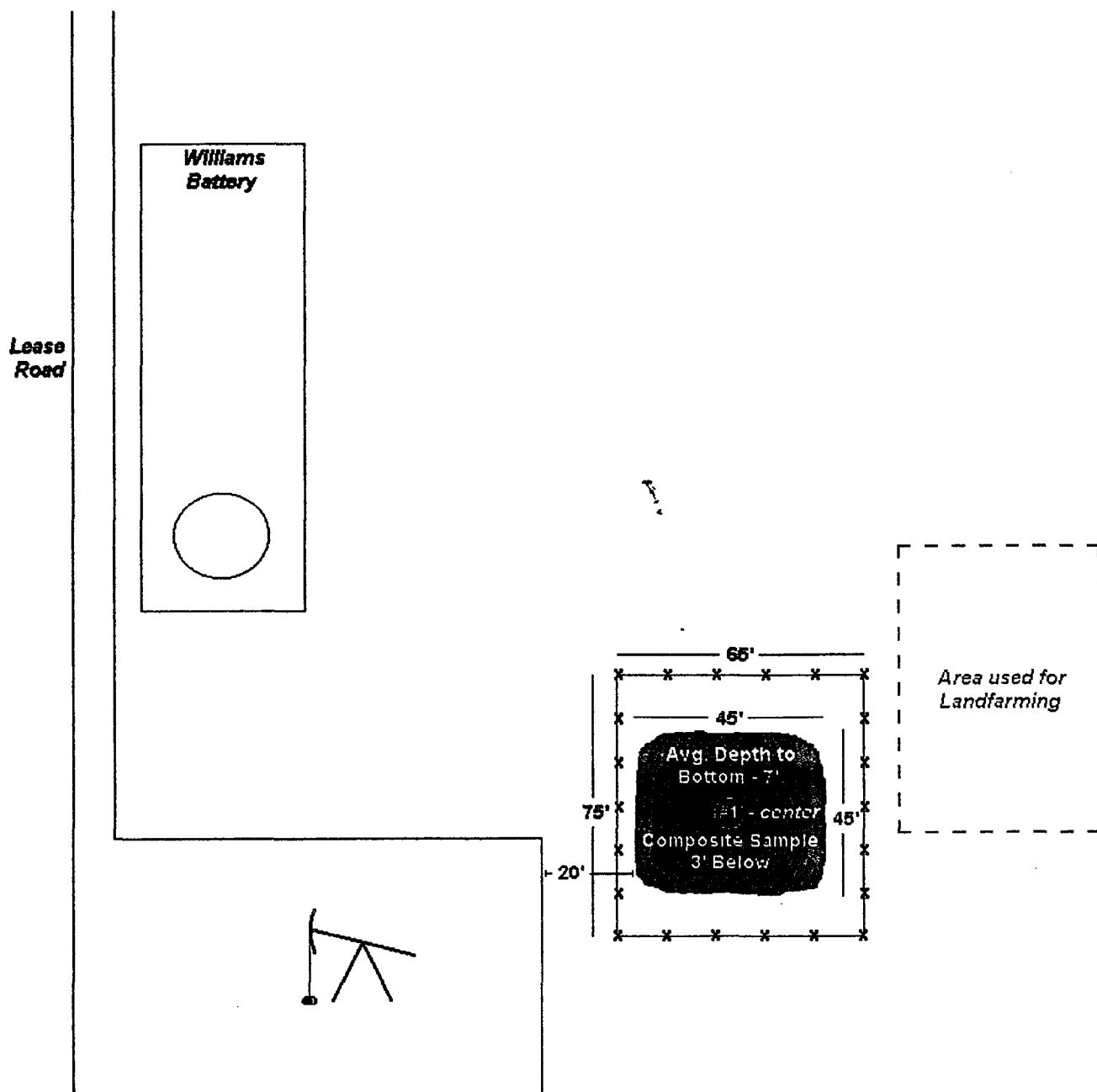
AUTHORIZED BY: Darrell Atkins/Ron Beasley

JOB DATE: 3/31/00

DESCRIPTION		QUANTITY	UNIT PRICE	AMOUNT
Phase II				
Treated & watered to prepare Pit for Close Out.				
Samples, Backfilled, Layered with Manure and Closed Pit				
0.75 Drum	BCC SOP 3	0.75	\$1,031.25	\$773.44
41 Lbs.	Nutrients	41	\$4.00	\$164.00
1	Water			\$40.00
1	Backhoe/Equipment/Operators			\$502.52
5 Hours	Application Truck/Equipment/Operator	5	\$50.00	\$250.00
2.5 Hours	Tractor/Equipment/Operators	2.5	\$35.00	\$87.50
1 Soil	Sampling/Documentation			\$300.00
Subtotal				\$2,117.46
NM Gross Receipts Tax (5.625%)				\$119.11
				\$2,236.57

INVOICE TOTAL: (NET 30) \$2,236.57

**Yates Petroleum Corporation**  
**Williams Battery Pit**  
*Unlined Surface Impoundment*  
Affected Surface Area - 2,025 sq. ft. / .05 acre



# TRACE ANALYSIS, INC.

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## Analytical and Quality Control Report

Paul Porter  
BCC, Inc.  
P. O. Box 494  
Brownfield, TX 79316

Report Date: 2/16/00

Project Number: N/A  
Project Name: Yates Petroleum  
Project Location: Williams Pit


Order ID Number: A00021502

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
140518	Williams Pit	Soil	2/9/00	14:45	2/14/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 2 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

  
Dr. Blair Leftwich, Director



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4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944  
E-Mail: lab@traceanalysis.com

## Analytical and Quality Control Report

Paul Porter  
BCC, Inc.  
P. O. Box 494  
Brownfield, TX 79316

Report Date: 2/16/00

Project Number: N/A  
Project Name: Yates Petroleum  
Project Location: Williams Pit

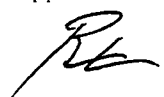
Order ID Number: A00021502

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
140518	Williams Pit	Soil	2/9/00	14:45	2/14/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

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Dr. Blair Leftwich, Director

Report Date: 2/16/00  
N/A

Order ID Number: A00021502  
Yates Petroleum

Page Number: 2 of 2  
Williams Pit

## Analytical Results Report

Sample Number: 140518  
Description: Williams Pit

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
TPH (mg/Kg)									
TRPHC	13	1	E 418.1	2/15/00	2/16/00	MA	PB00747	QC00926	10

## Quality Control Report Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
TRPHC (mg/Kg)		<10.0	10	2/16/00	PB00747	QC00926

## Quality Control Report Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	TRPHC (mg/Kg)	13	1	250	296	113		70 - 130	0 - 20	QC00926
MSD	TRPHC (mg/Kg)	13	1	250	253	96	16	70 - 130	0 - 20	QC00926

## Quality Control Report Lab Control Spikes and Duplicate Spike

Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS TRPHC (mg/Kg)	<10.0	1	250	237	95		70 - 130	0 - 20	QC00926
LCSD TRPHC (mg/Kg)	<10.0	1	250	238	95	0	70 - 130	0 - 20	QC00926

## Quality Control Report Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	TRPHC (mg/Kg)		100	114	114	70 - 130	2/16/00	QC00926
CCV 1	TRPHC (mg/Kg)		100	105	105	70 - 130	2/16/00	QC00926
CCV 2	TRPHC (mg/Kg)		100	106	106	70 - 130	2/16/00	QC00926



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## Analytical and Quality Control Report

Paul Porter  
BCC, Inc.  
P. O. Box 494  
Brownfield, TX 79316

Report Date: 1/28/00

Project Number: N/A  
Project Name: Yates Petroleum  
Project Location: Williams Pit


Order ID Number: A00012412

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
139307	Sample #1	Soil	1/11/00	14:15	1/24/00

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

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Dr. Blair Leftwich, Director

Report Date: 1/28/00

Order ID Number: A00012412

Page Number: 2 of 2

N/A

Yates Petroleum

Williams Pit

**Analytical Results Report**

Sample Number: 139307

Description: Sample #1

Param	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
TPH (mg/Kg)									
TRPHC	9080	10	E 418.1	1/25/00	1/26/00	MA	PB00454	QC00589	10

**Quality Control Report  
Method Blanks**

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
TRPHC (mg/Kg)		<10.0	10	1/26/00	PB00454	QC00589

**Quality Control Report  
Matrix Spike and Matrix Duplicate Spike**

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	TRPHC (mg/Kg)	<10.0	1	250	282	113		70 - 130	0 - 20	QC00589
MSD	TRPHC (mg/Kg)	<10.0	1	250	322	129	13	70 - 130	0 - 20	QC00589

**Quality Control Report  
Lab Control Spikes and Duplicate Spike**

	Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	TRPHC (mg/Kg)	<10.0	1	250	221	88		70 - 130	0 - 20	QC00589
LCSD	TRPHC (mg/Kg)	<10.0	1	250	233	93	5	70 - 130	0 - 20	QC00589

**Quality Control Report  
Continuing Calibration Verification Standard**

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	TRPHC (mg/Kg)		100	111	111	70 - 130	1/26/00	QC00589
CCV 1	TRPHC (mg/Kg)		100	117	117	70 - 130	1/26/00	QC00589
CCV 2	TRPHC (mg/Kg)		100	111	111	70 - 130	1/26/00	QC00589

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## Analytical and Quality Control Report

Paul Porter  
BCC, Inc.  
P. O. Box 494  
Brownfield, TX 79316

Report Date: 11/5/99

Project Number: N/A  
Project Name: Yates Petroleum  
Project Location: Williams Pit


Order ID Number: 99110404

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
134809	Lattion Pit	Soil	10/29/99	16:00	11/3/99

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

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Dr. Blair Leftwich, Director

## Analytical Results Report

Sample Number: 134809

Description: Lattion Pit

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
C6-C10 (mg/Kg)		<500	10	TX1005	11/4/99	11/4/99	MF	PB02987	QC03840	50
>C10-C28 (mg/Kg)		9220	10	TX1005	11/4/99	11/4/99	MF	PB02987	QC03840	50
C6-C28 (mg/Kg)		9220	10	TX1005	11/4/99	11/4/99	MF	PB02987	QC03840	50

## Quality Control Report Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
C6-C10 (mg/Kg)		<50	50	11/4/99	PB02987	QC03840
>C10-C28 (mg/Kg)		<50	50	11/4/99	PB02987	QC03840
C6-C28 (mg/Kg)		<50	50	11/4/99	PB02987	QC03840

## Quality Control Report Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	C6-C10 (mg/Kg)	<50	1	250	249	100		70 - 130	0 - 30	QC03840
MS	>C10-C28 (mg/Kg)	<50	1	250	218	87		70 - 130	0 - 30	QC03840
MS	C6-C28 (mg/Kg)	<50	1	500	467	93		70 - 130	0 - 30	QC03840
MSD	C6-C10 (mg/Kg)	<50	1	250	250	100	0	70 - 130	0 - 30	QC03840
MSD	>C10-C28 (mg/Kg)	<50	1	250	214	86	2	70 - 130	0 - 30	QC03840
MSD	C6-C28 (mg/Kg)	<50	1	500	464	93	1	70 - 130	0 - 30	QC03840

### Quality Control Report Lab Control Spikes and Duplicate Spike

Param	Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS C6-C10 (mg/Kg)	<50	1	250	247	99		70 - 130	0 - 30	QC03840
LCS >C10-C28 (mg/Kg)	<50	1	250	218	87		70 - 130	0 - 30	QC03840
LCS C6-C28 (mg/Kg)	<50	1	500	465	93		70 - 130	0 - 30	QC03840
LCSD C6-C10 (mg/Kg)	<50	1	250	248	99	0	70 - 130	0 - 30	QC03840
LCSD >C10-C28 (mg/Kg)	<50	1	250	255	102	16	70 - 130	0 - 30	QC03840
LCSD C6-C28 (mg/Kg)	<50	1	500	503	101	8	70 - 130	0 - 30	QC03840

### Quality Control Report Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	C6-C10 (mg/Kg)		250	304	122	70 - 130	11/4/99	QC03840
ICV	>C10-C28 (mg/Kg)		250	215	86	70 - 130	11/4/99	QC03840
ICV	C6-C28 (mg/Kg)		500	519	104	70 - 130	11/4/99	QC03840
CCV (1	C6-C10 (mg/Kg)		250	242	97	70 - 130	11/4/99	QC03840
CCV (1	>C10-C28 (mg/Kg)		250	213	85	70 - 130	11/4/99	QC03840
CCV (1	C6-C28 (mg/Kg)		500	455	91	70 - 130	11/4/99	QC03840
CCV (2	C6-C10 (mg/Kg)		250	257	103	70 - 130	11/4/99	QC03840
CCV (2	>C10-C28 (mg/Kg)		250	235	94	70 - 130	11/4/99	QC03840
CCV (2	C6-C28 (mg/Kg)		500	492	98	70 - 130	11/4/99	QC03840

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## Analytical and Quality Control Report

Paul Porter  
BCC, Inc.  
P. O. Box 494  
Brownfield, TX 79316

Report Date: 9/27/99

Project Number: N/A  
Project Name: Yates Petroleum  
Project Location: Williams Pit

Order ID Number: 99092313

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc. for analysis:

Sample Number	Sample Description	Matrix	Date Taken	Time Taken	Date Received
132207	Sample #1	Soil	9/22/99	12:25	9/23/99

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Dr. Blair Leftwich, Director

## Analytical Results Report

Sample Number: 132207  
Description: Sample #1

Param	Flag	Result	Dilution	Analytical Method	Date Prepared	Date Analyzed	Analyst	Prep Batch #	QC Batch #	RDL
Benzene (mg/Kg)		<0.05	50	S 8021B	9/23/99	9/23/99	RC	PB02443	QC03075	0.001
Toluene (mg/Kg)		<0.05	50	S 8021B	9/23/99	9/23/99	RC	PB02443	QC03075	0.001
Ethylbenzene (mg/Kg)		<0.05	50	S 8021B	9/23/99	9/23/99	RC	PB02443	QC03075	0.001
M.P.O-Xylene (mg/Kg)		0.065	50	S 8021B	9/23/99	9/23/99	RC	PB02443	QC03075	0.001
Total BTEX (mg/Kg)		0.065	50	S 8021B	9/23/99	9/23/99	RC	PB02443	QC03075	0.001
Surrogate		Result	Dilution	Spike Amount	% Rec.	% Rec. Limit	Analyst	Prep Batch #	QC Batch #	
TFT (mg/Kg)		5.04	50	0.1	101	72 - 128	RC	PB02443	QC03075	
4-BFB (mg/Kg)		5.48	50	0.1	110	72 - 128	RC	PB02443	QC03075	
C6-C10 (mg/Kg)		<1000	20	TX1005	9/23/99	9/23/99	MF	PB02435	QC03067	50
>C10-C28 (mg/Kg)	*	25300	20	TX1005	9/23/99	9/23/99	MF	PB02435	QC03067	50
C6-C28 (mg/Kg)	*	25300	20	TX1005	9/23/99	9/23/99	MF	PB02435	QC03067	50
* >C10-C28 - Hydrocarbons >C28 present.										
* C6-C28 - Hydrocarbons >C28 present.										

## Quality Control Report Method Blanks

Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
Benzene (mg/Kg)		<0.050	0.001	9/23/99	PB02443	QC03075
Toluene (mg/Kg)		<0.050	0.001	9/23/99	PB02443	QC03075
Ethylbenzene (mg/Kg)		<0.050	0.001	9/23/99	PB02443	QC03075
M.P.O-Xylene (mg/Kg)		<0.050	0.001	9/23/99	PB02443	QC03075
Total BTEX (mg/Kg)		<0.050	0.001	9/23/99	PB02443	QC03075
Surrogate		Result	Spike Amount	% Rec.	% Rec. Limit	QC Batch #
TFT (mg/Kg)		5.16	0.1	103	72 - 128	QC03075
4-BFB (mg/Kg)		5.03	0.1	101	72 - 128	QC03075
Param	Flag	Blank Result	Reporting Limit	Date Analyzed	Prep Batch #	QC Batch #
C6-C10 (mg/Kg)		<50	50	9/23/99	PB02435	QC03067
>C10-C28 (mg/Kg)		<50	50	9/23/99	PB02435	QC03067
C6-C28 (mg/Kg)		<50	50	9/23/99	PB02435	QC03067

## Quality Control Report

### Matrix Spike and Matrix Duplicate Spike

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	C6-C10 (mg/Kg)	<50	1	250	251	100		70 - 130	0 - 30	QC03067
MS	>C10-C28 (mg/Kg)	<50	1	250	240	96		70 - 130	0 - 30	QC03067
MS	C6-C28 (mg/Kg)	<50	1	500	491	98		70 - 130	0 - 30	QC03067
MSD	C6-C10 (mg/Kg)	<50	1	250	253	101	1	70 - 130	0 - 30	QC03067
MSD	>C10-C28 (mg/Kg)	<50	1	250	249	100	4	70 - 130	0 - 30	QC03067
MSD	C6-C28 (mg/Kg)	<50	1	500	502	100	2	70 - 130	0 - 30	QC03067

Standard	Param	Sample Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
MS	Benzene (mg/Kg)	<0.05	50	0.1	4.93	99		80 - 120	0 - 20	QC03075
MS	Toluene (mg/Kg)	<0.05	50	0.1	4.76	95		80 - 120	0 - 20	QC03075
MS	Ethylbenzene (mg/Kg)	<0.05	50	0.1	4.7	94		80 - 120	0 - 20	QC03075
MS	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	13.7	87		80 - 120	0 - 20	QC03075
Standard	Surrogate	Result	Dil.	Spike Amount	Analyst	% Rec.		% Rec. Limit	Prep Batch #	QC Batch #
MS	TFT (mg/Kg)	4.39	50	0.1	RC	88		72 - 128	PB02443	QC03075
MS	4-BFB (mg/Kg)	4.65	50	0.1	RC	89		72 - 128	PB02443	QC03075
MSD	Benzene (mg/Kg)	<0.05	50	0.1	4.92	98	0	80 - 120	0 - 20	QC03075
MSD	Toluene (mg/Kg)	<0.05	50	0.1	4.99	100	5	80 - 120	0 - 20	QC03075
MSD	Ethylbenzene (mg/Kg)	<0.05	50	0.1	4.73	95	1	80 - 120	0 - 20	QC03075
MSD	M,P,O-Xylene (mg/Kg)	<0.05	50	0.3	14.4	96	5	80 - 120	0 - 20	QC03075
Standard	Surrogate	Result	Dil.	Spike Amount	Analyst	% Rec.		% Rec. Limit	Prep Batch #	QC Batch #
MSD	TFT (mg/Kg)	4.59	50	0.1	RC	88		72 - 128	PB02443	QC03075
MSD	4-BFB (mg/Kg)	4.68	50	0.1	RC	94		72 - 128	PB02443	QC03075



## Quality Control Report

### Lab Control Spikes and Duplicate Spike

Param		Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	MTBE (mg/Kg)	<0.050	50	0.1	4.7	94		80 - 120	0 - 20	QC03075
LCS	Benzene (mg/Kg)	<0.050	50	0.1	4.6	92		80 - 120	0 - 20	QC03075
LCS	Toluene (mg/Kg)	<0.050	50	0.1	4.48	89		80 - 120	0 - 20	QC03075
LCS	Ethylbenzene (mg/Kg)	<0.050	50	0.1	4.4	88		80 - 120	0 - 20	QC03075
LCS	M.P.O-Xylene (mg/Kg)	<0.050	50	0.3	12.7	85		80 - 120	0 - 20	QC03075
Standard	Surrogate		Dil.	Spike Amount	Result	% Rec.		% Rec. Limit		QC Batch #
LCS	TFT (mg/Kg)		50	0.1	5.01	100		72 - 128		QC03075
LCS	4-BFB (mg/Kg)		50	0.1	4.95	99		72 - 128		QC03075
LCSD	MTBE (mg/Kg)	<0.050	50	0.1	4.47	89	5	80 - 120	0 - 20	QC03075
LCSD	Benzene (mg/Kg)	<0.050	50	0.1	4.21	84	9	80 - 120	0 - 20	QC03075
LCSD	Toluene (mg/Kg)	<0.050	50	0.1	4.12	82	8	80 - 120	0 - 20	QC03075
LCSD	Ethylbenzene (mg/Kg)	<0.050	50	0.1	4.03	81	9	80 - 120	0 - 20	QC03075
LCSD	M.P.O-Xylene (mg/Kg)	<0.050	50	0.3	11.6	77	9	80 - 120	0 - 20	QC03075
Standard	Surrogate		Dil.	Spike Amount	Result	% Rec.		% Rec. Limit		QC Batch #
LCSD	TFT (mg/Kg)		50	0.1	4.91	98		72 - 128		QC03075
LCSD	4-BFB (mg/Kg)		50	0.1	4.9	98		72 - 128		QC03075

Param		Blank Result	Dil.	Spike Amount Added	Matrix Spike Result	% Rec.	RPD	% Rec. Limit	RPD Limit	QC Batch #
LCS	C6-C10 (mg/Kg)	<50	1	250	223	89		70 - 130	0 - 30	QC03067
LCS	>C10-C28 (mg/Kg)	<50	1	250	220	88		70 - 130	0 - 30	QC03067
LCS	C6-C28 (mg/Kg)	<50	1	500	443	89		70 - 130	0 - 30	QC03067
LCSD	C6-C10 (mg/Kg)	<50	1	250	200	80	27	70 - 130	0 - 30	QC03067
LCSD	>C10-C28 (mg/Kg)	<50	1	250	199	80	23	70 - 130	0 - 30	QC03067
LCSD	C6-C28 (mg/Kg)	<50	1	500	398	80	25	70 - 130	0 - 30	QC03067

## Quality Control Report

### Continuing Calibration Verification Standard

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	Benzene (mg/Kg)		0.1	0.092	92	80 - 120	9/23/99	QC03075
ICV	Toluene (mg/Kg)		0.1	0.09	90	80 - 120	9/23/99	QC03075
ICV	Ethylbenzene (mg/Kg)		0.1	0.089	89	80 - 120	9/23/99	QC03075
ICV	M,P,O-Xylene (mg/Kg)		0.3	0.258	86	80 - 120	9/23/99	QC03075
CCV (1	Benzene (mg/Kg)		0.1	0.098	98	80 - 120	9/23/99	QC03075
CCV (1	Toluene (mg/Kg)		0.1	0.099	99	80 - 120	9/23/99	QC03075
CCV (1	Ethylbenzene (mg/Kg)		0.1	0.099	99	80 - 120	9/23/99	QC03075
CCV (1	M,P,O-Xylene (mg/Kg)		0.3	0.278	93	80 - 120	9/23/99	QC03075

Standard	Param	Flag	CCVs TRUE Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	QC Batch #
ICV	C6-C10 (mg/Kg)		250	232	93	70 - 130	9/23/99	QC03067
ICV	>C10-C28 (mg/Kg)		250	244	98	70 - 130	9/23/99	QC03067
ICV	C6-C28 (mg/Kg)		500	476	95	70 - 130	9/23/99	QC03067
CCV (1	C6-C10 (mg/Kg)		250	298	119	70 - 130	9/23/99	QC03067
CCV (1	>C10-C28 (mg/Kg)		250	287	115	70 - 130	9/23/99	QC03067
CCV (1	C6-C28 (mg/Kg)		500	585	117	70 - 130	9/23/99	QC03067
CCV (2	C6-C10 (mg/Kg)		250	294	118	70 - 130	9/23/99	QC03067
CCV (2	>C10-C28 (mg/Kg)		250	309	124	70 - 130	9/23/99	QC03067
CCV (2	C6-C28 (mg/Kg)		500	604	121	70 - 130	9/23/99	QC03067